A CONTRIBUTION TO ETHNOBOTANY OF MEHSANA DISTRICT, NORTH GUJARAT

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By

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CERTIFICATE

This is to certify that the content of this thesis for the requirement of Ph.D. degree in Botany entitled, "A Contribution to Ethnobotany of Mehsana District, North Gujarat" is original research work of **Mr. Modhvadia Avdabhai Rambhai** (Registration No.3615, Date : 28-2-2007, Saurashtra University) who carried out this research work under my supervision.

I further certify the present work has not been submitted partly or fully to any other university or institute for the award of Diploma or Degree.

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DECLARATION

I the undersigned Mr. Modhvadia Avdabhai Rambhai hereby declare that the research work has been carried out on "A Contribution to Ethnobotany of Mehsana District, North Gujarat" is original and the present work has not been submitted partly or fully to any other university or institute for the award of any diploma or degree.

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Avdabhai R. Modhvadia

LIST OF ILLUSTRATIONS

Photographs

ABBREVIATIONS USED

In the thesis researcher been used following short of some name and words, they are given in full forms detail as under,

ARM Avdabhai R. Modhvadia
BSI. Botanical Survey of India
F. Family
FBI Flora British India
FGS Flora of Gujarat State
Fls. Flowering Season (Months)
FNG Flora of North Gujarat
FOB Flora of Presidency of Bombay
Frs. Fruiting Season (Months)
G. Genus
RNS R. N. Sutariya
Sp. Species
Syn. Synonymous
Var. Variety
Viz. Videlicet (namely)
Vol. Volume
4.1 Botanical name
4.2 Local name
4.3 Brief description of the plant
4.4 Occurrence and availability
4.5 Ethnobotanic uses
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CHAPTER-I INTRODUCTION

1.1 Origin Of Ethnobotany

Ethnobotany came into being when the earliest man observed the animals mostly the apes and monkeys eating certain plant often to satisfy his hunger and at other times to heal his wound and to get rid from pains and sufferings. The observations on apes and monkeys (which were very close to human beings in morphology and also in anatomy and physiology) eating certain plant parts-roots, stems, leaves, flowers, fruits and seeds and the beneficial effects on their body gave a food for thought to these early men and it started the genesis of basic thoughts in human brain. An analysis of such observations provoked them to use plants for maintenance of life and alleviation of diseases. In this way, it helped them in formulating the basic concepts of sciences of life which were evaluated rationally, later on over a period of time. *Thus, on the basis of the uses of plants first by animals and later by human beings the concept of ethnozoology and ethnobotany emerged which merged to give birth to ethnobiology.*

1.2 Concept Of Ethnobotany

The term ethnobotany was first used by Hershberger (1895) and its scope was much elaborated later by Ford (1978) and Faulks (1958). In India it was Dr. S.K. Jain (1986) from NBRI, Lucknow, affectionately known as *'Father of Indian Ethnobotany'* who made pioneering investigations. *Ethnobotany has assumed new significance and a new dimension today when the modern civilization realized that all those plant products they are using today either as a food or as a medicine are the gift of those early men who used those plants to satisfy their hunger and heal their wounds and to know and evaluate the utility of those plants often experimented on their own body, sometimes also accidentally suffering due to their use, such as in case of some poisonous plants.*

1.3 Tribals And Biodiversity – A Symbiotic Relationship

The early men revealed the importance of some roots (Carrot, beet, radish, turnip, sweet potato, cassava, roots etc.); Some stems (Potato, asparagus, zinger, turmeric, yams, taro, corms, onion and garlic bulbs etc.); Some flowers (cauliflowers & brocilli etc.) and several of the fruits and seeds that had 'edible value' and provided nutrition to the human body for maintaining good health. At the same time it were these early men who also discovered the healing properties of some of those plant food products and of several plant roots such as those of snake-root plant *(Rauwolfia serpentina)* asparagus roots *(Asparagus racemosus and A. officinalis),* stems and leaves, fruits and flowers and revealed to the modern men about their utility as medicine for combating one or other diseases and ailments. Although several of those wild food and medicinal plants used by early man have been domesticated today by the modern civilization and has become parts of our culture, the agriculture, yet a number of them and their relatives still grow in the wild and are conserved and protected by the indigenous and ethnic societies (tribals in India) and traditional people all over the world. These indigenous societies are the descendents of the primitive human societies and the early men. Hence a considerable part of the knowledge of early men about utility of plants and people-plant relationships have continued down to modern day and are survived by and among the ethnic societies through folklore and through faith and folk traditions.

1.4 Utilization Of Wild Plants By The Tribals Of India

Over 9,500 wild plant species used by tribals for meeting their various requirements have been recorded so far (Table-1.1).Out of 7,500 wild plant species used by the tribals for medicinal purpose about 950 are found to be new claims and worthy of scientific investigations. Out of 3,900 or more wild plant species used as food by tribals, about 800 are new claims and at least 250 are worthy of consideration for development as alternative sources of nutritive food

which civilization might need in the near future. Out of over 525 wild plant species used by the tribals for making cordage and fibre, five have commercial potential. Out of 400 plant species used as fodder, 100 are worth recommending for wider use. The tribals of India have also been using about 300 wild plant species as 'Pesticides' and 'Pisicides' of which at least 175 have the potential to be developed as safe bio pesticides (GOI,1994).

Table 1.1: Use of wild plants by the tribals of India

S.No.	Use of wild plant species	No. of species of used
1	As food plants (cereals, pulses, vegetables, fruits, etc.)	3,900
2	As medicinal herbs	7,500
3	As fodder plants	400
4	As fibre and cordage	525
5	As pesticides and piscicides etc.	300
6	As gums, reins and dyes	300
7	As incense and perfumes	100
8	Miscellaneous and for other cultural requirement	700

Source: Ethnobiology, Government of India, 1994.

1.5 Socio-Economic Status Of Ethnobotany

Also different ethnic societies use a variety of plants and plant products on different religious and cultural occasions. Tribal societies of India have preserved and cultivate different varieties of rice (*Oryza sativa*), some for taste, other for aroma, and still others for preparing recipe to be offered to goddess on a particular religious occasion. Some varieties of rice are specially used for feeding the pregnant women's and after childbirth. They also use the wild relatives or rice and other crop plants at different occasions and hence have preserved their diversity. An ethnobotanical survey among the farmers of Rajasthan revealed that some of

the traditional farmers have conserved the two traditional varieties of wheat 'kathiya' and 'baja' because they use them on different religious and cultural occasions. The pregnant women are given 'laddus' prepared from the flour of kathiya wheat. These traditional wheat varieties are highly nutritious and also have disease and drought resistant genes but have gone out of cultivation practice because of poor yield. Only ethnobotanical studies can help locate and conserve such useful traditional varieties of crop plants with useful genes which will otherwise be lost from the civilization.

Although early men and the primitive civilizations had discovered over 3000 species of plants of economic uses, mostly as a source of food only some 200 species have been domesticated by the modern society and only about 30 species are in cultivation practice worldwide as a major source of food. Among the medicinal plants, out of 30,000 species estimated to be used by the indigenous and ethnic societies of world, around 10,000 have been used by the traditional systems of medicines of respective countries such as in Ayurveda, Siddha, Unani and Homeopathy medicines in India, and about 150 species have entered into the global market to be used in modern medicine once science discovered some valuable chemical compounds of significant biological actions in them. Prime examples are *Rauwolfia serpentina* and *Catharanthus roseus* which is earning millions of dollars every year as royalty for the US pharmaceutical industries.

Ethnobotanical investigations of use of plants by the various ethnic societies thus have grate socio-economic value. In 1973 an American scientist discovered from the strains of sorghum *(Sorghum vulgar*) which possess genes for high protein content. One gene from the Ethiopia's barley plant cultivated by the ethnic societies now protects US barley plant from the 'yellow dwarf virus' which otherwise coasted 160 million US dollars annually to US for control by pesticide use. Agene from the wild Mexican maize (*Zea diploperennis*) preserved by the ethnic societies of Mexico conferred resistance to seven of the domesticated crop

(*Zea mays*) major diseases and also made it a perennial high-yielding miracle maize (*Zea pernnis*) in US, worth million dollar in value.

Ethnobotanical surveys have also helped in locating and conserving the threatened and the endangered species of plants. An ethnobotanical survey done by National Botanical Research Institute (NBRI), Lucknow identified many endangered plant species some of them of high economic value as the source of food and medicine. These are *Aconitum ferox, Aconitum heterophylum, Angelica glauca, Atropa acuminate, Colchichum luteum, Delphinium denundatum, Dioscora deltoidea, Ephedra gerardiana, Orchis latifolia, Picrorhiza kurroa, Nardostachys grandifloriformis, Paenoia emodi, Podophyllum hexandrum, Swertia chirayita, Abies pindrow, Rhodedendron hyperanthum* etc. NBRI in co-operation with National Bureau of Plant Genetic Resource (NBPGR), New Delhi is trying to conserve these economically valuable plants through *in situ* and *ex situ* conservations.

1.6 Significance Of Ethnobotany

Study of ethnobiology assumes great importance in enhancing our knowledge about the plants grown and used by the native/ethnic and the tribal communities, the diversity produced and assembled by them through generations of informal breeding for their own sustenance and different traditional technologies, means and methods adopted by them for conservation of that plant diversity. These days greater emphasis is being laid on the traditional knowledge and the social and cultural aspects of the traditional and ethnic people imparting that knowledge and use that knowledge in *"bioprospecting"* of biological resources (wild plants and animals) as a new source of food and medicine and other important industrial raw materials. Ethnobiological survey is also leading to the study of diverse *"agro-ecosystems"* in world and their crop diversity and how these crop genetic resources are being used, managed and sustained by these traditional and ethnic communities.

With the revival of 'plant taxonomy' as its new version 'plant diversity' or 'biodiversity' in the 1980s, a new interest has grown in ethnobotany because now it is being realized that information about biodiversity and their utility as genetic resources for improvement of agriculture-both food crops and medicinal crops, and as a raw material for drug and pharmaceutical industries, have been provided at one time or other by the primitive indigenous and ethnic societies of world. The lead information about the food or medicinal values of several wild species hitherto unknown to the modern civilization gave been provided by these ethnic people who have been using these plants since centuries for one or other purpose. Not only that they posses specific knowledge about the use of these wild species, but they have also been instrumental in protecting and preserving them through cultivation and *in situ* conservation.

The anthropological surveys made for the study of life and practices of certain ethnic societies of India have brought out several new information's about the use of wild plant species by the ethnic societies. The tribals of north-east India Garo and khasi were found to be cultivating two pseudocereals viz. amaranth (*Amaranthus polygamous*) and buck wheat (*Fagopyrum esculentum*) on large scale. Nutritional analysis of these pseudocereals traditionally eaten by the hill communities of the Himalayas showed that they are exceptionally rich in good quality protein with the essential amino acid 'lysine' which is usually deficient in most cereals and millets. That was one reason, the survey report said that 'inspite of being poor these tribal people were found to be quite healthy and physically strong and seldom suffered from health problems.' Now there is a strong need to bring these highly nutritive pseudocereals in to our modern agricultural and cultivation practices because the civilization just depends upon three major cereals wheat, rice and maize whose genetic variability is also seriously, eroding. It is dangerous to depend upon such narrow range of food plant diversity.

Similarly the anthropological survey also revealed that the ethinic people of Himalaya ate the yam tubers (*Dioscorea deltoidea*) as a source of nutritive food.

Scientific analysis of yam revealed that it is a rich source of 'diosgenin' which are raw materials for steroid hormones much needed for the production of herbal oral contraceptive pills for women's. This herbal contraceptive is now being used worldwide and is involved in million dollar trade.

Hence major contribution of ethnobiological study today is towards the understanding and bioprospecting of biodiversity which has assumed great economic, ecological, social and political significance for the modern civilization. There is a close link between ethnic diversity and biological diversity. Different ethnic societies use a particular plant species in their locality differently as a source of food or as a source of medicine or for both. Different ethnic people use the same plants species for treatment of different diseases and conversely wide variety of plants by different ethnic societies are used for the treatment of same or related human diseases. For example *Centella asiatica* is used in 33 different formulations, *Withania somnifera* in 24, *Asparagus racemosus* in 32, *Tinospora cordifolia* in 26, for treatment of various human ailment by the various ethnic societies. Similarly for example, for the treatment of one common complain like stomach related problems a variety of herbs e.g. *Emblica officinalis, plantago ovata, Aegle marmelos, Piper longum, Nyctanthus arbor-tristis, Grewia tenax, Cordia gharaf, Cassia fistula, Cassia angustifolia* etc. are used by the different ethnic societies in different regions of the country.

1.7 The Future Of Traditional Medicine Of India

So far investment on traditional medicine and on the conservation and research activities of medicinal plants of India has been rather skewed. No has shown much interest except some of the ethnobotanists and research organizations.

Ironically enough, whereas all other systems of traditional medicine flourished well in India and received encouragement from both the people and the Government, their very originator the 'folklore medicine' who gave birth to

traditional medicine remained largely neglected and left to die its natural death. There has been no move on the part of Government of India for investing public or private funds for ensuring long-term availability of the large number (Over 7,500 species) of ecosystem specific medicinal plants that have been traditionally used by the numerous traditional folk healers, (Tribals and the villagers.) throughout the length and breadth of India from the cold Himalayas in the North to the hot peninsula in the south, from wet forest in Assam and Maghalaya in the east to the dry and dusty their desert in the west for their basic health needs and as home remedies. This is because the self-reliance of the 300-400 million rural poor in primary healthcare is on one's political or economic agenda.

1) Traditional Medicine in British India.
   a) Closing down of ayurvedic teaching institutions in 1835;
   b) Legal registration of native doctors/traditional medicine men stopped.
   c) Total cut off of government aid to Indigenous system of India Medicine;
2) Traditional Medicine in Independent India.
   a) Indian system of traditional Medicine get less then 4 percent of the national health budget;
   b) Sub-critical investment in research, teaching and public health services in traditional medicine;
3) WHO & Traditional medicine (TM)
   a) WHO invests less than 5 percent of its budget on traditional medicine;
   b) All WHO policies on TM are usually framed by western Medicine (WM) professionals;
   c) WHO encourage ethnobotanical studies on medicinal plants and herbal drugs based on western medicine (WM) hypothesis which in turn encourage biopiracy of medicinal plants and the traditional knowledge from

	the materia medicas of Indian system of Medicine (ISM) and do not revitalize the foundations of ISM.

Source: FRLHT, Bangalore (1998).

However, and perhaps not very surprisingly, there has been considerable public investment on medicinal plants (Some 40 odd species) that is needed by the modern pharmaceutical industries for obvious reasons because both government and the industrialists sees big economic stakes in them social objectives are always given back-seat and suffer before political and economic objectives. Political and economic discrimination meted out to the traditional medicine in India since the British rule is given in Table No.1.2 even World Health Organization (WHO) did not favour 'Traditional Herbal Medicine' (THM) at per with 'Modern Synthetic Medicine' (MSM) although having recognized the traditional medicine in 1977.

1.8 The Phytochemical Revolution

With the coming of the chemical revolution several medicinal plants of antiquity which were once used by the traditional medicine men have found wide acceptance and a place of pride in the modern medicine after their chemical examination revealed that they possessed chemical compounds of great biological activity. Development of traditional herbal medicine in to a modern drug of great therapeutic importance is exemplified by the wonder herb '*Rauwolfia serpentina'* the root of which has been used for centuries in traditional medicine in India, Shrilanka, Nepal and Burma as a cure for insanity. The alkaloids in the plant have been shown to be phenotropic and o influence the functions of the mind and behavior. It is no wonder that the traditional medicine men of India used *Rauwolfia serpentine* to treat insanity which is possibly associated with hypertensive encephalopathy (Borins, 1987). The CIBA laboratories of Switzerland are manufacturing the drug. Perhaps the most spectacular success story is that of Madagascar periwinkle (*Catharanthus roseus*). Traditional

herbalists in many parts of developing world were using their leaves to treat diabetes. Investigations on this plant began in the late 1950s in US and Canada. Canadian found alkaloids '*Vinblastine'* and '*Vincristina'* which reduced the white blood cells count in laboratory animals pointing towards its anti-leukemic properties.

The chemical structure of herbal drugs is very complex and their chemical synthesis in laboratory is most unlikely without any prior lead information about the chemical structure of some model chemical compounds from plants. Cocaine derived from *Erythroxylum coca,* provided the chemical information and the lead material (blueprint) for the synthesis of 'Procaine' and other related anesthetics. Salicin obtained from the *Salix purpurea* provided the information for the synthesis of 'acetly salycylic acid' (aspirin) which is the prized drug for rheumatism and dissolving blood-clot in arteries. *Papaver somniferum* and *P.bracteatum* gave 'morphine' and 'codeine' and their chemical structures were used in the synthesis of pain-killers which dominated the 20th century medical prescriptions. The antispasmodic 'tropine' alkaloids e.g. 'atropine' and 'scopolamine' and a number of synthetic anti-cholinergic dugs were synthesized based on the lead information provided by them and *Atropa belladonna* and *A.acuminata.*

1.9 The High Economic Stakes In Medicinal Plants

It is often cheaper to use natural plant products as starting material for the synthesis of 'Semi-synthetics' drugs then pure chemical synthesis. Reserpine extracted from *Rauwolfia* species costs US $ 1 per gram. Reserpine from *Rauwolfia* species has a market value that excceds $ 250 million a year (Ayensu 1986 and shiva 1996). Plant saponins are often 'Sapogenins' in the manufacture of steroidal drugs. Nearly 95 percent

Of all steroids are now being obtained from saponin bearing yams (*Dioscorea deltoideae*) and other species of *Dioscorea* which yields diosgenin and

other sapogenins. *Dioscorea* species have been the main source of world production of sex hormones (androgens, estrogens and progesterone), oral contraceptives, cortisone and other anti-inflammatory drugs. Diosgenin from the Mexican yam and its finished products are valued up to and 1 billion annually. (Ayensu, 1986).

The anti-leukemic drug 'Vincristine' extracted from *Catharanthus* leaves cost over $ 220,000 per kg. And about half tone of leaves are required to extract one gram of the alkaloid. But the drug is very effective in even very small quantities. The plant produces about 1,000 times more 'Vinblastine' than 'Vincristine'. In Hungary a research team has developed technique for converting vinblastine into vincristine. *Catharanthus roseus* forms the basis of a multi-million dollar drug industry in the US today. Drugs derived from this plant bring in about US $ 160 million worth of sales each year in US. The anti-cancerous drug 'taxol' obtained from the pacific yew (*Taxus wallichiana*) and the Himalayan yew *Taxus buccata* is also being commercialized on large scale.

In the US in 1973 over 40 percent of all over the counter prescriptions and sale of drugs contained an active biological compound obtained from wild or cultivated medicinal plants that originated in the poor developing countries of the south (Ayensu, 1986). About 25 percent of all these prescriptions and drugs were derived from higher plants and were retailed at US $ 1.6 billion. Figures for 1980 put the value of herbal drugs at US $ 4 billion and those drugs dispensed from US Government agencies, hospitals and other legitimate channels at $ 8.1 billion (Oldfiled, 1984). The value of illegally procured herbal drugs from the developing countries is, of course, incalculable! Presently the value of herbal drugs in the rich developed nations is simply prohibitive. The pharmaceutical industries in these nations invest more than US and 80 million on the development of a new drug from start to finish (Ayensu, 1986).

1.10 Prospects Of The Study

This study is concerned with the ways human perception and uses of plants influence the vegetational environment; it covers the entire Mehsana district of Gujarat state.

Though this study is purely restried to Mehsana district, the exploration and many of its implications are of general signification to the tribal and rural people of this area.

Effort has been made to adopt an inter disciplinary approach by probing into the tribal and rural people and their understanding of their immediate environment that influences their relationship to plant and regulate their uses. In fact, it is these that regulate their personal social and economic relationship as well. A probe into the individuals perception of the environment, i.e. how one finds on self in the given milieu, finally shows how the rural and tribals as a group view themselves and how their behavirous pattern and the subsequent interaction with the vegetational environment. It is this holistic view that finally determines ones use and management of plants. Special attention is given in this study to the factors that make plants a resource that sustains the rural people and how the management of this resource is vital to their survival and progress.

1.11 Hypothesis

Mehsana district is very rich in floristic and ethnobotanical knowledge. There are scanty ethnobotanical work carried out by Patel (2002) and Chaudhary, (2003) in some parts of the Mehsana district. The tribal-rural people have their own life style, culture, tradition and belief. These tribal-rural people can basically be categorized under a sect which has acclimatized it self to the ecosystem prevailing around. Since time immemorial and are evolved with a way of life style harmonious with the nature. Therefore it was hypothesized that this tribal-rural people has there unique ethnobotanical use. Which highlights tribal-rural

depending on forest and forest product as their resource base and some new ethnobotanical use must be recorded.

1.12 Aims and Objectives

1.12.1 Aims

Present work will fill a long gap between the practitioner of Indian system of medicine and scientists and encourage them to rationalize it suiting the modern requirements of biotechnology.

This will be helpful in recognizing the vast wealth of plants in Indian and will interest biologist, chemist and biochemist equally who can utilize the information for further analysis to strengthen the traditional knowledge.

This compendium will stimulate researchers to under take studies so that the traditional technical knowledge is authenticated.

These investigations have brought to light indigenous knowledge on the utilization of plant species by the various tribes in Mehsana district. It is hoped all such information provide should be utilized judiciously by all concerned for sustainable utilization of biodiversity and for well being of in humanity.

1.12.2 Objectives

The major objectives of this work are:

1. To present an inventory of the plants used by the various tribe of Mehsana district for food and drinks, medicine, material, culture like housing, wickerwork, fibers, dyes etc. and magico-religious beliefs, mythology, ceremonies, folk-songs and tales etc.
2. To documents the ethnobotanical data from exiting literature and from actual fieldwork.
3. To present data from several tribal weekly markets and various ceremonies of tribal and rural people.
4. To project the plant genetic resources of crops in the region.

5. To describe the basis, etymology or folk concept of vernacular names of plants.
6. To indicate gaps in ethnobotanical research, both region wise and tribe wise.
7. To compare and evaluate the ethnobotanical data for locating plants for further studies, economic uplift of the folk, conservation of biodiversity and eventually for welfare of society in general.
8. To record abiotic variables of the area.
9. To develop scientific approach among people towards their megicoreligious beliefs.
10. Unknown ethnobotanical uses of tribes bring in to form of literature.

CHAPTER-II MATERIALS AND METHODS

2.1 Research Site

Mehsana is one of the districts forming part of the north Gujarat region of the Gujarat State. It lies between $23^0$15' and $23^0$55' North latitude and $72^0$07' to $72^0$46' east longitude. It is bounded to the north and north-west by the Patan, Banaskantha district, to the west and south-west by the Little Rann of Kutch and to the south by the Dasada taluka of Surendranagar district and Viramgam, Sanand and Daskroi talukas of the Ahmedabad district. Moreover, to the south-east the district is bounded by the Gandhinagar and a part of the Ahmedabad district. The river Sabarmati skirts the eastern boundary and serves as a natural dividing line between the districts of Mehsana and Sabarkantha.

The climate of the District is semiarid type. It is strongly periodic and seasonal. Annual rainfall of the region is 500-650 mm. summer starts from late February and ends in June. The maximum temperature ranges from 30^0c to 45^0c, the minimum temperature ranges 8^0c to 18^0c. Soil of the district is black, greybrown and sandy. Mehsana district is the fertile and well irrigated by the river Sabarmati, Saraswati, Rupen, Puspswati and Khari. Rural population of the district is 14, 26,175 and urban population is 4, 11,717. It includes in 9 Taluka and 604 Villages. Population density of the district is 419 people/km^2. Major crop cultivated in the district is Sorghum, Bajara, Maize, Wheat, Pearl Millet, Cotton, Caster, Groundnut, Isabgul etc.

As far as the Mehsana District is concerned it has nine Taluka namely Mehsana, Visnagar, Vijapur, Vadnagar, Kheralu, Satlasana, Unjha, Becharaji and Kadi, of which Unjha is famous for its Cuminum market. Kadi, Vijapur, Mehsana, Kheralu and Visnagar famous for the cultivation and industrial development. Satlasana is famous for unclassified reserve forest Taranga.

2.1.1 Sun Temple, Modhera

The Sun Temple, Modhera was built in 1026 A.D. by King Bhimdev of the Solanki dynasty and is dedicated to Lord Surya, the Sun God of Hinduism.

It is akin to the Konark Temple of Orissa. The Modhera Sun Temple is situated on the bank of the river Pushpavati, 25 km from Mehsana.

The temple was so designed that the first rays of the sun fell on the image of Surya, the sun God, at the time equinoxes. The temple is partially in rains after it was also finally destroyed by the Allauddin Khilji. However enough has remained of the temple to convey its grandeur. The sun temple is of a unique architecture of its own kind. The temple comprises three separate but axillary aligned and integrated elements.

i. Surya Kund, which is an intricately carved, stepped tank named after Sun God Surya.
ii. Sabha Mandap, which is a hall used for religious gatherings and conferences.
iii. Guda Mandap, Sanctum sanctorum, which once housed the idol of Sun God.

2.1.2 Bahuchara Mata

The temple of Bahuchara Mata is located in Becharji town in Mehsana District of Gujarat. It is 35 km from west of Mehsana. The original temple complex was built in year 1783 A.D. The temple is nicely decorated with stone carving. Bahuchara Mata is considered partroness of and worshipped by the Hijra community. Chaul Kriya is one of the 16 Sanskars as per Hindu religion and it performed by offering hair of children near the Mansarovar Lake. Shri Bahucharaji Mata is Kuldevi for many castes in Gujarat and they all come here with devotion and reverence and carry out Chaul Kriya (Babri) of their children.

2.1.3 Thol Wildlife Sanctuary

Thol Lake is 56 km away from Mehsana. Thol Lake encompassing an area of 7 Sq km has marshy fringes. Scrub forests also surround the sides of the high banks. This makes it the ideal spot for a large number of migratory birds particularly. Those who belong to the category of wonders and waterfowls.

2.1.4 Taranga Hills Forest

Taranga Hills forest is 56 km away from Mehsana. It elevated 1200 feet above mean sea level. It covers 1870 Sq km area. It is one of the natural habitat and protected place for wild life. It has rich floral diversity. It is describe as an unclassified reserve forest by forest department. It is the western end of Aravalli hills. Sabarmati River is passing nearly about 2.5 km away from the forest border.

2.1.5 Vadnagar

Vadnagar is historical place, Kirti toran, Hatkeshwar temple, Tanariri are the famous historical places.

2.1.6 Unjha

Unjha is famous for Umiya Mataji & their marketing yard.

2.2 Origin Of The Name Of The District

The Mehsana district derives its name from the town of Mehsana which is the headquarters of the taluka and the district. It is said that the town of Mehsana was founded by Mahesaji or Masaji Chavda in 12^{th} or 13^{th} century. This fact is corroborated by Shri Manilal Nyalchand, the author of *Pragat Prabhavi Parshvanath*. He also mentions that Mahesaji built a temple of Chamunda Devi at the place. From this, it may be iferred, though not conclusively, tha the Mehsana town was founded during the Rajput period. In the former Baroda regime, the headquaters of the Kadi Prant were transferred to Mehsana in 1902 but the name of the prant continued to be Kadi till May 1931, when the prant came to be redesignated as Mehsana.

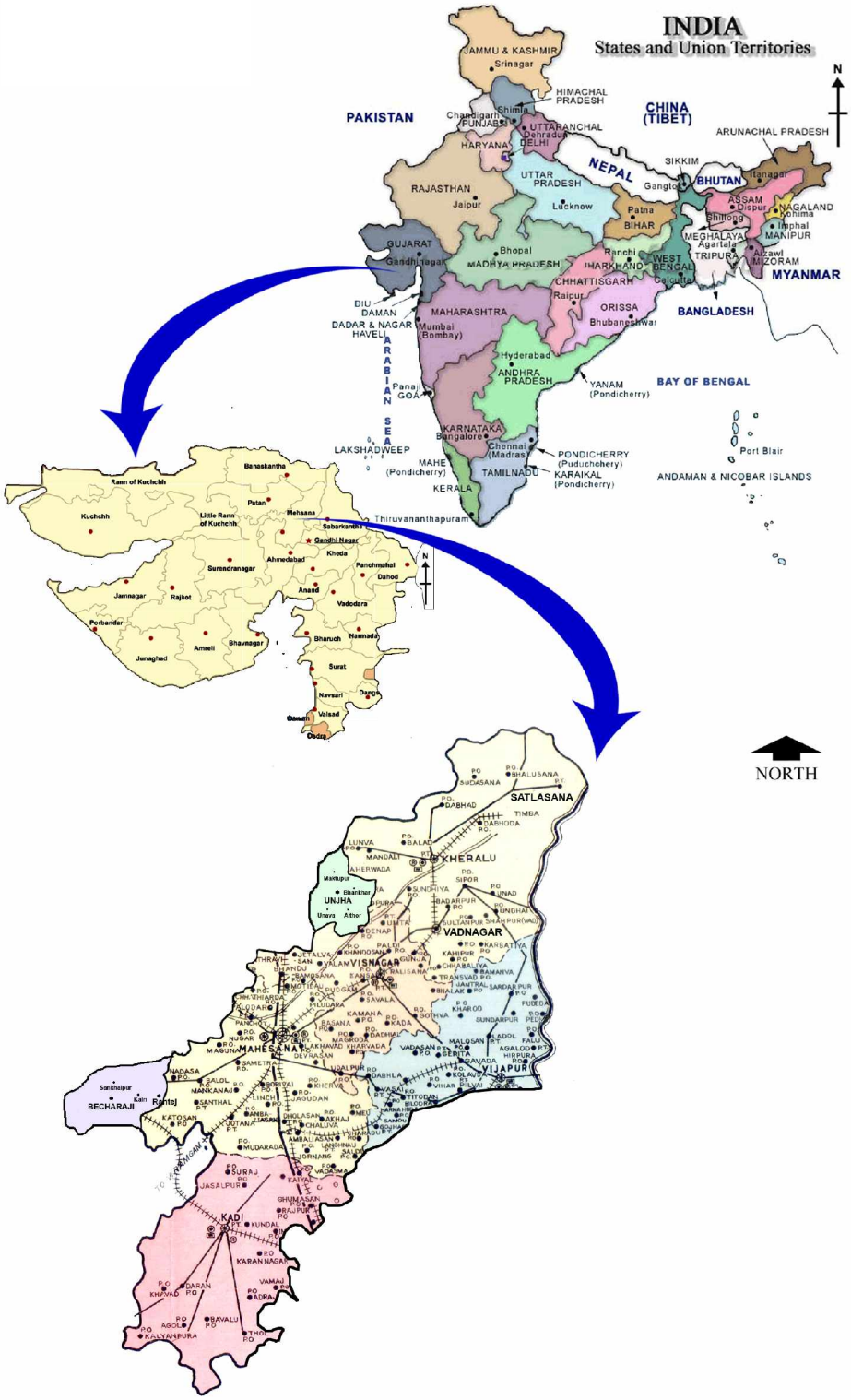


Figure 2.1 Map Of Study Site In India And Gujarat

2.3 Drainage System

The Mehsana District has five ephemeral rivers. Sabarmati, Saraswati, Rupen, Puspswati and Khari. These rivers usually dry-up during the summer months but water can still be found round the year in the scattered water pools. There are also 9 large dams – Dharoi (along with 512 lakes and many check dams) that supply water during the odd months of the year. Irrigation canal network is 309 km in the district.

2.4 Vegetation

The notified forest Taranga area in Mehsana District is 50.52 Sq. Km. that is about 2% of the total geographical area of the District.

As per the classification of forest types by Champion and Seth (1968). The Gujarat State has four major forest types out of 16 in the country. These are tropical moist deciduous forests, tropical dry deciduous forests, northern tropical thorny forests and the littoral and swamp forests. Mehsana District has tropical dry deciduous and northern tropical thorny forests.

In the Mehsana *Acacia nilotica, Acacia leucophloea, Ailanthus excelsa, Albizzia lebbek, Azadirachta indica, Balanites aegyptica, Capparis deciduas, Euphorbia nerrifolia, Holoptelea integrifolia, Prosopis cineraria, Salvadora persica, Zizyphus mauritiana* are the dominant species of angiosperm.

2.5 General Climate

The rainfall, air, temperature, relative humidity and wind speed are the climatic variables that govern the ecosystem and subsequently the diversity of the area. Hence they are referred as the driving variables. The structure and functioning of ecosystems is determined by several factors that both affect, and are affected by, ecosystem processes. These factors (interactive controls) include regional climate, soil water and nutrient supply, and the functional types of organisms present in the system, disturbance regime, and human activities (Chapin *et al.*, 1996). The regional climate is affected not only by solar input and moisture supplies from oceans, but also by forest cover, which

determines the amount of energy that is absorbed by the ecosystem and is available to heat the atmosphere (Bonan *et al*., 1992). In the present investigations *rainfall, temperature, relative humidity and wind speed* are considered as climatic variables of the ecosystem.

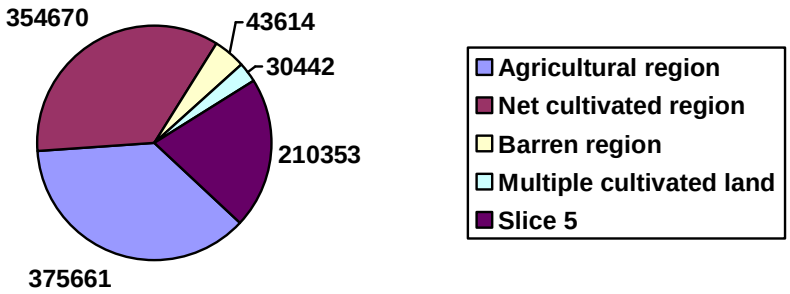
2.6 Land Utilisation

A study of the land utilisation would determine whether the agricultural potential of the district is properly harnessed and whether there is any scope for further development. Utilisation of land resource thus forms a major item in the programme of economic planning especially in an economy which is predominantly agricultural. It also reveals the various uses of the land in the district. Multiple cultivated area which was negligible in the past is now being practised on a fairly wide scale, as can be seen from the increase in the proportion of area sown more than once.

Table 2.1 : Land Utilisation In Mehsana District

Sr. No.	Land Utilisation	Area (Hector)	Percentage
1	Agricultural region	375661	85.52
2	Net cultivated region	354670	80.74
3	Barren region	43614	9.93
4	Grazing region	30442	6.93
5	Multiple cultivated land	210353	-
6	Total geographic region	439276	100.00

Figure 2.2 : Land Utilisation In Mehsana District



Net cultivated and non agricultural land of the district is 80.74% and 9.93% respectively. Forest area is less than after it is one of the promising district.

2.7 Soil

In the Mehsana district, nearly 90 percent of the soil is light sandy. Black soil is met with, but only in patches and chiefly towards the south and west of Kadi, the west of Kalol. Though light and sandy, the soil when properly treated, is capable of giving large returns for a little labour. This is not, however, the case in the low-lying and water-logged lands in Visnagar and Mehsana which give a poor yeild, in spite of all the efforts of the cultivators. Moreover, the sandy loam soil differs in richness and contents in some parts of the district. In Vijapur, Visnagar, Kalol and Mehsana talukas, the soil is rich and the sub-soil water is also sweet. Soil in Vijapur taluka is the richest. In parts of Kadi, Kalol talukas, the soil is interspersed with medium black soil suitable for cultivation of paddy and cotton.

2.8 Biogeography

2.8.1 Gujarat

Of the 12 biogeographic zone of India (Rodgers and Panwar, 1988), Gujarat is further sub-divided into four zones; zone 3, 4, 5 and 10. The provinces of these zones in Gujarat are province 3A-Kutch, 4B-Gujarat Rajwara, 5A-Malabar Coast, 5B-Western Ghats Mountains and 10A-The West Coast. Gujarat has a territory of 1,96,024 Sq km, and is endowed with a great diversity of natural ecosystems ranging from desert, semiarid, mangroves, coral reef-rich coast and forest with dry deciduous, moist deciduous and evergreen trees. The floristic and vegetational studies in Gujarat have received much attention since the last decade of the nineteenth century (Pilo and Pathak 1996).

2.8.2 Mehsana

Based on the revised classification of biogeographical zones by Rodgers and Panwar (1988), the diverse natural ecosystem in the Mahesana district is :

Table 2.2 : Biogeographic Zone

Biographic Zone	Biogeographic Province	Natural Ecosystems
Zone-4 The semi arid	4B- Gujarat Rajwada	Dry deciduous teak forest, dry deciduous misc. forest, dry thorn forest Savanah. Scrub land and Wetland.

Mehsana is falls under the type zone 4B. The teak mixed with dry deciduous species occurs in just a few pockets. Due to heavy grazing the ground cover becomes inadequate in the district.

2.9 The People Setting (Indigenous People)

2.9.1 Population

Tribals are the distinct ethnic group who are usually confined to definite geographical areas, and are culturally homogenous and a unifying social organization. Area of the Mehsana district is newly inhabited by few numbers of sub tribes such as Gadhiya, Chanori and Vadiya. Other local people of villages are the sub tribe of Gadhiya darbar, Thakarda, Rabari (Desai), Thakor, Raval, Chaudhari, Harijan, Meer and Banjara. Population of SC is 1, 48,597 and ST is 8,975 in the study area.

2.9.2 Houses

People live in houses built by using stones or bricks. Generally, there is a "*Varanda*" (well constructed open area) in front of a house and a sitting room with attached kitchen by the side, and with one or two bed-rooms. The room prepared as first floor is reserved to keep fodders for their cattles. They keep their cattles in well shelterd '*Vada*' near by their houses. Some live in fields and they prepare permanent cottage in the field. Most of the houses in village had walls of burnt bricks or mud plastered with clay and cow-dung emulsion, though grass, leaves, reeds (Wattle and Daub) or bamboo were in frequent use

in the constuction of hutments of those who were poor. The flooring in majority of village houses was of beaten earth covered with cow-dung emulsion which is believed to possess certain antiseptic properties.

2.9.3 Dialect

96.94 percent of the district population had Gujarati as their mother tongue according to the 2001 census. A slight local variation in speech and accent is, however, found in different parts of the destrict or in different communities. Which retain special features of thier own. besides Gujarati, the other important languages spoken by the people in the district include Urdu, Hindi, Sindhi, Marathi, Rajasthani and Marwadi. The difference in spoken language is clearly noticeable in the form of expression, accent and pronunciation of certain words like *chyon* instead of *kyan* (where), *chyam* in place of *kem* (why), *hun* insted of *shun* (what). The people substitute *e* for *i* , before a nasal consonant, for instance, *lemdo* for *limdo* and *peplo* for *piplo*, etc. Pattani dialect is spoken in Mehsana district also. *ch* or *chh* are pronounced as *s*.

The Mehsana district has a number of pecular proverbs which have their origin in certain villages, castes, communities, certain specialised commodities or important places. eg. *"Mondero vayaro karanhagari vij, marso nahi Balad khoso bij"* i.e. if the wind blows from Modhera side and the lightning is seem from the side of Karansagar, the popular belief is that there will be no rains. The farmers are, therefore, advised not to beat their bullocks and lose seeds, because all attempts at cultivation would end in smoke.

2.9.4 Occupation

A few, with good educational qualifications are employed in services and do the white-coller job. While most of the people are related with agriculture. The use modern equipments, instruments and technique in their farms. Cumin, Cotton, Tobacco are special crops of this district. Beside these crops vegetables and fruits they grow in their fields.

A typical day of various tribes.

	Time	Activities
Ø	5.00 am	Wake up & drink tea.
Ø	5.45 am	Feed live stocks & Milking Cow/Buffalo
Ø	6.30 – 7.30 am	Break fast
Ø	7.30 – 12.00 am	Work on Farm and collection of forest products. (Satlasana)
Ø	12.00 – 2.30 pm	Lunch and Afternoon nap
Ø	2.30 – 3.00 pm	Tea
Ø	3.00 – 6.00 pm	Work on farm (ploughing, harvesting, irrigating etc., depending upon time of the season), and collection of forest products. (Satlasan)
Ø	6.00 – 8.30 pm	Evening meal.
Ø	8.30 – 10.00 pm	Sit around & talk, listen Radio/Tape, Watch TV.

2.9.4.1 Agriculture

Tertiary rock found in Mehsana District. It is located in Cambay gabben and earthquake sensitive zone. Type of soil and its fertility is considered as effective factor on diversity of crop and its productivity. High temperature and less rainfall considerabally made the soil sandy and saline. Black, medium, sandy, Goradu and rocky soil found in the District. Due to diversity of soil in this region Pearl millet, Jowar, Wheat like Cereals, Cotton, Tobacco, Mustard, Fennel Isabgul, Caster, Rape seed like cash crop as well as, Ber, Gauva, Tomato, Capsicum, Potato, Amla like crop also grown. Total land area is 439276 hactor among which 354670 hactor area under cultivation. 67% Fennel of total world production is produced in North Gujarat; Asia's largest marketing yard is located in Unjha.

The calendar of sowing and harvesting operations for important crops in the district is given below :

Sr. No.	Name of crop	Month of sowing	Month of harvesting
1	Paddy	July	Oct.-Nov.
2	Wheat	Nov.	March
3	*Jowar*	Aug.	Dec.
4	*Bajri*	July	Oct.
5	*Tur*	July	Nov.-Dec.
6	Groundnut	July	Nov.
7	Castor	Aug.	Jan.
8	Rape and Mustard	Oct.	Jan.-Feb.
9	Cotton	July	Feb.
10	Tobacco	Aug.	Feb.-March

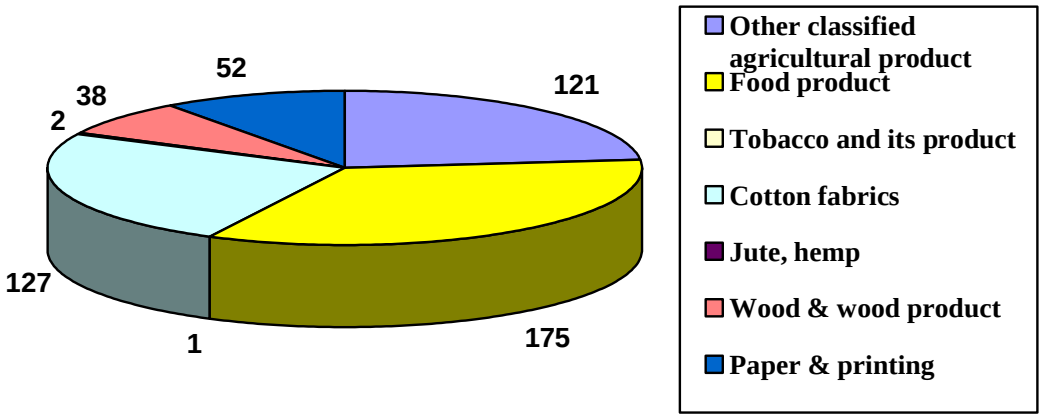
2.9.4.2 Small Scale Industries

Rice mills and edible oil factories are located in Kadi Taluka of Mehsana. Small scale oil industries are started in Vijapur Taluka also. Cotton industries are well developed in Vijapur.

Table 2.4 The Important Small Scale Industries In Mehsana District.

Sr. No.	Industries	Number of Industries	Number of Workers
1	Other classified Agricultural product	121	9425
2	Food product	175	6268
3	Tobacco and its product	1	6
4	Cotton fabrics	127	11599
5	Jute, hemp	2	186
6	Wood & Wood product	38	894
7	Paper & Printing	52	1634

Figure 2.3 The Important Small Scale Industries In Mehsana District.



2.10 Methodology

2.10.1 Introduction

In ecosystem analysis, both abiotic and biotic variable provide clues to the system function (especially in the interrelationship between living and non-living components) for adaptation or otherwise distribution of the components to habitats (landscape approach of Whittaker, 1962) thus, interaction between both these components also provides survival or otherwise dispersion of exotic species in such landscape. It is usually advantageous to consider the abiotic variables for the expression of the biotic diversity and therefore both abiotic and biotic variables are studied and accounted here.

2.10.2 Climate Variables

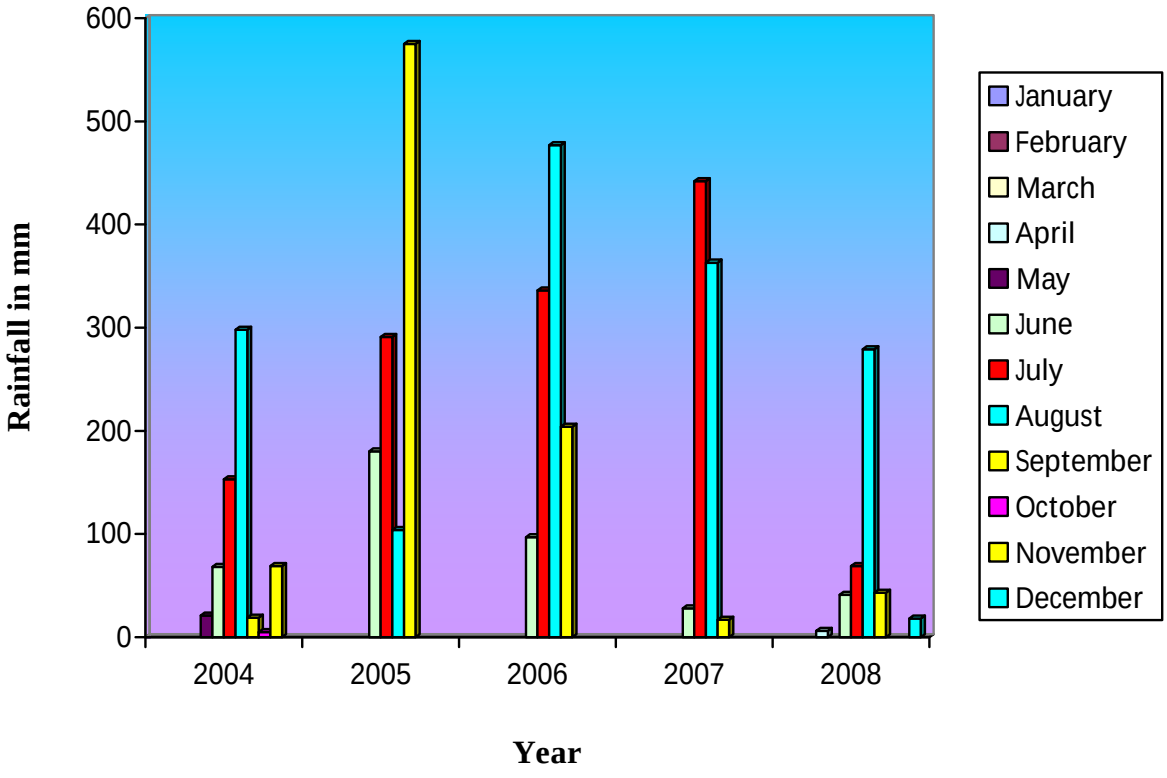
2.10.2.1 Rainfall

The mean annual rainfall recorded was 840.6 mm for the period of 2004-2008 (Table No. 2.5). The monthly maximum rainfall in the last five years was 575 mm in the month of September 2005 where as, the minimum rainfall was 5 mm (October-2004). It is evident from the table that the rainfall is ambient.

Table 2.5 Rainfall In Mm During The Period Of 2004-2008

Month/Year	2004	2005	2006	2007	2008	Total	Avg.
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	-	-	-	-	6	6	1.2
May	21	-	-	-	-	21	4.2
June	68	180	97	28	41	414	82.8
July	153	291	336	442	69	1291	258.2
August	298	104	477	363	279	1521	304.2
September	19	575	204	17	43	858	171.6
October	5	-	-	-	-	5	1
November	69	-	-	-	-	69	13.8
December	-	-	-	-	18	18	3.6
Total	633	1150	1114	850	456	4203	840.6

Figure 2.4 Rainfall In Mm During The Period Of 2004-2008



2.10.2.2 Temperature

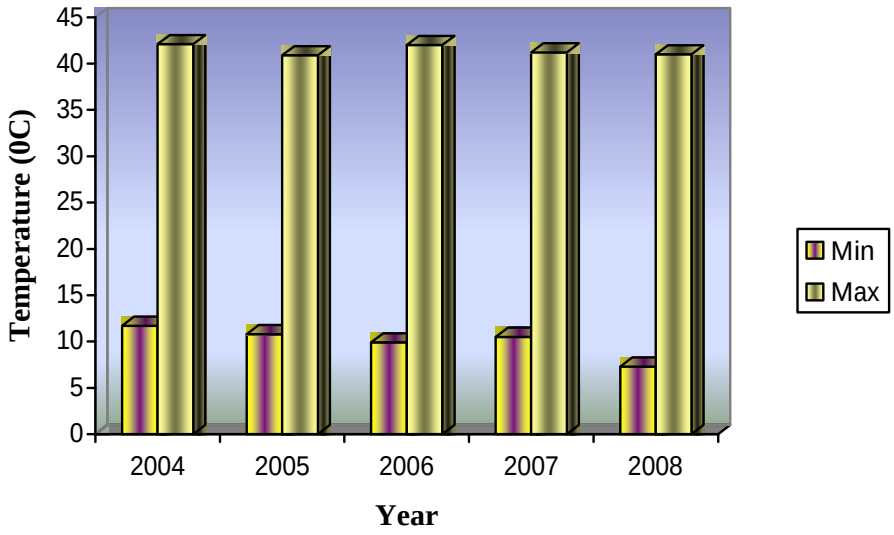
Table 2.6 states that during the period of 2004 to 2008 the mean monthly maximum temperature varied from 28.3^{0}C (January) to 42.1^{0}C (May) and the mean monthly minimum temperature from 8.2^{0}C (January) to 25.2^{0}C (June) (Based on 2004-2008 data). The highest temperature being in the month of May 2004 (42.1^{0}C).

Table 2.6 Temperature (^{0}C) during the period of 2004-2008

Month/Year	2004		2005		2006		2007		2008	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
January	11.7	24.6	12.7	25.5	9.9	28.3	10.5	26.6	8.5	26.8
February	12.3	28.8	11.8	27.8	15.0	35.0	14.3	31.9	7.3	26.8
March	17.2	36.1	17.2	35.4	16.0	35.0	15.5	34.9	17.8	36.4
April	23.6	39.7	20.1	39.6	20.3	38.9	22.5	40.5	20.9	39.2
May	26.0	42.1	22.7	40.9	24.1	42.0	26.3	41.2	23.1	41.0
June	27.1	39.0	27.5	40.0	26.1	40.1	27.2	39.0	25.2	37.9
July	28.0	38.1	26.7	31.8	24.5	32.4	24.6	33.0	24.6	34.6
August	25.1	32.0	24.6	30.0	24.2	28.2	23.7	32.0	21.9	31.0
September	25.2	35.6	25.2	32.5	25.0	31.8	23.6	34.4	22.2	33.5
October	21.5	34.6	22.4	33.9	21.2	34.0	18.9	35.7	18.6	35.6
November	17.9	32.9	17.2	32.5	17.3	32.8	14.4	34.4	13.3	32.8
December	15.0	30.6	10.8	28.2	11.8	28.1	10.4	28.9	14.8	31.1

2004		2005		2006		2007		2008	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
11.7	42.1	10.8	40.9	9.9	42.0	10.5	41.2	7.3	41.0

Figure 2.5 : Temperature (^{0}C) during the period of 2004-2008



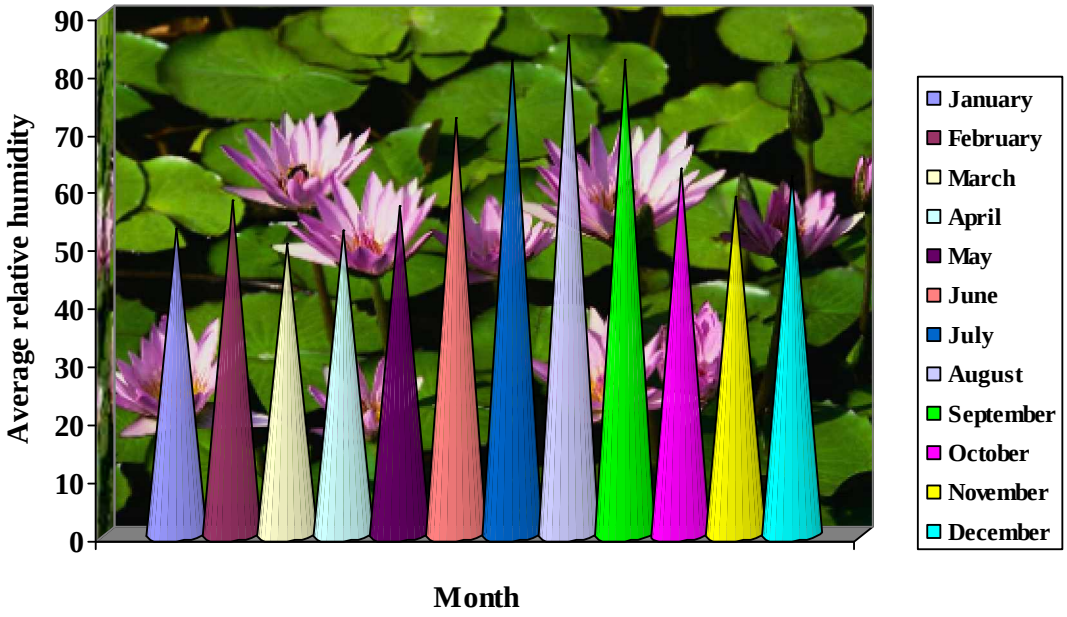
2.10.2.3 Relative Humidity

During last five years (2004-2008) the mean maximum relative humidity was 86.2% while the mean minimum relative humidity was 50.1%. However, the maximum relative humidity in last five years was 92.0% (August-2006) and minimum was 35.0% (May-2005).

Table 2.7 Relative humidity in Percentage during the period of 2004-2008

Month/Year	2004	2005	2006	2007	2008	Avg.
January	45.19	47	60	60	51	52.64
February	45.13	75	60	61	47	57.63
March	38.4	43	53	56	60	50.1
April	48.36	36.5	58	58	61	52.4
May	51.51	35	60	66	71	56.7
June	64	63.6	76	80	75	71.7
July	79	82	85	85	79	82.0
August	85	80	92	90	84	86.2
September	83	85	82	80	79	81.8
October	60	60.3	72	55	68	63.1
November	50	55	51	57	79	58.4
December	48	52	77	60	72	61.8

Figure 2.6 Relative humidity in Percentage during the period of 2004-2008



2.10.2.4 Wind Speed

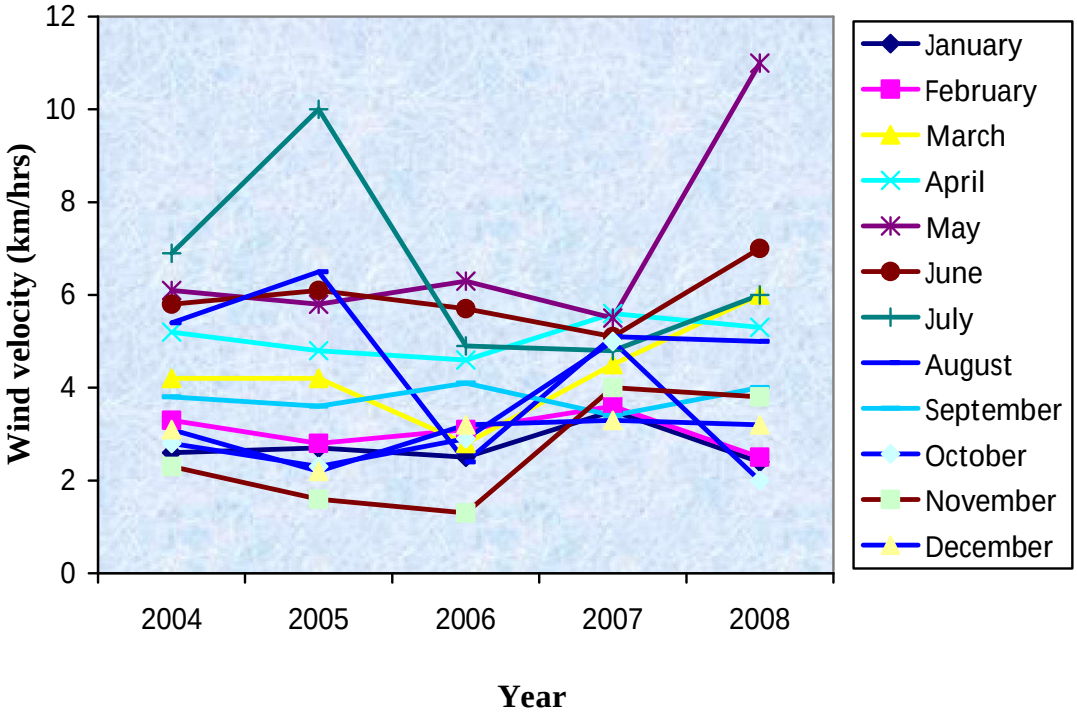
The winds blow from June to September with an average speed of 4.3 km/hr. They follow more or less the same direction throughout the greater part of the year. During the last five year the maximum speed was observed in the months of May-2008 (11.0 km/hr.). The minimum speed recorded was 1.6 km/hr. during the month of November-2005. A gradual increasing trend of wind speed in the rainy season (March-May) and the winter season (November-February) was also observed.

Table 2.8 Wind velocity (km/hrs) during the period of 2004-2008

Month/Year	2004	2005	2006	2007	2008	Total	Avg.
January	2.6	2.7	2.5	3.5	2.4	13.7	2.74
February	3.3	2.8	3.1	3.6	2.5	15.3	3.6
March	4.2	4.2	2.8	4.5	6.0	21.7	4.34
April	5.2	4.8	4.6	5.6	5.3	25.5	5.1
May	6.1	5.8	6.3	5.5	11.0	34.7	6.94
June	5.8	6.1	5.7	5.1	7.0	29.7	5.94
July	6.9	10.0	4.9	4.8	6.0	32.6	6.52
August	5.4	6.5	2.4	5.1	5.0	24.4	4.88
September	3.8	3.6	4.1	3.4	4.0	18.9	3.78
October	2.8	2.3	2.9	5.0	2.0	15.0	3.0
November	2.3	1.6	1.3	4.0	3.8	13.0	2.6
December	3.1	2.2	3.2	3.3	3.2	15.0	3.0
Avg.	4.20	4.38	3.65	4.45	4.85		

2004		2005		2006		2007		2008	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
2.3	6.9	1.6	10.0	1.3	6.3	3.3	5.6	2.0	11.0

Figure 2.7 Wind velocity (km/hrs) during the period of 2004-2008



2.10.3 Ethnobotany

2.10.3.1 General

To study ethnobotany, the plant human interaction has to be observed carefully within the dynamic ecosystem in which they exist. The central point of observation was: what role do the plants play in their life? What ethnobotanical processes are occurring and what is the net result ?

2.10.3.2 Literature Survey

Ethnobotanical information on 523 species was extracted from Patel (2002), Chaudhary (2003) references. A proforma was designed for recording information on usage of plants from various sources. It provides data on botanical name, local name, concerned tribe, plant part used, the usage and location of sources.

Books and journals of the fields of Anthropology, Sociology and Ethnology, Historical accounts, folk literature Government reports, gazetteers etc., were the non-botanical works screened.

Though there is no Ethnobotanic work on entire Mehsana district. Some good floristic and ethnographic works on the region by Mehsana district were consulted prior to the field work. Sexton & Sedgwick (1918), Yogi (1970), Bhatt & Sabnis (1987), Patel (2002), Chaudhary (2003) give supplementary information on Ethnobotany among the various tribes of some Taluka of Mehsana district.

For comparison of Ethnobotanic uses, Dictionary of Indian Folk Medicine and Ethnobotany (Jain, 1991), A manual of Ethnobotany (Jain & Goel, 1995), the nature and status of Ethnobotany (Ford, 1978), have been used.

2.10.3.3 Work Plan

2.10.3.3.1 Studies in Field

This work is the result of personal observations made after carefully planned field work among the various tribes of the Mehsana district during 2007-2009.

To collect first hand information on new sources of drugs, foods and folk knowledge regarding conservation of biodiversity, intensive, ethnobotanical explorations were undertaken in all the 604 villages under Mehsana district. Field tours to these areas were planned in such a way as to collect ethnobotanically interesting species either in flowering or fruiting stage. For a proper understanding of local customs, beliefs, habits and uses of plants, different categories of people like family heads, healers, old experienced and knowledgeable informants and medicineman of varies tribe were interviewed repeatedly. Generally the local medicineman or viallage headman accompanied the auther during field trip to the study area.

Before embarking on trips the localities were carefully selected on the basis of the available information on the areas to be visited, and the people to be studied taking aid of maps, divisional forest working plans. Floras, icons, literature on the tribes and obviously, discussions with relevant personnel. On reaching camp, report was established with the village headmen through whom using different ways which altered with situations and places the men folk, womenfolk, youth, children and the medicine-men were contacted and befriended. Prejudice against outsiders resulting from harassment and exploitation at the hands of non-tribals was a formidable barrier to be overcome almost everywhere. Ethnobotanical data was collected first hand through.

2.10.3.3.2 Enquiry

Which was on general lines e.g. on fuel, crops, vegetables, timber for construction etc. or on specific lines formulated on the spot, varying situation-wise.

2.10.3.3.3 Observation

At the village and hut level observations as on cultigens, constructions, farm boundries and fences, agricultural and food gathering, techiniques, domestic and day to day chores and articles were taken.

2.10.3.3.4 Interviews

Based on plants were taken in three situations:

Plants available as in floristic surveys with a group of tribals accompanying, plants were collected and brought to camp, the headman's hut or a convenient place where tribals were interviewed. Selected and knowledgeable tribals of assorted ages were taken for excursions within forest and ethnobotanically important plants were collected. Individual interviews were also taken on prior collected plants.

Plants not at hand but available (Interviews on plants in the area were taken with local names and notes. The plants were collected later).

Plants neither at hand nor available (while gathering information, the local names of plants with details on the morphology, habit and habitat, structure, size, colour of flowers and fruits together with season were taken. A specially designed hand book covering leaf shapes, fruit types and with a colour chart was used to obtain details. Plants were collected whenever opportunity arose).

The procedure of interview varied according to the degree of participation and attitude of the community towards outsider.

2.10.3.3.5 Participation

By organizing folk gatherings, participating in their various activities-ceremonial and otherwise, notes were taken. Documentation of information during and after field work was carried out on scientific lines. Data was noted in specially designed field-diaries covering floristic and ethobotanical entries, daily tour report proformas covering details that could not be entered in field-diaries. Voucher plant specimens tagged with field-numbers along with products or produce were invariable collected. Photographs are taken and talk is recorded were taken with interpretations.

At some places the purpose of the work was explained in the schools with the help of principals or head masters, the students were asked to bring the

plants used by or known to them their parents or family members. The student who brought interesting information was given some prizes.

Trible markets and mela or festivals also visited to study the plants and plant products sold there.

2.10.3.3.6 Audiovisual aids

Participating in their feasts, festivals, other social events etc. was of great use in collecting information on plants and observing how they are used photographing some of their plant-related activities and some important plants, recording some of their folklores and interviews were also done to document the tribes ethnobotanic life.

Some data are presented also in graphs, histograms and tables.

2.10.3.3.7 Miscellaneous

Forest personnel, school teachers, government physicians doctors, mines personnel, postal authorities and other personnel with experience in or posted in these regions were interviewed and exhaustive discussions were held with them for colleting fresh information or confirming the prior collected one.

2.10.3.3.8 Questionnaire

Based on the specific performa designed by Jain & Goel (1995), questionnaire (Appendix-V) were prepared and questions were asked and the resultant information was recorded in the ethnobotanical field not book along with the name of locality, attitude and local names. An attempt was also made to note whether the village herbalists prepare pastes, pills, powders, aqueous extracts, infusions and decoctions from some parts of medicinal plants for the treatment of various diseases and disorders. Approximate dose given was worked out by showing a tea-spoon in the internal use of drug. There is a common belief in the villages that chanting mantras enhances the medicinal effect of herbs.

2.10.3.3.9 Informants

Information was noted in the field on plant species, data were collected about the informants, the local name(s) of plants, for food, medicines and other materials relationships as also culture of the folk. The local informants were of four types, choosen by selected sampling and random sampling methods:

1. The medicine men,
2. Village headmen, Priests and other prominent leaders, their wives or other women.
3. Men and Women working in the field.
4. Men and Women in weekly market, temple and other common places.

The information collected was considered notable when the researcher himself observed its actual application or three informants in the same or different villages reported a similar use.

Major informants are : Dayabhai Patel (Mahadevpura gavada, Vijapur), Ketanbhai Pandya (Vijapur), Pachanbhai Chaudhari (Machhava, Kheralu), Dalpatsinh Thakor (Rajpur), Ramanbhai Suthar (Moti Dau, Mehsana), Iashwarbhai Patel (Laxmipura, Visnagar), Harshadbhai Joshi (Pilvai, Vijapur), Chandansinh Rajpur (Aithor), Harisih Chohan (Dharoi-Satlasana), Dasharathbhai Patel (Manipura-Vijapur), Kanjibhai Desai (Rabari) – (Vijapur), Chhaguji Thakor (Ranchhodpura), Premaji Barad (Kharod), Shankarbhai Raval (Anandpura), Marghaben Vanjara (Manipura), Raghajibhai Desai (Ladol), Karsanbhai Vanjara (Hirpura).

2.10.3.3.10 Laboratory Work

Laboratory work mainly consisted of processing, study of morphology, dissection, identification, matching, mounting, labeling and preservation of the specimens. At the conclusion of each fild trip, the collection was brought to Arts, Science & Commerce College, Pilvai and all the above processes were competed there.

Herbarium sheets of all the ethnobotanically important plants were prepared as per standard herborizing practices (Jain & Rao, 1977), and

identified with the help of floras of the adjoining areas, India and various monographic and reversionary works (Hooker, 1872-1897; Thakar, 1910; Saxton & Sedwick, 1918; Shah, 1978)

2.10.3.3.11 The Plan

The frequent trips were made from February 2007 to February 2009 in the Mehsana district which is located in approximately 4392.75 km^2 and total notified forest area is 71.75 km^2. The schedule of exploration was as follows.

Table

1	February 2007 to July 2007	Vijapur, Visnagar
2	August 2007 to January 2008	Mehsana, Becharaji, Kadi
3	February 2008 to July 2008	Kheralu, Satlasana
4	August 2008 to February 2009	Vadnagar, Unjha

Ethnobotanical data were also collected during the above mentioned period i.e. February 2007 to February 2009 from the various tribes in the Mehsana district.

The plants are arranged alphabetically by their generic and botanical names followed by synonyms, name of family, local name, brief description of the plant, occurrence and availability, Ethnobotanic uses, human medicinal uses, veterinary medicinal uses, food and fodder, material uses, notes, megico-religious aspects, socio-cultural aspects, commercial and economic aspects, conservational aspects and Biological activity.

CHAPTER-III REVIEW OF LITERATURE

3.1 Ethnobotanical Work in World

The beginning of present-day ethnobotanic enquiry can be traced back to Stephen Powers, who in 1874 used the term “aboriginal botany”, which included the total aboriginal dependence on plants for food, medicines, etc. (Ford. 1978. p.38). It assumed a new dimension ever since J. W. Harshberger in 1895 gave a new purpose to it – “the study of plants used by the primitive and aboriginal people” (Alcorn. 1984. p.2). He introduced the word ETHNOBOTANY for the first time. Modern anthropologists and ethnobotanists adopted this term to denote the cultural importance and significance of plants in the lives of people.

Walter Hough in 1898 defined it as “study of plants in their relation to human culture” (Ford, 1978. p.42), including psychological importance and mythological reference. Barrows in 1900 inspired an investigation beyond the economic realm into religious significance of plants, their place in folk worship, folkfore, etc. He was the first recipient of a doctorate in ethnobotany from the University of Chicago. Harrington in 1932 considered the concept of plants in human languages, while his colleague Robinson endeavored to emphasize the influence of plants in environment in the thought, life and well-being of people (Ford, 1978. p.42).

V. H. Jones in 1941 expanded the utilitarian scope of ethnobotany proposed by Harshberger and others with his definition : study of “inter-relations of primitive man and plants” (Ford, 1978. p.11), emphasizing that the ethnobotanists should be concerned with the entire range of relations between humans and plants as they were used in different societies for food, clothing, shelter, implements, utensils, medicines, etc. He considered ethnobotany as the unit of an ecological study specializing in thier interaction in human and plant world (Ford. 1978. p.11). He changed our understanding of ethnobotany by recognizing the reciprocal and dynamic aspect of the human interactions with plants. Without a holistic and

symbolic study, one cannot understand why certain plants and not others are used for a particular need, how they are prepared, and when they are used, etc.

Carter in 1950 envisaged ethnobotany as an ecological science capable of forging a link between geography, botany and ecology (Ford, 1978. p.43). In this respect, ethnobotany distinguishes itself from economic botany. When the former has a holistic approach to plants in relation to culture and human interaction with plants, the latter concerns more with the utility potential of plants. A more modern definition of ethnobotany is given by Alcorn : "study of direct interaction between humans and plants, concerned with the totality of place of plants in a culture" (Alcorn, 1984. p.3). This definition gives a wider scope to ethnobotanic studies. Most studies have so far not taken this broad view of the subject. Among many others, contributions of Barrau (1961), Schultes (1962), Jain (1963, 64, 65, 81, 91-a,b) and Altschul (1973) are notable in understanding the scope of ethnobotany.

Thus, we see that over the past century, scientiests of various disciplines like anthropology, archaeology, economic botany, geography, pharmacology, psychology, sociology and so on have been studying the different aspects of ethnobotany. And, though a co-ordinated effort was lacking, ethnobotany did remain the central theme of several of these studies.

The main credit to document indigenous knowledge of Indian medicinal herbs or in other words the ethnomedicine, goes to William Roxburgh (1832), who, during his floristic studies, recorded medicinal uses of herbs from South India. Later, Sir George Watt, in 1873, studied the 'economic plants' of Manipur and Burma (Mynmar) border for 10 years. Later in 1883, he was made in-charge of an exhibition on Indian Economic Products sponsored by the then Government of Bengal, in which plants exhibits from all over the country were obtained, and, after proper identification, were exhibited in the Indian Museum (ISIM), Kolkata. Watt published his monumental work '*Dictionay of the Economic Products of India*' with and index of 3000 vernacular names of plant products and various uses from different parts of India. He equated the plant products name in different

languages, viz., Sanskrit, Hindi, Bengali, South Indian and the tribal dialects like Bhils, Gonds, Nagas, Santals, Bhotias, etc. These names are still used in the Ayurvedic, ethnobotanical and other floristic works. He even mentioned the sacred and traditional uses of plants, such as *Butea frondosa* describing its traditional and medicinal importance, viz., twigs as sacrificial to be used in 'Homa' (Sacrificial fire), leaves as plates used for eating food in thread ceremony of Hindus (Watt, 1889-1896 & Watt, 1908). Beyond doubt, his work is the first ture reflection of ethnobotany and indigenous knowledge in India. He even mentioned names of some British physicians who practised with native plants for the treatment of their patients in clinics.

- Vickery (1994) thirty six examples are given of traditional herbal remedies colleded in the British Isles.
- Manandhar (1997) the paper deals with 31 species of unreported wild food plants used by tribal communities in different parts of Nepal.

  Liu Aizhong, pei shengji and chen sanyang (1999). The cultural diversity of plant worship among yi people in chuxiong of yunnan is discussed. the influences of plant culture on local biodiversity management and conservation practices are highlighted.

3.2 Ethnobotanical Work in India

Studies on ethnobotany in India were pioneered by Dr. E. K. Janaki Ammal and later on nurtured by Dr. S. K. Jain, with his surveys in Madhya Pradesh reporting various uses of plants Jain (1963); as medicine and food; and the abstract uses magico-religious rites, taboos and beliefs among tribals of Bastar Jain (1963). Thereafter, a number of sporadic studies were undertaken Jain & Tarafder (1970), Shah & Joshi (1971). In the first work, uses of medicinal plants by Santals reported earlier by Bodding (1925 & 1926) were presented and in the second work, ethnobotany of Kumaon Himalayas was reported with various uses of plants, such as medicinal, food, condiments, incense, etc. along with the

etymology and philology of the vernacular names and a brief introduction of tribal communities. After establishment of the 'Society of Ethnobotanists' (SEB) during 1980, ethnobotany in India was streamlined and a common platform was made available. A 'News Letter' was brought out and seminars, symposia and training courses and workshops were organized to bring awareness among students and field workers. In 1989, SEB started an international journal named ***Ethnobotany***.

During 1982-1993, an 'All India Coordinated Research Project on Ethnobiology' was initiated at Regional Research Laboratory, Jammu., under the leadership of Dr. P. Pushpangadan. It was a multidisciplinary, multi-institutional and action-oriented research programme for documenting the multi-dimensional perspectives of the tribal culture, traditions and knowledge (Anonymous undated).

Ethnobotanical studies in different regions and pertaining to different tribes of India were taken up, viz. Central India – Madhya Pradesh, Bihar, Orissa; North Eastern India – Arunachal Pradesh, Assam, Meghalaya; Western India – Maharashtra, Nilgiris, Gujarat, etc. and Southern India (Jain, 1987, 1990), which served as a real and true introduction to Indian ethnobotany. The entire work on ethnobotany in India was summarized (Binu *et al*., 1992), Maheshwari (1970) and Radhakrishnan *et al*., (2000). However, a graphic view of ethnobotany from 1982 to 2000 has been presented by Jain & Srivastava (2000) and recently, its status and its relationship with several other disciplines has been narrated by Jain (2001). Presently, there are a number of institutions and universities where ethnobotanical studies are bieng carried out actively in India.

The subject has been streamlined in India after the publication of the *Indian Journal of Traditional Knowledge* brought out in 2002 by the National Institute of Science Communication and Information Resources, CSIR, New Delhi. In its first volume, the traditional knowledge was defined appropriately. Dr. R. A. Mashelkar, DG, CSIR, stated, "In real life, particularly in the developing world, there is a whole parallel knowledge based system, which is generated by people who live in the laboratory of life, based on their empirical wisdom and experience.

There is an urgent need to preserve, protect and add value to it" (Mashelkar 2002). In India, non-government organisations (NGOs) are also working on indigenous medicinal plants and their cultivation (Shah 2000).

3.3 Some Important Publications

Bhargava (1983), Dagar & Dagar (1987), and chakraborty & Vasudeva Rao (1988), Published on Andaman and Nicobar islads; Pal & Banerjee (1971), and Banerjee (1977), on Andhra Pradesh; Bodding (1927), Srivastava & Verma (1981), and Tarafder (1983), on Bihar, Bedi (1978), Lal & Yadav (1983), and jain (1984), on Haryana ; Uniyal & Chauhan (1973), on Himachal pradesh; Dar et al. (1984), and Virjee *et al*. (1984) on Jammu and Kashmir; Ramachandran & Nair (1981), Manilal (1981), and Nagendra prasad & Abraham (1984), on Kerala ; jain (1964a, 1965), Jain *et al*.(1973), Maheshwari *et al*. (1986), and Saxena (1986), on a Madhyapradesh; Gammie (1903), Vartak (1981), and Kumbhojkar & Vartak (1988), on Maharashtra; Chaudhuri *et al*. (1975), Mudgal and Pal (1980), and Saxena *et al* (1981), on Orissa; Koelz (1979), and Lal & Lata (1980) on Punjab; Bhandari (1974), Joshi (1982), and Sebastian & Bhandari (1984), on Rajasthan; Chelladurai (1983), and Janaki Ammal & Nagendra Prasad (1984) on TamilNadu; Shah & Joshi(1971), Gaur (1977), and Maheswari & Singh (1987), On Uttar Pradesh; and Jain & De (1966) and Das *et al*. (1983) on West Bengal.

Some ethnobotanists reviewed the ethnobotanical studies in india. Mention can be made of the work of Jain (1986, 1989 b), and mudgal (1987). There are some publications on methodology, scope and application of ethnobotany, viz. those of De (1968), Jain (1964b, 1967, 1986, 1987 b, 1989 c), Maheshwari (1983, 1987), Rao (1989, 1990), and Rao & Hajra (1987).

- Sinha and Dixit (2003) the paper deals with ethnomedicinal usage of three plant species; *Drosera burmanni* and *Ventilogo denticulata* for painful

urination and spermatorrhoea (Dhaturog) and *Leea compactiflora* for asthma.

- Augustine and Sivadasan (2004) ethnobotanical investigations on the plants seen in the Periyar Tiger Reserve and used by the tribes were carried out. more than 180 species of plants were recognized as of ethnobotanical importance ; 66 among them are of medicinal use.
- Chhetri (2005) carried out survey and document the herbal drugs used by the tribal people in the Khangchendzonga natioual park area in Sikkim. India. A report on 110 species of ethnomedicinal plants belonging to 100 genera and 70 families.
- Ballabh Basant and Chaurasia (2006) worked on ethnobotanical uses of 98 valuable species belonging to 32 families of ladakh himalaya among boto tribes.

3.4 Ethnobotanical Work in Gujarat

Prominent among the floristic surveys is the Flora of Presidency of Bombay (cook, 1901-08), which covered floristic documentation of Gujarat state as well as neighboring Sindh (Pakistan) state. It has recorded 626 plant species ; 450 species in Gujrat and around 176 in Sindh. Though the systematic documentation of medicinal plants was not the aim of this exercise, it has mentioned medicinal uses of a few species. The ethnobotanical knowldge on the documented species, therefore, is not comprehensive.

Thakar (1886 - 1906) the then curator of forest and gardens (Porbandar State) was the first to extensively explore the vegetation around Probandar and the hilly tracts of the Barda Hills and their surroundings between Porbandar and Jamnagar districts (Thakar, 1894). His work is the only comprehensive documentation available on medicinal plants and their properties of Saurashtra region. The work was published as " vanaspati Sastra - Barda Dungar ni jadibuti,teni pariksha anae Upyog" (Thakar 1910).This has documentation on 613

medicinal species. However the scope of the work was limited to only Saurashtra region. Among the others, Ahluwalia, published his work on Jamnagar region as 'Medicinal plants of Jamnagar' (1964 & 1965) while, Jadeja (1999) is known for his work titled 'Plants used by the tribe Rabari in Barda Hills of Gujarat'. Both these works were restricted to small regions of Gujarat. Other such regional work includes Bhatt, *et al*. (1999) titled 'Ethnomedicinal plants of Shetrunjaya Hills of Palitana'.

The Flora of Saurashtra (Santapau, 1966) though restricted for Saurashtra region; provides detailed account of Medicinal properties of various species. The families covered in the flora are Ranunculaceae to Rubiaceae ; the book mentions medicinal properties of almost all the species it records. Information such as the morphological description of each taxon with local name, flowring time, places of occurrence, precedes the uses medicinal or otherwise, etc is mentioned in this flora. The work by Bole and Pathak (1988) titled as "Flora of Saurashtra" is much more comprehensive. They have continued upon Santapau's unfinished work and documented the occurrence of 750 plant species belonging to 335 genera covering the Asteraceae to Poaceae families. The work is restricted to Saurashtra region and mentions medicinal uses, though not comprehensive. Shah *et al*. (1981) also provides account of 133 medicinal species used by tribal of Saurashtra.

Similarly, Joshi *et al.* (1980) provides information on folk medicines of Dangs. Other such work for the Dangs region includes, Shah and Gopal (1982) which provides ethno - botanical profile of the Dangi commanity involving 145 medicinal species. Shah and Gopal (1985) also provide information on the plant species used by the Bhils, Rabaries, Dubias and Gharashias tribes of Gujarat. On the similar line work by Bhatt and Sabnis (1987) on " Ethno-botany of Khedbrahma" reports 41 species commonly used as medicine by Bhil, Dhank, Nayaka and Dubaba tribes. Joshi (1988) too covers information on 139 plants of medicinal value.

For the Kachchh region, work by Thakar (1926) is belived to be pioneering. He has listed about 507 Angiospermic plants belonging to 75 families with economic and other utilities. He in his work titled *'Kachchh Bruhad Bhoogar'* (1959) describes flora of Kachchh and reserved grasslands, their distribution and uses including medicinal ones. Rao (1981) too, provides an account of floral richness of South - Eastern Kachchh and lists 273 species with medicinal use. Recently, Silori and others has documented the traditional knowledge on 34 medicinal plants while, Ismail Master (2000) has documented 113 species from Kala Dunger in pachcham area of Bhuj taluka in Northern Kachchh with mention of their medicinal uses.

Forest flora of Gujarat state (Patel, 1971) also mentions medicinal uses of the plants described by him. District Gazetteer is another such source where in mention of medicinal herbs is made (e.g. District Gazetteer, Sabarkantha).

Other prominent works in this area include a book by Sukkawala (1974) detailing historical account, classification of herbal drugs, adulterants, common diseases and their cures, anatomy, morphology and chemical constituents of plants etc.

The book titled "*Gujarat ni Vanaspatio*", by Bapulal Gadbaddas Vaidya (1935) merits a special mention. It covers 528 plants with medicinal uses (including ferns) and follows Bentham & Hooker's system of classification. Another noteworthy contribution of Bapulal Gadbaddas Vaidya is titled "*Nighuntu Adarsh*" Purvardh and Uttardh.

In North Gujarat the Khedbrahma region was comparatively assessed by Bhatt and Sabnis (1974) In a series of publications they gave some interesting plant distributional records with number of novelties for the whole of the state. Sexton and Sadgwick (1961 and 1918) were made floristic study on North Gujarat first time, they covered only seven areas and recorded many plant species. They also published additional plant species list in additional notes. Yogi (1970) also made floristic study on some areas of North Gujarat. Shah (1978) published a

"Flora of Gujarat" where in however, name of the localities of Gujarat are not included specially Mehsana district. Patel (2002) also made Eco-floristic and ethnomedicinal study of Taranga forest of North Gujarat. Chaudhary (2003) studies angiosperm 04 taluka of Mehsana district with respect to ethnomedicinal aspect.

- Punjani (1998 a), the fields are protected by permanent boundaries made from different plant species. It is supple mented by many climbers of families like convolvulaceae and cucurbitaceae. worked on deals with 42 plant species which are used by the tribals of district. Sabarkantha, North Gujarat, for the purpose of field fencing.
- Punjani (1998 b), the paper reports 30 plant Species whose parts are used as tooth brushes by tribals of district Sabarkantha, North Gujarat.
- Patel *et al*. (2003), ethnobotanical studies bring out the usage of the artefacts. gave and account of trible arts facts. with trace out the utility of wild plant species by the tribals of Dholwani region.
- Punjani (2004), first information on medicinal plants was collected from the tribal informants comprising Bhagats, (Vaidyas) and medicinmen. madicinal uses of four taxa of vitaceae are reported along with their for mulations for the tretment of various human and cattle ailments.
- Patel (2004), the tribals from Danta taluka of Gujarat State also use such names in their love folk songs. worked on names of 26 such plant species belonging to 25 genera and 22 families have been identified and enumerated.
- Ant (2004), worked on 28 plants in all yield plant fibre which are used in the preparation of rope has also its own significance in their life.
- Punjani (2006), the paper deals with 35 plant species which are used traditionally since ancient times by kathodis for the treatment of various ailments. such as skin disease, colic complaints, headache, fever, piles, asthma, jaundice, diarrhoea, dysentery, vomiting, wounds etc.

- Vyas (2006), “Study of Ethnobotanical Plants of Kadi - Kalol taluka of Mehsana and Gandhinagar districts.
- Jadeja (2006), has documented 380 agniosperm plant spp. belonging to 290 genera of 99 families have been identified and recorded for ethnobotanical uses in Barda Hills.
- Odedra (2009), has documented 334 angiosperm plant spp. belonging to 273 genera of 88 families have been identified and recorded for ethnobotanical uses by Maher tribe in Porbandar district.

CHAPTER-IV OBSERVATION

4.1 Introduction

People were making use of plants, having discovered their beneficial and curative effects, long before scientific explanations were advanced. They soon came to separate edible species from poisonous ones and gradually learned how to select the most useful parts of such plants. This wealth of acquired knowledge was passed on verbally and, as so often happens when information depends on word of mouth, facts become distorted and all kinds of imaginary powers were attributed to certain plants. Although a certain mystique still surrounds herbs and their medicinal usage toady, progress in scientific research has greatly clarified the subject. Plants now have accepted botanical names, while attempts have been made to analyse them chemically and distinguish atleast some of their many components and active principles.

Such analyses have recently led to the production of similar compounds by synthetic means. These are not only convenient to take but are also easy to store on the face of it, the two types of products would seem to be analogous; experiments have shown, however, that from a curative point of view, substances extracted from medicinal plants and the equivalent substances produced synthetically behave differently. There is variation in the absorption capacity, and the natural product has a milder effect on the system then the man-made one. Other tests have shown that synthetic drugs afford a faster rate of recovery but plant substances have a much more positive and lasting effect. These, however, are not the only reasons for the present return to treatment with ‘simples’, as medicinal herbs were once known.

A plant is an immediate source of medicines, which can be extracted, titrated and preserved. Great many natural drugs, which cannot be synthetically duplicated, may, therefore, be selected for possible use. In view of the large number of active principles produced. By plants, we can only wonder at the incredibly vast reservoir nature has to offer, in which unlimited reserves of medicinal ingredients are still largely untapped. What is more, these ingredients

are not presentd for use in the form of pills and potions but as flowers, fruit, leaves and seeds.

Medicinal plants are the local heritage with global importance; the world is endowed with a rich wealth of medicinal plants. Herbs have always been the principal form of medicine in India and presently they are becoming popular throughout the devloped world, as people strive to stay healthy in the face of chronic stress and pollution, and to treat illness with medicines that work in concert with the body's own defence.

The variety and sheer number of plants with therapeutic properties is quite astonishing. It is estimated that around 70,000 plant species, from lichens to flowering trees, have been used at one time or another for medicinal purpose. The herbs provide. The starting material for the isolation or synthesis of conventional drugs. In Ayurveda, about 20,000 plant species are considered to have medicinal value, while the Chinese Pharmacopocia lists over 5,700 traditional medicines, most of which are of plant origin. About 500 herbs are still employed in conventional medicine, although whole plants are rarely used.

In India, medicinal plants have made a good contribution to the development of the ancient Indian *Materia Medica*. One of the earliest treatises on Indian medicine, the *Charak Samhita* (1000 BC), records the use of over 340 drugs of vegetable origin. Most of these continue to be gathered from wild plants to meet the demand of the medical profession. Thus, despite the rich heritage of knowledge on the use of plant drugs, little attention had been paid to grow them as field crops in the country till the latter part of the 19^{th} century. During the past one century, there has been a rapid extension of the allopathic system of medical treatment in India. It generated commercial demand for pharmacopoeial drugs and their products in India. Efforts have been made to introduce many of these drug plants to farmers. Several research institutes have undertaken studies on the cultivation practices of medicinal plants, which were found suitable and remunerative for commercial cultivation. The world Bank has several projects to support the cultivation of medicinal plants. Through various lending and non-lending initiatives, the World Bank is assisting the

countries of South Asia to address their needs. The Indian Pharmacopoeia (1966) recognised 85 drug plants whose ingredients are used in various pharmaceutical preparations. The National Medicinal Plant Board (New Delhi) has selected 32 plants to promote their full development, including cultivation, value addition, marketing, etc. The aim of this chapter is to study the information prossessed by ethnic groups either remain buried or forgotten and lost in antiquity.

4.2 Enumeration of Ethnobotanical Uses

The ethnobotanical information pooled, analaysed and presentation of data form a very major part of the work. For pooling and presentation of the data first the ethnobotanically important plants are enumerated alphabetically, each species with 7 sub-headings :

4.1 Botanical Name
4.2 Local Name
4.3 Breif description of the plant
4.4 Occurrence and availability
4.5 Ethnobotanic uses
4.5.1 Human medicinal uses
4.5.2 Veterinary medicinal uses
4.5.3 Food and fodder
4.5.4 Material uses
4.6 Notes
4.6.1 Magico-religious aspects
4.6.2 Socio-cultural aspects
4.6.3 Commercial and economic aspects
4.6.4 Conservational aspects
4.7 Biological activity

In presenting 4.5.1 and 4.5.2, wherever available, detailed prescription, preparation, use and dosage are given. The above data were analyzed manually and also with the help of computer and stored in retrieval system.

4.1 ***Abelmoschus esculentus*** (L.) Moench. (Malvaceae)

Syn. *Hibiscus esculentus* L.

FGS : 1 : 94, FOB : 1 : 119, FNG : 248, FBI, I : 343 ; ARM : 32

4.2 Bhinda

4.3 An annual erect herb covered with hair. Flower large yellow with a purple centre. Fruits long, 6-8 ribbed, capsular. Seeds many, rounded and strait.

4.4 Cultivated. Fls. & Frs. : July-Dec.

4.5.3 Tender capsules are used as a vegetable.

The fruits are sweet, mucilaginous.

4.5.4 Dry plants are used as fuel.

4.7 Seeds yield a fatty edible oil and leaves as an essential oil. Seed cack is rich in protein, cooling, aphrodisiac, and stomachic, haematinic, constipating, tonic and diuretic.

4.1 ***Abelmoschus manihot*** (L.) Medic. (Malvaceae)

Syn. *Hibiscus manihot* L.

FGS: I: 94, FOB, I: 118; FBI, I: 341; ARM: 33

4.2 Kantalo Bhendo.

4.3 Perennial, simple branched; leaves broadly ovate. Flowers yellow with deep purple, capsule 3-6 am. Seeds globose or reniform, black.

4.4 Common. Fls. & Frs.: Aug. – Jan.

4.5.3 Seeds are used as a fodder.

4.7 Seed yields fatty oil. Bark is emmenagogue.

4.1 ***Abelmoschus moschatus***, Medic. (Malvaceae)

Syn. *Hibiscus abelmoschus,* L.

FGS, I: 95; FBI, I: 342; ARM: 34

4.2 Kasturi Bhindo (Khat Bhindi)

4.3 Annual hairy herbs, 0.5 – 1.5 m high. Leaves angular or 3-7 partite, cordate, or sagitate at the base. Flowers usually axillary, sometimes in few-flowered leafless racemes; petals 4-7 cm long. Capsule 3-6 cm long.

4.4 Common in rainy season. Fls. & Frs : July – Sept.

4.7 Seeds are bitter, acrid, aromatic, cooling, ophthalmic, cardiotonic, digestive, carminative, diuretic, insecticidal, and tonic.

4.1 ***Abrus precatorius*** L. (Fabaceae)

FGS, I : 176 ; FOB, I : 382 ; FNG, 259 ; FBI,II : 175 ; ARM : 98

4.2 Chanothi.

4.3 Slender climber. Leaves 5-10 cm. long leaflets 10-20 pairs, liner, glabrous or pubescent beneath. Flower in dense racemes, ca 8 mm across, pinkish white. Pods ca 4 cm long. Seeds subglobose, shining, scarlet, or white with black eye.

4.4 Rarely observed. Fls & Frs : Aug – Jan.

4.5.1 Fresh leaves or dry leaves are chewed to cure mouth sores (Stomatitis) by rural people.

4.7 Abrin – a lactin contained in the plant part possesses immunopotenting activity.

4.1 ***Abutilon indicum*** (L.) Sweet. (Malvaceae)

FGS, I: 96; FOB, I: 102; FBI, I: 326; ARM: 35

4.2 Khapat, Kanshaki.

4.3 Annual herbs 0.5 – 2 cm high. Leaves ovate – orbicular, cordate, 3-10 cm long, crenate. Flowers yellow, 2 cm across; calyx lobes in fruits stellately spreading. Schizocarps 1.5 – 2.0 cm across, black on drying; mericarps ca 15, acute.

4.4 Very common. Fls. & Frs. : Throughout the year.

4.5.1 The root paste is applied externally on boils.

Seed paste is used as ointment in piles.

4.5.2 100-200 gms crushed leaf powder mixed with fodder is given once daily for 4-6 days against diarrhoea in cattle.

4.7 Seeds are laxative, diuretic, aphrodisiac, and expectorant. Leaves & root are demulcent and diuretic. Bark is astringent and diuretic.

4.1 ***Acacia chundra*** (Roxb. ex Roth.) Willd. (Mimosaceae)

Syn. *Acacia catechu* (Linn. F.) Willd., *Acacia catechuoides* Wall. *; Acacia polyacantha* Willd. *Mimosa catechuoides* Roxb.*; Mimosa catechu* Roxb.*; Acacia sundra* (Roxb.) DC.

FGS,I : 281 ; FOB,I : 476 ; FNG, 263 ; FBI,II : 295 ; ARM : 147

4.2 Khair

4.3 Small trees with hooked stipular spines, irregularly splitting black bark and red blaze ; pinnae 7-24 pairs with 1-4 cm long pubescent rachilla ; leaflets 6-35 pairs, linear, 3-5 x 1.2 mm. flowers small, greenish – white yellowish with age. Pods thin, irregularly constricted, 4-10 cm long, brown.

4.4 Rare. Fls & Frs : Jun – Feb.

4.5.1 A small amount of *katha* is applied over ulcer in the mouth for fasthealing by tribal of Taranga Hill.-Shankarbhai Raval

4.5.3 *Katha* is used in pan *masala* as a dye.

4.5.4 Dry stem is used as a fire wood.

Dry Branches are used as fencing.

4.7 Stem is antiviral, Heart wood is bitter, Astringent, anthelmintic, antiseptic and antipyretic. *Katho* is acrid, bitter, digestive, appetizer and anthelmintic.

4.1 ***Acacia farnesiana*** (L.) Willd. (Mimosaceae)

Syn. *Acacia indica* Desv. ; *Mimosa farnesiana* linn.;

FGS, I: 282; FOB, I: 473; FBI, II: 292; ARM: 148

4.2 Tal Baval.

4.3 A moderate sized tree, 9-12 m height ; leaves bipinnately compound ; leaflets 30-50 pairs, flowers pale yellow, sessile in peduncle axillary spikes, fruits flats, seed 3-10 per pod.

4.4 Common. Fls & Frs : Aug.-Mar.

4.5.3 Leaves & pods are eaten by grazing animal like goats & sheep's.

4.5.4 Dry stem are used as a fire wood.

Dry branches are used as fencing.

4.7 The bark is acrid and hot, alexiteric, anthelmintic and anti-dysenteric. The gum is sweetish, tonic, aphrodisiac.

4.1 ***Acacia jacquemontii*** Benth. (Mimosaceae)

FGS, I :283 ; FOB, I :475 ; FNG : 263 ; FBI, II : 293 ; ARM : 149

4.2 Rato Baval.

4.3 1.5 – 3 m tall – armed shrubs ; leaves pinnae, 2 – 4 pairs, leaflets linear – oblong ; head yellow ; pods flat glabrous.

4.4 Common. Fls & Frs : Dec. - June.

4.5.4 Stem is used as a fire wood.

Dry Branches are used as fencing.

4.1 ***Acacia leucophloea*** (Roxb.) Willd. (Mimosaceae)

Syn. *Acacia alba* Willd. ; *Acacia arcuata* Decaisne Herb. ; *Mimosa alba* Rottl. *Mimosa leucophloea* Roxb.

FGS, I : 283 ; FOB, I : 475 ; FNG, 263 ; FBI,II : 294 ; ARM : 150

4.2 Hermo Baval.

4.3 5-7 m tall trees, leaves bipinnate, leaflets 12-30 pairs, head creamy to pale-yellow, pods flats, linear oblong, seeds spherical, pale-brown.

4.4 Common. Fls & Frs: Oct – Jan.

4.5.4 Stem is used as fire wood.

Dry Branches are used as fencing.

4.7 Bark is astringent, anthelmintic, and antipyretic.

4.1 ***Acacia nilotica*** (L.) Del. subsp. ***Indica*** (Benth.) Bren. (Mimosaceae)

Syn. *Acacia arabica* (Lam.) Willd.

FGS, I : 283 ; FOB, I : 472 ; FNG : 263 ; FBI, II : 293 ; ARM : 151

4.2 Deshi baval

4.3 A moderate sized tree; leaves bipinnately compound; flowers golden yellow in globose heads; fruits stalked compressed; seed 8-12 per pod.

4.4 Very Common. Fls & Frs: July – Dec.

4.5.1 Fresh leaves are chewed twice a day in mouth sores (Stomatitis) and mouth ulcers.

Twigs used as '*Datan*' for cleaning teeth by Raval people of Mehsana District (Shankarbhai Raval).

4.5.2 Stem bark is boiled with water and used to clean wounds of Cattle (Chhaguji Thakor)

4.5.3 Gum is fried in deshi ghee (animal fat) and taken as break fast in winter season by rich people.

Leave & pods are eaten by grazing animal like goats and sheep's.

4.5.4 Stem is used as a fire wood.

Dry branches are used as farm fencing.

Wood is used hub and wheel of cart.

Wood is used to prepare oil mill crushing instrument.

4.7 Bark is cooling, constipating, diuretic and Gum is sweet, cooling, constipating, liver tonic and antipyretic.

4.1 ***Acacia pennata*** (L.) Willd. (Mimosaceae)

Syn. *Mimosa pennata* L.

FGS,I : 284 ; FOB,I : 480 ; FNG : 264 ; FBI,II : 297 ; ARM : 152

4.2 Khariyo Baval.

4.3 Large shrubby climbers with 5 – angled Branches; prickly on the angles. Leaves 10 cm long, bearing 6 cm long pinnae leaflets 50-60 pairs, linear, panicle 10-15 cm long; heads 1-2 cm across, white. Pods strap-shaped, pale-brown.

4.4 Rare. Fls & Frs: July – Mar.

4.5.4 The stem is used as a fire wood.

Dry branches are used as fencing.

4.1 ***Acacia senegal*** (L.) Willd. (Mimosaceae)

FGS, I :285 ; FOB, I : 478 ; FNG : 263 ; FBI, II : 295 ; ARM : 153

4.2 Gorad.

4.3 2-7 m tall – armed tree, pinnae 3-5 pairs ; leaflets 8-15 pairs, flowers white or creamy-white ; pods flat, glabrous linear oblong or lanceolate, reticulate ; seeds 5-6.

4.4 Rare. Fls & Frs: Aug – Mar.

4.5.3 Gums are edible.

4.5.4 Dry branches are used as fencing.

4.7 Gum is demulcent, emollient, tonic and expectorant.

4.1 ***Acacia torta*** (Roxb.) Craib in Kew Bull. (Mimosaceae)

Syn. *Acacia intsia,* auct.; *Mimosa torta* Roxb.

FGS, I: 286; FOB, I: 479; FNG: 263; FBI, II: 397; ARM: 154

4.2 Isarial Baval.

4.3 6 m long heavily prickly tree ; leaves 8-20 cm long, alternate, bipinnately compound ; flower $\pm$ 0.2 cm across, creamy-yellow ; fruit pods 8-10 x 1-1.5 cm, pale – to dark, flat, linear, sub falcate, 8-12 seeded.

4.4 Rare. Fls & Frs: July – Mar.

4.5.4 Stem is used as a fire wood.

4.7 Bark is astringent.

4.1 ***Acalypha indica.*** L. (Euphorbiaceae)

FGS, II : 611 ; FOB, III : 108 ; FNG : 298 ; FBI , V : 416 ; ARM : 381

4.2 Vinchhi Kato.

4.3 Erect annual herbs, 30-40 cm high. Stem with numerous angular, pubescent branches leaves ovate or rhomboid-ovate, acute or sub obtuse, crenate-serrate, glabrous; petiole longer then the blade; stipules minute. Inflorescence axillary, up to 8 cm long capsule hispid; seeds ovoid smooth.

4.4 Mostly common in rainy season. Fls. & Frs. : June – Dec.

4.5.1 Paste of leaves with lime juice is applied in ringworm infection (people of Taranga Hills).

½ cup of decoction of whole plant is taken orally once a day for a week in asthma.

4.7 Plant is bitter, acrid, diuretic, laxative, expectorant, emetic, anthelmintic, anodyne etc.

4.1 ***Acanthospermum hispidum*** DC. (Asteraceae)
FGS: I: 366, ARM: 223

4.2 Gokharu.

4.3 Dichotomously branched herbs; leaves sessile or sub sessile; heads pale – yellow, solitary, axillary or between forks of branches pedunculate, achenes 4 – 8, with hooked spines.

4.4 Common. Fls & Frs: Aug – Feb.

4.5.1 1 teaspoon full decoction of leaves is taken orally twice a day for two days to treating yellow fever but large doses emetic.

4.7 The plant part possesses antifungal and antibacterial activity.

4.1 ***Achyranthes aspera*** L. var. ***aspera*** (Amaranthaceae)
FGS,I : 587 ; FOB,II : 580 ; FNG, 294 ; FBI,IV : 730 ; ARM : 360

4.2 Anghedi.

4.3 Erect perennial herb, up to 1 m high; branches slightly tomentose. Leaves obovate or oblong. Spikes 10-40 cm long; bracts acuminate. Flowers 4-5 mm long, glistening whitish green or purplish, lower reflexed. Utricle broadly – oblong or slightly wider above.

4.4 Common. Fls. & Frs. : Sept.-Jan.

4.5.1 Leaf paste is applied on scorpion sting and insects bite.

Five seeds rubbed in Rice water and taken internally once a day for a week on piles.

Plant ash mixed with sesame oil is used for treatment of ear diseases.

Fresh leaves (5-7 gram) are taken on empty stomach in cases of sexual debility.

4.5.2 Fresh seeds mixed with ghee and sugar is boiled to make into slurry for treating stomach swelling.

4.7 The plant part possesses antibacterial activity. Whole plant antifertility, hypoglycemz.

4.1 ***Adansonia digitata*** L. (Bombacaceae)

FGS, I : 118 ; FOB, I : 126 ; FNG : 248 ; FBI , I : 348 ; ARM : 51

4.2 Rukhdo.

4.3 10-20 m. tall tree. Leaflets 3-7(9)2.5-12 x 1.2 - 5 cm long, sessile or sub sessile, obovate-oblong. Flower solitary, pendulous.

4.4 Rare, only single plant is located in village of Vadnagar Taluka.
Fls. & Frs. : Apr.- Dec.

4.6.1 Magico religious plants.

4.5.2 Seeds are crushed in water and given to cure enteritis.

4.7 Leaves are antiphlogistic, diaphoretic, antipyretic etc. Pulp of fruit is astringent, aperients, demulcent, and sour. Bark is astringent, antipyretic etc.

4.1 ***Adhatoda zeylanica*** Medic. (Acanthaceae)
Syn. *Adhatoda vasica* (L.) Nees. in Wall., *Justicia adhatoda* L.
FGS,I : 527 ; FOB,II : 493 ; FNG, 290 ; FBI,IV : 540 ; ARM : 325

4.2 Ardushi.

4.3 Dense evergreen shrub leaves elliptic-lanceolate, acuminate, and glabrous when mature. Flowers in short, bracteates, pedunculate spikes clustered. Towards the ends of the branches; bracts foliaceous; corolla white with some rose-purple lines and dots in the throat. Capsule clavate, 2-3 cm long.

4.4 Common. Fls & Frs. : Dec. – June.

4.5.1 Two teaspoonful with decoction of leaves with '*tulsi*' (*Ocimum sanctum*) leaves mixed in 2:1 ratio is given 3 times a day for 3-5 days to control cough, cold & fever by Vanjara community (Marghaben Vanjara).

Warm decoction of leaves (about 5 leaves crushed and 8 boiled in a cup of water) is given twice a day for a month to treat asthma.

4.5.2 100 ml leaf juice is given twice a day for a week as expectorant.

4.7 The plant part possesses antiasthmatic and antiviral activity.
Root antiviral, hypoglycemic, leaf hypoglycemic.

4.1 ***Adina cordifolia*** (Roxb.) Bth. & Hk. (Rubiaceae)

Syn. *Nauclea cordifolia* Roxb.

FGS, I: 349; FOB, II: 7; ARM: 214

4.2 Haldarvo.

4.3 Deciduous trees, 8-20m tall, with grey or light-black, longitudinally fissured bark. Leaves 2-26 x 1.5-25.5 cm, broadly ovate to sub-orbicular, appressed-pubescent beneath. Flowers yellow, in 1.5-2 cm across, globose, axillary heads. Capsule 0.4 - 0.6 cm long, obconical, pubescent. Seeds about 6 in each coccus, oblong, brown, minutely hairy, winged.

4.4 Rare. Fls. & Frs. : July-Mar.

4.5.1 About 200g fresh stem bark is boiled in 400 ml water, with sugar or honey. The mixture taken twice in a day to cure jaundice.

4.5.3 Leaves are used as a fodder.

4.5.4 Stem is used in preparation of housing materials (doors, windows etc.) and furniture.

4.7 Roots are astringent and constipating bark is acrid, bitter, astringent, refrigerant vulnerary, diuretic, demulcent, deobstruent aphrodisiac and tonic.

4.1 ***Aegle marmelos*** (L.) Corr. (Rutaceae)

Syn. *Crateva marmelos* Linn. ; *C. religiosa* Ainslie ;*Feronia pellucida* Roth.

FGS,I : 144 ; FOB,I : 204 ; FNG, 252 ; FBI,I : 516 ; ARM : 69

4.2 Bili.

4.3 A thorny, deciduous, medium sized trees. Leaves trifoliate leaflets petiolate, ovate-lanceolate, 5-10 cm long sub entire. Flowers in lateral or terminal panicles, whitish, fruit globose or oblong with a woody rind, 5-10 cm long; pulp slimy, yellow, and aromatic.

4.4 Common. Fls & Frs.: Apr. – Sept.

4.5.1 Half of a ripe fruit is eaten twice a day for 3-4 days to cure constipation. One forth of an unripe fruit is taken orally to cure diarrhoea & dysentery (people of Vanjara Community).

4.5.2 Fruit pulp is applied locally to cure mouth diseases of cattle.

4.6.1 Tripinnate leaves are offered to god 'Shiva'.

4.6.4 It is believed that the tree is sacrilegious to up root or cut this sacred tree.

4.7 Whole plant is sedative, analgesic and antipyretic, Roots is anticancer and fruits antiviral.

4.1 ***Aerva javanica*** (Burm.f.) Juss., (Amaranthaceae),

Syn. *Celosia lanata* L.

FGS, I : 588 ; FOB, II : 577 ; FNG : 293 ; FBI , IV : 727 ; ARM : 361

4.2 Gorakhganjo

4.3 0.6 – 1 m erect shrub ; leaves alternate, ovate-lenceolate or linear ; inflorescence stalked terminal paniculate spikes up to 18 cm ; flower dull white ; fruit utricle orbicular-ovoid, thin-walled.

4.4 Common. Fls. & Frs. : Aug.-Feb.

4.5.1 1 teaspoonful plant decoction is given early morning for three days in cough.

The root paste applied on forehead in headache.

4.7 The plant is astringent, bitter, cooling, vermifuge, and diuretic.

4.1 ***Agave americana*** L. (Agavaceae)

FGS, II: 671; FOB. III: 261; ARM: 417

4.2 Ketki.

4.3 Shrubby herbs with short thick woody root stock. Flower incomplete, zygomorphic; fruit capsule 3.5-4 cm long; seeds numerous, flattened.

4.4 Very common every where on waste lands or planted in the gardens or as a hedge – plant.

Fls & Frs. : Sep. – Dec.

4.5.4 (Xylem) fibres of leaves are used in preparing cordages.

4.7 Sap of the plant is laxative, emmenagogue, diuretic and antiscorbutic. Root is diuretic. Leaves yield hecogenin.

4.1 ***Ailanthus excelsa*** Roxb. (Simarubiaceae)

FGS, I : 146 ; FOB, I : 205 ; FNG : 252 ; FBI , I : 518 ; ARM : 75

4.2 Arduso.

4.3 Large deciduous foetid smelling tress with grayish stem and prominent leaf-scars. Leaves long petiole, pinnate, 0.2 – 1.0 m long; leaflets 8-16 x 4.7 cm, coarsely toothed. Flowers in large terminal and axillary hairy panicles, Unisexual, greenish. Samara 4-6 cm long seeds glabrous oblong.

4.4 Common and cultivated. Fls. & Frs.: Jan – May.

4.5.4 Dry branches are use as a fire wood.

4.5.2 Leaf decoction 250 ml is given orally to cure tympaniles and fever (Raghajibhai Desai).

4.7 Bark is bitter, Carminative. Leaves are antiseptic.

4.1 ***Alangium salvifolium*** (L.f.) Wang. (Alangiaceae)

Syn. *Alangium lamarckii*, Thw.

FGS, I: 347; FOB, II: 1; FNG: 269; FBI, II: 741; ARM: 213

4.2 Ankol.

4.3 3 – 10 m thorny trees ; bark ash coloured ; leaves alternate, elliptic – oblong ; flowers 2-2.5 cm. long greenish – white ; fruit Berries, ovoid with persistent calyx – limb ; seed solitary, oblong.

4.4 Rare. Fls. & Frs: Feb. – June.

4.5.1 About 100g fresh roots are rubbed with water and applied on the poisons animal sting.

The juice of root bark is given orally to cure worm.

Leaves are boiled in water, to take bathe with it to relief in rheumatism.

4.5.4 Wood is used as a plough and tool handles.

Wood is used in preparation of musical instrument and toys.

4.7 The root contains alkaloid alangine. A seed kernel contains “Alamarckine”.

4.1 ***Albizia lebbeck***, (L.) Benth. in Hook. (Mimosaceae)

FGS,I:287 ; FBI ,II : 301 ; FNG, 264 ; FOB, I : 483 ; ARM : 155

4.2 Siris.

4.3 Deciduous trees with smooth greenish bark, young branches and leaf rachis yellow pubescent leaf rachis 5 -12 cm long bearing 6-1-5 pairs of 3-8 cm long pinnae ; leaflets 15-25, linear ; midrib almost central, flower heads 1-2 cm across, yellow, fragrant. Pods 10-25 x 2-3 cm grayish brown.

4.4 Common. Fls. & Frs. : July-Mar.

4.5.1 Fresh decoction of bark (50g bark boiled in a cup of water) is taken thrice a day for a week to cure dysentery.

Crushed seeds along with honey prevent lymph node swellings in children.

4.5.4 Stem is used as a fire wood.

4.7 Root anticancer and seeds antiallergic.

4.1 ***Allium cepa*** L. (Liliaceae)

FGS, II: 677; FOB, III: 284; FBI, VI: 337; ARM: 421

4.2 Dungri (Kanda)

4.3 Scapigerous herb with 1.5-8 cm across bulbs leaves radical arising in a rosette-manner, flowers white. Complete, actinomorphic.

4.4 Cultivated crop. Fls. & Frs.: Feb. – Apr.

4.5.1 Paste of bulb is externally applied on boils and blisters.

Bulb is used in cough and cold (Thakor Community in Kotadi Village).

4.5.2 Juice of onion mixed with milk or curd along with sulphur powder is applied on infected skin of animal.

Boiled bulb extract is given after delivery to clean the stomach.

4.5.3 Green leaves and bulb are used as a vegetable.

4.7 Bulb is pungent, diuretic, expectorant, aphrodisiac, emmenagogue, cooling, rubefacient, anti septic, tonic, sedative, stimulant and demulcent.

4.1 ***Allium sativum*** L. (Liliaceae)

FGS, II: 677; FOB, II: 284; FBI, VI: 337; ARM: 422

4.2 Lasan.

4.3 30-45 cm perennial bulbiferous herbs ; bulb 2.4 cm broad, short, compressed, leaves 15-30 cm flat, appearing with flowers, linear.

4.4 Cultivated crop. Fls & Frs. : Dec. – Feb.

4.5.1 Half fresh and half roasted bulb is taken to give relief from stomach pain due to indigestion.

Paste is applied in mustard oil and oil is used as eardrops (Thakor people of Vijapur Taluka).

4.5.2 Paste of Rice with *Lasun* (*Allium sativum* L.) 50 gm twice a day for 7 days to cure given orally animal to Skin disease.

4.5.3 Bulblets are used as spices and condiments.

4.7 Bulblets are hot, carminative, diuretic, emmenagogue, stimulant, alterative, vermifuse, rubefacient, tonic, anthelmintic, digestive and aphrodisiac.

4.1 ***Aloe barbadense*** Mill. (Liliaceae)

Syn. *Aloe vera* (L.) Webb. & Berth.

FGS, II: 677; FOB, III: 283; FNG: 301; ARM: 423

4.2 Kuwarpathu.

4.3 Dwarf plant with fleshy leaves. Leaves in rosettes or 2-ranked; usually spinously dentate. Flowers in terminal simple racemes, usually reddish yellow with green perianth segments united into a cylindrical or companulate straight or slightly curved tube, tips sometimes free. Stamens as long as perianth or longer, filaments inserted into a pit in the connective. Fruit loculicidal.

4.4 Cultivated. Fls. & Frs. : June – Mar.

4.5.1 Pulp of leaf applied on burns, also given orally in sunstroke.

10-20 ml extract of leaves is given once a day for 2-3 days in pain during menstruation.

Root paste is applied externally to treat glands of breast of breast feeding mother by Bharwads community.

4.5.2 Fresh leaf juice is applied to skin to kill ticks and parasites. It is also used to treat rheumatism in camels.

4.5.4 Leaves pulp is used as skin cream.

4.7 Whole plant hypolipidaemic. Leaves are laxative, anti-inflammatory and cooling.

4.1 ***Alstonia scholaris*** R.Br. (Apocynaceae)

RNS: 336; FOB, II: 184; ARM: 249

4.2 Saptparni. (Satvin)

4.3 12-18 m tall erect trees (reaching 27 m in favorable condition) ; leaves coriaceous, oblong-lanceolate or obovate ; flower greenish-white, complete ; fruit follicles 2 cylindrical, pendulous in clusters.

4.4 Ornamental plant. Fls. & Frs: Sep. – Nov.

4.5.1 10 ml decoction of bark is given orally twice a day for a week in hypertension.

35 gm stem bark powder is used in once a day for three days in malaria fever.

4.7 The bark is bitter, astringent acrid, digestive, laxative, anthelmintic, febrifuge depurative, galactagogue, stomachic, cardiotonic and tonic, leaves are bitter and antiulcer.

4.1 ***Alternanthera pungens*** H. B. & K. (Amaranthaceae),

Syn. *Alternanthera repens* (L.) Link.

FGS, I: 590; FNG: 294; ARM: 362

4.2 Pani bhaji (Jal Jambvo)

4.3 Creeping herbs, stem 10-50 cm long ; leaves alternate, sub opposite, broadly ovate, obovate or almost orbicular ; flower bracts up to 0.5 cm, white or tinged pink ; seed $\pm$ 0.1 cm across, orbicular, smooth reddish-brown, discoid, lenticular.

4.4 Common in ditches. Fls. & Frs. : Aug - Dec.

4.5.1 Leaf juice is taken orally for 2 times for 2 days in gas trouble.

4.7 The plant is sweet, astringent, slightly bitter, acrid, cooling, depurative, cholagogue, galactagogue, and febrifuge.

4.1 ***Alternanthera sessilis*** (L.) DC. (Amaranthaceae)

Syn. *Alternanthera triandra* Lam.

FGS, I: 590; FOB, II: 584; FNG, 294; FBI, IV: 731; ARM: 363

4.2 Pani ni bhaji.

4.3 Erect, ascending or prostrate herb rooting at lower nodes. Leaves sessile or shortly petioled, linear – lanceolate or obovate, green or purplish. Heads axillary, ovoid – globose or cylindric, white. Utricles equaling tepals, brown.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Leaves are used as a vegetable. It is not very common. It is used as a lactagogue.

4.5.3 Fodder for grassing animals.

4.7 The plant parts possess antiulcer activity.

4.1 ***Althea rosea*** (L.) Cav. (Malvaceae)

Syn. *Alcea rosea* L.

FGS, I: 98; FBI, I: 319; FOB, I: 90; ARM: 36

4.2 Khaira.

4.3 Densely hairy, annual shrubs; leaves alternate; flower white actinomorphic, cyclic; fruit depressed formed by carpels 0.8 – 1.2 cm across; seed smooth, brown.

4.4 Cultivated in kitchen garden for its large, showy flowers. (Ornamental). Fls. & Frs.: Oct. - June.

4.1 ***Alysicarpus bupleurifolius*** (L.) DC. (Fabaceae)

FGS, I: 178; FOB, I: 370; FNG, 259; FBI, II: 158; ARM: 99

4.2 Khadsamarvo.

4.3 Annual slender herbs, 2-75 cm high. Leaflet 1, linear-elliptic, 2-9 x 2-8 cm, thinly pubescent beneath. Racemes 10-20 cm long with distant pairs of shortly pedicelled purplish red flowers; calyx ca 6 mm long, ciliate. Pods 4-6, jointed. Long exerted, smooth or faintly reticulately nerved.

4.4 Occasional. Fls. & Frs : Aug – Oct.

4.5.1 5-7 leaves are taken orally twice a day for 1 month for blood purification (tribal peoples of Taranga hill).

4.7 Whole plant is sedative and blood purifier.

4.1 ***Amaranthus hybridus*** L. ver. ***Paniculatus***, (Amaranthaceae)

Syn. *A. paniculatus* L.

FGS, I: 592; FOB, II: 573; FBI, IV: 718; ARM: 364

4.2 Rajgaro.

4.3 45 – 200 cm stout annual herbs; stem grooved; striate; leaves alternate, broadly ovate to ovate-rhomboid; flower numerous; bracts acicular; fruit ovoid, tip narrowed; seed smooth.

4.4 Cultivated. Fls. & Frs. : Nov. – Mar.

4.5.3 Whole plant is use as a fodder.

4.6.1 Grains flour especially eaten during fasts.

4.7 Seeds are diuretic, nutritive etc. leaves are diuretic, laxative, haemostatic and blood purifier etc.

4.1 ***Amaranthus lividus*** L. (Amaranthaceae)

Syn. *Amaranthus blitum* auct..

FGS, I: 592; FOB, II: 575; FBI, IV: 721; ARM: 365

4.2 Tandaljo.

4.3 30-60 cm erect, succulent herbs ; stem stout, pale, grooved ; leaves alternate, ovate, obtuse ; flower greenish, trimerous ; bracteoles shorter than tepals ; fruit broadly ovate ; seeds lenticular.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 To control excessive bleeding during menstruation and in urinary problem root juice is taken with "*amala*" juice twice a day for required days (Marghaben Vanjara).

4.5.3 Leaves are cooked and eaten as vegetable by rural people.

Whole plant is use as a fodder.

4.7 Leaves are digestive, diuretic, cooling, mild laxative and blood purifier.

4.1 ***Amaranthus spinosus***. L. (Amaranthaceae)

FGS, I : 593; FOB, II : 573; FNG, 293; FBI, IV : 718; ARM : 366

4.2 Kantado Dambho.

4.3 Erect annual herbs, 10-50 cm high. Stem yellowish or reddish green. Leaves ovate – oblong or lanceolate. Flower clusters dense, lower

axillary, higher collected in to axillary and terminal spikes. Tepals 5. Utricle circumi cissile. Seeds nearly orbicular, compressed dark-brown, smooth, glabrous.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Rural peoples depending upon the need, 10-100 heated leaves are applied locally thrice a day for 5 days to cure boils and burns.

4.5.2 Whole plant prescribed as cattle feed for milking cattle to increase lactation.

Whole plant decoction is given to cattle against delivery complaints.

4.7 Whole plant analgesic and has effect on isolated ileum.

4.1 ***Ammannia baccifera*** L. (Lythraceae)

FGS, I: 305; FOB, I: 542; FNG: 265; FBI, II: 569; ARM: 177

4.2 Jalmukhi, Jalaagiyo.

4.3 Annual erect herbs; stem 4 – gonous; leaves opposite, oblong; flower red, complete; capsule minute, red, glabrous; seed minute, brown, and obovate.

4.4 Common. Fls. & Frs.: Throughout the year.

4.5.1 Leaf paste applied to relieve joint pain.

4.7 The plant is bitter, acrid, cooling, appetizer, rubefacient, laxative, stomachic, diuretic, aphrodisiac and lithon triptic.

4.1 ***Amorphophallus campanulatus*** (Roxb.) Blume. (Araceae)

FGS, II : 697 ; FBI, VI : 513; FOB, III : 336; ARM : 438

4.2 Suran.

4.3 Perennial tuberous herbs ; leaves solitary ; flower incomplete, actinomorphic, Unisexual ; flower staminate ; fruit ripe berries, deep orange, 2- 3 seeded.

4.4 Cultivated Fls: Apr. Frs: Not seen.

4.5.3 Rhizome (corms) is used as a vegetable.

4.7 Corm is carminative, tonic, restorative, nutritive, appetizer, digestive, pungent, astringent, laxative, expectorant, stomachic and anthelmintic.

4.1 ***Anacardium occidentale*** L. (Anacardiaceae)

FGS, I: 166; FBI, II: 20; FOB, I: 292; ARM: 93

4.2 Kaju.

4.3 4 – 8 m evergreen tree ; stem aerial ; leaves alternate, simple, thick coriaceous ; flower pale to bright pick, small, numerous ; fruit drupe, reniform, nut 2-1 cm long ; seed testa membranous.

4.4 Planted at some places. Fls & Frs. : Sep. – Apr.

4.5.2 Latex is applied in foot diseases.

4.5.3 The seeds are used as a dry fruit.

4.7 Root is purgative. Fruit is nutritious tonic. Bark is alterative, astringent and antimalarial. Acrid oil is irritant rubefacient and vesicant.

4.1 ***Andrographis paniculata*** (Burm. f.) wall (Acanthaceae)

FGS, I: 528; FBI, II: 501; FOB, II: 451; ARM: 326

4.2 Lilu Kariyatu.

4.3 60 – 90 cm stout herb, leaves opposite, elliptic – laceolate; flower dirty-white or creamy-white, capsule glabrous, linear – oblong, seed numerous, subquadrate, yellowish-brown.

4.4 Rare. Fls. & Frs. : Aug. – Oct.

4.5.1 Whole plant is boiled in water and taken orally in fever (Chhagujji Thakor).

4.7 Extract of the plant part possesses antipyretic activity.

4.1 ***Anethum graveolens*** L.(Apiaceae)

Syn. *Peucedanum graveolens* Hiern in Oliver.

FGS, I: 340; FOB, I: 606; FBI, II: 709; ARM: 207

4.2 Suva.

4.3 20 – 60 cm, Perennial herbs ; leaves alternate, pinnately compound ; flower yellow, complete, actinomorphic ; fruit densely compressed ; seed flat, slightly on the back.

4.4 Cultivated crop. Fls. & Frs. : Dec.-Mar.

4.5.1 Seeds are boiled in water this boil water is given to lady after delivery.

4.5.2 Fresh seeds are fed with fodder during pregnancy of cattle.

4.5.3 Roasted seeds are use as mouth freshener.

4.7 Fruits are carminative, stomachic, aromatic, stimulant, diuretic, resolvent, galactagogue and emmenogogue.

4.1 ***Anisomeles indica*** (L.) O.Ktze. (Lamiaceae)

Syn. *Anisomeles ovata* R. Br.

FGS, I: 568; FOB, II: 543; FNG: 291; FBI, IV: 672; ARM: 347

4.2 Chodharo.

4.3 Under shrub, up to 1.5 m high. Stem tetraquetrous. Leaves ovate, 3-8 cm long, serrate, hirsute on both the surfaces. Flowers mauve, in axillary dense flowered whorls and terminal spikes; calyx ca 6 mm long, diliate. Nutlets ca 2.5 mm long, smooth, shining black.

4.4 Common. Fls & Frs : Oct.-Apr.

4.5.1 The plant ash mixed with Jaggery and make an extract. It is taken orally to reduce mucus.

4.5.4 Dry stem is used as a fire wood.

4.7 The plant parts possess anti inflammatory activity.

4.1 ***Annona reticulata*** L. (Annonaceae)

FGS, I: 50; FBI, I: 78; FOB, I: 15; ARM: 1

4.2 Ram Phal.

4.3 3 – 5m, tree; leaves alternate, extipulate. Simple ; flower 2 – 4, creamy – yellow, bracteate, fruit 10-15 cm across, etaerio of berries reddish to yellowish tinge ; seed smooth, blackish.

4.4 Plant is rare in this area a few number of plants are found in Vijapur & Visnagar city only. Fls. & Frs. : Sept. – May.

4.5.1 Seed ash is applied to cure dental complaints.

4.5.3 The ripe fruit is edible.

4.7 Roots are purgative, leaves are insecticidal. Fruits are sedative, stimulant and tonic. Seeds are abortifacient and insecticidal.

4.1 ***Annona squamosa*** L. (Annonaceae)

FGS, I: 50; FOB, I: 15; FNG, 242; FBI, I: 78; ARM: 2

4.2 Sitafal.

4.3 A deciduous tree, leaves oblong – lanceolate, 5-10 cm long flowers on extra – axillary peduncles, 2-3 cm long, greenish white; tepals in two series; carpels 1 – ovuled. Fruit of numerous fused carpels, fleshy, sub-globose, areolate 4-8 cm across, glaucous green, drying black.

4.4 Cultivated. Fls & Frs :Apr. – Aug.

4.5.1 Paste of fresh leaves is externally used to healing, wounds.
Seeds and leaves are used as insecticide.

4.5.2 Leaf extract is externally applied on worms in the wounds in cattle's.

4.5.3 Ripe fruits are edible.

4.7 Whole plant anticancer. Roots are purgative leaves and seeds are insecticidal. Fruits are cooling, sedative.

4.1 ***Anogeissus latifolia*** (Roxb) Wall. (Combretaceae)
FGS, I : 297; FOB, I : 512; FBI, II : 450; ARM : 163

4.2 Dhavdo.

4.3 Deciduous tree. Bark smooth grayish, peeling off these flakes leaving roundish scars. Leaves shortly petioled, broadly elliptic or sometimes suborbicular. Heads peduncled, 1 cm across, white, axillary, solitary or 2-3 together. Fruit beaked, pale brown.

4.4 Common in forest area. Fls. & Frs. : Sep. – Dec.

4.5.1 Decoction of stem bark is given orally 1 teaspoon twice in a day in colic complaints.
The gum is tonic and given during winter in weakness.

4.5.4 Wood used as a timber wood for preparation of agricultural implements and tool handle.

4.7 Leaves contain glucoside and gallotannin.

4.1 ***Anogeissus pendula*** Edgew. (Combretaceae)
FGS, I: 297; FOB, I: 513; FNG: 265; FBI, II: 451; ARM: 164

4.2 Safed Dhav.

4.3 3-5 m, deciduous tree with drooping or pendulous branches; leaves alternate and sub-opposite ; flower same as *Anogeissu. latifolia;* fruit sub-quadrate ultimately glabrous.

4.4 Founding Taranga forest only. Fls & Frs : Apr. – Jan.

4.5.4 Wood is used as a timber wood for preparation of plough and tool handles. (Agricultural implements.)

4.1 ***Anogeissus sericea*** Brandis. in Indian. (Combretaceae)

FGS, I : 298; FOB, I : 513; FNG : 264; ARM : 165

4.2 Dhav.

4.3 A small tree ; bark whitish – brown fissured ; leaves alternate elliptic or oblong, obtuse ; flower same as *Anogeissus latifolia.*

4.4 Rarely seen. Fls. & Frs. : Dec. – Apr.

4.5.4 Stem wood used as a timber wood for preparation of agricultural implements.

4.1 ***Anthocephalus indicus*** A. Rich. (Rubiaceae)

Syn. *Anthocephalus cadamba* Miq.

RNS : 289; ARM : 215

4.2 Kadam

4.3 A small tree. Leaves opposite, decussate, elliptic-oblong, acute, entire, coriaceous, cordate at base, stipules inter-petiolar, flowers in terminal globose heads, fragrant. Calyx tubular, lobes 5, obtuse. Corolla tubular, orange, lobes 5, imbricate. Stamens 5 on the corolla throat. Ovary 2-celled below but 4-celled on top. Style exerted, while, stigma fusiform, ovules many. Fruit globose of few-seeded leathery pyrenes, seeds minute.

4.4 Planted in garden. Fls. & Frs. : Sep.-Dec.

4.5.1 The fresh bark juice is used in inflammation of the eye by tribes of Taranga Hills.

4.6.1 The flowers are offered to Lord Krishna for a happy married life.

4.1 ***Antigonon leptopus*** Hk. & Arn. (Polygonaceae)

FGS, I : 602; FOB, III : 10; ARM : 373

4.2 Ice Cream Vel.

4.3 Perennial climbers, woody at base; leaves broadly ovate to ovate triangular puberulous or glabrous, inflorescence axillary and terminal; flower bright-rosy or white. Tendrillar racemes.

4.4 Planted for ornamental beautiful climber. Fls. & Frs. :Sept.– May.

4.5.1 5-10 flowers are taken orally for 15 days in Hypertension.

4.7 Whole plant is astringent.

4.1 ***Arachis hypogaea*** L. (Fabaceae)

FGS, I : 183; FOB, I : 435; FBI, II : 161; ARM : 100

4.2 Bhoising (Magfali)

4.3 Diffuse or sub erects patently hairy herbs. Leaves abruptly pinnate, alternate; inflorescence axillary, solitary; flower yellow or orange; seeds pinkish or red, glabrous, smooth.

4.4 Cultivated crop. Fls. & Frs : July – Nov.

4.5.3 Seeds are edible.

Oil extract from seed used as an edible oil.

Whole plant is used as a fodder for cattle.

Oil cake used as a fodder for cattle.

4.7 Seeds are sweet, astringent nutritive, seed oil have anticancer property.

4.1 ***Argemone mexicana*** L. (Papaveraceae)

FGS, I: 58; FOB, I: 29; FNG, 243; FBI, I: 117; ARM: 9

4.2 Darudi.

4.3 Perennial glaucous green prickly herbs, 30-50 cm high. Leaves lobed, 5-12 x 2-5 cm, with white stripes along the nerves. Flowers yellow; petals biseriate, soon falling stigmas red. Capsules 2-3.5 cm long; seeds black.

4. Common. Fls & Frs : Nov. – June.

4.5.1 Yellow milky juice is applied on blisters.

Root decoction is given in skin diseases.

Leaves paste is used to cure eczema.

The latex of plant is skin disease.

4.5.2 Crushed roots are applied over body for the treatment of eczema in domestic animals.

4.7 Sanguinarine (4.0 mg/kg) increased ventricular refractory period and also increased stimulus threshold of ventricle; thus prolonging ventricular refractoriness. This property may be useful in treatment of ventricular arrhythmias. (Rastogi & Mehrotra, 1993. p.59).

4.1 ***Aristida adscensionis*** L. (Poaceae)

FGS, II : 778; FOB, III : 529; FNG : 318; ARM : 443

4.2 Uth lampdo.

4.3 Tufted annuals or perennials with root stalk, 10-60 cm high. Leaves usually folded. Panicles contacted. Spikelet's green or purplish, lower glumes 1-3 mm long upper 5-10 mm long central awn 7-25 mm long, laterals as long or shorter.

4.4 Common. Fls. & Frs. : Aug. – Jan.

4.5.3 Used as fodder for cattle.

4.1 ***Aristolochia bracteolata*** Lam. (Aristolochiaceae)

Syn. *Aristolochia bracteata* Retz.

FGS, II : 605; FBI, V : 75; FOB, III : 16; ARM : 378

4.2 Kidamari

4.3 Prostrate, perennial slender herbs ; stem 30-40 cm long, slender, weak ; inflorescence axillary, solitary up to 5 cm long ; flower dark – purple, incomplete, actinomorphic ; fruit capsule oblong – ellipsoid, glabrous, 12 – ribbed ; seed deltoid with a slightly connate base.

4.4 Weed plants. Fls. & Frs. : July – Dec.

4.5.1 Leaf paste applied on the head while taking bath relieves dandruff and other infections.

4.5.2 Paste of green leaves is applied to kill ticks & maggots and also applied locally to cure foot disease in cattle.

4.7 Root yields an essential oil; root and stem contain the bitter alkaloid aristolochine.

4.1 ***Arygyreia nervosa*** (Burm.f.) Boj. (Convolvulaceae)

Syn. *Argyreia speciosa* Sw.

FGS, I: 460; FOB, II: 324; FNG: 280; FBI, IV: 185; ARM: 281

4.2 Samudra Shos.

4.3 Grayish or whitish – tomentose, climber ; leaves alternate, broadly ovate, glabrous above ; flower Purple or rose, complete, actinomorphic ; berries 1-2 cm across, globose, smooth glabrous; seed 4 embedded in mealy pulp.

4.4 Rare. Fls. & Frs. : Aug. – Oct.

4.5.1 Young fresh leaves, hairy side, applied on boils for ripening and pus formation and then smooth side for healing wound (Thakor community).

4.7 Root is alterative, tonic, aphrodisiac and diuretic. Leaves are antiphlogistic, maturant, rubefacient and vacicant.

4.1 ***Asclepias curassavica*** L. (Asclepiadaceae)

FGS, I : 422; FBI, IV : 18; FOB, II : 245; ARM : 259

4.2 Kakatundi.

4.3 40-100 cm tall, suffruticose herbs ; leaves opposite, decussate or whorled, flower complete, actinomorphic, hermaphrodite ; fruit follicles paired, ovate – lanceolate ; seed numerous, flattened, winged.

4.4 Cultivated in gardens. Fls. & Frs.: Throughout the year.

4.5.1 Latex is applied on corn for relief.

4.7 Leaves contains cardioactive glycosides, asclepiaside.

4.1 ***Asparagus racemousus*** Willd. var. ***javanicus*** (Liliaceae)

Syn. *Asparagopsis javanica* Kunth.

FGS, II: 679; FOB, III: 270; FNG: 300; FBI, VI: 316; ARM: 424

4.2 Satavri.

4.3 Deciduous, sarmentose shrubs, slender bushy scrambler or climber with woody prickly branch. Cladodes acicular, triquetrous, deciduous. Racemes axillary 5-10 cm long flower on filiform jointed pedicels. Berries globose, scarlet.

4.4 Common everywhere. Fls. & Frs. : Sep. – Dec.

4.5.1 About 5 teaspoonful powder of dry root is taken thrice a day for a week to cure urinary troubles.

About one cup of root decoction (a tuberous root boiled in water) is taken by women as a tonic thrice a day for 15 days after delivery by tribal community.

4.7 Tuberous roots are, sweet, cooling, ophthalmic, diuretic, carminative, appetizer, and tonic.

4.1 ***Asphodelus tenuifolius*** Cav. (Liliaceae)

FGS, II: 679; FOB, III: 279; FNG: 301; FBI, VI: 332; ARM: 425

4.2 Dungro.

4.3 20-25 cm scapigerous, annual slender herbs ; leaves radical, arising in rosette-manner ; flower light-purple, fading white fruit capsule glabrous globose erect 3 valved ; seed 0.3 cm long acute black.

4.4 Common weed in winter crop, Fls. & Frs. : Dec. – Mar.

4.5.1 Decoction of plant is given in toxiemia and kidney stone.

Paste of plant is applied on swellings

Decoction of roots is tonic for weak children (Thakor community).

4.7 Seeds diuretic. Plant is blood purifier and diuretic.

4.1 ***Azadirachta indica*** A.Juss. (Meliaceae)

FGS, I: 149; FOB, I: 220; FNG, 252; FBI, I: 544; ARM: 80

4.2 Limdo.

4.3 Evergreen trees, 4-15 m high; bark splitting into black flakes. Leaves odd-pinnate; leaflets 5-9 pairs, obliquely lanceolate, flowers white, scented, Drupes yellow when ripe. Seed hard, ellipsoid, glabrous.

4.4 Common. Fls. & Frs. : Feb -June

4.5.1 Bark, leaf and fruit decoction is antiseptic and used in ulcers by rural peoples of many communities.

Seed oil with powder of *Terminalia chebula* fruits and cow's ghee is applied externally in skin diseases.

Fresh leaf juice is taken to cure fever.

4.5.2 50 gm leaf powder is given orally once a day for 5-7 days against intestinal worms.

Leaf paste is applied on wounds to prevent bacterial infection.

Seed oil is used externally for the removal of lice in domestic animals.

4.5.3 Fresh twig and leaves are used as a fodder for camel (Vanjara community).

4.5.4 Fresh twig used as a toothbrush.

Dry stem is used to prepare agricultural implement like *Dhosari*.

Wood is used to prepare oil mill stands.

4.7 Leaf antibacterial, anticancer, antifungal, antifertility, anti-infective.

4.1 ***Azima tetracantha*** Lam. (Salvadoraceae)

FGS, I: 412; FBI, III: 620; FOB, II: 183; ARM: 246

4.2 Kajad

4.3 1.5 – 2.5 m, spinous, bushy, rigid shrub ; leaves opposite, entire, elliptic, obovate to lanceolate ; flower, small, greenish-white or yellowish, sessile, zygomorphic, unisexual ; fruit berry $\pm$ 0.6 cm across, globose, glabrous, white, edible usually 1-seeded ; seed $\pm$ 0.45 cm across, globose, circular, compressed.

4.4 Plants are located in surrounding Vijapur taluka only.

Fls. & Frs. : Apr. – June.

4.5.1 Leaf juice is used to relieve gas problem.

4.5.4 Plant used in making fencing surrounding farms.

4.7 Antifungal. Activities.

4.1 ***Bacopa monnieri*** (L.) Pennell. (Scrophulariaceae)

Syn. *Moniera cuneifolia* Michx.

FGS, I: 495; FOB, II : 356; FBI, IV : 272; ARM : 312

4.2 Bam.

4.3 Prostrate, Creeping or procumbent, fleshy; glabrous herbs, stem rooting at nodes, aquatic ; leaves opposite, decussate ; flowers pale – blue or bright – purple, seldom white ; fruit capsule glabrous, smooth ; seeds oblong, pale brown, numerous.

4.4 Common. Fls & Frs. : Throughout the year.

4.5.1 ½ cup decoction of leaves is taken orally for 3 days to cure urinary diseases (Premaji Barad).

4.7 Whole plant is cardiac, nerving tonic, febrifuge, aperient, diuretic, astringent, sedative, aphrodisiac and expectorant.

4.1 ***Balanites aegyptiaca*** (L.) Del. (Balanitaceae)

Syn. *Balanites roxburghii* Planch.

FGS, I : 146; FOB, I : 207; FNG : 252; FBI, I : 522; ARM : 76

4.2 Ingoriyo.

4.3 2.5 – 8 armed bushy tree ; stem woody, cylindrical ; leaves alternate, 2 – foliolate compound ; flowers pale-greenish-yellows, fragrant ; fruit drupe ovoid, yellowish green when ripe ; seed solitary, pendulous.

4.4 Common. Fls. & Frs. : Dec – July

4.5.1 Seed powder is mixed with milk and apply externally on burns by Raval Community Gundrasan village.

Fruit pulp is used for washing hair by tribal's of Taranga hills.

4.7 Bark is anthelmintic. Leaves & fruit pulp is laxative, emetic, antiseptic, deobstruent etc. seeds are expectorant, anthelmintic and hypertensive.

4.1 ***Bambusa arundinacea*** (Retz.) Willd. (Poaceae)

FGS, II: 787; FOB, III: 569; FBI, VII: 395; ARM: 444

4.2 Vans.

4.3 Tall arborescent bamboo; culm thorny, up to 20 m tall and 15-18 cm thick. Leaves linear – lanceolate, 5-12 cm long, auricles bristly ; culm-sheath 20-30 cm, dark brown, hairy, abiculate. Spikelets lanceolate, ca 16 mm long, 3-6 flowered; lemma ca 8 mm long.

4.4 Common in Taranga. Fls . & Frs. : Aug – Jan.

4.5.1 The crushed leaves of Bambusa are used as an anti-diabetic.

4.5.4 Clum is used in the construction of roof and wall of the hut.

Clums are also used in basketry, other handicrafts, fishing implements and agricultural implements etc.(Tribal people of Taranga Hills).

4.7 Roots and leaves sweet, astringent, cooling, laxative, depurative, diuretic and tonic.

4.1 ***Barleria prionitis*** L. (Acanthaceae)

FGS, I: 532; FOB, II: 457; FNG: 289; FBI, IV: 482; ARM: 327

4.2 Pilo Kantaseliyo.

4.3 1 – 1.5 cm armed erect or bushy shrubs; Stem obsoletely 4 – gonous ; leaves opposite decussate, bristle-tipped ; flowers yellow, sessile, complete, zygomorphic ; fruit capsule brown ; seed ovoid – orbicular, compressed, hairy.

4.4 Common. Fls. & Frs. : Sep.-Mar.

4.5.1 Powder of leaves with crushed leaves of *Clerodendrum inerme* and few drops of edible oil is applied on heals to remove scratches.

Root extract is applied on skin to expel out spine from the skin.

4.7 Bark is diaphoretic, expectorant and diuretic.

4.1 ***Basella rubra*** L. (Basellaceae)

Syn. *Basella alba* L.

FGS, I: 601; FOB, II: 594; FBI, V: 20; ARM: 372

4.2 Poi.

4.3 A perennial succulent glabarous twining climber; leaves simple, alternate; flowers white or red in spikes; fruit red, white or black globose, Urticle enclosed, glabrous.

4.4 Cultivated for ornamental. Fls. & Frs. : Throughout the year.

4.5.1 2 tsp extract of whole plant is taken orally twice a day to cure Dysentery.

4.7 Plant is cooling, diuretic, appetizer, laxative, aphrodisiac, narcotic, sour tonic, soporific and acrid.

4.1 ***Bauhinia racemosa*** Lamk. (Caesalpinaceae)

FGS, I: 263; FOB, I: 459; FNG: 262; FBI, II: 276; ARM: 132

4.2 Kanchnar

4.3 Small evergreen trees with irregularly breaking grayish-black bark and deep red blaze. Leaves rotundate, lobed to about one third, 3-6 cm broad, glaucous beneath, shallowly cordate at base. Flowers in 5-10 cm. long racemes, white; petals 1 cm long. Pods compressed, 10-25 cm long often twisted, green drying black. Seeds oblong, smooth, glabrous, brown.

4.4 Rare. Fls. & Frs. : Feb.-June.

4.5.1 Decoction of leave is mixed with stem decoction of *Tinospora cordifolia*, it is given one tsp twice a day for 5 days in malarial fever.

4.5.2 50 gms Leaf paste is given once for 3-5 days to control dysentery.

4.7 Plant-astringent, anthelmintic, expectorant, deobstruent, refrigerant, antipyretic, alexipharmic etc.

4.1 ***Benincasa hispida*** Cogn. (Cucurbitaceae)

Syn. *Benincasa cerifera* Savi.

RNS : 278; ARM : 186

4.2 Safed Kolu.

4.3 A large climbing or trailing climber with stout, angular, hispid stems, leaves large and long-petioled, 5-7 lobed, reniform-rotund, deeply cordate, upper surface sparsely pilose and scabrous, lower rigidly ; tendril slender, short ; flowers solitary, axillary, large, yellow, monoecious ; fruits fleshy, succulent, densely hairy when young, thickly deposited with white easily removable waxy bloom when mature, flesh white, spongy; seed white.

4.4 Rare. Fls & Frs.:- Sep. – Oct.

4.5.3 Fruits used for preparing *muraba* and confectionery.

4.1 ***Bergia capensis***, L. (Elatinaceae)

Syn. *Bergia odorata*, Roxb., *Bergia suffruticosa* (Del.) Fenzl., *Bergia verticillata* Willd.

FGS, I: 90; FOB, I: 78; FNG: 252; FBI, I: 252; ARM: 31

4.2 Jaljambvo.

4.3 Undershrubs ; aromatic, decumbent or spreading ; leaves very variable, broadly elliptic to oval or oblong-lanceolate, acute ; flowers white, solitary or in axillary fascicles ; capsules ovoid, 5-locular, globose, glabrous. Seeds many, minute, shining.

4.4 Common. Fls. & Frs. : Aug.-Oct.

4.5.2 Crushed leaves are given orally with buttermilk to cure food poison in cattle.

4.1 ***Beta vulgaris L***. (Chenopodiaceae)

RNS: 504; ARM: 375

4.2 Beet.

4.3 A small, fleshy herb with large, red, napiform tap- root, and stem red furrowed. Leaves alternate, fleshy, radical, ovate, entire, the cauline obovate-lanceolate, entire. Flowers axillary spikes. Bracts few, bracteoles 2. Perianth fleshy, 5-lobed, cup-like. Stamens 5. Ovary sunk, stigma 2-5. Utricle enclosed in the perianth.

4.4 Cultivated. Fls. : Dec.-Mar. Frs. : Not seen.

4.5.3 It is use as vegetable. Red tap-roots are eaten as salad.

4.1 ***Blepharis maderaspatensis*** (L.) Roth. (Acanthaceae)

Syn. *Blepharis boerhaviaefolia* pers.

FGS, I: 533; FOB, II: 424; FNG: 288; FBI, IV: 478; ARM: 328

4.2 Utigan.

4.3 Prostrate or procumbent, slender hispid herbs ; leaves unequal, thinly memberanous ; flower creamy white with red or purple veins or pale blue. Capsule 0.6 – 0.8 cm long, brown, ovoid, glabrous ; seed echinate with obtuse spines.

4.4 Common. Fls. & Frs. : Oct.-Feb.

4.5.1 Seeds powder is taken orally once a day for a week to cure ulcers and urinary problems (Dayabhai Patel).

4.5.3 Whole plant used as a fodder.

4.7 Plant is resolvent, expectorant, diuretic and aphrodisiac.

4.1 ***Blepharis repens*** (Vahl.) Roth. (Acanthaceae)

Syn. *Blepharis molluginifolia* pers.

FGS, I: 533; FOB, II: 425; FNG: 288; FBI, IV: 479; ARM: 329

4.2 Zinku Utigan.

4.3 Prostrate herbs ; stem 15-30 cm long, wiry ; leaves 4 at each node ; flowers creamy-white or pale-blue, sessile ; capsule 0.6-0.8 cm long, compressed, ellipsoid ; seeds 2, broadly ellipsoid, compressed, spherical, with hairy margins.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 The seeds are used to cure urinary problems.

4.1 ***Blumea lacera*** (Burm.f.) DC. (Asteraceae)

FGS, I: 373; FOB, II: 76; FNG: Ad No.-254; FBI, III: 263; ARM: 224

4.2 Kapuriyo.

4.3 An erect strong-smelling herb ; leaves variable in shape, oval or obovate dentate heads peduncled, arranged in short axillary cymes or terminal panicles ; corolla yellow ; achenes brown, subangulate, puberulous.

4.4 Very Common. Fls. & Frs. : Dec.-Jan.

4.5.4 Whole plant used as a insecticide.

4.7 The plant is bitter, astringent, carminative, antipyretic and diuretic, anti-inflammatory, ophthalmic and digestive.

4.1 ***Blumea mollis*** (D.Don) Merr. (Asteraceae)

Syn. *Blumea wightiana* DC.

FGS, I: 374; FOB, II: 75; FNG: Ad No.254; FBI, III: 261; ARM: 225

4.2 Chanchadmari.

4.3 Erect pilose herbs, up to 1 m high. Leaves ovate-oblong, 1-10 cm long, closely serrate, lower petiolate. Heads 3-4 mm across, in dense terminal spiciform panicles ; involucral bracts green or purplish flowers purplish.

4.4 Very Common. Fls. & Frs. : Nov.-Feb.

4.5.4 Whole plant used as an insecticide.

4.1 **Boerhavia chinensis** (L.) Druce in Rep. (Nyctaginaceae)

Syn. *Boerhavia repanda* Willd.

FGS, I: 583; FOB, II: 564; FNG: 293; FBI, IV: 709; ARM: 355

4.2 Satodi.

4.3 A diffuse, perennial herbs; leaves opposite, deltoid-ovate, acute or acuminate; flowers bright-pink, bracteoles 0.25-0.4 cm long, beneath umbels; fruit clavate; faintly ribbed.

4.4 Very Common. Fls. & Frs. : Throughout the year.

4.5.1 Paste of leaves is applied on swellings.

4.7 Root is anti-inflammatory, diuretic, blood purifier and laxative. Plant is better, astringent, cooling, anthelmintic, diuretic, anti-inflammatory, febrifuge, laxative and tonic.

4.1 ***Boerhavia diffusa*** L. (Nyctaginaceae)

Syn. *Boerhavia repens* L.

FGS, I: 583; FOB, II: 563; FNG: 292; FBI, IV: 709; ARM: 356

4.2 Punarnava (Satodi).

4.3 A perennial much-branched creeping herb with stout root stock ; leaves broadly ovate ; flowers dark pink, 4-10 together in small umbels, arranged in corymbose panicles ; fruit clavate, 5-ribbed, glandular.

4.4 Common Fls. & Frs. : Throughout the year.

4.5.1 1 teaspoon Juice of leaves twice a day for a week to cure Jaundice by Vanjara Community.

4.7 Plant extract possesses is antiviral activity.

4.1 ***Boerhavia verticillata*** Poir. (Nyctaginaceae)

FGS, I: 583; FOB, II: 564; FNG: 293; FBI, IV: 710; ARM: 357

4.2 Zeri Satodi (Punarnava).

4.3 Prostrate or decumbent herbs ; leaves 3-8 cm long, opposite, with subequal or unequal pairs, broadly ovate, undulate, green above, pale green beneath ; petioles up to 2 cm long ; flowers pale pink ; anthocarps obconical, 10-ribbed.

4.4 Common. Fls. & Frs. : Aug.-Dec.

4.5.1 Decoction of root is employed in swellings.

Leaves are chewed by the tribals in scorpion bite by tribals of Taranga Hills.

4.7 Root is anti-inflammatory, emetic, diuretic, blood purifier, diaphoretic, expectorant and laxative.

4.1 ***Bombax ceiba***, L. (Bombacaceae)

Syn. *Bombax malabaricum* DC.

FGS, I: 118; FOB, I: 127; FNG: 248; FBI, I: 349; ARM: 52

4.2 Shimlo.

4.3 Large deciduous trees. Trunk and branches with bulbous prickles when young, grayish ; blaze pink. Leaves digitately 5-7 foliate, petioles pulvinate, 10-15 cm long ; leaflets elliptic, 8-15 x 3-7 cm long ; leaflets elliptic, 8-15 x 3-7 cm flowers ca 8 cm across, scarlet. Capsule 5-valved; woody, seeds bearing cotton.

4.4 Rare. Fls. & Frs.: Jan.- June.

4.5.1 Root decoction (about 50g root boiled in a cup of water) is taken orally twice a day for a week to cure urinary troubles.

Decoction of flowers (about 5 teaspoonfuls) is given twice a day for 3-4 days to cure dysentery tribal people of Taranga Hills.

4.7 Stem bark hypoglycemic, flower antiviral and hypoglycemic.

4.1 ***Boswellia serrata*** Roxb. (Burseraceae)

FGS, I: 147; FOB, I: 210; FNG: 252; FBI, I: 528; ARM: 77

4.2 Saladi gugal.

4.3 Trees with greenish or pinkish white papery Bark and pink-red blaze, exuding yellowish droplets of resin. Leaves at the tips of branchlets, 30-45 cm long ; leatlets 9-16 pairs, 3-7 cm long, serrate, young brown, tomentose. Racemes several, clustered at the tips of brlets, 1-20 cm. long flowers white, ca 7 mm long : Drupes 3 – valved, with 3 pyrenes, glabrous.

4.4 Not common. Fls. & Frs. : Jan-May.

4.5.1 20-30 ml of bark juice is taken with milk twice a day for seven days in rheumatism.

4.5.4 Gum is used as an air fresheners.

4.7 Gum is anti-inflammatory, root anticancer, stem and fruit hypoglycemic.

4.1 ***Bougainvillea spectabilis*** willd. (Nyctaginaceae)

FGS, I: 584; FOB, II: 567; ARM: 358

4.2 Bogan Vel.

4.3 Large, thorny, straggling shrub ; thorns 0.5-4 cm long ; leaves alternate, ovate – elliptic to oblong ; flower crimson, ovate, rounded, base cordate, entire, acuminate, variously brightly coloured & conspicuously veined.

4.4 Cultivated. Fls. & Frs. : Throughout the year.

4.5.4 Planted near main gate of house as a decorative plant.

4.1 ***Brassica juncea*** (L.) Czern. (Brassicaceae)
FGS, I: 61; FOB, I: 37; FBI, I: 157; ARM: 10

4.2 Raydo, Rai.

4.3 50- 120 cm erect, annual, hispid herbs ; leaves radical and cauline, lyrately pinnatifid ; flower 0.8 cm across, flower buds shorter than open flower ; pods beck stout, subterete ; seed minutely pitted, rounded blackish – brown.

4.4 Cultivated in farms. Fls. & Frs. : Dec. – Mar.

4.5.1 Seeds are used to cure digestive disorders.
Bulbs of *Allium cepa, Allium sativum* and seeds of *Brassica jancea* are ground well and mixed with butter milk and then given twice a day for 3 days in diarrhoea (Dalpatsingh Thankor).

4.5.2 Seed oil is applied to cure rheumatism.

4.5.3 Seeds are used as spices.
Filtered oil is edible.
Cake is used as a cattle feed.

4.5.4 Stem is used to make a shelter and housing for hut.

4.6.3 Seeds commercially important.

4.7 Seeds are appetizer, pungent, emmenagogue, expectorant, rubefacient and stimulant.

4.1 ***Brassica oleracea*** L. var. ***botrytis*** L. (Brassicaceae)
FGS, I: 62; RNS: 61; ARM: 11

4.2 Fulevar.

4.3 60-120 cm. erect annual much branched herbs; leaves bristly variable petiolate; fruit pods, linear glabrous; seed ovoid, dark-brown or black.

4.4 Cultivated crop. Fls. & Frs. : Oct.-Mar.

4.5.3 Flowers are used as Vegetable.
Whole plant used as a fodder.

4.6.3 Flowers (Fulevar) commercially important.

4.7 Flower appetizer, nutritive, diuretic and pungent.

4.1 ***Brassica oleracea*** L. var. ***capitata*** L. (Brassicaceae)

FGS, I: 62; RNS: 61; ARM: 12

4.2 Cobbij.

4.3 60-120 cm., erect annual much branched herbs; leaves bristly variable petiolate; fruit pods, linear glabrous; seed ovoid, dark-brown or black.

4.4 Cultivated crop. Fls. & Frs. : Throughout the year.

4.5.3 Leaves are used as Vegetable.

Whole plant used as a fodder.

4.6.3 Leaves (Cobbij) Commercially important.

4.7 Leaves are nutritive, appetizer, diuretic and pungent. Seeds are anthelmintic.

4.1 ***Butea monosperma*** (Lam.) Taub. (Fabaceae)

Syn : *Butea frondosa* Koen.

FGS, I: 185; FOB, I: 395; FNG: 260; FBI, II: 194; ARM: 101

4.2 Khakhro.

4.3 Deciduous trees up to 7 m high. Leaflets ovate-rhomboid, 8-20 cm long and equally board, grey tomentose beneath. Racemes 10 cm long; calyx coriaceous, velvety black. Pods 15 x 4 cm, obliquely rounded at the base.

4.4 Common. Fls. & Frs. : Dec. – June

4.5.1 Flower is used for bathing juvenile child.

Seed paste is taken orally along with fresh cow milk early in the morning for 20 days to cure asthma.

Juice of flower is given one teaspoon twice a day for one week in burning urinary tract.

4.5.4 Dye obtained from flowers and it is used in ‘Holi’.

Leaves are used in making dishes (Patrada)

4.7 Leaf extract possesses anti-microbial activity. Flowers are astringent, cooling, constipating.

4.1 ***Cadaba fruticosa*** (L.) Druce in Rep. (Capparaceae)

Syn. *Cadaba indica* Lam.

FGS, I : 67; FOB, I : 45; FNG : 244; FBI, I : 172; ARM : 15

4.2 Kalo Katkiyo.

4.3 2-3 m, straggling, unarmed shrubs ; leaves simple, entire, alternate ; flower 1.5 cm across, dirty-white or creamy-yellow ; fruit berry 1.5 – 2.5 x 0.4 – 0.5 cm, tardily dehiscent ; seed 0.2 cm, numerous.

4.4 Throughout on hedges. Fls. & Frs. : Nov. – June.

4.5.1 ½ cup decoction of root is taken for five days to cure urinary diseases.

4.7 Leaves & Roots are purgative anthelmintic, antisyphiltic, stimulant, aperient, emmenagogue, anthiphlogisitic etc.

4.1 ***Caesalpinia crista*** L. (Caesalpiniaceae)

Syn. *Caesalpinia bonducella* (L.) Flem.

FGS, I: 264; FOB, I: 437; FNG: 261; FBI, II: 254; ARM: 133

4.2 Kachka

4.3 An extensive, scandent, annual, shrub; leaves 15-18 cm long, alternate, bipinnately compound; flower $\pm$ 1.5 cm across, complete, zygomorphic; pods 5-8 x 2.8-4.5 cm, ovoid – oblong ; seed oblong, smooth, polished lead – coloured.

4.4 Common in hedge. Fls. &Frs. : July – Dec.

4.5.1 2 gm powder of seed taken orally with sugar for 3 days after meals to cure fever.

10 gm seed powder is given to child for relief abdominal pain in Ghaghrat village.

4.5.2 50 gm seed powder is given orally to cure fever worms and flatulence.

4.5.4 Whole plant is natural fencing for farms.

4.7 Seeds are antispasmodic, antiperiodic, anthelmintic, amollient, febrifuge and appetizer.

4.1 ***Caesalpinia pulcherrima*** (L.) Swartz. (Caesalpiniaceae)

FGS, I : 265; FOB, I : 440; FBI, II : 255; ARM : 134

4.2 Galtoro.

4.3 Shrubs with rather slender, sometimes prickly branches ; leaves bipinnate, 10-45 cm long ; pinnae 4-12 pairs ; leaflets oblong, apiculate ; inflorescence 15-30 cm long racemes ; flowers orange – yellow or red ; pods straight, 5-8 cm long. Seed 8-10, obovate-oblong, smooth, glabrous.

4.4 Growing in gardens as an ornamental plant.

Fls. & Frs. : Throughout the year.

4.5.1 5 to 10 flowers taken early morning for 2 weeks to cure bronchitis.

4.5.4 Stem used as a firewood.

4.7 Leaves are laxative, abortifacient and antipyretic.

4.1 ***Cajanus cajan*** (L.) Mill. (Fabaceae)

Syn. *Cajanus indicus* Spreng.

FGS, I : 186; FOB, I : 435; FBI, II : 217; ARM : 102

4.2 Tuver.

4.3 Shrub, 1-3 m high, branches grey pubescent leaves trifoliolate, leaflates lanceolate, pubescent and glandular on both surfaces. Flowers racemose or panicled, yellow with reddish brown streaks. Pods linear-oblong, 2-4.5 cm long, pubescent, with oblique depression between the seeds; seeds smooth, globose.

4.4 Cultivated crop. Fls. & Frs. : Aug. – Apr.

4.5.1 10 ml fresh leaves juice is taken orally to cure oral ulcers, toothache and bleeding gums.

4.5.3 Dry seeds used as pulses (*Toor dal*) fresh seeds also use as vegetables.

4.5.4 Stem used as a fire wood

Stem are used for make a shelter and hut.

4.7 Whole plant hypoglycemic, hypolipidaemic.

4.1 ***Callistemon lanceolatus*** DC. (Myrtaceae)

Syn. *Callistemon coccineus* DC.

RNS: 248; ARM: 173

4.2 Bottle brush.

4.3 A small evergreen tree. Leaves narrow, lanceolate, pointed. Flowers red in long drooping spike like bottle brush. Fruit a small pyxis, ovid, truncated at apex.

4.4 Cultivated in garden, Fls. & Frs. : Feb. – Apr.

4.5.4 Dry stem and branches are used as a fire wood.

4.1 ***Calotropis gigantia*** (L.) R.Br. (Asclepiadaceae)

FGS, I: 423; FOB, II: 214; FNG: 277; FBI, IV: 17; ARM: 260

4.2 Safed Akado.

4.3 Evergreen shrub, 1.0 – 2.5 m high. Leaves sessile or sub-sessile, thick, elliptic-oblong, cordate, acute, white pubescent beneath, 7-13 x 3-6 cm flowers in umbellate cymes. Follicles paired, recurved, 7-10 x 3-4 cm; seeds flat, with 2-3 cm long coma.

4.4 Common. Fls. & Frs : Throughout the year.

4.5.1 Dried, powdered flowers (1-3 g) with honey are given thrice a day to cure cough used by rural people Taranga Hills.

Fresh milky latex is applied locally twice a day for 7 days to cure scabies.

4.6.1 Flowers are offered lord Hanumandada by all Community.

4.7 The plant part possesses antibacterial activity. Root anticancer, spasmolytic, effect on guinepiog heart, leaf anticancer.

4.1 ***Calotropis procera*** (Ait) R.Br. (Asclepiadaceae)

FGS, I: 423; FOB, II: 215; FNG: 277; FBI, IV: 18; ARM: 261

4.2 Akado.

4.3 Shrubs up to 1.5 m high. Leaves ovate-oblong, acute or sub-mucronate, glabrescent with age; flowers in umbellate cymes; follicles paired, recurved; seeds obovate.

4.4 Very common. Fls. & Frs. : Throughout the year.

4.5.1 Leaves along with turmeric and onion are applied on affected part of sprain, headache and other pains used (Bhandu village).

Put the latex drop on the paining teeth for relief.

4.5.2 Warmed crushed leaf along with sesame oil is applied locally to cure boils and swellings.

4.6.1 Flowers are offered to lord Hanumandada.

4.7 The leaf extract possesses anticancer activity. Plant is antiseptic, expectorant, emetic, diaphoretic, antiphloggist, leaves are antiphlogistic, acrid etc. latex is antiseptic, vesicant, prophylaxis etc.

4.1 ***Canavalia ensiformis*** (L.) DC. (Fabaceae)

Syn. *Canavalia gladiata* L., *Dolichos ensiformis* L.

FGS, I: 187; FNG: 256; FBI, I: 195; ARM: 103

4.2 Tarvardi (Fofalo)

4.3 Erect or semi erect, stout perennial or biennial twiner ; leaves alternate, pinnately tri-foliate compound ; in florescence racemes at ends of curved axillary ; fruit straight or slightly in curved ; seeds ellipsoid glabrous.

4.4 Common Fls. & Frs. : Aug.– Jan.

4.5.1 Leaf paste applied on the anus relieve pain in external piles. (Ubakhal village).

Stem bark ash mixed with lime is applied to relieve pain in Scorpion bite.

4.1 ***Cannabis sativa*** L. (Cannabaceae)

FGS, II: 648; FBI, V: 487; FOB, III: 160; ARM: 407

4.2 Ganjo (Bhang)

4.3 Annual, erect dioecious, pubescent herbs; leaves opposite below, digitate, 3-8-foliate compound; flower incomplete, zygomorphic; fruit reddish-brown, compressed, shiny; seed flattened oily.

4.4 Very rare. Fls. & Frs.: Not seen.

4.5.4 Infloresence (Ganjo) is smoked with tobacco(Narcotics).

4.6.1 Preparing an intoxicating drink (Bhang) from its leaves to which are added sugar, milk and dry almonds. To please lord ‘Shiva’ this drink is first offered to him and then consume themselves to enjoy is intoxicating effects in ‘Shivratri’.

4.7 Seed is astringent, carminative.

4.1 ***Capparis decidua*** (Forsk.) Edgew. (Capparaceae)

Syn. *Capparis aphylla* Roth.

FGS, I : 68; FOB, I : 49; FNG : 244; FBI, I : 174; ARM : 16

4.2 Kerdo, Ker.

4.3 A densely branching straggling glabrous shrub ; leaves simple, caducous ; flower red in many flowered corymbos on old branches ; fruit globular, glabrous, beaked ; seed numerous embedded in the pulp.

4.4 Common. Fls. & Frs. : Feb. – Sep.

4.5.1 Fresh juice extracted from branches is good for killing worms in the ear (Sunsi village).

4.5.3 Fruits are used in making pickl.

4.5.4 Wood used as fuel.

Whole plant is used as a natural fencing.

4.7 Roots and fruits are bitter, thermogenic, astringent, digestive and antibacterial, carminative, purgative, stimulant and tonic. Fruits are bitter, sweet, astringent, acrid, thermogenic and constipating.

4.1 ***Capparis sepiaria***. L. (Capparaceae)

FGS, I: 69; FOB, I: 51; FNG: 244; FBI, I: 177; ARM: 17

4.2 Kanthar.

4.3 Erect climbing shrubs; leaves ovate-elliptic, acute-emarginate, cuneate; flowers white, in many-flowered terminal subsessile umbels; pedicels filiform; sepals oval, concave ; petals oblong unequal ; stamens exceeding the petals ; fruit a globose berry deep purple.

4.4 Common. Fls. & Frs. : Feb. – June.

4.5.2 Ash of stem mixed with oil and applied externally on wound of cattle (Valam village).

4.7 Plant is antiseptic, febrifuge, alterative, tonic, blood purifier, expectorant, pungent, bitter etc.

4.1 ***Capparis zeylanica***. L. (Capparaceae)

Syn. *Capparis horrida*, L.

FGS, I: 69; FOB, I: 51; FBI, I: 178; ARM: 18

4.2 Granthila (Govindfal)

4.3 A climbing shrub; leaves ovate, obovate or elliptic – oblong, grey-tomentose beneath shortly petiolate; flowers white or creamy, supra-axillary; ellipsoid or nearly globose, deep-red bright-scarlet, glabrous, smooth.

4.4 Frequent. Fls. & Frs. : Dec.– Jun.

4.5.1 The leaf paste is applied on boils (Karsanbhai Vanjara).

4.7 Roots are Analgesic, sedative and stomachic.

4.1 ***Capsicum annuum*** L. var. ***acuminata*** Fingerh. (Solanaceae)

Syn : *Capcisum frutescens* Roxb.

FGS, I: 483; FBI, IV: 239; FOB, II: 347; ARM: 297

4.2 Marcha

4.3 Annual herbs or undershrub. Leaves simple, entire or repand. Flowers solitary or 2-3 axillary. Calyx broadly campanulate, subentire or with five small teeth. Corolla rotate, 5 – lobed valvate in bud. Berry various in size. Seeds discoid, smooth or subscabrous. Not very pungent.

4.4 Cultivated crop. Fls & Frs.: Throughout the year.

4.5.1 Lal mirch powder is applied locally on the dog bite by (Bhalgamda village).

4.5.3 Fresh & Dry fruits are use as spices & vegetable.

4.7 Capsaicin impaired hypothalamic neuron from regulating against overheating in hot environment in rats.

4.1 ***Cardiospermum halicacabum*** L. (Sapindaceae)

FGS, I: 163; FOB, I: 283; FNG: 254; FBI, II: 670; ARM: 90

4.2 Kagdoliyo.

4.3 Slender, glabrous or sparsely hairy, climbing annual and perennial climber ; leaves alternate, deltoid, 2-3 ternate, compound ; flower minute, white, complete, zygomorphic with eccentric androecium ; fruit capsule 3.5 x 3 cm, trigonously pyriform ; seed globose, smooth, black, arillate.

4.4 Very Common. Fls. & Frs. : July – Feb.

4.5.1 Leaves are fried and applied to the pubes to increase menstrual flow.

4.7 Roots are diuretic, emetic, laxative, seeds are tonic and astringent. Leaves are rubefacient, diuretic, laxative and emetic etc.

4.1 ***Carica papaya*** L. (Caricaceae)

FGS, I : 315; FBI, II : 599; FOB, I : 557; ARM : 183

4.2 Papaya.

4.3 A soft wooded tree with large palmately lobed leaves, the lobes again variously lobed. Flowers greenish white or white, females large solitary or in short cymes, males panicled. Sepals and petal in alternating whorls. Fruit variable in size. Seeds spherical, blackish-brown.

4.4 Cultivated. Fls. & Frs.: Throughout the year.

4.5.1 Latex of carica papaya is used to cure gum swelling.

The pulp of ripe papaya fruit is very useful in digestion.

4.5.3 Fruits are edible.

4.7 Fruits are anthelmintic, carminative, laxative, digestive, diuretic and antifungal, aphrodisiac, appetizer, digestive and demulcent. Latex is anthelmintic, anodyne, laxative, digestive, febrifuge and tonic. Seeds are anthelmintic, abortifacient and emmenagogue.

4.1 ***Carissa congesta*** Wt. (Apocynaceae)

Syn. *Carissa carandas* auct.

FGS, I: 415; FOB, II: 186; FNG: 276; FBI, III: 630; ARM: 250

4.2 Karamadi.

4.3 A large evergreen shrubs up to 5 m; leaves opposite, coriaceous, elliptic-oblong or ovate-oblong, rarely obovate; flower white. Complete, actinomorphic, hermaphrodite; fruit Berries 1-1.4 cm long, ovoid-oblong or ellipsoidal; seed 4 or more.

4.4 Common. Fls. & Frs. : Feb.- June.

4.5.3 Fruit are eaten by tribal people and also making pickl.

4.7 Roots are antiscorbutic, stomachic. Unripe and ripe fruit is astringent, bitter, appetizer and antipyretic. Ripe fruit is sweet, cooling, appetizer and antiscorbutic.

4.1 ***Cassia absus*** L. (Caesalpiniaceae)

FGS, I : 267; FOB, I : 451; FNG : Ad.No. 253; FBI, II : 265; ARM : 135

4.2 Chimed, Chamed.

4.3 45-75 cm tall, suffruticose, erect, annual herbs ; leaves alternate, abruptly pinnately compound long petioled ; flower $\pm$ 1.5cm across, pure yellow or tinged red ; fruit pods falcate, short, stiptate ; seed shining black.

4.4 Not Common. Fls. & Frs. : Aug – Dec.

4.5.1 Seeds powdered minutely and then applied in eye in case of conjunctivitis and other ophthalmic diseases (Pedhamali village).

4.7 Leaves and seeds are bitter, astringent, acrid, constipating cooling and ophthalmic.

4.1 ***Cassia auriculata*** L. (Caesalpiniaceae)

FGS, I : 268; FOB, I : 448; FNG : 261; FBI, II : 263; ARM : 136

4.2 Aval.

4.3 Shrubs ; stipules large, foliaceous, reflexed, reniform ; leaflets 8-12 pairs elliptic oblong, obtuse, and minutely apiculate, with subulate glands in between ; corymbs axillary and terminal, often panicled ; bracts ovate ; flowers yellow ; pod flat, dehiscent, 10 x 1.5 cm, obtuse at apex with age.

4.4 Very Common. Fls. & Frs. : Throughout the year.

4.5.1 Paste of leaves is applied on boils.

4.5.2 Leaf paste is applied to cure boils, swellings and wounds.

4.7 Roots are astringent, cooling leaves are anthelmintic, laxative, antiseptic and seeds are constipating, depurgative and stomachic.

4.1 ***Cassia fistula*** L. (Caesalpiniaceae)

FGS, I : 268; FOB, I : 444; FBI, II : 261; ARM : 137

4.2 Garmalo.

4.3 Medium sized deciduous trees; Bark of Young Branches smooth, grey, of old Branches rough, brown. Leaves 20-40 cm long; leaflets 3-8 pairs, ovate-oblong, 5-15 x 4.9 cm. flowers in 10-40 cm long drooping racemes, large, bright lemon yellow. Pods long many-seeded and black.

4.4 Planted along road side and garden.

Fls. : Mar.-June Frs. : Throughout the year.

5.1 Root juice (about 50g root crushed in a cup of water) is taken twice a day for 3-4 days to cure fever.

One teaspoonful powder of seed is given once in the morning for 15 days or more to cure diabetes used (Chaudhari community of Kheralu Taluka).

Ash of fruit along with honey (2-3 g.) is given in whooping cough (Thakor People of Kheralu Taluka).

5.2 25-30 gms powdered stem bark with cold water is given twice daily for 3-4 days to goats to control diarrhoea.

4.5.4 Dry stem are used as a fire wood.

4.6.4 Fast growing species, good for reforestation.

4.7 The plant part possesses antiviral, antibacterial and antifungal Activities. Stem bark and pod anticancer and hypoglycemic.

4.1 ***Cassia italica*** (Mill.) Lam. subsp. ***Micrantha*** Brenan. (Caesalpiniaceae)
Syn. *Cassia obtusa* Roxb.

FGS, I : 269; FOB, I : 448; FNG : 262; FBI, II : 264; ARM : 138

4.2 Mindhi Aval.

4.3 30-60 cm, diffuse, perennial, herbs ; Leaves 3-10 cm long, alternate, abruptly pinnately compound ; flower yellow, few ; pedical very short ; bracts ovate ; fruit pods flat, papery, glabrous, oblong ; seed 6-12, cuneate, wedge shaped, polished, dark-brown.

4.4 Not Common. Fls. & Frs. : June – Jan.

4.5.1 10 gm eaves powder is taken orally for two days in constipation (Raghjibhai Desai).

4.5.2 Powder/paste of dry or green leaves are fed to animal against constipation.

4.7 Leaves are laxative and carminative.

4.1 ***Cassia occidentalis*** L. (Caesalpiniaceae)

FGS, I : 271; FOB, II : 445; FNG : 261; FBI, II : 262; ARM : 139

4.2 Kasundro.

4.3 Stout, suffruticose, herb or undershurb. Leaves 10-20 cm long ; leaflets 3-5 pair, ovate-lanceolate or oblong. Flowers in corymbose racemes, yellow. Pods 7-12 cm. long, septate, 20-30 seeded. Seeds subcylindirc, greenish-brown, smooth, glabrous.

4.4 Very Common. Fls. & Frs. : Throughout the year.

4.5.1 Chewing of roots is a good treatment for snake bite.

Roasted fruit and seeds are crushed and about 1 gm powder with 5-10 ml ripe seed oil is applied in scabies.

4.7 Leave and seeds are bitter, acrid, and laxative, and roots are diuretic, anti inflammatory and tonic,

4.1 ***Cassia pumila*** Lamk. (Caesalpiniaceae)

FGS, I : 272; FOB, I : 452; FNG : 262; FBI, II : 266; ARM : 140

4.2 Nani Chimed.

4.3 Prostrate, procumbent or suberect suffruticose herbs ; leaves alternate, abruptly pinnately compound ; flower 0.4 – 1 cm across, pale to bright yellow ; fruit pods 1.1-3.2 x 0.3–0.4 cm, linear – oblong or linear-lanceolate, pale to dark-brown ; seed subquadrate or trapezoidal, brown.

4.4 Rarely noted in rainy season. Fls. & Frs. : Aug - Dec.

4.7 Seeds are purgative.

4.1 ***Cassia tora*** L. (Ceasalpinaceae)

FGS, I : 274 ; FOB, I : 447; FNG : 261; FBI, II : 263; ARM : 141

4.2 Kuvadiyo.

4.3 Annual erect herbs or under shrub. Leaves 5-10 cm long; leaflets 0.5 - 5.0 x 0.5 – 2.5 cm with glands between the two lower pairs of leaflets. Peduncles 1-2 flowered. Flowers yellow, pedicels 4-10 mm long, petals

8-10 mm long. Pods sub tetragonal, 10-20 cm long on 5-15 mm long pedicels.

4.4 Very common. Fls. & Frs. : Aug.-Dec.

4.5.1 Leaf paste is used in skin diseases like dermatocycosis (Rajpur Village of kadi Taluka).

The massed leaves of this plant mixed with lemon juice is used for curing blemishness.

4.5.4 Seed powder mixed with coffee.

4.7 Leaf extract possesses antibacterial activity.

Seed spasmolytic. Whole plant diuretic, Antiviral.

4.1 ***Casuarina equisetifolia*** L. (Casuarinaceae)

FGS, II: 648; FOB, III: 161; FBI,V: 859; ARM : 408

4.2 Sharu.

4.3 Evergreen trees, 10-20 m tall, with brown to blackish brown bark; leaves reduced to scales, in whorled of 6-8. Male spikes terminal; female fascicles globose or ovoid at ends of lateral branches. Nuts winged, minute, crowded into a woody cone.

4.4 Common planted in gardens.

Fls. & Frs.: Throughout the year.

4.5.4 Stem used as a fire wood.

4.7 Bark is astringent.

4.1 ***Catharanthus pusillus*** (Murr.) G.Don.(Apocynaceae)

Syn. *Lochnera pusilla* (Murr.) K.

FGS, I : 416; FOB, II : 191; FNG : 276; FBI, III : 640; ARM : 251

4.2 Morali (Sangkhi)

4.3 40-80 cm, erect or diffuse annual herbs ; leaves opposite, decussate, elliptic-lanceolate ; flower white, complete, actinomorphic, hermaphrodite ; fruit follicles ; linear, paired, straight. Glabrous ; seed black, cylindric, end rounded.

4.4 Common in cultivated fields. Fls. & Frs. : July – Sept.

4.5.1 Plant is dried, boiled in oil and then applied on rheumatism.

4.7 Leaves are anti-inflammatory and vesicant.

4.1 ***Catharanthus roseus*** (L.) G. Don. (Apocynaceae)

Syn. : *Vinca rosea* L. ; *Lochnera rosea* (L.) Reichb.

FGS, I: 416; FOB, II: 192; FBI, III: 640; ARM: 252

4.2 Barmasi.

4.3 Beautiful herbaceous, 1-2 ft. high. Leaves deep-green, oval, obovate or oblong. Flowers pure white or deep rose, usually paired and sessile in the axills. Corolla 2-5 cm in diameter. Base of petiole 2 – glandular. Seeds black, cylindric, ribbed.

4.4 Cultivated in kitchen gardens as ornamental plant.

Common. Fls. & Frs. : Throughout the year.

4.5.1 100 ml leaf decoction is taken orally for a month in empty stomach for diabetes.

4.7 Cathranthamine from stem showed anti-tamour activity.

4.1 ***Cayratia carnosa*** (Lam.) Gagnep. (Vitaceae)

Syn. *Vitis trifolia* auct..

FGS, I: 159; FOB, I: 271; FNG: 254; FBI, I: 654; ARM: 89

4.2 Khat Khatumbo.

4.3 4 m, slender, scandent, herbaceous climbers; leaves 7-9 cm, cauline & ramal, alternate, trifoliate; flower greenish-white, complete, hermaphrodite, and actinomorphic ; fruit berry 0.6 – 1 cm across, globose, obovoid.

4.4 Very Common. Fls. & Frs. : July – Oct.

4.5.1 A paste of whole plant is prepared in water and given (10-20 g) on empty stomach, till cure, in cases of bleeding piles (Gunchhali village).

4.7 The plant is astringent, diuretic, blood purifier, antipyretic, laxative and sedative.

4.1 ***Celastrus paniculata*** Willd. (Celastraceae)

FGS, I: 152; FOB, I: 245; FNG: 253; FBI, I: 617; ARM: 82

4.2 Malkangani.

4.3 Scrambling or climbing shrub with lenticellate branch leaves obovate, serrulate flowers green and yellow in terminal panicled cymes. Capsule yellow 3-lobed with red arilled seeds.

4.4 Frequent. Fls. & Frs. : Apr.-Nov.

4.5.1 Seed oil mixed with mustard oil in equal quantities and applied externally to cure eczema.

4.7 Stem bark abortifaceint. Seeds are bitter, laxative, emetic, alterative, stimulant, aphrodisiac and brain tonic. Oil from seed is stimulant and rubefacient.

4.1 ***Celosia argentea*** L. (Amaranthaceae)

FGS, I : 594; FOB, II : 570; FNG : 293; FBI, IV : 714; ARM : 367

4.2 Lambdi, Lopadi.

4.3 Annual erect herbs with green or reddish stem. Leaves linear spikes terminal, ovoid or subcylindric, 2-10 cm long, glistening white with pink tips. Flowers white with pink tips ; bracts and bracteoles persistent. Utricles ovoid, calyx 3 mm long. Seeds spherical, compressed, dark-black, smooth, glabrous.

4.4 Common weed plant in Becharaji taluka.

Fls. & Frs. : Aug – Dec.

4.5.1 20-25 g seeds are given orally in diarrhoea.

Paste of leaves applied on boils (Chandansinh Rajput).

Leaf paste applied on poisonous insect sting (rural people of Becaraji Taluka).

4.7 Seeds are diuretic, cooling, blood purifier and astringent.

4.1 ***Centella asiatica*** (L.) Urb. in Mart. (Apiaceae)

Syn. *Hydrocotyle asiatica* L.

FGS, I: 341; FBI, II: 669; FOB, I : 598; ARM : 208

4.2 Brhami.

4.3 Radially creeping, 30-40 cm long herbs. Leaves 2-3.2 cm in diam., broadly subordicular to reniform, glabrous. Flowers pink or red, in

axillary, fasciculate umbels. Fruit 0.4-0.5 cm long, ovoid, reticulately wrinkled, primary and secondary ridges distinct.

4.4 Cultivated Fls. & Frs. : Throughout the year.

4.5.1 The leaves are used in hair-oil as cooling agent and sedative to nerves and brain.

4.7 Leaves are alexiteric, stimulant, antipyretic, alterative, diuretic, tonic, astringent and cooling.

4.1 ***Ceropegia bulbosa*** Roxb. (Asclepiadaceae)
FGS, I : 423; FOB, II : 240; FNG : 278; FBI, IV : 67; ARM : 262

4.2 Kundher.

4.3 Twining slender perennial herbs, climber ; leaves opposite, orbicular ; inflorescence in lateral umbellate cymes ; flower complete, actinomorphic ; fruit follicles paired, glabrous, cylindric ; seed numerous, ovate-oblong.

4.4 Rare in Taranga Hill. Fls. & Frs. : July – Dec.

4.5.1 The Tubers are used to cure eye diseases.

4.5.3 The leaves and tubers are eaten.

4.7 Aphrodisiac and tonic.

4.1 ***Cestrum diurnum*** L. (Solanaceae)
FGS, I : 484; ARM : 298

4.2 Din Ka Raja.

4.3 1-3 m, erect, much-branched shrubs having lenticellate branches ; leaves alternate, elliptic-oblong or elliptic-lenceolate ; inflorescence in 1.5 – 6 cm long, axillary panicles ; flower ivory white, sweet scented ; Berries deep-purple or nearly black.

4.4 Cultivated as a ornamental plant in gardens
Fls. & Frs. : Throughout the year.

4.7 Seeds are anti-fungal and inflammations.

4.1 ***Cestrum nocturnum*** L. (Solanaceae)
FGS, I : 484; ARM : 299

4.2 Rat - Rani, Jasmin.

4.3 1.5 – 2 m erect, much-branched shrubs ; leaves simple, entire, acute ; inflorescence axillary or terminal ; flower very fragrant, greenish-white or creamy-white ; berries 0.5 – 1 cm across, white or deep-purple,

4.4 Cultivated in gardens as an ornamental plant.
Fls. & Frs. : Throughout the year.

4.7 Fruits are antispasmodic and epilepsy.

4.1 ***Chenopodium album*** L. (Chenopodiaceae)
FGS, I: 599; FOB, II: 586; FNG: 294; FBI, V: 3; ARM: 376

4.2 Chill Ni Bhaji.

4.3 20-90 cm annual erect herbs ; leaves toothed or irregularly lobulate ; inflorescence axillary and terminal ; flower green, clustered, sessile ; fruit utricles $\pm$ 0.15 cm across. membranous ; Seeds orbicular, compressed, black.

4.4 Common weeds in crop fields. Fls. & Frs. : Nov. – Apr.

4.5.3 Leaves are used as a vegetable.

4.7 Whole plant is anthelmintic, diuretic and laxative.

4.1 ***Cicca acida*** (L.) Merr. (Euphorbiaceae)
Syn : *Phyllanthus distichus* Muell.
FGS, II: 617; FBI, V: 304; FOB, III: 85; ARM: 382

4.2 Khata Ambala.

4.3 5 - 8 m, glabrous, robust, deciduous tree ; leaves alternate, pinnately compound, inflorescence densly clustered on pendulous branches on old wood in elongate ; flower reddish. Drupes yellow, some-what lobed, globose, creamy-to pale-yellow when ripe.

4.4 Common, Fls. & Frs. : Mar – June.

4.5.1 Fruit use for blood purification source of vitamin-C (Vishnubhai Patel).

4.5.3 Fruit use in preparation of jams (Murabba)

4.1 ***Cicer arietinum*** L. (Fabaceae)
FGS, I : 189; FBI, II : 176; FOB, I : 435; ARM : 104

4.2 Chana.

4.3 Diffuse herbs ; leaves ovate – oblong or obovate, glandular-pubescent, serrate ; flowers violet – purple ; axillary, solitary, pods turgid, 1-2 seeded, glandular – pubescent, seeds smooth, brown.

4.4 Cultivated crop. Fls. & Frs. : Oct - Mar.

4.5.1 Seed powder used as face pack.

4.5.2 Fresh leaf juice is fed to animal against constipation.

4.5.3 Seeds are use as a pulses.

Seed powder using in make in farsana and sweets.

Whole plant is use as a fooder.

4.6.1 Rosted seeds are offered on Friday to goddess '*Santoshimata*' by the tribals as well as educated people in Mehsana district.

4.7 Seeds are astringent, antibilious, expectorant, aphrodisiac and diuretic. Juice of leaves stomachic and laxative.

4.1 ***Cissampelos pareira*** L. (Menispermaceae)

FGS, I: 53; FOB, I : 24; FNG : 242; FBI, I : 103; ARM : 4

4.2 Venivel.

4.3 Twining shrubs; leaves ovate-orbicular, obtuse, apiculate, base cordate, glaucous beneath; inflorescence a raceme; fruits globose, deep red.

4.4 Common. Fls. & Frs. : June-Oct.

4.5.1 5-10 ml juice of aerial part is taken orally twice a day before meals to treat headache (Kherpur village).

4.7 Root anticancer, hypoglycemic; fruit antiviral.

4.1 ***Cissus quadrangularis*** L. (Ampeliedeae)

Syn.Vitis quardrangularis Wall.,

FGS, I: 160; FBI, I: 645; FOB, I: 266; ARM: 88

4.2 Hadsankal.

4.3 Succulent, tendril climbers ; leaves alternate, entire or lobed ; flower $\pm$ 0.7 cm across, greenish – white or cream – white, complete, actinomorphic ; fruit Berries 0.4 – 1.7 cm across, globose, ellipsoidal or ovoid, glabrous, purple ; seed rugulouse, smooth.

4.4 Frequent. Fls. & Frs. : June – Dec.

4.5.1 Stem juice is applied on swellings of bone fracture (Takhor Community).

4.7 Juice of plant is alterative, antiseptic, emmenagogue, digestive and blood purifier.

4.1 ***Citrullus colocynthis*** (L.) Schrader. (Cucurbitaceae)

Syn. *Cucumis colocynthis* L.

FGS, I: 318; FOB, I: 571; FNG: 267; FBI, II: 620; ARM: 187

4.2 Indravarna.

4.3 Prostrate, perennial, scabrid – hairy herbs ; leaves simple, alternate, deeply 3-7 lobed ; inflorescence axillary solitary ; male flower pale-yellow, monoecious ; berries globular, variegated, green & white ; seed pale brown.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 5ml root extract is taken 15 days to cure jaundice.

25g powder of dry fruits is taken orally twice a day for a week in diabetes.

4.7 Fruit is bitter, hydrogogue, abortifacient, emmenagogue, catheric and emetic. Root is carminative, antipyretic, bitter, pungent and cathartic.

4.1 ***Citrus limon*** (L.) Burm.f. (Rutaceae)

FGS, I : 144; FOB, I : 201; FNG : 252; FBI, I : 515; ARM : 70

4.2 Limbu.

4.3 2-6 m, thorny, small trees; leaves alternate, exstipulate palmately compound ; inflorescence axillary ; flower white, fragrant ; berry ; globose or ovoid bright yellow ; seed many, smooth, glabrous.

4.4 Cultivated crop. Fls. & Frs. : Throughout the year.

4.5.1 One glass lemon juice with water is taken orally to cure stomachic trouble.

4.5.2 Lemon juice boiled in water and is given orally to animal three times a day to cure food poisoning.

4.6.1 The rural people tie the lemon along with green fresh chillies to main gate of shop to ward of the evil spirits.

4.7 Fruits are antioxidant, diuretic, anthelmintic, antiseptic and mosquito repellent.

4.1 ***Citrus medica*** L. (Rutaceae)

RNS: 132; FOB, I: 201; FNG: 252; FBI, I: 514; ARM: 71

4.2 Bijoru.

4.3 A tree with a short indistinct trunk and short, thick irregular thorny branches armed with short sharp thorns, leaves large, oval-oblong ; flowers large, axillary ; fruits lemon-yellow, large, oblong to oval, sometimes ridged, rind thick, pulp sparse, aromatic, sweet, juice sacs small, slenders ; seeds oval.

4.4 Frequent. Fls. & Frs. : Throughout the year.

4.5.1 Juice of one fruit is taken orally for 3 days to cure kidney stone.

4.7 Root is laxative, anthelmintic and diuretic.

Flowers are astringent and appetizer. Seeds are anti-inflammatory and tonic. Fruits are emollient, sour astringent, diuretic, refrigerant, carminative and digestive.

4.1 ***Cleome gynandra***. L. (Capparaceae)

Syn. *Gynandropsis pentaphylla* (L.) DC.

FGS, I: 72; FOB, I: 42; FNG: 244; FBI, I: 171; ARM: 19

4.2 Dholi talavani. (Ghandhatu)

4.3 30-80 cm, annual erect, viscidly, hairy herbs ; leaves alternate, exstipulate, palmately compound ; inflorescence at first 2.5 cm long corymbose ; flower complete, actinomorphic ; capsules linear-cylindric ; seed depressed spherical, blackish-brown.

4.4 Common. Fls. & Frs. : June–Dec.

4.5.1 5ml decoction of seed is given orally in typhoid (Vamta village).

The paste of leaves applied externally on boils to prevent the formation of pus.

4.7 Seeds are bitter, anthelmintic, carminative and stimulant. Leaves are antiseptic, vesicant, rubefacient and anthelmintic. Roots are antiphlogistic and diaphoretic.

4.1 ***Cleome viscosa*** L. (Capparaceae)

FGS, I: 73; FOB, I: 41; FNG: 243; FBI, I: 170; ARM: 20

4.2 Pili talavani.

4.3 30-100 cm, annual, erect, glandular pubescent herbs ; leaves alternate, exstipulate, palmately compound; inflorescence axillary ; flower yellow, bracteate, complete ; capsules erect ; hairy, terete, obliquely striate ; seed numerous, dark-brown or reddish-brown, reniform.

4.4 Common in rainy season. Fls. & Frs. : Throughout the year.

4.5.1 Paste of leaves is applied externally in the treatment of boils.

4.7 Seeds are Anthelmintic, inflammations.

4.1 ***Clerodendrum inerme*** (L.) Gaertn. (Verbenaceae)

FGS, I: 558; FOB, II: 511; FBI, IV: 589; ARM: 339

4.2 Vad Mahndi (Kadavi Mahndi)

4.3 1.5 – 3 m, evergreen, glabrous or sparsely hairy shrubs; leaves opposite, decussate, coriaceous; inflorescence in axillary; flower complete, white; fruit drupes deep-purple or nearly black, globose, glabrous; seed oblong, albumen absent.

4.4 Cultivated in gardens as an ornamental plants.

Fls. & Frs. : Throughout the year.

4.5.1 Leaf paste is applied to cure Rheumatism (Chhaguji Thakor).

4.7 Leaves are blood purifier, bitter, febrifuge and alterative.

4.1 ***Clerodendrum multiflorum*** (Burm.f.) O.Ktze. (Verbenaceae)

Syn. *Clerodendrum phlomidis* L.

FGS, I : 559; FOB, II : 511; FNG : 291; FBI, IV : 590; ARM : 340

4.2 Arani.

4.3 2.5 – 4 m, erect shrubs ; inflorescence in small axillary ; flower creamy-white ; fruit drupes 0.4 – 0.6 cm across, blackish obovoid.

4.4 Common. Fls. & Frs. : Oct.- Feb.

4.5.1 The fresh leaves are bounded over the eyes in ophthalmic burning used (Thakor People of Vasai Village).

10ml leaves juice is taken to cure back pain after delivery (Shanghapur village).

4.5.2 Leaf paste is applied locally to cure septicemia, worms and foot diseases.

4.7 Leaves are anthelmintic, demulcent, antipyretic, anti-inflammatory, laxative, bitter and alterative.

4.1 ***Clitoria ternatea***. L. (Fabaceae)

FGS, I : 190; FBI, II : 208; FOB, I : 405; ARM : 105

4.2 Garni Bibri.

4.3 Up to 6 cm, slender, perennial, rambling twinner ; leaves alternate imparipinnately compound ; inflorescence axillary, solitary ; flower blue or white ; fruit pods 6-10 x 1 – 1.5 cm, linear – oblong ; seed oblong, compressed.

4.4 Common, Fls. & Frs. : Throughout the year.

4.5.1 Extract of leaves is used to cure eye complains.

4.7 Whole plant Aphodisiac, diuretic and purgative.

4.1 ***Coccinia grandis*** (L.) Voigt. (Cucurbitaceae)

Syn. *Coccinia indica* wight. & Arn.

FGS, I: 319; FOB, I: 572; FNG: 268; FBI, II: 621; ARM: 188

4.2 Gilodi. (Tindora)

4.3 Climbing herbs with long tuberous roots; leaves with a few glistening glands on the midrib towards the base; flowers dioecious; bracts absent, female flowers solitary, peduncle slender; fruit ovoid or elliptic.

4.4 Common. Fls. & Frs.: Throughout the year.

4.5.1 Two fruits taken orally in empty stomach for diabetes.

4.5.3 Fruit are used as Vegetable.

4.7 Root is emetic and aphrodisiac. Leaves and stem are antispasmodic, andexpectorant.

4.1 ***Cocculus hirsutus*** (L.) Diels. (Menispermaceae)

Syn. *Menispermum hirsutum* L., *Cocculus villosus* DC.

FGS, I: 54; FOB, I: 22; FNG: 242; FBI, I: 101; ARM: 5

4.2 Vevadi.

4.3 About 6 m, straggling, scandent, perennial, dioecious climber ; leaves alternate ; inflorescence axillary cymose panicles ; flower dioecious, unisexual ; fruit drupes 0.2 – 0.4 cm across, keeled.

4.4 Common. Fls. & Frs. : Nov. – Apr.

4.5.1 One teaspoonful root extract in water is given orally once daily for 2-3 days to cure diarrhoea and dysentery (Tribals of Taranga Hill & Satlasna Taluka).

4.7 Root is pungent, refrigerant, diaphoretic, blood purifier and antipyretic.

4.1 ***Cocos nucifera*** L. (Arecaceae)

FGS, II: 693; FOB, III: 322; FBI, VI: 482; ARM: 434

4.2 Nariel.

4.3 Tree, 8-15 m tall with straight or slightly bent trunk; leaves pinnate; inflorescence spadix, androgynous, at length dropping; fruit drupes fibrous.

4.4 Planted. Fls. & Frs. : Throughout the year.

4.5.1 Ash of pericarp is applied for treatment of piles.

4.5.3 Endosperm of fruit is edible.

4.5.4 Leaves midribs used as a broom.

Leaves used for thatching the roof of their houses.

4.6.1 Dried fruit is used on several social and religious occasions.

4.6.3 One of the important plants of economic importance.

4.7 Coconut milk is nutritive, anthelmintic, diuretic, aperients and refrigerant. Root is diuretic. Oil is rubefacient, hair tonic and antiseptic.

4.1 ***Coldenia procumbens*** L. (Boraginaceae)

FGS, I : 449; FOB, II : 271; FNG : 279; FBI, IV : 144; ARM : 277

4.2 Okhrad.

4.3 Prostrate, glaucous – green villous herbs usually lying quite flat on ground ; leaves alternate, thick-coriaceous ; inflorescence axillary solitary ; flower pale-yellow, complete ; fruit drupe, a dry 4 - lobed pyramid, conical ; seed albuminous.

4.4 Common, Fls. & Frs. : Nov. – June.

4.5.1 Leaf extract is applied on knee pain (Titadan village).

4.1 ***Combretum ovalifolium*** Roxb. (Combretaceae)

FGS, I: 299; FOB, I: 515; FNG: Ad.No. 253; FBI, II: 458; ARM: 166

4.2 Madhval.

4.3 A large, wood, scandent, deciduous, climber up to 25 (40) m ; leaves opposite, decussate broadly ovate ; inflorescence axillary ; flower yellow, complete, sessile ; fruit globose, 4-winged ; Wings entire or jagged, very faintly veined.

4.4 Planted near house for its beautiful flowers.

Fls. & Frs. : Jan. – May.

4.7 Leaves are anthelmintic and astringent.

4.1 ***Commelina benghalensis*** L. (Commelinaceae)

FGS, II : 687; FOB, III : 291; FNG : 301; FBI, VI : 370; ARM : 430

4.2 Shish Muliyu.

4.3 Diffuse or suberect, procumbent glabrescent herbs ; leaves alternate, elliptic – ovate or elliptic – oblong ; inflorescence in racemes ; flower bright blue, white ; fruit capsule 0.4 – 0.5 cm long. Pyriform, membranous; seed sub quadrate truncate.

4.4 Common. Fls. & Frs. : Aug. – Jan.

4.5.1 Two teaspoonfuls fresh plant juice (about 2 or 3 branches crushed by mortar and pestle) is taken twice a day for a week for its cooling effect on the body (Shankarbhai Raval).

4.5.3 Common weed growing in monsoon and eaten by grazing animals.

4.7 Seeds are stimulant, diuretic.

4.1 ***Commelina diffusa*** Burm.f. (Commelinaceae)

Syn. *Commelina nudiflora* auct.

FGS, II : 687; FOB, III : 290; FNG : 301; FBI, VI : 369; ARM : 431

4.2 Moti Shishmuliyu.

4.3 30-60 cm annual, creeping, prominent herbs; leaves alternate, sessile, lanceolate or ovate-lenceolate; inflorescence a spathe; flower blue or white; fruit capsule oblong; seed oblong-cylindric.

4.4 Throughout common. Fls. : Aug. – Oct.

4.5.3 Common weed growing in monsoon and eaten by grazing animals.

4.7 Plant is laxative, refrigerant, emollient and demulcent.

4.1 ***Commelina forskalaei*** Vahl. (Commelinaceae)

FGS, II : 688; FOB, III : 292; FBI, VI : 371; ARM : 432

4.2 Nanu sishmuliyu

4.3 Prostrate or sub erect herbs ; leaves alternate, linear to linear-oblong, sparsely hairy; flower blue, complete, zygomorphic ; fruit capsule seed of dorsal cell oblong, ends rounded.

4.4 Fls. & Frs. : July – Oct.

4.5.1 Plant extract is massaged taken orally twice a day for 15 days to cure rheumatism and body swelling.

4.5.3 Common weed growing in monsoon and eaten by grazing animals.

4.1 ***Commiphora wightii*** *(*Arn.) Bhandari in Bull. (Burseraceae)

Syn. *Commiphora mukul* (Hk.f.) DC.

FGS, I : 148; FOB, I : 212; FBI, I : 529; ARM : 78

4.2 Gugal.

4.3 1-2.5 m, deciduous, bushy, balsamiferous, trees ; leaves alternate, trifoliate compound ; inflorescence fascicled cymes ; flower brownish red, polygamous ; fruit drupes 0.4 – 0.8 cm across, ovoid, shortly beaked.

4.4 Rare. Fls. & Frs. : Jan.-May

4.5.2 Chopped stem and leaves mixed with buttermilk, kept in earthen pot are fed to animals to treat rheumatism.

4.5.4 Fumes of gum is used as air freshener by rural people.

4.7 Whole plant is Aphrodisiac, ascites, indigestion, laxative and stomachic.

4.1 ***Convolvulus arvensis*** L. (Convolvulaceae)

FGS, I : 461; FBI, IV : 219; FOB, II : 303; ARM : 282

4.2 Veldi, Khetrau Phudardi.

4.3 Glabrous, root stock creeping herbs; leaves alternate, ovate – triangular or linear – oblong: inflorescence axillary, solitary; flower bright-rosy-purple, complete; fruit capsule 0.4 – 0.6 cm long, glabrous, globose.3

4.4 Common, Fls. & Frs. : Oct. – Jan.

4.5.1 The leaf paste is used to remove warts from the skin by rural people.

4.7 The Roots is Purgative.

4.1 ***Convolvulus microphyllus*** (Roth.) sieb. (Convolvulaceae)
FGS, I : 462; FOB, II : 301; FBI, IV : 218; ARM : 283

4.2 Shankhavli, Dholi Shankhavli.

4.3 Prostrate or suberect, 15-30 cm long, hairy herbs ; leaves alternate, linear–oblong or elliptic – oblong ; inflorescence in axillary or on short lateral branches ; flower pale to bright rosy ; fruit capsule 0.4 – 0.5 cm across, ellipsoidal, dark-brown ; seed glabrous.

4.4 Common, Fls. & Frs. : Throughout the year.

4.5.1 Extract of whole plant is taken orally for a month as brain tonic.

4.7 Whole plant is purgative and blood purifier.

4.1 ***Corchorus aestuans*** L. (Tiliaceae)
Syn. *Corchorus acutangulus* Lam.
FGS, I : 126; FOB, I : 160; FNG : 251; FBI, I : 398; ARM : 57

4.2 Chhunch.

4.3 Annual, prostrate or diffuse suffrutescent herbs ; leaves alternate, broadly ovate ; inflorescence axillary ; flower yellow, complete, actinomorphic ; fruit capsule 2.5-4 x 0.5 cm, terete, 6 – angled, 3 winged ; seed brownish – black.

4.4 Common. Fls. & Frs. : Aug.-Dec.

4.5.1 Infusion of crushed fruit is given in fever and pneumonia.

4.7 Fruit are nutritive, diuretic, stomachic, astringent and aphrodisiac.

4.1 ***Corchorus capsularis*** L. (Tiliaceae)
FGS, I : 127; FNG : 250; FBI , I : 397; FOB, I : 157; ARM : 58

4.2 Shan. (Bor Chhunchi)

4.3 40-200 cm tall, erect, glabrous, annual (very tall under cultivation) herbs ; leaves simple, alternate, ovate-lanceolate ; inflorescence axillary ; flower buds obovoid ; fruit green, black on drying ; seed smooth, glabrous.

4.4 Common, Fls. & Frs. : Aug.-Dec.

4.5.1 Powdered fruit with curd is given twice a day in dysentery.

4.7 Leaves are demulcent, tonic, antipyretic. Stomachic, carminative, cooling and diuretic. Seeds are purgative.

4.1 ***Corchorus tridens*** L. (Tiliaceae)

FGS, I : 128; FOB, I : 159; FNG : 252; FBI , I : 398; ARM : 59

4.2 Chuncho.

4.3 30-100 cm, erect or sub erect, annual, slender herbs ; leaves alternate, simple ; inflorescence leaf opposed ; flower yellow, sessile or sub sessile ; fruit erect, stout, truncate ; seed brownish-black, truncate.

4.4 Common. Fls. & Frs. : Aug.-Sep.

4.5.1 Whole plant crushed with curd and taken in digestive disorder.

4.1 ***Corchorus trilocularis*** L. (Tiliaceae),

FGS, I : 128; FOB, I : 158; FNG : 250 : FBI , I : 397; ARM : 60

4.2 Tridhari Chunch.

4.3 20-50 cm or up to 1 m, annual or perennial ; leaves basally 3-4-nerved, alternate, simple ; inflorescence solitary or 2-3-fasicled cymes ; flower yellow ; fruit capsule straight or slightly curved ; seed trigonous, black.

4.4 Common. Fls. & Frs.: July-Apr.

4.5.1 1 teaspoon leaf decoction is taken orally twice a day for two days to cure fever.

4.7 Whole plant is astringent, demulcent and laxative.

4.1 ***Cordia dichotoma*** Forst. (Ehretiaceae)

Syn. *Cordia myxa*. auct.

FGS, I: 444; FOB, II: 265; FNG : 279; FBI , IV : 136; ARM : 273

4.2 Vad Gundo (Moto Gundo).

4.3 9-13.5 cm, deciduous – tree; leaves alternate, broadly ovate; inflorescence in large lax terminals & axillary pedunculate cymose panicles; flower creamy yellow or nearly white; drupes ovoid or rounded; seed exalbuminous.

4.4 Common. Fls. : & Frs. : Feb. – June.

4.5.3 The ripe fruits are eaten and unripe fruits are used in making pickles.

4.5.4 Stem is used for making churning rod.

4.7 Fruits antipyretic, astringent, expectorant, sialagogue, anthelmintic and cooling.

4.1 ***Cordia grahaf*** (Forsk.) Ehrenb. (Ehretiaceae)

Syn.: *Cordia rothii* R. & S.

FGS, I: 445; FOB, II: 268; FNG: 279; FBI, IV: 138; ARM: 274

4.2 Nani Gundi.

4.3 5 – 10 m tree ; bark grey or pale brown ; leaves sub opposite, oblanceolate – oblong ; inflorescence in lax terminal and axillary cymes ; flower white ; fruit drupe ; seed 1 – seeded.

4.4 Common. Fls. & Frs. Apr. – Jan.

4.5.1 A teaspoonful of stem bark juice is given orally to cure dysentery.

4.5.3 Ripe fruits are edible.

4.5.4 Woods are use as a third support of cart.

4.7 Leaves and fruits are stomachic, expectorant, diuretic, nutritive and sialagogue.

4.1 ***Cordia perrottetii*** Wt. (Ehretiaceae)

FGS, I: 446; FNG : 279; FBI , IV : 138; ARM : 275

4.2 Jangali Gundi.

4.3 1.5 – 2.2 M tree; bark black; leaves opposite or sub opposite; inflorescence in corymbose cymes; flower; fruit drupes, ovoid, apiculate, glabrous.

4.4 Common. Fls. & Frs. : Jan.-May

4.5.1 Leave is chewed to cure mouth blisters.

4.5.4 Dry stem and branch are used as a fire wood.

4.7 Whole plant is diaphoretic.

4.1 ***Coriandrum sativum*** L. (Apiaceae)

FGS, I: 341; FOB, I: 609; FBI, II: 717; ARM: 209

4.2 Dhana. (Kothmir)

4.3 30-50 cm, annual, aromatic herbs ; leaves alternate, pinnatisect, compound ; inflorescence terminal and/or axillary ; flower complete ; fruit cremocarp splitting into 2 mericarps.

4.4 Cultivated crop, Fls. & Frs. : Throughout the year.

4.5.2 Salted churning curd, ground leaves of *Dhana* (*Coriandrum sativam* L.) and juice of lemon (*Citrus limon* L.) is given during diarrhoea

4.5.3 Fresh leaves used as a vegetable & dry seed use as spices, also roasted seeds are used for mouth freshener.

4.7 Fruit is stomachic, diuretic, aphrodisiac, antibilious, antispasmodic, refrigerant, carminative, aromatic and stimulant.

4.1 ***Crateva nurvala*** Buch. Ham. ver. ***nurvala*** (Capparaceae)

Syn. *Crateva riligosa* Hk.f.

FGS, I: 74; FOB, I: 44; FBI, I : 172; ARM : 21

4.2 Vay varno.

4.3 10 m tall tree; leaves alternate, tri-foliate compound; inflorescence terminal; flower fragrant, complete; fruit berry 4.5 x 4 cm, yellowish – gray.

4.4 Frequent. Fls. & Frs. : Feb. – June.

4.5.1 Decoction of the bark is taken orally to cure urinary complaints.

Juice of stem bark is applied on burned part of skin.

4.6.1 The plant is considered for performing religious activities viz. *Yagna*.

4.7 Leaves are tonic, rubefacient, febrifuge and stomachic. Root and bark are blood purifier, alterative, lithontriptic, laxative and diuretic.

4.1 ***Crinum asiaticum*** L. (Amaryllidaceae)

FGS, II 668; FOB, III: 256; FBI, VI: 280; ARM: 415

4.2 Nag daman.

4.3 Stout, perennial herbs ; bulbs5-10 cm across, underground, tunicated ; leaves linear lanceolate, widely spreading, repand, shortly acuminate, flower white, sessile, perianth tepals 6, gamotepalous, tubular, funnel or salver-shaped ; fruit capsule ; seeds large, rounded testa thick, albumen fleshy & copious.

4.4 Cultivated as an ornamental plants in garden.
Fls. & Frs. : Throughout the year.

4.5.1 Two drops of the leaf extract poured in ear to cure earache (Vanjara Community).

4.6.1 Flowers used as offering to goddess Mahakali.

4.7 Leaves and roots is Diaphoretic, emetic and seeds are Diuretic.

4.1 ***Crotalaria filipes*** Bth. ver. ***trichophora*** Cooke. (Fabaceae)
FGS, I: 194; FOB, I: 293; FBI, II: 67; ARM: 106

4.2 Adadiyo.

4.3 A prostrate herb, very slender, terete, spreading, deciduous silky hairs. Leaves ovate-oblong, obtuse, flowers distant, in leaf-opposed racemes, corolla yellow, exerted, standard erect, veined, pods shortly stalked, glabrous. Seeds 8-10.

4.4 Very common on farm border.
Fls. & Frs. : Aug.-Jan.

4.5.3 Eaten by grazing animals.

4.5.4 Whole plant is use as a shelter and housing (hut).

4.1 ***Crotalaria juncea*** L. (Fabaceae)
FGS, I: 195; FOB, I : 320; FBI, II : 79; ARM : 107

4.2 Shan.

4.3 Herbs 1-2 m high. With vurgate grooved stem and branch. Leaves linear or linear-oblong, sepals beaked pedicels and pods softly pubescent or velvety. Corolla slightly exerted, standard 2.5 cm broad, veined red, silky without. Pods 2.5 – 4 cm long.

4.4 Cultivated. Fls. & Frs. : Aug.-Feb.

4.5.1 Leaf decoction is very effective in blood purification.

4.5.4 Plant bark is given fiber it is useful to make cordage.
Dry stem used as a shelter & housing.
Whole plant is used as a green mannur.

4.7 Seeds are purgative.

4.1 ***Crotalaria retusa*** L. (Fabaceae)
FGS, I: 198; FOB, I: 318 ; FBI, II : 75; ARM : 108

4.2 Gughro.

4.3 20-120 cm, erect, robust, appressed-hairy herb ; leaves alternate, simple ; flower bright yellow, numerous ; fruit pods 3-4.5 x 1.5 cm, obovate oblong ; seed 5-20, subreniform, dark – brown.

4.4 Common. Fls & Frs. : July – Apr.

4.5.1 Extract of whole plant is applied to cure scabies.

4.1 ***Croton bonplandianum*** Baill. (Euphorbiaceae)
Syn. *Croton sparsiflorum* Morong.
FGS, II: 617; ARM: 383

4.2 Croton.

4.3 30-90 cm, erect, hispid herbs ; leaves alternate, ovate-lanceolate ; inflorescence androgynous, terminal ; flower pale-creamy – yellow or nearly white, incomplete ; fruit capsule 0.5 – 0.6 x 0.4 cm, angled ; seed shining, spongy.

4.4 common .Fls. & Frs. : Throughout the year.

4.5.1 Latex is applied externally to cure wounds.

4.7 Plant is expectorant and laxative.

4.1 ***Cryptostegia grandiflora*** R.Br. (Asclepiadaceae)
FGS, I: 433; FOB, II: 245; FBI, IV: 6; ARM: 263

4.2 Rubber Vel.

4.3 A lofty woody climbers with plenty of milky latex ; leaves opposite, decussate but twining nature ; inflorescence terminal, dichasid ; flower large, rose coloured ; fruit follicles trigonous.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Leaves paste is applied on swellings.

4.7 Whole plant is antidote and poisonous.

4.1 ***Cucumis callosus*** (Rottl.) Cogn. (Cucurbitaceae)

Syn. *: Cucumis trigonus* Roxb.

FGS, I: 321; FOB, I: 569; FNG: 267; FBI, II: 619; ARM: 189

4.2 Kothimdu.

4.3 Prostrate, perennial, scabrid, membranous climber ; leaves alternate, chartaceous, broadly ovate ; inflorescence axillary fascicled ; flower yellow, monoecious ; fruit berries 2.7 – 5 x 2.3 – 4 cm ; seed ellipsoid-oblong, pale-brown.

4.4 Common. Fls. & Frs. : July – Feb.

4.5.2 Fresh fruit are fed with fodder to help expel the placenta after delivery.

4.5.3 Dry fruit are edible.

Whole plant is used as a fodder.

4.7 Pulp of fruit is purgative and abortifacient. Plant is digestive, anthelmintic and antipyretic.

4.1 ***Cucumis melo*** L. var. ***agrestis*** Naud. (Cucurbitaceae)

FGS, I: 322; FOB, I: 569; ARM: 190

4.2 Tarbuch (Kharbuj)

4.3 Prostrate, annual, monoecious climber ; leaves alternate ; inflorescence axillary fascicles ; flower yellow, monoecious ; fruit berries 3-4 cm long ; seed numerous, narrowly ovoid. Fruit is diuretic.

4.4 Cultivated (Planted in farms.)

Fls. & Frs. : Sept . – Nov.

4.5.3 Rip fruit is edible. Rosted seeds also edible.

Whole plant is use as a fodder.

4.7 Fruits and seeds are diuretic.

4.1 ***Cucumis sativus*** L. (Cucurbitaceae)

FGS, I: 323; FOB, I: 570; FBI, II: 620; ARM: 191

4.2 Kakdi.

4.3 Scabrid, trailing or climbing monoecious climber ; leaves alternate ; inflorescence axillary solitary or fascicled ; flower 1.5 – 2 cm across ; fruit berries variously shapes ; seed numerous, oblong.

4.4 Cultivated (Planted in farms for vegetable.)
Fls. & Frs. : Throughout the year.

4.5.1 Pulp is applied in eczema.
The fresh thin slices of the fruit are used to cure dark under eye circles.

4.5.3 Fresh fruits use as salad & vegetable.
Whole plant is use as a fodder.

4.7 Fruit is demulcent, cooling, nutritive and diuretic.

4.1 ***Cucurbita maxima*** Duchesne. (Cucurbitaceae)
FGS, I: 323; FOB, I: 582; FBI, II: 622; ARM: 192

4.2 Kolu.

4.3 Trailing or climbing, villous climber, with soft & bristly stem ; leaves alternate ; inflorescence axillary solitary ; flower reddish-yellow or orange-coloured ; fruit berries 2.5 – 5 cm or more across.

4.4 Frequent. Fls. & Frs. : July-Oct.

4.5.1 Extract of leaves is poured in ear to cure ear pain.

4.5.2 Fruit is given to animal in diet during redness in eyes.

4.5.3 Fruit are used as a vegetable.
Plant is used as a fodder.

4.6.1 Fruits are used in *yagna* and *vastu* pooja.

4.1 ***Cuminum cyminum*** L. (Apiaceae)
FGS, I: 342; FOB, I: 609; FBI, II: 718; ARM: 210

4.2 Jiru.

4.3 10-25 cm, annual herbs ; leaves alternate, compound ; inflorescence terminal and/or axillary compound umbels ; flower pale to bright rosy pink ; fruit cremocarp splitting in to mericarps.

4.4 Cultivated. Fls. & Frs. : Oct. - Mar.

4.5.1 Cremocarpic fruit boiled in water and taken to relieve stomach upset indigestion and for cooling effect.

4.5.2 Fruit are used in treatment of acidic indigestion.

4.5.3 Fruit are used as spices.

4.6.3 Fruit commercially important.

4.7 Fruits are cooling, stimulant, aromatic, carminative, pungent, stomachic, anthelminitc and astringent.

4.1 ***Curcuma domestica*** Val. (Zingiberaceae)

Syn. *Curcuma longa* L.

RNS : 569; ARM : 411

4.2 Haldar.

4.3 Tuberous perennial herbs; leaves broadly elliptic-lanceolate, glabrous; flower 2 – 2.5 x 2 – 1.8 cm, capsule 3-valved with arillate seeds.

4.4 Cultivated in field, Fls. & Frs. : Feb.-Apr.

4.5.2 Paste of rhizome powder is applied with salt to cure pains, swellings and mastitis.

4.5.3 Rhizomes used for masala and dried up rhizomes are powdered and used in cooking and dyeing.

4.6.1 Paste comprising of rhizome with gram flour and *Sesamum indicum* oil is applied in a ceremony called '*Pithi*' on the body of bride and bridegroom with the belief of to ward of evil spirits.

4.7 The plant part possesses antibiotic and anti-inflammatory activities.

4.1 ***Curcuma inodora*** Blatter. (Zingiberaceae)

FGS, II: 665; ARM: 412

4.2 Chhichhodo.

4.3 Tuberous perennial herbs; leaves broadly elliptic – lanceolate, glabrous; flower 2 – 2.5 x 1.2 – 1.8 cm; capsule 3-valved with arillate seeds.

4.4 Frequent in Taranga forest. Fls. & Frs. : June – Nov.

4.5.1 The crushed tubers are applied on wounds.

4.7 The plant tubers purgative and diuretic.

4.1 ***Cuscuta chinensis*** Lamk. (Cuscutaceae)

FGS, I: 481; FOB, II: 293; FNG: 280; FBI, IV: 226; ARM: 295

4.2 Nani Amar Vel.

4.3 Slender twinners ; stem aerial, filiform, weak, yellow to yellowish brown ; flower white, complete, actinomorphic ; fruit capsule irregularly, dehiscent ; seed long, glabrous.

4.4 Common, Fls. & Frs. : Aug – Oct.

4.5.1 The whole plant is boiled in water and used for taking bath, once a day at night for 7 days, is believed to be a useful remedy for skin infections.

4.7 Whole plant is antiviral.

4.1 ***Cuscuta reflexa*** Roxb. (Cuscutaceae)

FGS, I: 482; FOB, II: 292; FNG: 280; FBI, IV: 225; ARM: 296

4.2 Moti Amar Vel.

4.3 A parasitic twining climber ; inflorescence in solitary or short racemes ; flower white, glabrous ; fruit capsule depressed globose, circumsessile, glabrous ; seed black, glabrous.

4.4 Common. Fls. & Frs. : Nov – Apr.

4.5.1 The whole plant is boiled in water and used for taking bath at night for 7 days, is believed to be a useful remedy for skin infections.

4.7 Whole plant is antiviral.

4.1 ***Cyamopsis tetragnoloba*** (L.) Taub. (Fabaceae)

Syn. *Cyamopsis psoralioides* DC.

FGS, I: 200; FOB, I: 328; FNG: 256; FBI, II: 92; ARM: 109

4.2 Guvar.

4.3 Erect, annual, herbs ; leaves cauline & ramal, tri-foliate compound, alternate ; inflorescence condensed, short axillary, flowered racemes zygomorphic, hermaphrodite, hypogynous ; fruit linear, long, beaked, nearly glabrous ; sub tetragonous.

4.4 Cultiviated for vegetable. Fls . & Frs. : Throughout the year.

4.5.1 Fresh leaf juice mixed with garlic (*Allium sativum*) and crushed then applied externally on ringworm.

4.5.3 Fruit are use as vegetable.

Seeds are used as fodder.

4.7 Pods are cooling, nutritive and expectorant.

4.1 ***Cymbopogon citratus*** (DC.) Stapf. (Poaceae)

FGS, II: 805; FBI, VII: 204; FOB, III: 511; ARM: 445

4.2 Lili Cha.

4.3 Tall, perennial herbs; leaves glaucous – green, rough along margins; leaves sessile spikelet; inflorescence terminal, spathaceous.

4.4 Planted in garden, Fls. & Frs. : Not seen.

4.5.1 Decoction of leaves is given orally twice a day for a week to cure typhoid.

4.7 Whole plant laxative.

4.1 ***Cymbopogon martinii*** (Roxb.) Wats. (Poaceae)

FGS, II: 806; FBI, VII: 204; ARM: 446

4.2 Gandharu ghas.

4.3 Perennial herbs; leaves linear – lanceolate or ovate-lenceolate, glabrous; inflorescence narrowly oblong, compound.

4.4 Common. Fls. & Frs. : Aug – Jan.

4.5.1 Extract of leaves applied on the scabies.

4.1 ***Cynodon dactylon*** (L.) Pers. (Poaceae)

FGS, II: 808; FOB, III: 554; FNG: 320; FBI, VII: 288; ARM: 447

4.2 Dharo (Darbh).

4.3 Stoloniferous perennial with slender underground Rhizome. Culms 10-40 cm long leaves 2-10 cm long 2- 4 mm broad, scaberulous. Ligule a short ciliolate rim 0.3 mm long. Racemes 4 – 6, whorled slender, 2-7 cm long. Spikelets 2 mm long. Lemma silky pubescent on the keel.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Five to six drops of leaf juice is put in to the nostril 1-2 times to stop nose – bleeding.(Tribal people of Taranga hills).

Decoction of plant (about 50 branches boiled in a cup of water) is given twice a day for 7-10 days to treat diseases of the Urino-genital system.

4.5.2 Fresh rhizome of Haldi, cynodon (Grass) and a pinch of calcium oxide are boiled. Prepared luke warm decoction is sprinkled at the sprained site (Diseases – sprains).

4.5.3 Food for grazing animals.

4.6.1 The grass is used in worship of rural people.

4.7 Whole plant antiviral.

4.1 ***Cyperus exaltatus*** Retz. var. ***exaltatus*** (Cyperaceae)

FGS, II: 725; FOB, III: 386; FBI, VI: 617; FNG: 306; ARM: 441

4.2 Ghodachiyo.

4.3 40-125 cm, perennial, stout, glabrous herbs with stout root fibres ; leaves few, linear, glabrous, finely acuminate ; inflorescence terminal, compound or decompound ; flower bracts 3 – 6, leaf-like ; fruit nut 0.05 – 0.08 cm long, broadly ovate or ellipsoid-oblong.

4.4 Common. Fls. & Frs. : July – Dec.

4.5.4 Whole plant is used for a shelter and housing as a thatching materials.

4.7 Tubers are diuretic, emmenagogue, stimulant, diaphoretic and stomachic.

4.1 ***Cyperus nutans*** Vahl. var. ***eleusinoides*** (Kunth.) Haines. (Cyperaceae)

FGS, II: 731; FOB, III: 382; FNG: 306; FBI, VI: 608; ARM: 440

4.2 Moth ni jat.

4.3 Perennials, 30-40 c, high. leaves 6-15 mm broad. Anthela compound, spikelets few-fid, linear – oblong, 5 – 8 x 1.5 – 2.0 mm ; glumes elliptic-oblong. Mucronate, 1.5 – 2.0 mm long. Stamens 3 Nuts obovoid, ca 1.5 mm long.

4.4 Common. Fls. & Frs. : July – Dec.

4.5.3 Plant is used as fodder.

4.7 Tuber: diuretic, anthelmintic, antipyretic.

4.1 ***Cyperus rotundus*** L. subsp. ***rotundus*** (Cypepraceae)

FGS, II: 735; FOB, III: 385; FNG: 306; FBI, VI: 614; ARM: 442

4.2 Motha.

4.3 Rhizomatous perennial herbs with aromatic tubers ; stem compressed, trigonous ; inflorescence of 3-9 spreading rays bearing tassels of few, large spikelets ; spikelets 20 – 40 flowered, red brown to almost black ;

glumes ovate to elliptic, sub acute, speculate, with hyaline margin ; nut oblong – ovate.

4.4 Common. Fls. & Frs. : July – Dec.

4.5.1 1teaspoon of tuber powder is given orally twice a day in fever.

Fresh tuber is applied as paste on breasts of nursing mother to promote the flow of milk.

Moth is used in hair oil as perfume.

4.5.3 Plant is used as fodder.

4.7 Tubers are stimulant, diuretic, diaphoretic and stomachic.

4.1 ***Dalbergia latifolia*** Roxb. (Fabaceae)

FGS, I: 201; FOB, I: 422; FBI, II: 231; ARM: 110

4.2 Sisam.

4.3 Unarmed, deciduous, trees ; leaves alternate, imparipinnately compound ; inflorescence axillary or extra – axillary, divaricate punicles ; flower copious, complete, zygomorphic ; fruit lanceolate or strap shaped, glabrous ; seed : 1-2, 0.7 x 0.4 cm

4.4 Frequently in Taranga forest, Fls. & Frs. : Jan – Oct.

4.5.1 Leaf extract is taken orally by the Vanjara peoples in dysentery.

4.5.4 Stem used as furniture in houses.

Woods are use for cart axles and plough.

4.7 Whole plant is stimulant and tonic.

4.1 ***Dalbergia sissoo*** Roxb. (Fabaceae)

FGS, I: 202; FOB, I: 421; FBI, II: 231; ARM: 111

4.2 Sisam (Moto Sisam)

4.3 Unarmed evergreen trees ; leaves alternate, bifarious, imparipinnately compound ; inflorescence lax, terminal and/or axillary panicles ; flower copious, complete, zygomorphic, fruit lanceolate, glabrous ; seed subreniform, glabrous.

4.4 Common on plains and road sides.

Fls.& Frs. : Mar -Nov.

4.5.1 The Roots decoction is given twice a day in dysentery (Premaji Barad).

4.5.4 Wood is used for furniture and construction.

Wood is used for agricultural implements.

4.7 The plant is spasmolytic.1

4.1 ***Datura innoxia*** Mill. (Solanaceae)

Syn . – *Datura metal* auct.

FGS, I: 485; FOB, II: 344; FNG: 248; FBI, IV: 243; ARM: 300

4.2 Kala Dhatura. (Dhaturo).

4.3 Erect, grey – tomatoes, much branched herbs ; leaves alternate or sub opposite, simple ; inflorescence axillary, solitary ; stout ; flower complete, actinomorphic, hermaphrodite ; fruit minutely grey – tomentose, globose, dorsiventraly spinous ; seed kidney-shape, glabrous.

4.4 Common , Fls. & Frs. : Throughout the year.

4.5.2 Leaf paste is applied to cure swellings and sprains.

4.6.1 Flowers & fruits are offered to appease 'Lord Shiva'.

4.7 Leaves and seeds are analgesic, antiseptic and narcotics.

4.1 ***Datura metel*** L. (Solanaceae)

Syn. *Datura fastuosa* L.

FGS, I: 485; FBI, IV: 242; FNG: 284; FOB, II: 343; ARM: 301

4.2 Dhatura.

4.3 Under shrub up to 1.7 m high. Young branches purplish. Leaves elliptic or ovate, 7 – 15 cm long, with sinuate margins. Flowers purple or white. Calux reflexed in fruits. Fruits nodding, irregularly dehising.

4.4 Common is waste places. Fls. & Frs. : Throughout the year.

4.5.2 Three leaves are given with jaggery to cure diarrhoea.

4.6.1 Flowers & fruits are offered to appease 'Lord Shiva'.

4.7 Whole plant anthelmintic, anticancer, hypertensive and spasmolytic.

4.1 ***Daucus carota*** L. (Apiaceae)

FGS, I: 342; FOB, I: 609; FBI, II: 718; ARM: 211

4.2 Gajar.

4.3 A biannual plant. Scabrous, leaves triangular to oblong in outline, 2-3 pinnatisect in to oblong lanceolate. Umbel with very numerous rays ;

breacts of the involucre or pinnate, of the involucel line at white margined, entire. Petals radiating ; central flower sterile, purple ; fruit 4 mm long, 3 mm broad, including the prickles ; prickles setaceous, as long as the diameter of the seed or longer with 1-3 recurved barbs.

4.4 Cultivated crop, Fls. & Frs. : Dec.-Apr.

4.5.3 Roots used as vegetable & salad.
Whole plant use in fodder.

4.7 Roots are pungent, cooling, antiseptic, diuretic and nutritive. Seeds are emmenagogue, abortifacient, carminative, aromatic and stimulant.

4.1 ***Delonix regia*** (Boj.) Raf. (Caesalpiniaceae)
Syn. : *Poinciana regia* Boj.
FGS, I: 275; FOB, I: 442; FBI, II: 260; ARM: 142

4.2 Gul mohor.

4.3 Deciduous tree with an equal spread of crown ; leaves cauline & ramal, bibinnately compound ; inflorescence terminal, simple or branched racemes ; flower scarlet or reddish-orange or crimson ; fruit broadly, linear, woody ; seed oblong, glabrous, smooth.

4.4 Growing in gardens as an ornamental plant.
Fls.& Frs. : Mar. – Aug.

4.5.4 Stem used as firewood.

4.7 Bark is febrifuge, astringent, flowers are nutritive, sweet and appetizer.

4.1 ***Dendrophthoe falcata*** (L.f.) Etting. ver. ***Falcata*** (Loranthaceae)
Syn. : *Loranthus longiflorus* Desr.
FGS, II: 607; FBO, III: 42; FNG: 296; FBI, V: 214; ARM: 379

4.2 Zad ghodo. (Vando)

4.3 Epiphytic bushy herbs. Leaves elliptic-oblong, obvote or ovate-lanceolate, 6-15 cm long, obtuse or rounded flowers in second racemes, latter often clustered in axils of fallen leaves ; perianth bright red. Fruit ovoid-oblong, bright red crowned with a persistent calyculus.

4.4 Frequently noted. Fls. & Frs. : Nov. – Feb.

4.5.2 Plant paste applied on veterinary fracture.

4.7 Whole plant antiviral and hypotensive.

4.1 ***Dendrocalamus strictus*** Nees. (Poaceae)

FGS, II: 809; FOB, III: 572; FBI, VII: 404; ARM: 448

4.2 Nakor vans.

4.3 8-10 m tall herbs, with solid, tufted culms; leaves linear-lanceolate to ovate-lanceolate, glabrous.

4.4 Common in taranga, Fls . & Frs. : Dec.-Mar.

4.5.1 Leaf juice is given orally during child birth for easy delivery.

4.5.2 Strips of bamboo are tied on fractured bone of leg and water is sprayed over it.

4.5.4 Stem is used as a walking stick.

Plant is grown on outskirt of field to prevent soil eroision.

4.7 Plant is tonic and astringent.

4.1 ***Dentella repens*** (L.) Forst. (Rubiaceae)

FGS, I: 350; FBI, III: 42; FOB, II: 12; ARM: 216

4.2 Par pat ni Jat.

4.3 Slender, strigose, prostrate herbs ; leaves opposite, dithechous, subsessile, ovate, lanceolate or spathulate ; inflorescence axillary, solitary ; flower complete, white ; fruit capsule ; seed minute.

4.4 Common. Weeds growing in monsoon.

Fls. & Frs. : Sep.-Apr.

4.5.1 Paste of whole plant is applied to cure sores.

4.1 ***Derris indica*** (Lam.) Bennet. (Fabaceae)

Syn. *Pogamia glabra* Vent;

FGS, I: 203; FOB, I: 429; FBI, II: 240; ARM: 112

4.2 Karanj.

4.3 Evergreen trees; leaves alternate, imparipinnate; inflorescence axillary, drooping racemes; flower white with purple tinge; fruit pods thick; seed oblong or slightly reniform.

4.4 Common. Fls. & Frs. : Feb.-July

4.5.1 Seed oil is applied externally on scabies.

Seed oil is mixed with lemon juice and applied on scalp or to remove dandruff.

4.5.4 Fresh twig used as a toothbrush.

4.7 Seeds are antiseptic, stimulant, febrifuge and tonic. Bark is astringent. Leaves are cholagogue.

4.1 ***Desmostachya bipinnata*** (L.) Stapf. (Poaceae),
FGS, II: 809; FOB, III: 550; FBI, VII: 324; ARM: 449

4.2 Dabh, Dabhado.

4.3 Rigid, tufted, perennial herbs; leaves linear, flat, glabrous; inflorescence narrowly pyramidal or columnar.

4.4 Common. Fls. & Frs. : Aug. - Jan.

4.5.1 Root paste (about 5 cm long 10 pieces of fresh root ground by mortar and pestle) is applied twice a day for 7 days to treat toothache.

4.6.1 Leaves are used in 'Pitru' puja.

4.7 Plant is cooling, stimulant, astringent, diuretic, acrid, styptic and aphrodisiac.

4.1 ***Digera muricata*** (L.) Mart. (Amaranthaceae)
Syn.- *Digera arvensis* Forsk.
FGS, I: 595; FOB, II: 572; FNG: 293; FBI, IV: 717; ARM: 368

4.2 Kanjariyu (Kanjro).

4.3 Annual, erect, slender herbs; leaves ovate – lenceolate; inflorescence in lax racemes usually bisexual; urticles ovoid or subsperical seed pale – brown, muricate.

4.4 Common weed.. Fls. & Frs. : Throughout the year.

4.5.1 Arial parts of the plant are used as a vegetable to cure urinary complaints.

4.7 Whole plant is astringent, coolant and laxative.

4.1 ***Dioscorea alata*** L. (Dioscoreaceae)
FGS, II: 673; FOB, III: 267; FNG: 300; FBI, VI: 296; ARM: 419

4.2 Ratalu.

4.3 Perennial, extensive, glabrous, climber ; leaves broadly ovate, cuspidately acuminate, herbaceous ; flower axillary, solitary, pendulous spikes ; fruit semicircular, lobes, apex retuse ; seed with a wing all round.

4.4 Cultivated as vegetable , Fls. & Frs. : Not seen.

4.5.1 Paste of tubers is applied on affected part to cure piles.

4.7 Tubers anthelmintic.

4.1 ***Dioscorea bulbifera*** L. (Dioscoreaceae)
FGS, II: 674; FOB, III: 265; FNG: 300; FBI, VI: 295; ARM: 420

4.2 Kanak.

4.3 Climbers. Tuber solitary, globose – pyriform, 10-15 cm across. bulbils abundant. Leaves broadly ovate – cordate, subcaudate. Male flowering axes on up to 1 m long leafless branches ; flowers whitish or pinkish, frangrant. Female flowering axes axillary 20-40 cm long. Capsule winged 20-22 x 4.79 mm ; seeds winged at the base.

4.4 Rare. Fls. & Frs. : July-Mar.

4.5.1 About one fourth of fresh tuber is chewed twice a day for 2-3 days to cure cough and cold.

4.7 Bulbs are analgesic, diuretic and hypoglycemic.

4.1 ***Diospyros cordifolia*** Roxb. (Ebenaceae)
FGS, I: 409; FOB, II: 165; FBI, III: 555; ARM: 242

4.2 Dheki.

4.3 Armed, 3-5 m tall shrubs or small trees. Leaves 2.3-8.5 x 1-2.5 cm, oblong, ovate-oblong or ovate-lanceolate, almost glabrous. Flowers creamy-white, axillary, males in cymes of 3, female solitary. Drupe globose, yellow when ripe.

4.4 Common, Fls. & Frs. : Feb.-July

4.5.1 Fruit is warmed on fire and then pulp is applied on soles of feet to persons suffering from cracks.

4.7 Leaves are expectorant and antipyretic.

4.1 ***Diospyros melanoxylon*** Roxb. (Ebenaceae)

FGS, I: 409; FOB, II: 159; FNG, 274; FBI, III: 564; ARM: 243

4.2 Timbru.

4.3 Deciduous tree ; leaves obtuse or sub acute, coriaceous, softly tawny ; inflorescence male flower pendulous cymes longer than petioles ; female flower axillary solitary ; flower dioecious, actinomorphic, white ; fruit glabrous, fruiting calyx ; seed oblong, testa ruguse, shining.

4.4 Common in Taranga forest. Fls. & Frs. : Mar. – Aug.

4.5.3 The fruits are edible.

4.5.4 Wood is used for housing purpose and firewood.
Dried leaves are used to make "Bidies".

4.7 Fruits and leaves are astringent.

4.1 ***Dipteracanthus prostratus*** (Poir.) Nees. (Acanthaceae)
Syn. *Ruellia prostrata* Poir.
FGS, I: 536; FOB, II: 431; FNG: 288; FBI, IV: 412; ARM: 330

4.2 Kali Ghavani.

4.3 Straggling, suberect herbs, leaves opposite decussate, ovate, ovate or ovate-elliptic to deltoid ; inflorescence axillary solitary or 2-3 together in dichasial cymes ; flower pale purple or violet, sessile. Complete; fruit clavate, acute and shortly pointed at apex, base tapering; seed faces almost glabrous.

4.4 Common, Fls. & Frs. : Throughout the year.

4.5.1 1/2cup of whole plant decocation is given orally twice a day to cure fever.

4.1 **Dodonaea viscosa** (L.) Jacq. (Sapindaceae)
FGS, I: 164; FOB, I: 287; FNG: 254; FBI, I: 697; ARM: 91

4.2 Jakhami.

4.3 Evergreen shrubs; leaves alternate, exstipulate, simple; inflorescence terminal and axillary, few-flowered, short cymes; flower greenish-yellow, small, complete; fruit membranous, valves winged, compressed; seed subglobose, compressed, exalbaminous.

4.4 Planted in garden, Fls. & Frs. : Sep. – Feb.

4.5.1 The leaves are used as a vermifuge.

4.7 Leaves are febrifuge, antiseptic, sudorific, tonic, sour, alterative, laxative and bitter.

4.1 ***Dolichos trilobus*** L. (Fabaceae)

FGS, I: 211; FNG: 260; FBI, II: 211; ARM: 113

4.2 Jungali papadi.

4.3 Perennial or annual climber ; leaves alternate, trifoliate compound ; inflorescence axillary, fascicles of racemes ; flower purple, complete, zygomorphic ; fruit glabrous, linear – oblong, sub falcate ; seed smooth, glabrous, strophiolate.

4.4 Frequent, Fls. & Frs. : Sept. – Oct.

4.5.1 Seeds are used to cure Rheumatism.

4.7 Seeds are antispasmodic and stomachic.

4.1 ***Dregia volubilis*** (L.f.) Benth. (Asclepiadaceae)

Syn. *Marsdenia volubilis* (L.f.) Cooke.

FGS, I: 425; FOB, II: 106; FNG: 276; FBI, IV: 56; ARM: 264

4.2 Dodi.

4.3 A shout woody pubescent twiner ; leaves broadly ovate to suborbicular, cordate ; flowers green, in dense, drooping umbels ; follicles paired, divaricate, tapering from base.

4.4 Rare. Fls. & Frs. : June – Dec.

4.5.1 Root paste is applied for pain of external injury.

4.7 Stem is anticancer Activity.

4.1 ***Drypetes roxburghii*** (Wall.) Hurus in Journ. (Euphorbiaceae)

Syn. *Putranjiva roxburghii* Wall.

FGS, II: 618; FBI, V: 336; FOB, III: 86; ARM: 384

4.2 Putranjivi.

4.3 Evergreen tree, 5-20 m tall, with pale-brown, smooth bark. Leaves 4-6x1.8-6.6cm, glabrous, elliptic-oblong, with undulate margins. Flowers greenish-yellow, axillary. Females 1-3 in cymes. Drupes 1-1.5 cm long, ellipsoid, grayish-white or grayish-brown-tomentose.

4.4 Planted on hedge of field. Fls. & Frs. : July-Dec.

4.5.1 10 gm seed powdered is taken orally once a day for a month for prevent the immature delivery.

4.5.4 Wood is used in preparation of tool handle.

4.7 Fruits are astringent, diuretic, sour and conceptive.

4.1 ***Echinochloa frumentacea*** Link. (Poaceae)

FGS, II: 818; FBI, VII: 31; FOB, III: 446; ARM : 450

4.2 Banti.

4.3 60-70 cm tall, annuals, glabrous, tufted ; leaves linear – lanceolate, glabrous ; inflorescence panicles 12-18 cm long, pyramidal ; spikes 1.5 – 3.5 cm long, solitary or geminate ; spikelets 0.25 – 0.3 cm long, ovoid, ellipsoid, pubescent to hispid.

4.4 Cultivated crop. Frs. & Fls. - Oct – Jan.

4.5.2 Paste prepared from the boiled seeds is applied externally on snout.

4.5.3 Stem and fruit used as fodder.

4.7 The grains are nutritive astringent, sweet, emollient, desiccating, constipating alexteric and digestive.

4.1 ***Echinops echinatus*** Roxb. (Asteraceae)

FGS, I: 378; FOB, II: 112; FNG: 273; FBI, III: 358; ARM: 226

4.2 Suliyo Utakant.

4.3 Suffrutescent annual spiny herbs; leaves alternate, simple, pinnatifid; inflorescence spinescent, globose, aggregated in dense; flower pale – blue, solitary, sessile; fruit villous, densely, elongate, angled.

4.4 Frequent. Fls. & Frs. : Oct.-Jan.

4.5.1 The plant powder applied on wound (Dasrathbhai Patel).

4.6.1 Root is tied over lumbar of an expecting woman for easy delivery.

4.7 Whole plant is diuretic.

4.1 ***Eclipta prostrata*** L. (Asteraceae)

Syn : *Eclipta erecta* L.

FGS, I: 379; FOB, II: 95; FNG: 272; FBI, III: 304; ARM: 227

4.2 Bhangro.

4.3 Diffuse, annual, herbs ; leaves opposite, simple, elliptic ; inflorescence axillary, terminal, solitary ; flower white, heterogamous, radiate ; fruit triquetrous, often empty, top entire.

4.4 Very Common. Fls. & Frs. : Throughout the year.

4.5.1 Leaves boiled in coconut oil and applied to remove dandruff and for blackening gray hair.

Juice of leaves is given orally to children in diarrhoea.

4.7 The plant possesses antiviral, hypotensive and hepatoprotective activities.

4.1 ***Ehretia laevis*** Roxb. (Ehretiaceae)

FGS, I: 447; FBI, I: 141; FOB, II: 269; ARM: 276

4.2 Vadhwardi, Dantrango.

4.3 Tree, glabrous ; leaves chartaceous, coriaceous, subacute, acuminate ; inflorescence terminal and axillary lax cymes ; flower white, sessile or subsessile, fruit subglobose, reticulately veined.

4.4 Rare. Fls. & Frs. : Dec. – May

4.5.1 2-3 drops of leaf extract is put in to eyes to cure conjunctivitis and night blindness.

4.7 Whole plant are anthelmintic and blood purifier.

4.1 ***Eichhornia crassipes*** (Mart.) Solms. in DC. (Pontederiaceae)

FGS, II: 683; ARM: 429

4.2 Eichhornia (Kanphutti).

4.3 Stoloniferous free – floating herbs; leaves 7-25 cm long, radical, broadly ovate to rhomboid; flower sessile, complete, zygomorphic; perianth tepals 6, in 2 imbricate, persistent.

4.4 Common. Fls. : Oct. – Nov.

4.5.2 Flowers are boiled in water and hoarse skin is wash with such water to keep skin smooth and shining.

4.1 ***Eleusine indica*** (L.) Gaertn. (Poaceae)

FGS, II: 819; FOB, III: 560; FBI, VII: 293; FNG: 321; ARM: 451

4.2 Kodra.

4.3 30-50 cm tall, simple or branched, tufted annuals herbs ; leaves linear, flat, glabrous or sparsely hairy ; inflorescence spikes 2-6, spikelets 0.3 – 0.4 long, ovate or oblong, umbellate, spikelets, 0.3 – 0.4 cm long, ovate or oblong biseriate ; fruit caryopsis subglobose, deeply grooved on one side ; grain oblong.

4.4 Cultivated in field. Fls. & Frs. : Aug. – Jan.

4.5.1 Decoction of plant (4-5 plants boiled in a cup of water) is given two times a day for a week to cure fever (people of Taranga Hill).

4.5.3 Fruits are used as cereals.

Whole plants used as a fodder.

4.1 ***Emblica officinalis*** Gaertn. (Euphorbiceae)

Syn. : *Phyllanthus emblica* L.

FGS, II: 618; FOB, III: 81; FNG: 298; FBI, V: 289; ARM: 385

4.2 Ambla.

4.3 Trees with grayish spreading branches, exfoliating leaves small pinnately arranged, stipules fimbriate. Flowers small, greenish white, densely fasicled fruit globose, succulent, yellowish green.

4.4 Cultivated. Fls. & Frs. : Mar – Sept.

4.5.1 Powder of dried fruit (two teaspoonfuls) is given twice a day for 7 days to cure diarrhoea.

4.5.3 Fruit content highly vitamin C fruits are use in preparation of Jams & mouth freshener.

4.5.4 Day fruit powder used in hair cleanar and hair dye.

4.7 Fruit anti-inflammatory, antiviral, hypotensive and chlorohydric.

4.1 ***Enicostema hyssopifolium*** (Willd.) Verdoon. (Gentianaceae)

Syn : *Enicostema littorale* Bl.

FGS, I: 439; FOB, II: 255; FNG: 278; FBI, IV: 101; ARM: 272

4.2 Navali.

4.3 Glabrous, perennial herbs ; leaves numerous, cauline & ramal, opposite, linear to linear ; inflorescence axillary clusters all along the stem ;

flower small, white, complete ; fruit glabrous, smooth, base slightly narrowed ; seed numerous, minute, subglobose.

4.4 Common. Fls. & Frs. : June – Dec.

4.5.1 The decoction extract of leaves is given orally once a day for a week to cure malarial fever.

4.7 Whole plants are anthelmintic, carminative and stomachic.

4.1 ***Eucalyptus Citriodora*** Hk. (Myrtaceae)

Syn : *Eucalyptus globules* Labill.

FGS, I: 302; ARM: 174

4.2 Nilgiri.

4.3 A gigantic tree; leaves falcate, curved, rather thick; inflorescence axillary; operculim thick; fruit angular, valved exserted.

4.4 Cultivated in garden. Fls. & Frs. : Jan. – Feb.

4.5.1 Leaf extract is rubed on child chest to relief in cold and cough.

4.5.4 Wood is used as an Agriculture implements (part of plough).

Dry branches are use as a fire wood.

4.7 Leaves are antiseptic.

4.1 ***Euphorbia heterophylla*** L. (Euphorbiaceae)

FGS, II: 623; FOB, III : 66; ARM : 386

4.2 Lalpati.

4.3 30-75 cm. annual herbs; leaves alternate, opposite below, flower floral leaves opposite, deep red patch, male flower 12-15, bracteolate, female flower laterally pendulous; fruit capsule, seed angled, bluntly tuberculate.

4.4 Ornamental plant. Fls. & Frs: Throughout the year.

4.5.1 Leaf extract is applied externally to cure swellings (Karsanbhai Vanjara).

4.1 ***Euphorbia hirta*** L. (Euphorbiaceae)

Syn. *Euphorbia pilulifera* auct.

FGS, II: 623; FOB, III : 64; FNG : 296; FBI, V : 250; ARM : 387

4.2 Vadi Dudhi

4.3 Slender, herbs; leaves opposite, decussate, elliptic; inflorescence globose, clustered cymes; flower yellow, numerous, on stalk of same length; fruit appressedly hairy, 3-lobed, globose; seed reddish-brown, obtusely ovoid.

4.4 Common. Fls. & Frs.: Throughout the year.

4.5.1 Leaf paste mixed with goat milk consumed for stomach upset and dysentery.

4.7 Plant is expectorant, galactagogue, anthelmintic, antispasmodic and demulcent.

4.1 ***Euphorbia milli*** Ch. des. Moulins. in Bull. (Euphorbiaceae)

Syn. *Euphorbia splendens* Boj.

FGS, II : 623; FOB, II : 66; ARM : 388

4.2 Crown Throns.

4.3 60-100 cm. armed erect, shrubs; leaves crowded, alternate, oblong spathulate to obovate; flower scarlet, showy, bright red, bracts app 2, broadly ovate to suborbicular; fruit not seen.

4.4 Ornamental plant. Fls. : Throughout the year.

4.7 Leaves is diuretic and purgative.

4.1 ***Euphorbia neriifolia***. L. (Euphorbiaceae)

Syn. *Euphorbia ligularia* Roxb.

FGS, II : 624; FOB, III : 59; FNG : 296; FBI, V: 255; ARM : 389

4.2 Thor.

4.3 Erect shrub, up to 4 m. high, with 5 cm. thick stem at base and pairs of stipular spines on tubercles. Leaves fleshy, obovate, 20 cm. long. Involucres yellowish, 3-7 in cymes; lopes of involucres broadly cuneate and fimbriate. Anthers sagitate, apiculate capsule 3-lobed, lobes compressed.

4.4 Very Common. Fls. & Frs. : Dec. - Apr.

4.5.2 Chopped stem and leaves boiled with water is fed to animal to treat infected gums.

4.5.4 Farmers making fencing surrounding their farms or the plant is used as field fencing.

Dry branches used as fuel.

4.7 Root is antispasmodic. Plant is poisonous. Leaves are purgative and diuretic. Milky juice is rebefacient, expectorant and purgative.

4.1 ***Euphorbia pulcherrima*** Willd. (Euphorbiaceae)

Syn. : *Poinsettia Pulcherrima* R.Grah.

FGS, II: 626; FOB, III: 66; FBI, V: 239; ARM: 390

4.2 Lalpati

4.3 1.5 – 3 m. unarmed, deciduous shrub; leaves alternate, ovate-elliptic to lanceolate, entire; flower bracts opposite, brightly coloured, crimson or occasionally yellowish white, leaf-like, oblong-lanceolate; involucres 0.8 – 1 cm. across, globose, green with red; lobes gland orange-yellow.

4.4 Growing in gardens as ornamental plant.

Fls. & Frs. : Nov.-Jan.

4.1 ***Euphorbia thymifolia*** L. (Euphorbiaceae)

FGS, II: 627; FOB, III: 64; FNG: 297; FBI, V: 252; ARM: 391

4.2 Nani Dudheli.

4.3 Purplish green herbs with numerous horizontally spreading branches. Leaves small, opposite, oblong-ovate. Involucres small, axillary, green or pinkish, without & common peduncle. Capsul pubescent. Seeds furrowed.

4.4 Ornamental. Fls. & Frs. : Throughout the year.

4.5.1 Plant extract is applied externally on ring worm.

4.5.2 The plant paste with leaves of *scoparia dulcis* given orally to animals when they stop mastication.

4.7 Seeds are astringent and laxative.

4.1 ***Euphorbia tirucalli*** L. (Euphorbiaceae)

FGS, II: 627; FNG: 297; FBI, V: 254; FOB, III: 66; ARM: 392

4.2 Kharsani Thor.

4.3 Profusely branched shrub with terete polished branches, ca 1.5 m. high. Leaves small, scaly, caduceus. Involucres shortly pedicelled, clustered, in forks of smaller branches. Capsule ca 5 mm. long cocci compressed velvety; seeds ovoid, smooth.

4.4 Common. Fls. & Frs. : Not seen.

4.5.1 Plant juice is applied locally as a counter-irritant.

4.5.4 Farmers are making fencing surrounding their farms.

4.7 Whole plant is antiprotozoal.

4.1 ***Evolvulus alsinoides*** L. (Convolvulaceae)

FGS, I: 464; FOB, II: 297; FNG: 280; FBI, IV: 420; ARM: 284

4.2 Kali Shankhavali.

4.3 Patently hairy herbs; leaves alternate, ovate, elliptic, oblong; inflorescence axillary solitary or sometimes in pairs; flower bluish, complete, actinomorphic; fruit glabrous, rounded, thin; seed oblong, smooth, glabrous.

4.4 Common in rainy season.

Fls. & Frs. : Throughout the year.

4.5.1 10 gm powder of the whole plant with milk is taken once a day to improve memory power. It is also used as a 'brain tonic'.

4.7 Plant is bitter, alexiteric, alterative, pungent, febrifuge, antifolgistic and anthelmintic.

4.1 ***Ficus amplissima*** Sm. (Moraceae)

Syn : *Ficus rumphii* Blume.

FGS, II: 643; FOB, III: 150; FBI, V: 515; ARM: 399

4.2 Pipli.

4.3 8-10 m. deciduous tree, at first epiphytic; leaves sub coriaceous, broadly ovate; inflorescence receptacles 1-1.5 cm. across, sessile, germinate, axillary; fruit achenes, minutely tuberculate, mucilaginous.

4.4 Common. Receptacles : Throughout the year.

4.5.4 Stem used as a fuel wood.

4.6.1 Wood is used to make *Palli* of Chamunda Mataji.

4.7 Leaves are astringent. Fruits are cooling, sweet, digestive and laxative.

4.1 ***Ficus benghalensis*** L. (Moraceae)

FGS, II: 644; FOB, III: 145; FNG: 299; FBI, V: 499; ARM: 400

4.2 Vad.

4.3 Evergreen trees; leaves alternate, subcoriaceous, broadly ovate, ovate, ovate-oblong; inflorescence geminates, deep-orange-red, puberulous; flower unisexual, monoecious; fruit glabrous, globose-ellipsoid.

4.4 Common. Receptacles: July-Mar.

4.5.1 White latex is applied twice a day for 5 days for healing of foot cracks by people of Thakor Community.

Infusion of bark (about 50g bark boiled in a cup of water) is given twice a day for 7 days to cure diarrhoea.

4.5.2 Paste of bark and root is applied on the fractured parts.

4.5.4 Stem is used as firewood.

Adventitious root twig is used as toothbrush.

4.7 Fruits are tonic, cooling, aphrodisiac and astringent. Bark is emmenagogue, tonic, astringent, diuretic and cooling. Latex is astringent and aphrodisiac.

4.1 ***Ficus carica L.*** (Moraceae)

FGS, II: 644; FOB, III: 155; ARM: 401

4.2 Anjir.

4.3 5-8 m tall trees, without aerial roots. Leaves 8-30x7.5-25 cm, broadly ovate, entire or lobed, softly pubescent beneath. Receptacles 1.2-3.5 cm across, axillary obovoid-oblong, thinly pubescent.Achenes shortly stipitate, oblong, pale-straw, glabrous except for hairy margins.

4.4 Planted at some places. Receptacles: July.-Oct.

4.5.3 Fruit is edible.

4.7 Fruits are aperient, emollient, cooling, laxative, nutritive, digestive, tonic, demulcent, antipyretic and aphrodisiac.

4.1 ***Ficus hispida*** L.f. (Moraceae)

FGS, II: 645; FNG: 299; FBI, V: 522; FOB, III: 154; ARM: 402

4.2 Kalo umbaro.

4.3 Pubescent tree; leaves oblong, coriaceous, apiculate; inflorescence dioecious, on special shoots: male flower: ostiolar, numerous, female flower: sessile; fruit ovoid, glabrous, minutely tubercled.

4.4 Rare. Recetpacles : Throughout the year.

4.5.4 Stem used as a fuel wood.

4.7 Fruits are emollient and cooling.

4.1 ***Ficus racemosa*** L. (Moraceae)

Syn : *Ficus glomerata* Roxb.

FGS, II: 646; FOB, III: 154; FNG: 299; FBI, V: 535; ARM: 403

4.2 Umbaro.

4.3 Trees, 5 to 10 m. high. with spreading branches; leaves ovate-oblong or elliptic-lanceolate, base acute or rounded; figs shortly peduncled, pyriform or subglobose, 2-3 cm. across, red on the main branches, and trunk, or on the leafless branches, orifice closed by 5-6 apical bracts.

4.4 Common. Receptacles : Throughout the year.

4.5.1 Paste of bark is applied twice a day for 2-3 days to cure swellings of foot and hands.

Bark decoction (about 50 g. boiled in two cups of water) is gargled to cure mouth ulcer (Thakor Community).

4.5.3 Fruit is edible.

4.5.4 Dry branches are used as a fuel wood.

4.7 Stem bark anticancer and antigastric ulcer.

4.1 ***Ficus religiosa*** L. (Moraceae)

FGS, II: 646; FOB, III: 149; FNG: 299; FBI, V: 513; ARM: 404

4.2 Pipalo.

4.3 Trees with grayish branches; leaves coriaceous, shining, long-petioled, drooping, ovate, 5-15 cm. broad, caudate-acuminate with 2-9 cm. long acumen; figs in pairs, axillary, sessile, smooth, ripe pink-purple or ultimately black.

4.4 Common. Receptacles: Dec. – May.

4.5.1 Latex is applied externally on wounds to stop bleeding.

4.5.2 Decoction of leaves is given to animals in throat infections.

4.6.1 Plant is worshipped as a symbol of god 'Vishnu' and water is offered on particular days to get good health.

4.7 The plant part possesses antiviral activity.

4.1 ***Flacourtia indica*** (Burm.f.) Merr. (Flacourtiaceae)

Syn : *Flacourtia latifolia* cooke.

FGS, I: 78; FOB, I: 60; FNG: 245; FBI, I: 194; ARM: 23

4.2 Lordi (Gargugal).

4.3 Trees or shrub. Leaves elliptic-obovate or suborbicular, Usually Crenate-serrate, 1-7 cm. long. Flowers almost clustered in short racemes or solitary, ca 5 cm. across, Berries with 6-7 pyrenes, red.

4.4 Frequent. Fls. & Frs. : Feb.-May

4.5.1 Infusion of leaves given thrice a day to cure cough.

4.7 Stem analgesic, hypotensive.

4.1 ***Foeniculum vulgare*** Mill. (Apiaceae)

Syn : *Foeniculum officinale* L.

FGS, I: 342; FOB, I: 609; FNG: 269; FBI, II: 695; ARM: 212

4.2 Valiari.

4.3 Romatic glaucous-green herbs; leaves alternate, pinnatisect decompound, inflorescence terminal and/or axillary compound; flower yellow, complete, hermaphrodite; fruit oblong, ellipsoid, subterete.

4.4 Cultivated crop. Fls. & Frs. : Nov.-Apr.

4.5.1 Fruits and sugar crushed and mixed in water and filtered.1cup filterate is given twice a day in sunstroke (Chhaguji Thakor).

4.5.3 Fruit are used as a condiment and mouth freshnar.

4.5.4 Dried stems are used to prepare wall of shelter and housing.

4.7 Dried ripe fruits are stimulant, carminative, stomachic, diuretic, galactagogue and cooling.

4.1 ***Gardenia resinifera*** Roth. (Rubiaceae)

FGS, I: 351; FBI, III : 115; FOB, II: 30; ARM: 217

4.2 Dikamali (Jangli Champo)

4.3 Unarmed, shrub; leaves opposite, glabrous, elliptic; inflorescence axillary solitary; flower white, complete, actinomorphic; fruit obovoid, glabrous, smooth; seed many light-red, glabrous.

4.4 Planted in garden. Fls. & Frs. : Oct. – Feb.

4.5.1 The root paste is smeared on forehead to cure headache.

4.7 Gum is antiseptic.

4.1 ***Garuga pinnata*** Roxb. (Burseraceae)

FGS, I: 148; FOB, I: 211; FBI, I: 528; ARM: 79

4.2 Kakad.

4.3 Less tomentose, unarmed, tree; leaves alternate, imparipinnately compound; inflorescence much branched, axillary, tomentose panicles; flower grey-tomentose, poly gamous, complete; fruit subpyriform, horned, fleshy, edible.

4.4 Rare. Fls. & Frs. : Jan.-May

4.5.1 2 tsp. decoction of leaves is given twice a day in asthma.

4.5.3 Fruits are edible.

4.1 ***Glinus lotoides*** L. (Molluginaceae)

Syn. *Mollugo hirta* Thunb.

FGS, I: 334; FOB, I: 593; FNG: 269; FBI, II: 662; ARM: 205

4.2 Mitho Okhrad.

4.3 Suberect, annual prostrate herbs; leaves alternate, opposite or whorled on nodes; inflorescence in axillary fascicles of 5-10 flowers; flower greenish-white or pinkish white, incomplete; fruit densely hairy, globose; seed minute, ovoid-sub renifrom.

4.4 Common. Fls. & Frs. : Throughout the year

4.5.1 ½ cup of decoction of whole plant is given orally twice a day in diarrhoea.

4.1 ***Glinus oppositifolius*** (L.) A. DC. (Molluginaceae)

Syn. *Mollugo oppositifolia* L.

FGS, I: 334; FOB, I: 593; FNG: 269; FBI, II: 662; ARM: 206

4.2 Kadvo Okhrad.

4.3 Ascending, radially spreading herbs; leaves spathulate-elliptic, glabrous, oblanceolate; inflorescence axillary facidles of 5-7 flowers; flower white; filiform, glabrous; fruit 3-valved, glabrous, oblong; seed numerous, reniform, dark-brown.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Paste of whole plant is applied on a cuts as antiseptic.

4.7 Whole plant is Antiseptic.

4.1 ***Gloriosa superba*** L. (Liliaceae)

FGS, II: 681; FOB, III: 274; FNG: 301; FBI, VI: 358; ARM: 426

4.2 Vachhnag.

4.3 A scrambler among bushes with 1-3 m. long herbaceous from a tuberous root stalk. Leaves lanceolate, 8-15 cm. long with circinate tips. Flowers solitary or subcorymbose, long peduncled, drooping, lower half yellow and upper half red, finally whole flower becomes red. Tepals with crisped margins.

4.4 Rare, Fls. & Frs. : July – Oct.

4.5.1 Root paste is applied on external injury for relief pain.

4.7 Rhizome is anti-galactagogue.

4.1 ***Gmelina arborea*** Roxb. (Verbenanceae)

FGS, I: 560; FOB, II: 504; FBI, IV: 581; ARM: 341

4.2 Shevan.

4.3 Trees up to 15 m. high; bark smooth; young branches yellowish tomentose. Leaves opposite ovate, 5-20 x 5-18 cm. acuminate, fulvous tomentose beneath. Flowers in 10-25 cm. long fulvous paniculate cymes, yellow. Drupes obovoid, 1-2 cm. long, orange-yellow.

4.4 planted in garden. Fls. & Frs. : Jan. – Apr.

4.5.1 1 teaspoon full decoction of ripe fruit is given twice a day in fever.

4.5.4 The timber is used for furniture.

4.6.1 The plant is considered symbolic for ceremonial sacrifices.

4.7 Stem bark antiviral, hypoglycemic and wood hypoglycemic.

4.1 ***Gomphrena celosioides*** Mart. (Amaranthaceae)

FGS, I: 595; FNG: 294; ARM: 369

4.2 Batan.

4.3 Pilose herbs; leaves elliptic-oblong or obovate-oblong, pubescent beneath; inflorescence spikes, terminal, erect; fruit ovoid; seed oblong, glabrous, smooth.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 10 g of root powder with jaggery is taken early morning in cough.

4.5.3 Plant used as fodder.

4.1 ***Gomphrena globosa*** L. (Amaranthaceae)

FGS, I: 596; FOB, II: 584; FNG: 294; FBI, IV: 732; ARM: 370

4.2 Batan.

4.3 30-40 cm. tall herbs; leaves elliptic-oblong or oblong-obovate, pilose; inflorescence spikes, solitary or 2-3 fascicled, terminal; seed nearly spherical.

4.4 Ornamental plant growing in garden. Fls. & Frs. : Throughout the year.

4.5.1 ½ cup of decoction of roots is taken empty stomach in cough.

4.7 Whole plant Biliousness, coolant.

4.1 ***Gossypium arboreum***. L. (Malvaceae),

FGS, I: 100; FOB, I: 125; FNG: 247; FBI, I: 347; ARM: 37

4.2 Deshi Kapas.

4.3 Perennial, shrubs; leaves coriaceous, subglabrous; inflorescence axillary solitary; flower reddish-purple, deep-violet at base within, bracteate; fruit orbicular-oblong, pointed; seed cottony, floss white.

4.4 Cultivated crop. Fls. & Frs. : Dec. – Mar.

4.5.3 Seed use as fodder and seed oil is edible.

4.5.4 Fibres of seed are use in cordages & Textile industries.

Dry stem use as fuel.

4.6.3 Fibres commercially important.

4.7 stem bark antiviral and hypoglycemic.

4.1 ***Gossypium barbadense*** L. (Malvaceae)

FGS, I: 100; FOB, I: 125; FBI, I: 347; ARM: 38

4.2 Vilayti Kapas.

4.3 Slender shrub with rough, pale brown almost glabrous, nigro-panctate, petiolate; flower yellow, axilarry, solitary; capsule long reddish brown, 3-4 valved, valves woody; seed light black, reniform.

4.4 Cultivated crop. Fls. & Frs. : Oct. – May.

4.5.3 Seed use as fodder and seed oil is edible.

4.5.4 Fibres of seeds are used in cordages & & textile industries.
Dry stem used as fuel.

4.1 ***Gossypium herbaceum*** auct. var. ***acerifolium*** (Malvaceae)
Syn: *Gossypium hersutam* L.
FGS, I: 100; FOB, I: 123; FNG: 248; FBI, I: 346; ARM: 39

4.2 Kapas.

4.3 Perennial, hairy shrubs; leaves compound, broadly ovate; inflorescence axillary, solitary flower yellow with a purple base within, complete, actinomorphic; fruit woody, cuspidate mucronate, acute; seed light-black, reniform.

4.4 Cultivated crop. Fls. & Frs. : Oct. – Apr.

4.5.2 Decoction of unripe fruit and root are fed to animal to help expel the placenta after delivery.

4.5.3 Seed used as fodder and seed oil is edible.

4.7 Root, bark and leaves are emmenagogue and galactagogue. Seeds are laxative, aphrodisiac, demulcent and nervine tonic.

4.1 ***Grewia hirsuta*** Vahl. (Tiliaceae)
FGS, I: 132; FOB, I: 153; FNG: 250; FBI, I: 391; ARM: 61

4.2 Khad Dhamni.

4.3 Shrub with 1.0-1.5 m. long slender hairy branches. Leaves oblong lanceolate, serrate. Flowers white, turning yellow and finally brown, peduncles short, sub-equal to petioles, fruit depressed globose, deeply 2-lobed, each half again slightly 2-lobed, red-purple.

4.4 Frequent. Fls. & Frs. : July – Nov.

4.5.1 A piece of root is rubbed in stone with water and applied in eyes to cure white spots in children.

4.7 Whole plant antiviral, diuretic.

4.1 ***Grewia subinequalis*** DC. (Tiliaceae)

Syn. *Grewia asiatica* auct.

FGS, I: 132; FBI, I: 386; FOB, I: 150; ARM: 62

4.2 Phalsa.

4.3 5-7 m. shrubs; bark ash-colored; leaves alternate, simple, ovate; inflorescence axillary or extra-axillary cymes; flower yellow; buds obovate-oblong, fruit globose, dark-purple to almost black.

4.4 Cultivated. Fls. & Frs. : Feb.- July.

4.5.3 Ripe fruit is edible. It is also used in preparation of pickled.

Leaves used as fodder.

4.5.4 Dry branches used as fuel.

4.7 Fruits are sour, cooling, astringent, tonic and aphrodisiac. Bark is demulcent.

4.1 ***Grewia tiliaefolia*** Vahl. var. ***tiliaefolia*** (Tiliaceae)

FGS, I: 133; FOB, I: 150; FBI, I: 386; ARM: 63

4.2 Dhaman.

4.3 Tree with young parts densely pubescent; leaves alternate, simple, ovate, acuminate; inflorescence axillary or extra-axillary, umbellate cymes; flower complete, actinomorphic, hermaphrodite; fruit didynous, minutely hairy.

4.4 Frequent. Fls. & Frs. : Mar. – Aug.

4.5.4 Wood very hard and used for cart-axis.

4.7 Fruits are cooling and astringent.

4.1 ***Guazuma ulmifolia*** Lam. (Sterculiaceae)

FGS, I: 122; FBI, I: 375; FOB, I: 144; ARM: 53

4.2 Khoto Rudraksh.

4.3 Trees, usually with soft wood; leaves alternate, simple, ovate-oblong; inflorescence terminal and or axillary cymes; flower yellow, complete,

actinomorphic; fruit oblong, woody, tuberculate; seed not winged, numerous.

4.4 Ornamental plants. Fls. & Frs. : Throughout the year.

4.6.1 Making rosaries from piece of stem for religious worshipping and wear by aged women of Vanajara.

4.1 ***Gymnema sylvestre*** (Retz.) Schult. (Asclepiadaceae)
FGS, I: 425; FBI, IV: 29; FOB, II: 224; ARM: 265

4.2 Madhunasini.

4.3 Twinning woody climber running over the tops of high trees; leaves opposite, ovate; inflorescence lateral umbellate cymes; flower complete, actinomorphic; fruit paired, terete, rigid; seed numerous, narrowly ovoid-oblong.

4.4 Rare. Fls. & Frs. : Aug. – Sep.

4.5.1 Shade-dried leaves powdered (2 to 4 gms per day) and taken in diabetes for reduce sugar in the blood (Rajubhai Barot).

4.7 Leaves have sugar destroying properties.

4.1 ***Helicteres isora*** Linn. (Sterculiaceae)
FGS, I: 122; FOB, I: 136; FNG: 249; FBI, I: 365; ARM: 54

4.2 Maradashing

4.3 Deciduous shrub, 1-3 m. high. with rough grayish branches. Leaves broadly oblong or rotundate, 7-15 cm. long, serrate, usually oblique, sometimes lobed, palminerved. Flowers zygomorphic, 20-35 mm. long, pink-red or scarlet. Fruit of five spirally twisted follicles, black when dry.

4.4 Frequent. Fls. & Frs. : July – Apr.

4.5.1 5 gm powder is given orally with water thrice a day for a week to cure diarrhoea.

4.7 An unspecified part has effect on isolated ilium.

4.1 ***Heliotropium ellipticum*** Ledeb. (Boraginaceae)
Syn. *Heliotropium cichwaldi* Steud.
FGS, I: 452; FBI, IV: 149; FOB, II: 277; ARM: 278

4.2 Nilkattei.

4.3 30-9- cm., erect, softly hairy stout herbs; leaves alternate, elliptic-oblong or obovate, base tapering; in florescence geminate or ternate, ebracteate, unilateral spikes; flower white, 2-ranked; Nutlets 4, ellipsoidal.

4.4 Common weed in cultivated fields. Fls. & Frs. : Mar. – Aug.

4.5.1 2-5 drops of extract of leaves are poured in ear to cure earache.

4.1 ***Heliotropium ovalifolium*** Forsk. (Boraginaceae)

FGS, I: 453; FOB, II: 278; FNG: 280; FBI, IV: 150; ARM: 279

4.2 Hathi Sundhi.

4.3 10-45 cm. prostrate or suberect, densely appressed white hairy herbs; leaves alternate, ovate-oblong or obovate; inflorescence hairy terminal, spikes; flower white, 2-ranked; fruit nutlets 4.

4.4 Common in cultivated fields. Fls. & Frs. : Aug. – Feb.

4.5.1 2-5 leaves are given orally in the early morning to cure ulcers.

4.7 Plant is diuretic, emollient and astringent.

4.1 ***Hemidesmus indicus*** (L.) R. Br. (Asclepiadaceae)

FGS, I: 433; FOB, II: 210; FNG: ad.-255; FBI, IV: 5; ARM: 266

4.2 Anantmul, Upalsary

4.3 A perennial, twinning or trailing climber with woody root stock; leaves opposite, narrow to broadly oblong; inflorescence in axillary opposite; flower greenish-purple; fruit follicles; seed elliptic-oblong.

4.4 Rare. Fls. & Frs. : Sept. – June.

4.5.1 Paste of root is applied in rheumatic pains.

4.7 Whole plant antiviral, roots are bitter, sweet. Stem is diaphoretic, diuretic. Flowers are antibacterial, antidermatitic.

4.1 ***Hibiscus cannabinus*** L. (Malvaceae)

FGS, I: 103; FBI, I: 339; FOB, I: 116; ARM: 40

4.2 Bhindi.

4.3 1-3 m., erect, prickly, glabrescent or hairy, herbs; leaves alternate; inflorescence axillary solitary with stout 1 cm. long peduncle; flower plae-yellow with a chocolate base within; fruit capsule; seed brown.

4.4 Cultivated in farm. Fls. & Frs. : Aug. – Dec.

4.5.2 Seeds are used as a fodder for increasing lactation.

4.5.3 Roasted seeds are used as a mouth freshener

4.5.4 Strong fiber is obtained from stem and it is used in preparation of ropes and strings.

Dry plants are use as fuel.

4.6.3 Fibre commercially important.

4.1 ***Hibiscus ovalifolius*** (Forsk.) Vahl. (Malvaceae)

Syn. *Hibiscus micranthus* L.

FGS, I: 105 FOB, I: 113; FNG: 247; FBI, I: 335; ARM: 41

4.2 Chanak Bhindi.

4.3 30-180 cm., slender, hairy, suffruticose, erect, herbs; leaves alternate, simple; inflorescence axillary solitary & in terminal racemes; flower pale-to bright rosy, complete; fruit capsule; seed reniform.

4.4 Frequent. Fls. & Frs. : Aug. – Mar.

4.5.1 1 teaspoon of root decoction is given orally in fevers.

4.7 Root is alterative.

4.1 ***Hibiscus rosa-sinensis*** L. (Malvaceae)

FGS, I: 107; FOB, I: 120; FBI, I: 344; ARM: 42

4.2 Jashud.

4.3 3-5 m. evergreen, nearly glabrous, arborescent shrubs; leaves alternate, hairy beneath; inflorescence axillary solitary; flower deep red or scarlet.

4.4 Ornamental planted in garden.

Fls. & Frs. : Throughout the year.

5.1 Warm leaf paste is applied on boils for suppuration.

4.6.1 Rural people used its flowers in worshipping their gods and goddesses.

4.7 Leaf extract is anti-inflammatory activity.

4.1 ***Holarrhena antidysenterica*** Wall. (Apocyanaceae)

FGS, I: 417; FOB, II: 195; FNG: 276; FBI, III: 644; ARM: 253

4.2 Kadavo Indrajav.

4.3 Large shrub with milky latex; young branches and leaves pinkish. Leaves broadly ovate to elliptic-oblong, strongly nerved beneath, 10-14 pairs of nerves. Cymes terminal, corymbose. Flowers white, sweet scented. Follicles green, cylindrical, with lenticels. Seeds comose at top.

4.4 Common in Taranga forest. Fls. & Frs. : Jan.-Dec.

4.5.1 5-10 gm of dried bark powder with boiled and cooled water is used twice a day for 5-7 days in amoebic dysentery (Vanjara community).

4.7 Stem-bark antiamoebic, anticancer, hypoglycemic, hypotensive fruit pasmolytic.

4.1 ***Holoptelea integrifolia*** (Roxb.) Planch. (Ulmaceae)

FGS, II: 636; FOB, III: 127; FNG: 299; FBI, V: 481; ARM: 406

4.2 Kanji.

4.3 5-6m, deciduous, spreading, glabrous tree; bark grayish-white or ash-coloured; leaves alternate, coriaceous; in florescence short racemes or fascicles; flower minute, greenish-yellow; fruit samara; seed ovate or ovate-oblong.

4.4 Common. Fls. &Frs. : Dec.-May.

4.5.1 Infusion of bark and leaves are applied to cure rheumatism.

4.5.3 Seeds are edible.

4.5.4 Fresh branches used as a shelter and housing.

Stem is used in prepration of big sieve.

4.7 The bark is blood purifier.

4.1 ***Hordeum vulgare*** L. (Poaceae)

FGS, II: 832; FBI, VII: 37; FOB, III: 575; ARM: 452

4.2 Jav.

4.3 An erect, glabrous, annual herb, 75-00 cm tall. Leaves 15-30x0.6-1.3 cm, flat, scabrid on both surfaces. Spikes emerging from leaf sheaths, 2-ranked, 7.5-9 cm long without awns and 18-20 cm with awns. Spikelets in each row 10-15, two rows of barren spikelets, alternating with each row of fertile spikelets.

4.4 Cultivated in farm. Fls. & Frs. : Feb.-Mar.

4.5.2 Seeds are fed to cattle for increasing milk production.

4.5.3 Whole plant used as a fodder.

4.1 ***Hydrilla verticillata*** (L.f.) Royle (Hydrocharitaceae)

Syn. *Serpicula verticillata* L.

FGS, II: 651; FOB, III: 170; FNG: 300; FBI, V: 659; ARM: 409

4.2 Hydrilla.

4.3 Aquatic, caulescent, slender, submerged free floting or rooting, leafy, fresh-water herbs forming large tangled masses; leaves whorled 3-8 per node; inflorescence axillary solitary of filiform peduncles; flower white; fruit subterete subulate; seed oblong-ellipsoid.

4.4 Occasionally present in water body.

Fls. & Frs. : Oct. – Dec.

4.5.1 Entire plant is put on inflammated part of the body for relief (Raghjibhai Desai).

4.1 ***Hygrophila auriculata*** (Schum.) Heine. (Acanthaceae)

Syn. Astracantha logifolia, Nees,

FGS, I: 543; FOB, II: 428; FNG: 288; FBI, IV: 408; ARM: 331

4.2 Kantashelio (Aekharo)

4.3 30-60 cm. armed, annual, strigose-hispid herbs; leaves sparsely hispid on sides; inflorescence axillary. Whorls of 8 flowers in 4 pairs at each node; flower bluish-purple; fruit capsule; seed orbicular.

4.4 Common. Fls. & Frs. : Sept.-Mar.

4.5.1 1/2 cup infusion of whole plant is taken orally for 3days to cure urinary complains.

4.7 The plant part possesses Analgesic and diuretic activity.

4.1 ***Hygrophila serphyllum*** (Ness.) T. Anders. (Acanthaceae)

Syn. *Hemiadelphus polyspermus* (Roxb.) Ness.

FGS, I: 543; FOB, II: 429; FNG: 288; FBI, IV: 406; ARM: 332

4.2 Sarpat.

4.3 A procumbent unarmed herbs; leaves opposite ovate, elliptic, hairy; flower bright purple or bluish purple with white streaks within on lower

lip; fruit capsule narrowly oblong or linear, grooved apex pointed; seeds 8-10, orbicular-ovoid, margins hairy.

4.4 Common. Fls. & Frs. : Oct.-Mar.

4.5.1 Crushed whole plant is applied on effacted part to cure wounds.

4.1 ***Impatiens balsamina*** L. ver. ***coccinea*** Hk.f. (Balsaminaceae)
FGS, I: 142; FOB, I: 185; FBI, I: 454; ARM: 67

4.2 Tanmania. (Balsam)

4.3 Annual erect herbs, 20-30 cm. high. leaves alternate, lanceolate, acuminate, serrate; petioles long. Flowers usually 1-3 together; standard petaloid, orbicular, retuse; wing petals unequally 2-lobed, lip with 20-35 mm. long, incurved spur. Capsule tomentose.

4.4 Common in monsoon. Fls. & Frs. : July-Dec.

4.5.4 Dyes obtained from leaves and flowers are used for colouring palm.

4.7 The plant part possesses antibiotic and anticancer activity.

4.1 ***Indigofera cordifolia*** Heyne. (Fabaceae)
FGS, I: 220; FOB, I: 331; FNG: 256; FBI, II: 93; ARM: 114

4.2 Gali.

4.3 10-30 cm., prostrate or trailing, copiously branched, radically spreading, pubscent or tomentose or almost woolly annual herbs; leaves alternate; inflorescence axillary, subsessile; fruit pods; seed 2, glabrous.

4.4 Rare. Fls. & Frs. : Throughout the year.

4.5.1 2-5 leaves are chewed to mouth ulcers.

4.1 ***Indigofera linifola*** Retz. var. ***linifolia*** (Fabaceae)
FGS, I: 222; FOB, I: 330; FNG: 256; FBI, II: 92; ARM: 115

4.2 Jinki Gali.

4.3 15-45 cm. long, prostrate or erect, grayish green, woody herbs; leaves alternate; inflorescence axillary racemes; flower red; fruit pods; seed brownish-black.

4.4 Common. Fls. & Frs. : July – Feb.

4.5.1 Paste of whole plant applied on wound for check the bleeding.

4.1 ***Indigofera oblongifolia*** Forsk. (Fabaceae)

Syn. *Indigofera paucifolia* Delile.;

FGS, I: 222; FOB, I: 334; FNG: 256; FBI, II: 97; ARM: 116

4.2 Zil, Ziladi

4.3 75-150 cm., twiggy herbs; leaves alternate, imparipinnately compound; inflorescence spicate, 20-50 flowered racemes; flower red, small; fruit pods; seed oblong.

4.4 Frequent. Fls. & Frs. : Apr. – Dec.

4.5.2 Plant ash and castor oil is applied on the neck of bullock to cure neck sore.

4.7 Root is purgative, cooling, pungent and antiphlogistic. Leaves are diuretic.

4.1 ***Indigofera tinctoria*** L. (Fabaceae)

FGS, I: 224; FOB, I: 339; FNG: Ad. No. 252; FBI, II: 99; ARM: 117

4.2 Gali

4.3 40-150 cm. erect, appressed silvery hairy to nearly glabrous, herbs; leaves alternate; inflorescence axillary, spicate; flower red; fruit pods 1; seed brown.

4.4 Rare. Fls. & Frs. : Aug. – Jan.

4.5.1 Paste of leaves is applied on scorpion sting for relief.

4.6.3 Cultivated for the blue dye.

4.7 Plant is stimulant and hypoglycemic. Leaves are antiseptic and blood purifier.

4.1 ***Ipomoea aquatica*** Forsk. (Convolualaceae)

FGS, I: 468; FOB, II: 315; FNG: 282; FBI, IV: 210; ARM: 285

4.2 Jalgamini, (Nada ni Vel)

4.3 Perennial glabrous herbs; leaves alternate; inflorescence solitary or 3-4 flowered cymes; flower purplish, complete; fruit capsule; seed 4 or 2 , microscopically hairy.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.3 Leaves are used as fodder.

4.7 Plant is aphrodisiac, anthelmintic, laxative and emetic.

4.1 ***Ipomoea batatas*** (L.) Lamk. (Convolvulaceae)

FGS, I: 468; FOB, II: 320; FBI, IV: 202; ARM: 286

4.2 Shakkariya.

4.3 Creeping perennial with tuberlous elongate, fusiform, roots; leaves alternate; inflorescence in axillary cymes of few to many flowers; flower pale to bright or deep purple; fruit capsule ovoid; seed trigonouse-ovoid.

4.4 Cultiveted in field. Fls. & Frs. : Aug. – Oct.

4.5.1 10ml root juice is given twice a day to cure diarrhoea.

4.5.3 Tuberous roots use as a vegetable.

Whole plant used as a fodder.

4.6.3 Plant grows well. Organized cultivation would be beneficial.

4.7 Tuberous root is aperients, nutritive and sweet.

4.1 ***Ipomoea cairica*** (L.) Sweet. (Convolvulaceae)

Syn. *Ipomoea palmata* Forsk.

FGS, I: 468; FOB, II: 319; FBI, IV: 214; ARM: 287

4.2 Naravel.

4.3 Evergreen perennial glabrous herbs with watery juice; leaves alternate; inflorescence in axillary; flower pale to bright or deep purple; fruit capsule; seed ovoid or subglobose, glabrous.

4.4 Cultivated in gardens (Ornamental.)

Fls. & Frs. : Throughout the year.

4.7 Seeds diuretic, laxative, purgative.

4.1 ***Ipomoea fistulosa*** Mart. (Convolvulaceae)

Syn. *Ipomoea carnea* auct.

FGS, I: 470; FOB, III: 321; ARM: 288

4.2 Nafat Vel. (Besharmi)

4.3 2-4 m., straggling shrubs; leaves alternate, broadly ovate or ovate-lanceolate; inflorescence axillary umbellate cymes; flower purple or rose-coloured; funnel-shaped; seed 2-4, black, densely brown, villous.

4.4 Very Common. Fls. & Frs. : Throughout the year.

4.5.3 Young branches are used as fodder.

4.5.4 Plants are growing for field fencing.

4.7 Whole plant : Anti-fungal, antibiotic.

4.1 ***Ipomoea nil*** (L.) Roth. (Convolvulaceae)

Syn. *Ipomoea hederacea* auct.

FGS, I: 471; FOB, II: 321; FNG: 282; FBI, IV: 199; ARM: 289

4.2 Kaladana.

4.3 Annual or perennial, herbaceous, slender, glabrous, or hairy twiners; leaves-alternate; inflorescence: axillary solitary; flower: bluish-white or light-blue; fruit; capsule; seed, ovoid-oblong. Black, smooth, glabrous.

4.4 Common in rainy season. Fls. & Frs. : Aug.-Feb.

4.5.1 Dried seeds roasted and powdered then applied in scalp with water. It is kept for 5-10 minutes and rinsed in water and repeated thrice in a week used by Raval community to remove dandruff.

4.5.3 Plant used as fodder for camel.

4.7 Seeds carminative, laxative. purgative.

4.1 ***Ipomoea obscura*** (L.) Ker-Gawl. (Convolvulaceae)

Syn. *Convolvulus obscurus* L.

FGS, I: 472; FOB, II: 317; FNG: 282; FBI, V: 251; ARM: 290

4.2 Vad fudardi.

4.3 Annual, glabrous or patently long hairy, slender herbs; leaves alternate; inflorescence axillary solitary; flower creamy white; fruit capsule; seeds deep-brown, oblong, velvety grey, pubescent.

4.4 Common in rainy season. Fls. & Frs. : July – Dec.

4.5.1 Paste of leaves is applied on boil.

4.1 ***Ipomoea pes-caprae***. (L.) Sweet, (Convolvulaceae)

Syn. *Ipomoea biloba* - Forsk.

FGS, I: 472; FOB, II: 317; FBI, IV: 212; ARM: 291

4.2 Aarvel, Maryad Vel.

4.3 Prostrate glabrous herbs having large & long roots with thick brown bark; leaves-alternate; inflorescence axillary solitary; flower pale to

bright or deep purple; fruit glabrous, brown; seeds large, densely brown-velvety.

4.4 Cultivated in the gardens. Fls. & Frs. : Throughout the year.

4.5.1 The paste of leaves is applied in rheumatism.

4.7 Whole plant antifertility, hypotensive, astringent, antiseptic, acrid, refrigerant, mucilaginous, stomachic, antiphlogistic, laxative, diuretic and tonic.

4.1 ***Ipomoea pes-tigridis*** L. (Convolvulaceae)

FGS, I: 472; FOB, II: 320; FNG: 282; FBI, IV: 204; ARM: 292

4.2 Vaghpadi.

4.3 Annual, densely petently hairy herbaceous twiners; leaves alternate; inflorescence capitate head of 3 or more flowers; flower pale rosy purple; fruit capsule, papery subglobose; seeds 4 or less, ovoid black, floccose-pubescent.

4.4 Common. Fls. & Frs. ; Aug. – Dec.

4.5.3 Whole plant used as a fodder (Raghjibhai Desai).

4.7 Roots purgative.

4.1 ***Ipomoea quamoclit*** L. (Convolvulaceae)

Syn. *Quamoclit vulgaris* choisy. in Mem.

FGS, I: 473; FOB, II: 331; FBI, IV: 199; ARM: 293

4.2 Kamlata. (Ganesh Vel)

4.3 Annual, slender, herbaceous, glabrous, twiners; leaves small, pinnatifid inflorescence: axillary solitary; flower white; fruit capsule; seeds black, minutely hairy, oblong.

4.4 Ornamental. Fls. & Frs. : Throughout the year.

4.5.1 Paste of leaves is applied on bleeding piles (Kotadi).

4.1 ***Ixora arborea*** Roxb. (Rubiaceae)

Syn. *Ixora parvifolia* Vahl.

FGS, I : 353; FBI, III : 142; FNG, : 270; FOB, II : 39; ARM : 218

4.2 Ixora. (Nevari)

4.3 Evergreen, much branched shrub. Leaves smooth, coriaceous, oblong or elliptic, sub-sessile, 7-15 x 2.5 – 6.0 cm. with rounded or obtuse tip, and rounded or cordate base, flowers white, subsessile, in compact panicle, branches brachiate or ascending; pedicels very short; corolla tube without hairs at mouth, style densely clothed with white hairs. Fruit depressed globose, shining black.

4.4 Common. Fls. & Frs. ; Mar. – Apr.

4.5.4 It is grown as a live fence surrounding human settlement..

4.7 Whole plant antiviral.

4.1 ***Ixora coccinea*** L. (Rubiaceae)

FGS, I : 354; FOB, II : 40; FNG : 270; FBI, III : 145; ARM : 219

4.2 Lal Ixora. (Rati Nevari)

4.3 60-200 cm. tall shrubs; leaves elliptic-oblong, sometimes obovate, flowers red, scarlet or yellow, terminal, paniculate cymes; berries rounded, globose, smooth, orange or purple.

4.4 Cultivated in gardens. Fls. & Frs. : Throughout the year.

4.5.1 2-3 drops of extract of aerial parts is put in eyes for treatment of cataract.

4.1 ***Jasminum officinale*** L. (Oleaceae)

FOB, II : 175; ARM : 244

4.2 Jui. (Jai)

4.3 A large straggling twinning climber; leaves opposite, pinnately compound; flower: white, very fragrant.

4.4 Cultivated in garden. Fls. : Throughout the year.

4.6.2 Flowers are used as garland of flower or decorate hair wearing ‘Veni’ by Thakor community.

4.7 Flowers are bitter, astringent, acrid, refrigerant, alexipharmic, ophthalmic, purgative and lactifuge.

4.1 ***Jatropha curcas*** L. (Euphorbiaceae)

FGS, II : 628; FOB, III : 95; FBI, V : 383; ARM : 393

4.2 Ratan Jot. (Vilayti Arandi)

4.3 Shrub 2-4 m. high. leaves long-petioled, broadly ovate-cordate, 10-15 cm. diameter, mature glabrous. Flower small; yellowish, with campanulate 5-10 lobed corolla, in terminal cymose panicles; petals cohering. Capsule subglobose or ellipsoid, 25 mm. long.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Latex mixed with water is taken orally to cure leukemia.

4.6.3 Seed oil used in making bio fuel.

4.7 Whole plant diuretic and seed oil purgative.

4.1 ***Jatropha gossypifolia*** L. (Euphorbiaceae)

FGS, II : 629; FOB, III : 94; FNG : 298; FBI, V : 383; ARM : 394

4.2 Nepalo.

4.3 Shrub, 1-2 m. high. leaves palmately lobed, with yellow viscid glands covering the leaf margins, petioles, and stipules. Flowers small, red, in glandular corymbose cymes; petals free, stamens 10-12. fruit broadly oblong, 2 cm. long reddish-green.

4.4 Common in waste places. Fls. & Frs. : Throughout the year.

4.5.1 Latex of plant is used in skin disease (tribal people of Taranga Hills).

4.5.2 Crushed leaves applied around neck of animals to cure their wounds.

4.7 Whole plant analgesic.

4.1 ***Justicia diffusa*** Willd. (Acanthaceae)

FGS, I : 545; FOB, II : 489; FNG : 290; FBI, IV : 538; ARM : 333

4.2 Khadsaliya ni jat.

4.3 20-30 cm. diffuse decumbent herbs; leaves opposite, ovate to ovate-elliptic or elliptic-lanceolate; in florescence axillary and terminal narrow spikes; flower pale to bright pink or purple; fruit capsule; seed 4, nearly spherical, subconcentrically rugose.

4.4 Common. Fls. & Frs. : July-Dec.

4.5.1 ½ cup root decoction is taken for 15 day to cure psychological disorders.

4.5.3 Plant is used as fodder.

4.1 ***Kalanchoe pinnata*** (Lam.) Pers. (Crassulaceae)

Syn. *Bryophyllum calycinum* Salisb.,

FGS, I : 25; FOB, I : 494; RNS : 223; ARM : 162

4.2 Pan Phuti.

4.3 An erect, stout perennial herb, loves large, very variable, succulent, deeply pinnatified twice or thrice; flowers yellow orange or magenta, in paniculate cymes.

4.4 Planted in garden. Fls. & Frs. : Jan. – Feb.

4.5.1 The fresh leaf is taken 15 days in daily morning with two glass of warm water for kidney stone, urinary bladder stone and urinogenital problems.

4.7 Whole plant is antiseptic, astringent, diuretic, carminative, anti-inflammatory and tonic.

4.1 ***Kickxia ramosissima*** (Wall.) Janch. (Scrophulariaceae)

Syn. *Linaria ramosissima* Wall.

FGS, I : 498; FBI, IV : 251; FOB, II : 353; ARM : 313

4.2 Bhini Ghilodi

4.3 Perennial, slender, glabrous or hairy herbs; leaves basal ones ovate-triangular; clear yellow, axillary, solitary and in terminal racemes, capsule ovoid or subglobose; seeds many, minute.

4.4 Rare in Taranga Forest. Fls. & Frs. : Throughout the year.

4.5.1 15g Powder of aerial part is taken orally for a month to control diabetes.

4.1 ***Kigelia pinnata*** (Jacq.) DC. (Bignoniaceae)

FGS, I : 519; FOB, II: 411; ARM : 316

4.2 Kigelia (Topgola).

4.3 An evergreen tree; leaves imparipinnate; leaflets subcoriaceous, elliptic-oblong or obovate-oblong; flowers lax, pendent racemes; fruit pale-brown.

4.4 Planted on Road Side. Fls. & Frs. : Feb. – June.

4.5.1 Bark paste is smeared on inflammated part to cure rheumatism (Kanjibhai Desai).

4.5.3 Roasted seed are edible

4.1 ***Kirganelia reticulata*** (Poir.) Baill. (Euphorbiaceae)

Syn. *Phyllanthus reticulates* Poir.

FGS, II : 629; FOB, III : 81; FNG : 297; FBI, V : 288; ARM : 395

4.2 Kamboi.

4.3 Straggling, monoecious shrubs; leaves elliptic or oblong, glabrous, sessile; flowers greenish-yellowish or creamy-white, axillary, males 2-6-clustered, females soitary; berries globose, smooth; seed irregularly trigonous.

4.4 Common. Fls. & Frs. : Aug. – Jan.

4.5.1 Plant twig used as toothbrush in toothache.

4.5.3 Roasted seeds are edible.

4.7 Roots Analgesic.

4.1 ***Lablab purpureus*** (L.) Sweet. (Fabaceae)

Syn. *Dolichos lablab* L.

FGS, I : 226; FBI, II : 209; FOB, I : 406; ARM: 118

4.2 Val Papadi.

4.3 Extensive twiner, leaflets broadly ovate rhomboid or elliptic – ovate ; flower white or pale creamy yellow ; 10 to 30 cm tall terminal and axillary racemes ; pod strongly falcate, linear oblong ; seeds oblong glabrous, pale – yellow when mature.

4.4 Cultivated for vegetable. Fls. & Frs. : Oct. – May.

4.5.3 Unripe fruits are used as vegetable.

4.7 Seeds are Antispasmodic, aphrodisiac and stomachic.

4.1 ***Lagenaria leucantha*** (Duch.) Rusby in Mem. (Cucurbitaceae)

Syn. *Lagenaria vulgaris* Ser.

FGS, I : 325; FOB, I : 581; FBI, II : 613; ARM : 193

4.2 Dudhi.

4.3 A stout, climbing or trailing climber; leaves shallowly 3-5-lobed; flowers 3-5 cm. across, white, axillary, solitary; berries light to dark-green; seed obovate or obovate-triangular, flat, glabrous.

4.4 Cultivated (It is cultivated for vegetable in kitchen gardens as well as in farms) Fls. & Frs. : Throughout the year.

4.5.1 The juice of leaves is given orally in jaundice.

4.5.3 Fruit is used as vegetable and in preparation of sweets.

4.7 Fruit is diuretic, laxative, cooling and tonic.

4.1 ***Lannea coromandelica*** (Houtt.) Herrill. (Anacardiaceae)

Syn. *Odina wodier* Roxb.

FGS, I : 167; FOB, I : 296; FNG : 254; FBI, II : 29; ARM : 94

4.2 Moyno.

4.3 Large deciduous, dioecious trees; young branches with smooth whitish bark and pink-crimson blaze. Leaves clustered at the tip of the branches; leaf-lets usually 7, obliquely ovate, 7-13 cm. long, stellately hairy beneath. Flower 3 mm. across, greenish yellow, in 5-20 cm. long racemes. Drupes oblong, smooth, glabrous.

4.4 Frequent in Taranga forest. Fls. & Frs. : Jan.– July

4.5.1 The paste of leaves boiled in sesame oil and externally applied on body to cure body pain.

4.5.4 Wood is used as a house hold furniture and firewood.

4.7 Bark and leaves are acrid, astringent, womb purifier, sweet, thermogenic, stomatic, anodyne, antiphlogistic and haemostatic.

4.1 ***Lantana camara*** auct. ver. ***aculeata*** (L.) Mold. (Varbenaceae).

FGS, I : 561; FOB, II : 498; FNG : 290; FBI, IV : 562; ARM : 342

4.2 Indradhanu.

4.3 Prickly shrub.Leaves opposite ovate, base cuneate, rounded or cordate. Flowers in pedunculate capitate spikes, all pink or orange, or central ones yellow or orange and peripheral ones pink. Drupes globose, 2-3 mm. bluish-Black.

4.4 Very Common. Fls. & Frs. : Throughout the year.

4.5.1 Paste of leaves is used in cuts and wounds.

4.5.4 It is grown as a field fence.

4.7 Leaf extract is antimicrobial.

4.1 ***Lantana salvifolia*** Jacq. (Verbenaceae)

FGS, I : 562; FOB, II : 499; FBI, IV : 562; ARM : 343

4.2 Indradhanu.

4.3 Strongly aromatic, straggling shrubs; leaves cauline & ramal, opposite; inflorescence in axillary pedunculate, lengthening short spikes & elongating in fruits; peduncles, slender; flower lilac, odorous, sessile; fruit drupe, globose, black, glabrous.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Leaf juice is applied in the mouth ulcer.

4.7 Fruits are carminative and diaphoretic.

4.1 ***Launaea procumbens*** (Roxb.) Ram. & Raj. (Asteraceae)

FGS, I : 387; FOB, II : 122; FNG : 273; FBI, III : 416; ARM : 228

4.2 Bhoypatri.

4.3 Glabrous, prostrate or sub erect, perennial herbs; leaves cauline & radical, sessile, glabrous; inflorescence cylindric, remotely subracemose; flower involucral bracts seriate, campanulate, imbricate; fruit achemes inner ones thick & 4-gonous, smooth, brown slightly.

4.4 Very Common. Fls. & Frs. : Throughout the year.

4.5.1 Paste of whole plant is applied on effected part to cure rheumatism.

4.1 ***Lawsonia inermis*** L. (Lythraceae)

Syn. *Lawsonia alba* Lam.

FGS, I : 309; FOB, I : 544; FNG : 266; FBI, II : 573; ARM : 178

4.2 Mendhi.

4.3 Glabrous, much-branched, bushy shrubs, bark grayish-white, smooth; leaves cauline & ramal decussate, opposite, elliptic-lanceolate or ovate-lanceolate; inflorescence terminal, pyramidal Panicled cymes; flower white or creamy-white, numerous; fruit capsule globose, glabrous, smooth; seeds minute, brown, smooth, glabrous.

4.4 Ornamental as well as willd. Common.

Fls. & Frs. : Throughout the year.

4.5.2 Fresh leaf paste is applied on the fractured bones of camel.

Paste of leaves is applied to cure foot and mouth diseases.

4.5.4 Dry leaves used as dye.

4.7 Leaves and bark is astringent, seeds are laxative and diuretic.

4.1 ***Lepidagathis trinervis*** Wall. (Acanthaceae)

FGS, I : 549; FOB, II : 471; FNG : 289; FBI, IV : 517; ARM : 334

4.2 Harancharo.

4.3 A small, suffruticose, erect or procumbent diffuse, perennial herbs with woody rootstock; leaves cauline & reamal, opposite; inflorescence axillary, sessile, ovoid spikes flower white with yellow, brown; fruit capsule ovoid-lanceolate, compressed; seeds oblong, apex rounded, brown, smooth.

4.4 Common. Fls. & Frs. : Aug.-Apr.

4.5.1 Plant ash along with oil applied on ring worm.

½ cup of plant decoction is given orally twice a day in fever.

4.7 Whole plant is antiseptic, diaphoretic and antipyretic.

4.1 ***Lepidium sativum*** L. (Brassicaceae)

FGS, I : 65; FOB, I : 37; FBI, I : 159; ARM : 13

4.2 Asaliyo.

4.3 Annual, slender, erect herbs; leaves cauline & ramal, alternate, exstipulate, glabrous; inflorescence terminal simple; flower broad, white, complete, actinomorphic, hermaphrodite, tetramerous, hypogynous; fruit broadly elliptic-oblong or ovate-oblong, glabrous; seed oblong, reddish brown, smooth, glabrous.

4.4 Cultivated in farms. Fls. & Frs. : Jan. – Apr.

4.5.1 5-7 seeds are placed in eye to remove foreign particles.

4.5.3 Whole plant used as fodder.

4.5.4 Whole plant is used in preparation of broom.

4.6.3 Mucilage extracted from seeds.

4.7 Leaves antiscorbutic.

4.1 ***Leptadenia pyrotechnica*** (Forsk.) Decne. (Asclepiadaceae)

Syn. *Leptadenia spartium* Wight.

FGS, I : 426; FOB, II : 237; FNG : 278; FBI, IV : 64; ARM : 267

4.2 Khip.

4.3 Much-branched bushy climber of ten leafless; leaves cauline & ramal, opposite; inflorescence in axillary fascicles of umbellate cymes; flower greenish-yellow, small, complete, fruit follicles paired, ovate, lanceolate, glabrous, terete; seeds numerous, ovate-lanceolate, glabrous.

4.4 Frequent. Fls. & Frs. : Aug. – Jan.

4.5.1 Extract of the leaves is put to cure ear complaints.

4.5.4 Plant is used in preparation of hut roof.

4.7 Whole plant antipyretic.

4.1 ***Leptadenia reticulata*** (Retz.) Wight. & Arn. (Asclepiadaceae)
FGS, I : 427; FOB, II : 237; FNG : 277; FBI, IV : 63; ARM : 268

4.2 Khirdodi (Nanidodi)

4.3 A twining climber with watery sap; leaves cauline & ramal, opposite, ovate to ovate; inflorescence sub axillary fascicles of boary-puberlus globose cymes; flower pedicel puberulous; fruit follicles paired, oblong or broadly lanceolate; seeds ovate-oblong, winged, glabrous.

4.4 Rare. Fls. & Frs. : Throughout the year.

4.5.1 Root powder used in eye diseases.

4.5.3 Leaves and fruit used as vegetable.

4.7 Leaves and fruits are tonic, astringent, cooling and aphrodisiac.

4.1 ***Leucas cephalotes*** (Roxb. ex. Roth.) Spreng. (Lamiaceae.)
FGS, I : 572; FOB, II : 549; FNG : 292; FBI, IV : 689; ARM : 348

4.2 Doshi no Kubo.

4.3 Erect branched hairy herbs; leaves elliptic, lanceolate, serrate; with short petiole; flower white in dense whorls; nutlets dark brown, smooth.

4.4 Common. Fls. : Aug.-Feb.

4.5.1 4-5ml juice of flowers is given in the early morning to cure cough and colds.

Juice of leaves and young shoot is applied externally in burns (Vanjara Community) in vijapur.

4.7 Whole plant diaphoretic and antiseptic.

4.1 **Limonia acidissima**, L. (Rutaceae)

Syn. *Feronia elephantum* Corr.

FGS, I : 144; FOB, I: 203; FNG : 251; FBI, I : 510; ARM : 72

4.2 Kothi.

4.3 Evergreen, spinous, glabrous, small tree; leaves cauline & remal, alternate, imparipinnately compound leaf; inflorescence lateral; flower pale-greenish yellow, polygamous, complete, fruit berry; indehiscent, globose; seeds numerous.

4.4 Frequent. Fls. & Frs. : Mar. – Dec.

4.5.1 1/2cup of fruit juice is given once a day for a week in asthma.

4.5.3 Fruit is edible.

4.7 Fruit is blood purifier.

4.1 ***Linderbergia muraria*** (Roxb.ex.D.Don) P. Bruehl. (Scrophulariaceae)

Syn. *Linderbergia indica* (L.) O. Ktze.

FGS, I : 499; FOB, II : 379; FBI, IV : 262; ARM : 314

4.2 Bhitchati.

4.3 Prostrate or diffuse, patently glandular hairy, leaves cauline & ramal, opposite; inflorescence axillary solitary and in terminal leafy racemes; flower complete, zygomorphic, hermaphrodite, pentamerous; fruit ovoid or oblong, globrous; seeds numerous, minute, dark-brown.

4.4 Occasionally. Fls. & Frs. : Throughout the year.

4.5.1 10ml the plant juice is given for a week once a day in chronic broanchitis.

4.1 ***Ludwigia perennis*** L. (Onagraceae.)

Syn. *Ludwigia parviflora* Roxb.;

FGS, I : 313, FOB, I : 550; FNG : 266; FBI, II : 588; ARM : 181

4.2 Panvel.

4.3 Annual herbs, 0.3-1.0 m. high., usually erect. Found in moist or wet fields. Leaves linear lanceolate. Flower short-pedicelled, small, yellow usually 4-merous. Capsule 3-16 mm. long. Seeds 0.3-0.5 mm. long.

4.4 Common. Fls. & Frs. : Aug. – Jan.

4.5.1 Leaf paste with salt is applied on infected skin parts to cure scabies and ring worms.

4.7 Whole plant antiviral and hypotensive.

4.1 ***Luffa acutangula*** (L.) Roxb. var. ***acutangula*** (Cucurbitaceae)

FGS, I : 326; FOB, I : 566; FNG : 267; FBI, II : 615; ARM : 194

4.2 Turiya

4.3 Annual climber. Stem smooth, angled.Leaves orbicular, angled or slightly 5-7 lobed, deeply cordate. Tendrils 3 fid.Male flowers racemed or panicled, with glandular bracts near the base of the pedicel, sepals lanceolate. Female flowers larger, solitary, often from the same axil. Fruit 8-12 cm. clavate or pyriform, narrowed at base to stalk, 3-celled. Seeds black, flattened, elliptic, with 4 grooves.

4.4 Cultivated in farms. Fls. & Frs. : Throughout the year.

4.5.3 Fruit used as a Vegetable.

4.5.4 Mature dry fruits (fiber) used as scrubbing brush.

4.7 Fruit is expectorant, nutritive. Seeds especially ripe ones have emetic and laxative.

4.1 ***Luffa acutangula*** (L.) Roxb. var. ***amara*** (Lam.) Clerk. (Cucurbitaceae)

FGS, I : 327; FOB, I: 567; FNG: 267; FBI, II : 615; ARM : 195

4.2 Ram Turia (Jungli Turiya)

4.3 Slender, glabrous, annuals climbers; leaves cauline & ramal, alternate; inflorescence: male & female flowers in same axil. Flower pale-yellow. Fruit berries linear-obovate or cylindric-fusiform; seeds black, ovoid, flat.

4.4 Common. Fls. & Frs. : July-Sep.

4.5.4 Mature dry fruits (Fibre) used as scrubbing brush (Sanghpur village).

4.1 ***Luffa cylindrica*** (L.) M.J. Roem. (Cucurbitaceae)

Syn. Luffa aegyptica Mill.

FGS, I : 327; FOB, I : 565; FNG : 253; FBI, II : 614; ARM : 196

4.2 Galka.

4.3 Monoecious, slender, climbing, glabrous climber; leaves broadly ovate; flowers bright-yellow, males in short racemes, female solitary; berries cylindric-oblong, pale-to dark olivaceous-green; seed flat, narrow winged.

4.4 Cultivated. Fls. & Frs. : July-Sep.

4.5.3 Fruit used as a Vegetable.

4.7 Fruits are blood purifier, expectorant, diuretic, nutritive, cooling and demulcent.

4.1 ***Luffa echinata*** Roxb. (Cucurbitaceae)

FGS, I : 327; FOB, I : 567; FBI, II : 615; ARM : 197

4.2 Kukad Vel.

4.3 Flabrous climbers with tendrils; leaves orbicular or reniform, 5-bobed, lobes minutely ciliate, scabrous; flowers white; male flowers in clusters; female-flowers solitary; fruit oblong, globos, clothed with ciliate spines; seeds many.

4.4 Common. Fls. & Frs. : Aug. – Oct.

4.5.1 1 teaspoon extract of leaf is given twice a day for a week to cure jaundice.

4.7 Seeds are emetic, expectorant, stimulant and purgative.

4.1 ***Lycopersicon lycopersicum*** (L.) Karst. (Solanaceae)

Syn. *Lycopersicum esculentum*, Mill.

FGS, I : 486; FOB, II : 345; FBI, IV : 237; ARM : 302

4.2 Tameta.

4.3 Erect or diffuse, glandular-pupesent, herbs; leaves cauline & ramal, alternate; inflorescence drooping, extra-axillary racemes. Flower greenish-to-deep yellow, complete, fruit berries deep-red to reddish-yellow, smooth, glabrous; seeds numerous, nearly spherical, flat, glabrous.

4.4 Cultivated in farms. Fls. & Frs. ; Throughout the year

4.5.3 Fruit used in salad & Vegetable.

4.7 Fruit blood purifier.

4.1 ***Madhuca indica*** J. F. Gmel. (Sapotaceae)

Syn. *Bassia latifolia* Roxb.

FGS, I : 407; FOB, II : 152; FNG : 274; FBI, III : 544; ARM : 238

4.2 Mahudo.

4.3 Trees with spreading Branches and brown bark. Leaves elliptic or oblong-elliptic. Flowers fleshy, cream-coloured, on long rustly-tomentose pedicels, clustered at the ends of usually leafless branches. Fruit ovoid, brown tomentose; seeds ellipsoid almost terete, shining brown.

4.4 Frequent. : Fls. & Frs. : Mar. – July

4.5.1 Paste of fallen dry flowers is applied on wounds (Tribal people's of Taranga Hills).

4.5.3 The seeds are crushed to yield oil called "Vegetable butter" which is edible and use by tribal's of Taranga Hill.

4.5.4 Dry flowers are used in preparation of country liquor by tribal people of Taranga Hills.

4.7 Stem bark hypotensive.

4.1 ***Maerua oblongifolia*** (Forsk) A.Rich. (Capparaceae)

Syn. *Maerua ovalifolia* (D.C.) Camb.

FGS, I: 74; FOB, I: 43; FNG: 244; FBI, I: 171; ARM: 22

4.2 Hemkand (Maerua)

4.3 Unarmed, climbing, glabrous, shrub; leaves simple alternate; inflorescence maxillary and terminal flower greenish-white, complete; fruit berry glabrous, seeds brown, globose, glabrous.

4.4 Common. Fls. & Frs. : Oct. – Feb.

4.5.1 10g. Powder of the roots is given with water to cure bronchitis (Mukeshbhai Modi).

4.7 Roots are anthelmintic. Leaves are digestive, blood purifier and anti-inflammatory.

4.1 ***Mangifera indica*** L. (Anacardiaceae)

FGS, I: 167; FOB, I: 291; FNG: 254; FBI, II: 13; ARM: 95

4.2 Ambo.

4.3 Evergreen trees with dark green foliage. Leaves lanceolate, 10-20 x 3-5 cm. flower polygamous, small, greenish white, in terminal panicles; panicles; pediels jointed. Drupes with fleshy and fibrous juicy mesocarp.

4.4 Cultivated. Fls. & Frs. : Jan. – July.

4.5.1 Two teaspoonful bark decoction is given twice a day for 3-5 days in empty stomach to treat bloody dysentery and chronic diarrhoea.

4.5.2 Paste of mango (dried fruit powder of *Mangifera indica*) and lemon juice along with water is given to animal orally in food poisoning.

4.5.3 Raw fruit & ripe fruits are edible.

4.5.4 Wood for making musical instruments and for other light works.

4.6.1 One of the magical beliefs about the plant is that a person who first seen its inflorescence and inahles the smeared inflorescence will not be bitten by the snakes for that particular year (*Vanjara* community).

4.6.3 Fruit commercially important.

4.7 Fruits (unripe) are astringent digestive, laxative and diuretic.

4.1 ***Manilkara hexandra*** (Roxb.) Dub. (Sapotaceae)

Syn. *Mimusops hexandra* Roxb.

FGS, I: 407; FOB, II: 155; FNG: 274; FBI, II: 549; ARM: 239

4.2 Rayan.

4.3 Evergreen, glabrous tree with shady head; leaves cauline & ramal, alternate; inflorescence axillary solitary flower creamy-white, small, numerous actinomorphic, fruit berries oblong, ovoid or ellipsoid, smooth, seeds ovoid, smooth, reddish-brown to black, shining.

4.4 Common. Fls. & Frs. : Sep.-Apr.

4.5.1 Latex is used in toothache.

4.5.3 Ripe fruits are edible.

4.5.4 Wood is strong and dense timber used in preparation of agricultural impliments.

Wood is used to prepare oil mill baize.

4.7 Bark is astringent, fruits are nutritive and aphrodisiac.

4.1 ***Manilkara zapota*** L. (Sapotaceae)

Syn. *Achras zapota* L.

FGS, I: 408; FOB, II: 156; FBI, III: 534; ARM: 240

4.2 Chikoo.

4.3 A large handsome tree with rough dark grey bark and dense crown. Leaves oblong-lanceolate or elliptic-oblong, obruse or subacute, shining sides with numerous very fine inconspicuous secondary nerves and petiole long. Flowers long-pedicelled. Fruit globose, usually with large black shining seeds, planted.

4.4 Cultivated in farms. Fls. & Frs. : Throughout the year.

4.5.3 Fruit is edible.

4.7 Fruits are cooling, astringent, tonic and diuretic.

4.1 ***Martynia annua*** L. (Martyniaceae)

Syn. *Martynia diandra* Glox.

FGS, I: 524. FOB, II: 414; FNG: 287; FBI, IV: 386; ARM: 324

4.2 Vinchhudo.

4.3 Perennial viscous hairy herbs 0.5-2.0 m. high. Leaves ovate orbicular, 15-23 cm. across, dentate, petiole fistular. Flowers with deep purple blotches on the inside of the corolla lobes; calyx and corolla glandular-pubescent. Fruit ovoid, green, drying black.

4.4 Common. Fls. & Frs. : July – Dec.

4.5.1 Fruit paste applied on scorpion sting; it is very effective.

4.7 Seeds hypotensive.

4.1 ***Maytenus emarginata*** (Willd) D.Hou. (Celastraceae)

Syn. *Gymnosporia monata.* Bth.

FGS, I: 153; FOB, I: 247; FNG: 252; FBI, I: 621; ARM: 83

4.2 Viklo (Vickro)

4.3 Thorny, bushy, armed, shrubs; leaves cauline & ramal, alternate; inflorescensce axillary or terminal cymes flower creamy-white, complete, actinomorphic, fruit capsule obovoid, globose, glabrous, reddish-purple, seeds ovoid, glabrous, chestnut brown, swelling.

4.4 Common. Fls. & Frs. : Nov.-Feb.

4.5.1 10-15 fresh leaves are eaten three times a day for two weeks to cure jaundice (Manipura village).

4.5.3 The fruit used as a cattle food.

4.5.4 Dry branches used as field fencing.

4.7 Whole plant Analgesic and Blood purifier.

4.1 ***Medicago sativa*** L. (Fabaceae)

FGS, I: 230; FOB, I: 327; FBI, II: 90; ARM: 119

4.2 Lachko (Rajko)

4.3 Erect, almost glabrous, perennial herbs; leaves cauline & ramal, alternate; inflorescence compact, axillary and terminal racemes; flower light purple or mauve; fruit pale-brown, slightly pubescent, armed; seeds: globose, brown.

4.4 Cultivated in farm. Fls. & Frs. : Throughout the year.

4.5.3 Plant cultivated for fodder.

4.7 Seeds are bitter, astringent, nutritive, emmenagogue and uterine tonic, leaves are nutritive, antiseptic and haemostatic.

4.1 ***Melia azedarach*** L. (Meliaceae)

FGS, I: 150; FOB, I: 218; FNG: 252; FBI, I: 544; ARM: 81

4.2 Bakan Limdo.

4.3 Deciduous tree; bark dark-brown, shallowly longitudinally furrowed; leaves cauline & ramal, alternate, exstipulate; inflorescence axillary panicled cymes; flower liliac, bracteate, bracteolate, complete; fruit drupe ellipsoid-oblong, yellow; seeds solitary, pendulous, elliptic.

4.4 Cultivated in garden. Frequent. Fls. & Frs. : Throughout the year.

4.5.1 Leaf paste is massaged on the body of children to cure rickets.

4.7 Whole plant alexipharmic, anthelmintic, diuretic and blood purifier.

4.1 ***Mentha spicata*** L. (Lamiaceae)

FGS, I: 575; FBI, IV: 647; FOB, II: 559; ARM: 349

4.2 Fudino.

4.3 Aromatic, perennial, creeping or ascending, glabrous herbs; eaves cauline & ramal, opposite, decussate; inflorescence in terminal whorls of thyrsoid panicles; flower purplish; bracts; fruit nutlets globose, brown.

4.4 Common. Fls. : Not seen.

4.5.1 Leaf paste along with fruit pulp of *tamarindus indica* and jaggery is taken with food for digestion.

4.5.3 Fresh leaves are used as a condiment.

4.7 Whole plant carminative, stimulant.

4.1 ***Millingtonia hortensis*** L.f. (Bignoniaceae)

FGS, I : 520; FOB, II : 409; FNG : 286; FBI, IV : 377; ARM : 317

4.2 Buch.

4.3 Handsome tree of rapid growth; bark yellowish-brown, rough, corky. Leaves cauline & ramal, opposite, pinnately compound; inflorescence axillary & hermaphrodite; fruit capsule linear, flat, ends acute, terete.

4.4 Planted in garden. Fls. & Frs. : Sep.-Dec.

4.5.4 Wood is used in preparation toys.

4.7 Stem bark is astringent and antipyretic.

4.1 ***Mimosa pudica*** L. (Mimosaceae)

FGS, I : 290; FBI, II : 291; FOB, I : 470; ARM : 156

4.2 Lajamni.

4.3 Softly hairy and heavily armed prostrate, diffuse suberect herbs; leaves cauline & ramal, digitate, sensitive; inflorescence axillary, solitary; flower pink, tetramerous, polygamous, complete; fruit flat, slightly curved, glabrous, compressed, dark-brown, seeds orbicular, compressed.

4.4 Planted in garden. Fls. & Frs. : Throughout the year.

4.5.1 10ml decoction of leaves is given orally in urinary infection

4.7 Whole plant is blood purifier.Bark, flower and fruits are astringent. Seeds are laxative.

4.1 ***Mimusops elengi*** L. (Sapotaceae)

FGS, I : 408; FOB, II : 155; FBI, III : 548; ARM : 241

4.2 Borsali.

4.3 A tall trees; bark grey or nearly light black, smooth. Leaves elliptic or elliptic-lanceolate, glabrous. Flowers white, fragrant, axillary, fruits yellow, smooth, ellipsoid, 2-seeded.

4.4 Planted in garden as well as on road side. Fls. & Frs. : June-Mar.

4.5.1 20g seed powder with water is taken for 5days in piles (Hathipura village).

4.5.3 Ripe fruits are edible.

4.1 ***Mirabilis jalapa*** L. (Nyctaginaceae)
FGS, I : 584; FOB, II : 567; ARM : 359

4.2 Gulbas.

4.3 Large, erect, branched herbs, with tuberous roots; leaves ovate, truncate or cordate; flowers white, red or yellow; corollar tube elongated; fruits leathery.

4.4 Cultivated garden plant. Fls. & Frs. : Throughout the year.

4.5.1 About two teaspoonfuls root paste (about 5 cm. long 10 pieces of root ground by mortar and pestle) is given once a day for 15 days to cure piles.

4.7 Root is aphrodisiac and laxative.

4.1 ***Mitragyna parvifolia*** (Roxb.) Korth. (Rubiaceae)
FGS, I : 355; FOB, II : 8; FNG : 270; FBI, III: 25; ARM : 220

4.2 Kadamb (Kalam)

4.3 Deciduous, glabrous or pubescent, tree; bark grey, smooth. Leaves cauline & ramal, opposite, ovate, elliptic-oblong, orbicular nearly glabrous; inflorescence axillary and terminal, globose heads; flower white turning yellow, complete, fruit capsule, glabrous, cuneate, seeds numerous, flat.

4.4 Frequent. Fls. & Frs. : Apr. – Dec.

4.5.3 Decoction of stem bark used as mouthfreshner.

4.5.4 Stem is used in preparation of agriculture implement viz. Khapo, Perani.

4.7 Acrid, bitter, stomachic, febrifuge, styptic, vulnerary, stomachic, anti-inflammatory, anodyne, depurative.

4.1 ***Momordica charantia*** L. (Cucurbitaceae.)

FGS, I : 329; FOB, I : 562; FNG : Ad. 253; FBI, II : 616; ARM : 198

4.2 Karela.

4.3 A perennial, with stem slender, branched, furrowed, glabrous and shining. Tendrils simple, elongate, striate, glabrous. Flower yellow, small fruits oblong irregularly shaped.

4.4 Cultivated in field. Fls. & Frs. : Throughout the year.

4.5.1 Fruit juice is effective in controlling diabetes.

Fruit juice is used as drink mixed with 'Misri', one glass daily, to control acidity and to increase appetite.

4.5.3 Fruit use as a vegetable.

4.7 The fruit is antipyretic.

4.1 ***Momordica dioica*** Roxb. (Cucrbitaceae)

FGS, I : 329; FOB, I : 563; FNG : 267; FBI, II : 617; ARM : 199

4.2 Kantoda.

4.3 Climbers, leaves ovate, eglandular, membranous, glabrous; tendrils filiform, simple, glabrous; flowers dioecious; male flowers solitary, corolla yellow; fruit ovoid;

4.4 Common. Fls. & Frs. : July-Nov.

4.5.3 Fruit used as a Vegetable.

4.7 Fruits are astringent and root is antiseptic.

4.1 ***Moringa concanensis*** Nimmo. (Moringaceae)

FGS, I : 169, FBI, II : 45; FOB, I : 301; ARM : 97

4.2 Kadvo Sargavo.

4.3 6-12 m unarmed deciduous tree; leaves alternate; inflorescence axillary; flower white or creamy-white; fruit capsule; seed numerous.

4.4 Rare. Fls. & Frs. : Oct. – Dec.

4.5.1 Seed yield oil is applied externally on rheumatism.

4.1 ***Moringa oleifera*** Lamk. (Moringaceae)

Syn. *Moringa pterygosperma* Gaertn.

FGS, I : 170; FOB, I : 301; FNG : 254; FBI, II : 45; ARM : 96

4.2 Saragvo.

4.3 Deciduous trees with corky grayish or pale brown Bark and soft white wood. Leaves generally tripinnate; leaflets opposite, elliptic ovate, Flowers white in large axillary panicles. Fruit an angular, capsule, up to 30 cm. long, green outside, white and pitted in side. Seed triangular.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Extract of leaves (1-2 drops) is applied on eye twice a day in cases of inflamed tumour on the eyelid.

4.5.2 Paste of leaves and stem bark is fed with sugar to increase lactation.

4.5.3 Fruits used as a Vegetable.

4.6.3 Fruits are economic importance as Vegetable.

4.7 The plant part possesses antiviral and antibacterial activities.

4.1 ***Morus alba*** L. (Moraceae)

FGS, II : 647; FOB, III : 159; FBI, V : 492; ARM : 405

4.2 Shetur.

4.3 Small deciduous, monoecious or dioecious trees, 6-8 m. tall. Leaves ovate or cordate, serrate, sometimes 3-lobed,acuminate. Flowers greenish in short pedunculous catkins. Sorosis purplish black when ripe.

4.4 Planted in gardens. Fls. & Frs. : July – Dec.

4.5.1 Leaves are chewed in sour throat.

4.5.3 Fruits are edible.

4.7 Root bark antifungal and antibacterial.

4.1 ***Mucuna prurita*** Hk. f. (Fabaceae)

Syn. *Mucuna pruriens* DC.

FGS, I : 234; FOB, I : 389; FNG : 259; FBI, II : 187; ARM : 120

4.2 Kuvach.

4.3 Extensive, lignose, hairy twiner; leaves 3-foliolate, petiolate; leaflets appressedly silky-hariy; inflorescence drooping racemes; flower manuv or dark-purple; fruit pods 5 shaped; seed elliptic.

4.4 Rare. Fls. & Frs. : Sept. – Dec.

4.5.1 Kaucha Pak is prepared from seeds. It is taken to increase sexual urges.

4.7 Fruit anticancer and hypoglycemic.

4.1 ***Mukia maderaspatana*** (L.) M.Roem. (Cucurbitaceae.)

Syn. *Melothria maderaspatana*, Cogn.;

FGS, I : 330 ,FOB, I : 573; FNG : 268; FBI, II : 623; ARM : 200

4.2 Chanak Chibhdi.

4.3 slender creeping or climbing herb, with firm, 3-7 lobed and toothed very rough deeply cordate leaves. Flowers solitary, or a few fasicled, small, yellow. Berries globose with firm epicarp, often hairy.

4.4 Occasional. Fls. & Frs. : July – Nov.

4.5.1 Roots are used to cure toothache.

4.5.3 Fruits are edible.

4.7 Whole plant aperient and expectorant.

4.1 ***Murdannia nudiflora*** (L.) Brenan. (Commelinaceae)

Syn. *Aneilema nudiflorum* R. Br.

FGS, II : 690; FOB, III : 298; FNG : 302; FBI, VI : 378; ARM : 433

4.2 Murdannia.

4.3 10-30 cm., annual, delicate, suberect or diffuse, bright-green herbs; leaves alternate, broadly oblong-linear, ovate-lanceolate inflorescence axillary & terminal; flower violet-purple or pale-purple, complete, zygomorphic, perianth petals 6, fruit capsule mucronate, trigonously subglobose, membranous, smooth; seed rugose, 3-gonous, tuberculate.

4.4 Rare. Fls. & Frs. : Aug. – Oct.

4.5.1 5ml plant extract is taken orally in stomach pain.

4.5.3 Tender shoots vegetable.

4.1 ***Murraya koenigii*** (L.) Spreng. (Rutaceae)

FGS, I : 145; FOB, I : 193; FBI, I : 503; ARM : 73

4.2 Mitho Limdo.

4.3 3-5 m., deciduous, Unarmed, tree; leaves alternate; inflorescence terminal, panic late cymes; flower creamy-white or dirty white; fruit berry; seed glabrous testa.

4.4 Common. Fls. & Frs. : Feb.-May.

4.5.1 Root juice (about 5 cm. long 10 pieces of root crushed by mortar and pestle) is administered externally twice a day for 7 days to relieve pain associated with kidney problem.

4.5.2 Powder of root is mixed with latex of *calotropis sp.* and it is applied externally to the animal to cure poisonous effect.

4.5.3 Leaves are used as a condiments in daily cooking.

4.7 Leaves are astringent, aromatic and febrifuge.

4.1 ***Murraya paniculata*** (L.) Jack. (Rutaceae)

Syn. *Murraya exotica* L.

FGS, I : 145; FOB, I :193; FBI, I : 502; ARM : 74

4.2 Kamini (Jasvanti)

4.3 3-5 m., evergreen, unarmed, tree; leaves alternate, exstipulate; inflorescence terminal & axillary; flower while, campanulate; fruit berry; seed coat densely pubescent.

4.4 Cultivated in gardens. Fls. & Frs. : Throughout the year.

4.5.1 1 teaspoon decoction of stem bark is given twice a day for 15days in rheumatism.

4.7 Leaves are cooling, digestive and aromatic.

4.1 ***Musa paradisiaca*** L. (Musaceae)

FGS, II : 666; FOB, II : 249; FBI, VI : 262; ARM : 414

4.2 Kel

4.3 2-8 m., stoloniferous, stout, perennial herbs; leaves oblong to elliptic-oblong; inflorescence dense cymose. Subtended; flower incomplete, zygomorphic; fruit cylindric; seed embedded in pulp.

4.5 Cultivated in farms. Fls. & Frs. : Throughout the year.

4.5.1 Fruits taken orally to cure amoebic dysentery.

4.5.2 Fruits mixed with milk are fed to animal against swelling of udder and mastitis.

4.5.3 Fruits are edible

4.6.1 Leaves used in several sacred ceremonies, Havan, Katha.

4.6.3 Fruits commercially important.

4.7 The extract possesses anti ulcer activity.

4.1 ***Nelumbo nucifera*** Gaertn. (Nymphaeaceae)

FGS, I : 57; FBI, I : 116; FOB; I : 28; ARM : 7

4.2 Kamal.

4.3 Perennial large, aquatic, rhizomatous herb; leaves flat or somewhat hollow; inflorescence solitary; flower erect or cernuous; fruit etaerio of nuts; seed filling the carple.

4.4 Abandant in Vadnagar pond. Fls. & Frs. : Aug. – Oct.

4.5.1 Seeds used as tonic.

4.6.1 Fruits are used as beads in rosaries by devotees of Lord Shiva. Fruit & seeds use in worship of Lord Shiva.

Flowers used for religious ceremonies.

4.7 Astringent, bitter, sweet, cooling, emollient, diuretic, sudorific, antifungal, antipyretic, cardiotonic, fragrant, anthelmintic, depurative and aphrodisiac.

4.1 ***Nerium indicum*** Mill. (Apocynaceae)

Syn. *Nerium odorum* Soland.

FGS, I : 417; FOB, II : 206; FNG : 276; FBI, III : 655; ARM : 254

4.2 Karen.

4.3 2-3 evergreen shrubs; leaves whorled with 3 leaves; inflorescence terminal racemose cymes or dichasial cyme; flower red or white; fruit follicles.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Latex is applied on effected parts thrice a day in cases of ringworm.

4.6.1 Flowers used for religious ceremonies.

4.7 Whole plant is antiseptic.

4.1 ***Neuracanthus sphaerostachyus*** (Nees.) Dalz. (Acanthaceae)

FGS, I : 550; FOB, II : 465; FNG : 289; FBI, IV : 491; ARM : 335

4.2 Ganthera.

4.3 27-75 cm., suffrutescent, erect herbs; leaves opposite, subsessile; inflorescence axillary sessile spikes; flower blue to bluish-purple; fruit capsule; seed orbicular.

4.4 Common. Fls. & Frs. : Aug.-Jan.

4.5.1 Powder of the flowers and fruits is taken with water for a month to control diabetes.

4.1 ***Nicotiana tabacum*** L. (Solanaceae)

FGS, I : 487; FOB, II : 346; FBI, IV : 245; ARM : 303

4.2 Tamaku.

4.3 30-90 cm., Viscidly-Pubescent, erect, much-branched, annual or Perennial herbs; leaves alternate; inflorescence long axillary and terminal corymboid panicles; flower bright-rosy-pink; fruit capsule; seed glabrous.

4.4 Cultivated crop. Fls. & Frs. : Feb.–Apr.

4.5.2 Leaf paste is applied to cure foot diseases in domestic animal.

4.5.4 Leaves are used for Cigar, Bidi, & Chewing tobacco & pan masala.

4.6.3 Cultivated as a cash crop in Mehsana District.

4.1 ***Nyctanthes arbortristis*** L. (Oleaceae)

FGS, I : 411; FOB, II : 176; FNG : 274; FBI, III : 603; ARM : 245

4.2 Parijatak.

4.3 3-8 m. small trees, seldom tree; leaves coriaceous; in trichotomously cymose capitate heads; flower fragrant; fruit capsule; seed obovate, black.

4.4 Planted in garden. Fls. & Frs. : Aug. – Feb.

4.5.1 Seed crushed and applied on scalp to remove dandruff.

Decoction of leaves is mixed with honey, it is given in stomatitis (Vishnubhai Trivedi).

4.6.1 Flowers used in worship of Lord Vishanu.

4.7 Leaf antiamoebic and anti-inflammatory.

4.1 ***Nymphaea stellata*** Willd. (Nymphaeaceae)

FGS, I : 58; FBI, I : 114; FOB, I : 27; ARM : 8

4.2 Poyana (Kamal).

4.3 Large aquatic floating rhizomatous perennial herbs with creeping root stock; leaves wavy, greenish above; inflorescence solitary; flower white or pale blue; fruit fleshy berry; seed small.

4.4 Rare. Fls. & Frs. : Aug. – Nov.

4.5.3 Fruit & tubers are edible.

4.6.1 Flowers used for religious ceremonies.

4.7 Flowers are cardiotonic, aphrodisiac. Fruits are stomachic.

4.1 ***Ocimum basillicum*** L. (Lamiaceae)

FGS, I : 577; FOB, II : 522; FBI, IV : 608; ARM : 350

4.2 Damro.

4.3 30-40 cm., aromatic erect, much-branched, herbs; leaves opposite; inflorescence in compact or distant whorls in terminal; flower white; fruit carcaerulus splitting in to 4 nutlets of ellipsoid.

4.4 Common. Fls. & Frs. : Throughout the year.

4.6.1 Flowers used by Muslim community for worship.

4.7 Whole plant anthelmintic and antipyretic.

4.1 ***Ocimum canum*** Sims. (Lamiaceae)

FGS, I : 577; FOB, II : 521; FNG : 291; FBI, IV : 607; ARM : 351

4.2 Jungli Tulsi.

4.3 20-45 cm. aromatic herbs; leaves opposite decussate; inflorescence terminal racemes; flower white or pink; fruit carcaerulus splitting in to 4 nutlets.

4.4 Frequent. Fls. & Frs. : Throughout the year.

4.5.1 A decoction of leaves and young branches is taken in malarial fever.

4.7 Leaves are aromatic, antipyretic and carminative. Seeds are diuretic.

4.1 ***Ocimum gratissimum*** L. (Lamiaceae)

FGS, I : 578; FOB, II : 522; FNG : 291; FBI, IV : 608; ARM : 352

4.2 Bavachi – Ram Tulsi.

4.3 45-100 cm. perennial, erect, herbs; leaves opposite; inflorescence verticillaster formed of 8-20 cm. long racemes flrming compact whorls; flower pale-greenish-yellow; fruit carcaerulus splitting in to 4 nutlets.

4.4 Common. Fls. & Frs. : Aug.-Jan.

4.5.1 Seeds taken with milk for cooling used in chronic dysentery & diarrhoea (Falu village).

4.7 Essential oil present in the plant parts possesses antibacterial activity.

4.1 ***Ocimum sanctum*** L. (Lamiaceae)

FGS, I : 578; FOB, II : 521; FBI, IV : 609; ARM : 353

4.2 Tulsi.

4.3 Perennial herbs, ca 50 cm. high. Leaves ovate or ovate-oblong, 1.5-3.0 cm. long verticellasters racemed; bracts broady cordate; finally reflexed; calyx ca 3 mm. long; corolla purplish, upper lip pubescent on the pack. Nutlets reddish yellow with black marking.

4.4 Very Common. Fls. & Frs. : Throughout the year.

4.5.1 Leaf paste is applied externally on forehead to get relief from headache. About 10 ml leaf decoction with ginger juice is given to cure cough and fever twice a day for 5 days.

4.6.1 Leaves used in worship of Lord Vishnu by hindus.

Small pieces of wood are used as beads in rosaries by devotees of Lord Krishna.

4.7 Leaf extract possesses antiulcer, analgesic and antiallergic activity.

4.1 ***Oldenlandia corymbosa*** L. (Rubiaceae)

FGS, I : 358; FOB, II : 15; FNG : 270; FBI, III : 64; ARM : 221

4.2 Parpat.

4.3 10-30 cm. annual, erect or diffuse, glabrous herbs; leaves opposite, decussate; inflorescence axillary cymes in generally 3-flowerd; flower white; fruit capsule; seed pale, brown.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 ½ cup of decoction of leaves is given orally for 3days in jaundice.

4.1 ***Opuntia elatior*** Mill. (Cactaceae)

Syn. *Opuntia dillenni* Grah.

FGS, I : 333; FOB, I : 552; ARM : 204

4.2 Phaphdiyo Thor.

4.3 90-200 cm. succulent shrubs with jointed flat or columnar stems; leaves fall off soon or modified in to spines; inflorescence axillary solitary on free margins of joints; flower yellow, or pale-pink; fruit berry.

4.4 Common on farm bordars. Fls. & Frs. : Dec. – Apr.

4.5.4 Whole plant used as a farm fencing.

4.7 Whole plant is anti-inflammatory and antiseptic.

4.1 ***Oryza sativa*** L. (Poaceae)

FGS, II : 845; FOB, III : 565; FBI, VII : 93; FNG : 322; ARM : 453

4.2 Dangar (Chokha)

4.3 75-100 cm. tall, annual herbs; culms hollow, erect; leaves linear, flat; inflorescence solitary or fascicled; grain elliptic-oblong.

4.4 Cultivated crop. Fls. & Frs. : Aug.-Nov.

4.5.1 Some pieces of straw are chewed and juice is swallowed to get rid from burning sensation at the time of urination during summer.

4.5.2 Paste prepard from seeds of *Adad* & Rice is applied externally on sprains.

4.5.3 Seeds are edible as Rice.

Plant used as fodder.

4.6.1 Grains puttin on vermillion tika spot on forehead of the bride & groom especially in marriage ceremony.

4.6.3 Cultivated as a food crop.

4.7 Seeds hypotensive.

4.1 ***Oxalis corniculata***. L. (Oxalidaceae)

FGS, I : 141; FOB, I : 177; FNG : 251; FBI, I : 436; ARM : 68

4.2 Navari

4.3 Slender herbs with creeping stem. Leaflets 3, digitate, obovate, bilobed, 5-15 mm. long and equally broad. Flowers ca 7 mm. across, in axillary

peduncled clusters; petals oblong-oblanceolate, yellow, capsule subcylindric, 8-20 mm. long pubescent.

4.4 Cultivated in garden.

Fls. & Frs. : Throughout the year.

4.5.1 The juice of the whole plant is gently rubbed on the skin against skin allergies for 3-5 days.

Two or three drops of leaf juice (Juice obtained by crushing 5-6 leaves between palms of hands) is put in the eye twice a day for 3 days to relive redness caused by dust allergy.

4.7 Extract of the plant part is antibacterial. Leaves are cooling, appetizer, antiscorbid and astringent.

4.1 ***Pancratium triflorum*** Roxb. (Amaryllidaceae)

FGS, II : 669; FOB, III : 259; FBI, VI : 285; ARM : 416

4.2 Garden lili (Pancratium)

4.3 Perennial herbs, bulbs 3.75-5 cm. across; leaves contemporary with flowers, narrowly linear-lanceolate; inflorescence terminal umbels on slender long scape; flower white, incomplete, zygomorphic; fruit capsule subglobose.

4.4 Ornamental. Fls. & Frs. : Throughout the year.

4.5.4 Girls of Thakor community wear a garland of flower or decorate hair by wearing “Veni”.

4.7 Whole plant cardio-tonic, diuretic.

4.1 ***Pandanus odoratissimus*** L.f. soland (Pandanaceae)

Syn. *Pandanus tectorius* Soland.

FGS, II : 695; FOB, III : 324; FNG : 302; FBI, VI : 485; ARM : 436

4.2 Kevdo.

4.3 Large small trees upto 6 m. high; leaves spirally arranged at the ends of branches; inflorescence spadix; flower pistillate, hypogynous; fruit yellow or red.

4.4 Planted in gardens. Fls. & Frs. : July – Oct.

4.5.1 Extract of leaes is taken for 3days in leucoderma (Harsadbhai Shah).

4.5.2 20ml. root juice is given orally to cure prolapsed of uterus.

4.6.1 Sweet scented male flowers leafy golden bracts use in worship (Kevda trij) by Hindu.

4.7 Leaves are diaphoretic, pungent, stimulant, alexiteric and aphrodisiac.

4.1 ***Parkinsonia aculeata*** L. (Caesalpiniaceae)
FGS, I : 275, FBI, II : 260; FOB. I : 442; ARM : 143

4.2 Ram-baval.

4.3 3-8 m. small tree, armed with sharp woody erect spines & tomentose branchlets; leaves pinnae 2 or 3 pairs; inflorescence axillary; flower yellow, complete, zygomorphic; fruit pods; seed ellipsoidal-oblong.

4.4 Common. Fls. & Frs. : Jan. – May

4.5.1 Fresh root are rubbed with fresh water on rabbis dog bite for seven days.

4.5.4 Dry branches are used as a fuel.

4.7 Seeds are bitter, sweet, antipyretic, anti-inflammatory. Leaves are antipyretic, diaphoretic and abortifacient.

4.1 ***Passiflora edulis*** Sims. (Passifloraceae)
FGS, I : 315, FOB, I : 557; ARM : 184

4.2 Krushan Kamal.

4.3 Woody climber with simple axillary tendrils; leaves alternate; inflorescence axillary, solitary; flower bluish-purple; fruit edible berries; seed numerous, usually ovoid.

4.4 Grow near house for its fragrent flowers. Ornamental.
Fls. & Frs. : Throughout the year.

4.5.1 Leaf paste is applied on forhead to cure headache.

4.7 Fruit purgative, tonic.

4.1 ***Passiflora foetida*** L. (Passifloraceae)
FGS, I : 315; FOB, I : 557; FNG : 267; FBI, II : 599; ARM : 185

4.2 Jangli Krushan Kamal.

4.3 A slender neutralized herbaceous foetid tendrillar climber with branchlets densely stiff-hispid; leaves alternate; inflorescence axillary solitary; flower white; fruit berries; seed numerous, oblong.

4.4 Frequent. Fls. & Frs. : Aug. – Dec.

4.5.1 The leaves are used to cure itche and giddiness (tribals of taranga hill).

4.7 Leaves are anti-inflammatory and emmenagogue. Fruit is emetic.

4.1 ***Pedalium murex*** L. (Pedaliaceae).,

FGS, I : 523; FOB, II : 412; FNG : 287; FBI, IV : 386; ARM : 321

4.2 Ubhu gokharu.

4.3 15-50 c,. simple or branched, erect or diffuse pubscent herbs; leaves alternate or (sub) opposite; inflorescence axillary solitary; flower complete, zygomorphic; fruit drupes; seed 2 in each cell.

4.4 Common. Fls. & Frs. : July - Jan.

4.5.1 Decoction of fruits is given twice a day (2-3 teaspoonfuls) in cases of night discharge.

4.7 Fruits Antiseptic, diuretic, tonic.

4.1 ***Pedilanthus tithymaloides*** (L.) Poir. (Euphorbiaceae)

Syn. *Euphorbia tithymaloides* L.

FGS, II : 630; FBI, V : 239; FOB, III : 124; ARM : 396

4.2 Vilayti Kharsani.

4.3 60-90 cm. erect or scandent, succulent, deciduous, distinctly gemiculate shrubs; leaves alternate, broadly ovate; inflorescence obliquely zygomorphic; flower scarlet or bright-rosy-pink.

4.4 Cultivated in gardens. Fls. & Frs. : Jan. – May.

4.5.1 Crushed hot stem applied on forehead to cure headache.

4.1 ***Peltophorum Pterocarpum*** (DC.)Backer. (Caesalpiniaceae)

Syn. *Peltophorum ferrugineum* Benth.

FGS, I : 276; FBI, II : 257; ARM : 144

4.2 Tamrafali.

4.3 5-16 m. densely foliaceous evergreen trees; leaves alternate, bi-pinnately compound; inflorescence terminal & axillary; flower bright-yellow; fruit pods; seed obovate-oblong.

4.4 Planted on road sides. Fls. & Frs. : Throughout the year.

4.5.4 Stem & branch use as a firewood.

Wood is used in preparation of tool handle viz. *Kodari, Pavada*, Axe.

4.1 ***Pennisetum typhoides*** (Burm.f.) Stapf & Hubb. (Poaceae)

FGS, II : 856; FOB, III : 432; FBI, VII : 082; ARM : 454

4.2 Bajaro.

4.3 1-2 m. tall, stout, simple or branched, annuals; leaves linear to linear-lanceolate, glabrous or hairy; spikes cylindric, terminal, pale-brown. Spikelets 0.3-0.4 cm. long.

4.4 Cultivated crop. Fls. & Frs. : Mar.-May

4.5.2 Boiled seeds are mixed with jaggery given to animals during delivery.

4.5.3 Fruit use as a cereals in making Rotla.

Stem leaves use as fodder.

4.6.3 Cultivated as a cerals crops.

4.7 Grains are aphrodisiac, expectorant, astringent, hot, sweet, galactagogue and nutritive.

4.1 ***Pentatropis capensis*** (L.f.) Bullock. (Asclepiacaceae)

Syn. *Pendtatropis microphylla*, wight. & Arn.

FGS, I : 428; FOB, II : 218; FNG : 277; FBI, IV : 20; ARM : 269

4.2 Shingroti.

4.3 A twining glabrous perennial herb; leaves opposite, ovate to ovate-oblong; inflorescence umbellate cymes; flower complete, actinomorphic; fruit ovate-lanceolate or ovate-oblong, thickly margined; seed ovate, narrowly margined, winged, flattened.

4.4 Common. Fls. & Frs. : Aug. – Dec.

4.5.1 Whole plant are used to cure skin diseases.

4.7 Whole plant : anti-fungal, antiseptic.

4.1 ***Pergularia daemia*** (Forsk.) Chiov. (Asclepiadaceae)

Syn. *Daemia extensa* R.Br.

FGS, I : 429; FOB, II : 219; FNG : 277; FBI, IV : 20; ARM : 270

4.2 Chamar Dudheli.

4.3 A perennial twining climbers, foetid when bruised & with much silky juice; leaves opposite, cordiform; inflorescence in leteral, drooping,

umbellate cymes; flower greenish-yellow or creamy-yellow; fruit follicles; seed numerous.

4.4 Common. Fls. & Frs. : Oct.-Mar.

4.5.1 ½ cup juice of leaves is given orally in diarrhoea.

4.7 Whole plant Anthelmintic, antipyretic, emetic.

4.1 ***Peristrophe bicalyculata*** (Retz.) Nees. (Acanthaceae)

FGS, I : 551; FOB, II : 495; FNG : 290; FBI, IV : 554; ARM : 336

4.2 Kali Anghedi.

4.3 1-1.5 m. erect herbs; leaves opposite, decussate; inflorescence axillary & terminal; flower complete, zygomorphic; fruit capsule; seeds 4, orbicular.

4.4 Very common. Fls. & Frs. : Oct.-Apr.

4.5.1 Extract of the leaves is applied externally to cure swelling.

4.7 Whole plant is hypotensive.

4.1 ***Phoenix sylvestris*** (L.) Roxb. (Aracaceae)

FGS, II : 694; FOB, III : 311; FNG : 302; FBI, VI : 425; ARM : 435

4.2 Khajuri.

4.3 Tall trees, trunk 20-40 cm. across, clothed with petiole bases, and with a crown 2-4 m. long grayish green leaves, leaflets in several fasicles lying in different planes; the lowest converted in to long spines. Male flowers white, scented. Female inflorescence ultimately drooping. Drupes ca 15 mm. long, orange to reddish brown, flesh sweet.

4.4 Planted in field and garden. Fls. & Frs. : Jan.-June

4.5.3 Ripe fruits are edible.

4.5.4 leaves are used for making brooms, basketry, brushes, mats and for thatching.

4.7 Leaf is hypoglycemic.

4.1 ***Phyla nodiflora*** (L.) Greene. (Verbenaceae)

Syn. *Lippia nodiflora* A. Rich.

FGS, I : 562; FOB, II : 499; FNG : 290; FBI, IV : 563; ARM : 344

4.2 Ratveliyo.

4.3 A creeping, often radially spreading, perennial herbs; leaves opposite, subsessile; inflorescence axillary heads; flower white or pale-pink; fruit drupe; seed exalbuminous.

4.4 Very common Sabarmati River banks.
Fls. & Frs. : Throughout the year.

4.5.1 10ml decoction of whole plants is given orally twice a day to cure urinary complains.

4.7 The plant part possesses Anthelmintic and diuretic Activity.

4.1 ***Phyllanthus fraternus***, Webst. (Euphorbiceae)
FGS, II : 632; FOB, III : 84; FNG : 298; FBI, V : 298; ARM : 397

4.2 Bhoy Ambali.

4.3 Annual herbs with numerous branches. Leaves oblong, tip and base obtuse or round, glabrous. Flowers green or whitish yellow. Male flowers 1-3, female solitary. Fruit small, globose. Seeds brown, longitudinally ribbed on the back.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 10ml plant juice is taken for five days to cure Jaundice.
Fresh plant is employed as prophylaxis to remain healthy against malaria.

4.7 Plant is stomachic, antibilious, febrifuge, astringent, cooling, bitter, alexipharmic, anti-inflammatory and tonic.

4.1 ***Physalis longifolia*** Nutt. (Solanaceae)
FGS, I : 488, FOB, II : 340; ARM : 304

4.2 Moti Popti.

4.3 Character as P. minima but differs in; 1-4.15 m. sub shrub; flower yellow with five purple; fruit berry more thatn 1 cm. across.

4.4 Common. Fls. & Frs. : Aug. – Sep.

4.5.3 Fruits are edible.

4.7 Pods is diuretic.

4.1 ***Physalis minima*** L. (Solanaceae)
FGS, I : 488; FOB, II : 340; FNG : 283; FBI, IV : 238; ARM : 305

4.2 Ran-Popti.

4.3 15-80 cm. diffuse or sub erect glabrous, annual herbs; leaves alternate; inflorescence axillary solitary; flower yellow, complete; fruit capsule; seed discoid, glabrous.

4.4 Common. Fls. & Frs. : July – Sep.

4.5.1 ½ teaspoon crushed powder of entire plant is given orally twice daily for 15 day as a tonic.

4.7 Whole plant stomachic, diuretic, laxative.

4.1 ***Pisum sativum*** L. (Fabaceae)

FGS, I : 235; FBI, II : 181, FOB, I : 436; ARM : 121

4.2 Vatana

4.3 Twing, glabrous annuals; leaflets ovate-elliptic, sessile; inflorescence axillary racemes; flower white; fruit pods, turgid; seed nearly globose.

4.4 Cultivated. Fls. & Frs. : Dec. – Apr.

4.5.3 The tender pods are used as a Vegetable. Seeds are best puleses.

Whole plant used as a fodder.

4.1 ***Pithecellobium dulce*** (Roxb.) Bth. & Hk., (Mimosaceae)

FGS, I : 291; FOB, I : 485; FNG : 264; FBI, II : 302; ARM : 157

4.2 Goras Amli.

4.3 Trees with persistent stipular spines; Brances gleyish. Pinnae 2, Leaflets 2 in each pinna, obliquely elliptic, 2-4 x 1-2 cm. Heads panicled, ca 1 cm. across, white. Pods spirally Twisted. Seeds black with white fleshy aril.

4.4 Common. Fls. & Frs. : Dec.-June

4.5.3 Aril is edible.

Leaves eaten by goats (Fodder)

4.5.4 Stem used as fuel.

4.7 Whole plant is astringent.

4.1 ***Plantago ovata*** Forsk. (Plantaginaceae)

FGS, I : 582; FOB, II : 562; FBI, IV : 707; ARM : 354

4.2 Isabgul.

4.3 10-20 cm. erect, scapigerous, perennial, glabrous, stemless or nearly stemless softly hairy or woolly herbs with short stout rhizome; leaves elliptic to oblong; inflorescence ovoid or cylindric spikes; flower greenish; fruit capsule; seed smooth.

4.4 Cultivated crop. Fls. & Frs. ; Jan. – Mar.

4.5.1 5-10g crushed seeds with milk or water are given orally before sleep at night in constipition.

4.6.3 Cultivated as cash crop.

4.1 ***Plumbago zeylanica*** L. (Plumbaginaceae)

FGS, I : 404; FOB, II : 136; FNG : 274; FBI, III : 480; ARM : 237

4.2 Chitrak.

4.3 60-100 cm. slender, olivaceous green, perennial shrub; leaves alternate; inflorescence terminal elongate spikes; flower white or pale-blue, complete, actinomorphic; fruit capsule; seed oblong.

4.4 Frequent. Fls. & Frs. : Throughout the year.

4.5.1 10g root powder mixed with Ghee and given orally for a week to cure piles.

4.7 Whole plant antibacterial and antifungal.

4.1 ***Plumeria rubra***. L. (Apocynaceae)

Syn. *Plumeria acutifolia* Poir.

FGS, I : 418; FOB, II : 206; FBI, III : 641; ARM : 255

4.2 Khad Champo (Champo)

4.3 5-10 m. tree with plenty of milky juice; leaves alternate; inflorescence in terminal or corymbose; flower white, complete; fruit follicles; seed flat, winged.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 A piece (8-10 cm) of young root is inserted in to vagina; it should be done at night and kept whole night for abortion.

Latex is applied in toothache.

4.7 Latex is rubefacient.

4.1 ***Polianthes tuberosa*** L. (Agavaceae)

FGS, II : 671; FOB, III : 260; ARM : 418

4.2 Gulchadi.

4.3 Acaulescent perennial rigid herbs with subterranean blue-like tuber; leaves narrowly linear; inflorescence racemes on 60-75 cm. tall scapes; flower creamy-white or very pale-yellow.

4.4 Cultivated in garden plant. Fls. & Frs. : Aug. – Dec.

4.5.4 Flowers are used in preparation of garlands.

4.7 Bulbs is diuretic and emetic.

4.1 ***Polyalthia longifolia*** (Sonn.) Thw. (Anonaceae)

FGS, I : 52; FOB, I : 13; FNG : 242; FBI, I : 62; ARM : 3

4.2 Asopalav.

4.3 5-20 m. girth, evergreen handsome tree; leaves alternate; inflorescence axillary; flower yellowish-green; fruit etaerio of berries; seed shining, smooth.

4.4 Commonly Planted in garden. Fls. & Frs. ; Dec. – Aug.

4.5.1 Bark is used to cure uterine disorders.

4.6.2 Leaves are used for decorative purpose (*toran*)on auspicious occasions.

4.7 Bark is anthelmintic and febrifuge.

4.1 ***Polycarpaea corymbosa*** (L.) Lamk. (Caryophyllaceae)

FGS, I : 82; FOB, I : 70; FNG : 245; FBI, I : 245; ARM : 25

4.2 Polycarpaea

4.3 Profusely branched herbs, 20-40 cm. high. Young branches glabrous or tomentose. Leaves opposite, mostly in small clusters. Flowers in axillary and terminal cymes, 2.0 – 2.5 mm. long capsule ellipsoid, 3-valved.

4.4 Common (Weed) Fls. & Frs. : July – Feb.

4.5.1 2 tsp. root decoction is given orally twice a day in fever.

4.5.3 Whole plant used as a fodder.

4.7 Whole plant antifertility.

4.1 ***Polycarpon prostratum*** (Forsk.) Aschers. & Schweinf. (Caryophyllaceae)

Syn. *Polycarpon loeflingiae* Bth. & Hk.

FGS, I : 83; FOB, I : 69; FBI, I : 245; ARM : 26

4.2 Sureta.

4.3 Profusely branched creeping herbs, branches 5-30 cm. long leaves sessile in pseudo-whorls, 3-15 x 1-6 mm. long stipules scarious. Flowers 2.5 mm. long, greenish white. Capsule ellipsoid, 3-valved.

4.4 Rare. (Weed) Fls. & Frs. : Nov. – Feb.

4.5.3 Fodder for grazing animals.

4.1 ***Polygala chinensis*** L. (Polygalaceae)

Syn. *Polygala arvensis* willd.,

FGS, I : 80; FOB, I : 64; FNG : 245; FBI, I : 204; ARM : 24

4.2 Pili Bhoyasan.

4.3 Annual hairy herbs. Branches 2-20 cm. long leaves subsessile, elliptic, obovate or suborbicular, 5-20 mm. long flowers solitary or in racemes, yellow, or sometimes pink. Capsule 3-5 x 2-4 mm. ciliate or the margins; caruncle with 3 teeth-like appendages.

4.4 Common in rainy season. Fls. & Frs. : June – Oct.

4.5.1 Paste of leaves is applied to reduce swelling.

10ml root decoction is given orally twice a day to cure fever.

Root paste along with seed powder of *Tamarindus indica* L. is applied on scorpion bite.

4.7 Leaves are anti inflammatory and antipyretic. Root is antipyretic.

4.1 ***Polygonum plebeium*** R.Br., (Polygonaceae)

FGS, II : 604; FOB, III : 4; FNG : 295; FBI, V : 27; ARM : 374

4.2 Geniyo Okharad.

4.3 A prostrate, annual, diffusely branched herbs; leaves alternate; inflorescence axillary, solitary; flower pale-to-bright pink, actinomorphic; fruit nut, trigonous, black, glabrous.

4.4 Common. Fls. & Frs. : Sep.-May

4.5.1 10ml extract of leaves and roots is taken early morning for 3 days to cure cough.

4.7 Whole plant is astringent and diuretic.

4.1 ***Portulaca grandiflorum*** Hk.f. (Portulacaceae)

FGS, I : 85; ARM : 27

4.2 Chini Gulab.

4.3 Prostrate or procumbent, radially spreading, fleshy, glabrous herbs; leaves narrowly linear-lanceolate; inflorescence terminal; flower 3-5-fascicled; fruit capsule glabrous; seed minute.

4.4 Cultivated in garden. Fls. & Frs. : Throughout the year.

4.4 Planted in kitchen garden as a ornamental plant.

4.7 Whole plant depurgative.

4.1 ***Portulaca oleracea*** L. (Portulacaceae)

FGS, I : 86; FOB, I : 72; FNG : 246; FBI, I : 246; ARM : 28

4.2 Moti Luni.

4.3 Prostrate or diffuse, succulent herbs; leaves alternate, opposite, subopposite or whorled; inflorescence terminal, solitary or fascicled; flower yellow; fruit capsule; seed minute.

4.4 Cultivated. Fls. & Frs. : Throughout the year.

4.5.1 Stem is considered useful in scurvy (Karsanbhai Patel).

4.5.3 The leaves are used as a vegetable (*Luni ni Bhaji*)

Whole plant use as a fodder.

4.7 Extract of the plant part possesses antibacterial activity.

4.1 ***Portulaca quadrifida*** L. (Portulacaceae)

FGS, I : 86; FOB, I : 72; FNG : 246; FBI, I : 247; ARM : 29

4.2 Jini Luni.

4.3 Prostrate or diffuse, herbs; leaves sessile, fleshy; inflorescence terminal; flower yellow; fruit capsule; seed minutely tubercled.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 5-7 fresh leaves are taken orally twice a day for a week to cure ulcers(Stomach).

4.5.3 Plant is used as vegetable. (*Luni ni Bhaji*)

4.7 The plant is sour, cooling, diuretic alterative, emollient, nutritive, demulcent and laxative.

4.1 ***Portulaca suffruticosa*** Wight. (Portulacaceae)

FGS, I : 86; FOB, I : 73; FNG : 246; FBI, I : 274; ARM : 30

4.2 Portulaca.

4.3 A tall, suffrutescent herb. Leaves 0.7 – 1.5 cm. long, cylindric, sessile. Flowers yellow, surrounded by 5-8 bractiform leaves and a ring of brown hairs. Capsule conical. Seed minute.

4.4 Frequent. Fls. & Frs. : Throughout the year.

4.5.3 Whole plant used as a lean fodder.

4.1 ***Prosopis chilensis*** (Molina) stuntze. (Mimosaceae)

Syn. *Prosopis juliflora* (Sw.) DC.

FGS, I : 293; ARM : 158

4.2 Gando Baval.

4.3 Armed trees up to 8 m. leaves bipinnately compound, alternate or clustered; inflorescence axillary solitary; flower pentamerous; fruit pods; seed ovoid.

4.4 Very common. Fls. & Frs. : Aug. – May.

4.5.3 Pods used as a fodder. (Goats)

4.5.4 Stem & branches used as a firewood

Plant used as a live and dry fancing.

4.7 Ripe fruit are nutritive, sweet and astringent, unripe fruits are sour and sweet.

4.1 ***Prosopis cineraria*** (L.) Druce. (Mimosaceae)

Syn. *Prosopis spicigera* L.

FGS, I : 292; FOB, I : 467; FNG : 262; FBI, II : 288; ARM : 159

4.2 Sijado (Shami.)

4.3 5-10 m. erect, armed trees with compact braches and deeply rooted roots; leaves bipinnately compound; inflorescence axillary, short peduncled, simple or branched spikes or terminal panicles; flower yellow; fruit pods; seed 10-15.

4.4 Common. Fls. & Frs. : Aug.-May

4.5.3 The pods are an excellent fodder for camels & goats.

4.6.1 Worshiped on dussera day. Tree is sacred to Hindus.

During festival of Navratra people use the wood of *Prosopis* to making Ambaji mata's Palli .

Khandi made from *Prosopis* from carring fire during Holi festival.

4.7 Fruits are sweet, demulcent, astringent and expectorant.

4.1 ***Psidium guajava*** L. (Myrtaceae)

FGS, I : 302; FOB, I : 529; FNG : 265; FBI, II : 468; ARM : 175

4.2 Jamphal

4.3 Shrub with peeling bark. Leaves opposite, entire, elliptic-oblong, pubescent beneath and with 15-20 secondary nerves. Peduncles axillary with 1-3 white flowers. Ovary usually 4-5 celled with many ovules. Fruit with many hard seeds. Embryo horse-shoe shaped.

4.4 Cultivated. Fls. & Frs. : Throughout the year.

4.5.1 ½ cup of leaves decoction is taken orally for 3days in cholera.

4.5.3 Ripe fruits are edible.

4.7 The plant part possesses antiulcer activity.

4.1 ***Punica granatum*** L. (Punicaceae)

FGS, I : 312; FOB, I : 548; FBI, II : 581; ARM : 180

4.2 Dadum.

4.3 A small tree; branchelts often spine-tipped; bark cinnamom-brown; leaves opposite; inflorescence terminal solitary; flower complete, actinomorphic; fruit a balusta. Seeds obtusely angular, white, pink or red juice.

4.4 Cultivated. Fls. & Frs. : Throughout the year.

4.5.1 10ml juice of young flowers is given once a day for relieving stomach pain and dysentery:

4.5.3 Fruit are edible.

4.7 Pulp of seed cooling. Flowers and rind of fruit are stomachic, anthelmintic, appetizer, styptic and astringent.

4.1 ***Pupalia lappacea*** (L.) Juss., (Amaranthaceae.)

FGS, I : 597; FOB, II : 583; FNG : 294; FBI, IV : 724; ARM : 371

4.2 Ganjetiu (Gadar Zipto)

4.3 Erect, suberect or straggling herb; leaves broadly ovate; inflorescence; flower clustered, greenish-yellow or slightly; utricles memberanous; seed compressed.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Paste of leaves is applied on boils.

10ml decoction of fruits is given for 3 days in coughs.

4.7 Plant is diuretic, expectorant and anti-inflammatory.

4.1 ***Quisqualis indica*** L. (Combretaceae)

FGS, I : 299; FOB, I : 517; FNG : Ad.No. 253; FBI, II : 459; ARM : 167

4.2 Madhu Malti.

4.3 An extensive, woody climber; leaves opposite or subopposite, membranous; inflorescence in terminal and axillary, dropping spikes; flower bright-rosy-pink or red.

4.4 Ornamental. Fls. & Frs. : Throughout the year.

4.7 Aerial parts is anthelmintic.

4.1 ***Raphanus sativus*** L. (Brassicaceae)

FGS, I : 65; FOB, I : 37; FBI, I : 166; ARM : 14

4.2 Mulo.

4.3 A hispidely hairy herbs; 40-70 cm. or even 100 cm. biennial, leaves alternate, exstipulate; inflorescence terminal racemes; flower complete, actinomorphic; fruit pods; seed 1-6 brown, glabrous.

4.4 Cultivated in field. Fls. & Frs. : Nov. – Apr.

4.5.3 Root & leaves used as a vegetable.

4.7 Seeds are abortifaceint, laxative, emmenagogue and carminative. Root is diuretic, appetizer, pungent and expectorant. Fresh leaf juice is diuretic and laxative.

4.1 ***Rauvolfia tetraphylla*** L. (Apocynaceae)

Sny. *Rauvolfia canescens* L.

FGS, I : 418; FOB, II : 190; ARM : 256

4.2 Sarpgandha.

4.3 Erect perennial herb or undersh. Leaves lanceolate or oblanceolate, acute or acuminate. Cymes corymbose, bracts minute, flowers white or pinkish, pedicels and calyx red, corolla tube swollen above the middle, lobed elliptic-oblong. Drupes purplish black.

4.4 Planted in garden. Fls. & Frs. : May-Jan.

4.5.1 5 gm. of dried root powder taken orally twice a day in the morning with milk is effective to control blood-pressure (Raghjibhai Desai).

4.7 Whole plant is abortifacient, anthelmintic and antiemetic.

4.1 ***Rhynchosia minima*** (L.) DC. var. ***laxiflora*** (Camb.) Baker. (Fabaceae)

FGS, I : 239; FOB, I : 414; FNG : 261; FBI, II : 223; ARM : 122

4.2 Daria vel. (Nanhi Kamalvel)

4.3 Trailing climber; leaflets lanceolate-rhomboid, glabrous or nearly so; flower reddish-yellow; fruit pods; seed globose.

4.4 Common. Fls. & Frs. : Aug. – Dec.

4.5.3 Whole plants are used as a fodder for goat and camel.

4.1 ***Ricinus communis*** L. (Euphorbiaceae)

FGS, II : 633; FOB, III : 125; FNG : 299; FBI, V : 457; ARM : 398

4.2 Arandi.

4.3 Small trees. Shorts and panicles glaucous. Leaves peltate, orbicular, palmatifid, green, often suffused with red. Flowers yellow, in subsessile cymes; female flowers in 1-7 flowered cymes. Capsule 1.2 – 2.5 cm. globose, echinate; seeds oblong, smooth mottled.

4.4 Cultivated crop. Fls. & Frs. : Throughout the year.

4.5.1 Seed oil is applied once a day for 7 days as coolant in case of sun strock. Oil is applied externally twice a day for a week to cure inflammation of the intestine.

2.5 ml seed oil with ginger juice is given once a day in rheumatoid arthritis.

4.5.2 Castor oil is given to sick goats against fever. Seed oil is given to sheep to cure throat problem.

4.5.3 Seed oil used in preservation of cereals (Wheat).

4.7 Leaf extract possesses antibacterial and antiviral activity.

4.1 ***Rivea hypocrateriformis*** (Desr.) Choisy (Convolvulaceae)
FGS, I : 481; FOB, II : 323; FNG : 281; FBI, IV : 184; ARM : 294

4.2 Fang Vel.

4.3 Extensive, appressed whitish-tomentose, woody climbers; leaves alternate; inflorescence axillary; flower fragrant, complete; fruit capsule; seed 4 or a few.

4.4 Not Common. Fls. & Frs. : Aug. – Mar.

4.5.3 Leaves used as a vegetable.

4.7 Plant is anti-inflammatory, astringent, bitter and cooling.

4.1 ***Rosa multiflora*** L. (Rosaceae)
Syn. *Rosa damascene* Mill.
FOB, I : 492; G.M.W. ed. 5, PP. 281-300; ARM : 161

4.2 Gulab.

4.3 An erect shrub up to 2 m. high. Branches long, Arching, with large hooked, prickles; leaves pinnate, leaflets 3-7, 6 petioles prickly; flowers double, red, pink or white, on slender glandular-hispid and prickly pedicles, sweet-scented; fruit ovoid or obovate, bristly, bright red and pulpy.

4.4 Cultivated in garden. Fls : Throughout the year.

4.5.3 Gulkand is edible.

4.7 Whole plant is diuretic and purgative.

4.1 ***Ruellia tuberosa*** L. (Acanthaceae)
FGS, I : 552; FNG : 288; ARM : 337

4.2 Bandhukadi.

4.3 30-40 cm., erect, suberect or diffuse perennial herbs; leaves opposite; inflorescence in axillary 1-3 flowered cymes; flower bluish-purple or deep-blue; fruit bluish-purple or deep-blue; seed 24 numerous.

4.4 Common. Fls. & Frs. : July-May

4.5.1 5-7g seeds are given orally for 5days in spermatorrhoea (Chhaguji Thakor).

4.7 Whole plant is Emetic.

4.1 ***Rungia repens*** (L.) Nees. (Acanthaceae)

FGS, I : 554; FOB, II : 480; FBI, IV : 549; ARM : 338

4.2 Moto Khadsalio.

4.3 15-60 cm. decumbent, annual, suffruticose, suberect or diffuse herbs; herbs; leaves opposite, elliptic-oblong; inflorescence terminal; flower blue; fruit capsule; seed suborbicular.

4.4 Common. Fls. & Frs. : July – Sept.

4.5.1 Extract of whole plant is applied on effacted part to cure swelling.

4.1 ***Saccharum bengalense*** Retz. (Poaceae)

FGS, II : 860; FOB, III : 465; FBI, VII : 119; ARM : 455

4.2 Munj.

4.3 Tall grass, up to 5.5 m. high. With solid culms; leaves proportionately very long, linear, flat; flowering panicles 30-90 cm. long, lanceolate, pale-cream-coloured to dark-reddish-purple. Spikelets paired, one sessile, other pedicellate, awnless, lanceolate, up to 0.5 cm; lower glume of sessile spikelet with long hairs.

4.4 Frequent. Fls. & Frs. : Oct.-Dec.

4.5.4 Whole plant are used as a roof of house.

4.7 Whole plant is blood purifier.

4.1 ***Saccharum officinarum*** L. (Poaceae)

FGS, II : 860; FBI, VII : 118; FOB, III : 466; ARM : 456

4.2 Sherdi.

4.3 1 - 3.5 m. tall, perennials, erect, stoct, grass; leaves rigid, linear-lanceolate; inflorescence panicles pyramidal; grain oblong; pedicelled spikelets as sessile.

4.4 Cultivated at some places. Fls. & Frs. Sep.-Dec.

4.5.1 Stem is eaten dailly for a month to cure anaemia.

4.5.3 Aerial part and leaves use as a fodder.

4.6.3 Extensively cultivated as a plant of economic importance for its stems. (Sweet juice, Jaggery, Sugar are Prepared)

4.7 Roots are cooling and diuretic. Stems are sweet, cooling, emollient, laxative, antibilious, demulcent, cardiotonic, diuretic, galocatagogue, aphrodisiac, expectorant, haemostatic and tonic.

4.1 ***Sagittaria sagittifolia*** L. (Alismataceae)

FGS, II : 703; FOB, II : 345; FBI, VI: 561; ARM : 439

4.2 Swamp Patato.

4.3 Scapigerous, erect, stemless, perennial aquatic herbs; leaves radical, raised above surface of water, cordate-acuminate; inflorescence 3-6 whorls; flower white or tinged pink often with a purple claw; incomplete, unisexual; parianth petals 6; fruit achemes; seed erect.

4.4 Frequent in detches. Fls. & Frs. : June – Sep.

4.5.1 Paste of whole plant is applied to cure skin diseases.

4.1 ***Salvadora oleoides*** Decne. (Salvadoraceae)

FGS, I : 413; FOB, II : 183; FNG : 276; FBI, III : 620; ARM : 247

4.2 Piludi.

4.3 An evergreen, a small tree with a short twisted or bent trunk; leaves opposite; inflorescence axillary, paniculate spikes of racemes; flower greenish white; fruit glabose.

4.4 Common. Fls. & Frs. ; Nov. – Feb.

4.5.1 Fruit are eaten as an effective treatment for enlarged spleen (Raval People).

4.5.4 Stem is used as a fuel.

Seed oil is used in soap making.

4.7 Leaves is purgative.

4.1 ***Salvadora persica*** L. (Salvadoraceae)

FGS, I : 413; FOB, II : 182; FNG : 275; FBI, III : 619; ARM : 248

4.2 Vakhdo.

4.3 A large 2.5 – 4 m. much-branched evergreen small tree; leaves opposite; inflorescence axillary and terminal compound; flower greenish yellow; fruit drupes.

4.4 Common. Fls. & Frs. ; Nov. – Mar.

4.5.1 10g powder of fruits is given for effective treatment of Rheumatism.

4.5.2 Leaf juice is applied locally to cure wounds and mastitis.

4.5.4 Stem is used as fuel.seed oil is used in soap making.

4.6.2 During Holi festival fire is carrying in vakhdas "Khandi".
Prepare from wood of *Salvadora persica*.

4.7 Bark is stimulant and emmenagogue, leaves are expectorant, anti-inflammatory and pungent. Fruits are carminative, digestive, lithontripic, deobstrunt, alterative, laxative, diuretic and pungent.

4.1 ***Samanea saman*** (Jacq.) Merrill. (Mimosaceae)
Syn. *Pithecolobium saman* Benth.
FGS, I : 293; FOB, I : 845; ARM : 159

4.2 Ratosarasdo.

4.3 10+15 (20) m. tree with yellowish-tomentose branchlets; leaves alternate, bipinnately compound; inflorescence heads in terminal or axillary corymbose racemes; flower 25 per head; fruit pods seed 2-seriate.

4.4 Planted on road sides & garden. Fls. & Frs. : Mar. – May.
It is very rapid growing tree for shade for animal.

4.5.4 Dry stem use as a firewood.

4.1 ***Santalum album*** L. (Santalaceae)
FGS, II : 608; FOB, III : 49; FNG : 296; FBI, V : 231; ARM : 380

4.2 Chandan.

4.3 5-8 m. ever-green glabrous tree; leaves alternate above; inflorescence terminal and axillary paniculate 3-chotomous cymes; flower brownish-purple; fruit subglobose or ellipsoid; seed solitary.

4.4 Rare, planted in gardens. Fls. & Frs. : Aug.-Dec.

4.6.1 Stem powder is used in tilak by Hindu also it is a holly tree.

4.1 ***Sapindus laurifolius*** Vahl. (Sapindaceae)

FGS, I : 164; FOB, I : 284; FNG : 254; FBI, I : 682; ARM : 92

4.2 Aritha.

4.3 5-10 m. handsome tree; leaves alternate; inflorescence terminal; flower dingy white, complete; fruit indehiscent; seed globose.

4.4 Frequent. Fls. & Frs. : May-Aug.

4.5.1 Mixture of fruits paricarp and bark powder of *Acacia catechu* is roasted and ground and 1-2 tablets of about 1 g are taken twice a day along with butter to cure piles.

4.5.2 Foam of fruit is applied on snake bite and fruit juice is given orally.

4.5.4 Fruits are used to clean clothes and hairs as alternative of shop.

4.7 Fruit is anthelmintic and emetic.

4.1 ***Saraca asoca*** (Roxb.) De. Willd. (Caesalpiniaceae)

FGS, I : 277; FBI, II : 271; FOB, I : 456; ARM : 145

4.2 Ashok

4.3 5-7 m. evergreen, erect, tree; leaves alternate; inflorescence rarely axillary; flower yellow or raddish-yellow, fruit pods; seed ellipsoid-oblong.

4.4 Planted in garden. Fls. & Frs. : Dec.-Apr.

4.5.1 Flowers of saraca pounded and mixed with water are useful in haemorrhagic dysentery.

4.1 ***Sesamum indicum*** L. (Pedaliaceae)

FGS, I : 524; FOB, II : 413; FNG : 287; FBI, IV : 387; ARM : 322

4.2 Tal.

4.3 60-140 cm. erect, annual, glandular pubescent herbs; leaves opposite below; inflorescence axillary solitary; flower pinkish-purple; fruit capsule; seed black, white or brown, smooth or rugose.

4.4 Cultivated crop. Fls. & Frs. : Aug. – Sep.

4.5.1 Seed oil is rubbed on whole body and head to have resistance over skin and hair infection.

Few drops of seed oil is administred in to the nostril to clear nosal congestion.

4.5.2 Dry seeds powdered and mixed with Ghee are fed to animals to treat foot and mouth diseases.

4.5.3 Seed & seed oil are edible. Seeds used in confectionery.

4.5.4 Stem use in wall for huts.

4.7 Seed is aphrodisiac, coolant and diuretic.

4.1 ***Sesamum lacinatum*** Klein. ex. Willd. (Pedaliaceae)

FOB, II : 413; FBI, IV : 388; ARM : 323

4.2 Adbau Tal.,

4.3 30-90 cm. long, scabrid prostrate herbs; leaves lower opposite; inflorescence axillary solitary; flower pedicel; fruit capsule; seed foveolate.

4.4 Rare. Fls. & Frs. : July – Sept.

4.6.1 Sacred and offered during religious rites.

4.7 Seeds are aphrodisiac, emmenagogue, galactagogue.

4.1 ***Sesbania grandiflora*** (L.) Pers. (Fabaceae)

FGS, I : 242; FBI, II : 115; FOB, I : 350; ARM : 123

4.2 Agathiyo.

4.3 A soft-wooded tree, 8-10 m. tall; leaflets oblong or slightly obovate, subsessile; inflorescence axillary racemes; flower creamy-white or tinged pinkish; fruit pods; seed brown, flat, smooth.

4.4 Rare. Fls. & Frs. : Nov. – Feb.

4.5.1 Paste of leaf and flower is used in treatment of wounds.

4.7 Bark is astringent.

4.1 ***Sesbania sesban*** (L.) Merr. ver. ***sesban***, (Fabaceae)

Syn. *Sesbania aegyptica*, Poir. var. *Picta*

FOB, I : 349; FBI, II : 114; FGS, I : 242; ARM : 124

4.2 Shevari (Inchad)

4.3 An unarmed, large shrub; leaves pale green, linear-oblong; inflorescence axillary. Pendulous recemes; flower corolla spotted purple; fruit pods; seed oblong.

4.4 Common. Fls. & Frs. : Oct. – Mar.

4.5.1 The juice of flowers applied externally in eyes, to relive from burning sensation of eyes.

4.7 Seeds is astringent.

4.1 ***Setaria glauca*** (L.) P. Beauv. (Poaceae),

FGS, II : 864; FOB, III : 435; FBI, VII : 078; FNG : 310; ARM : 457

4.2 Chipatiya ni Jat.

4.3 15-45 cm. tall, slender, loosely tufted herbs; leaves linear, glabrous or softly hairy; inflorescence spike-like racemes, densely flowered, spikelets numerous, ellipsoid, glabrous; spikelets 0.3 cm. long; upper lemma coarsely rugose, boat-shaped and slightly keeled upwards, broad and dorsally strongly curved in profile.

4.4 Common. Fls. & Frs. : July – Nov.

4.5.3 Plants are fairly good green fodder for cattel.

4.1 ***Sida acuta*** Burm.f. (Malvaceae)

Syn. *Sida Carpinifolia* L.

FGS, I : 114; FOB, I : 98; FBI, I : 323; ARM : 43

4.2 Bod (Bala)

4.3 Erect under shrub or woody herb, 0.3-1.0 m. tall. Leaves 2-8 cm. long, crenate. Flowers solitary or 2-3 together, yellow mericarps 5-6, aristulate, ca 2.5 m. long,

4.4 Common. Fls. & Frs. ; Aug. – Feb.

4.5.1 Root paste is applied on effacted parts of body to relief pain.

4.5.4 Fibre for cordage.

4.7 The plant part possesses anti inflammatory activity.

4.1 ***Sida alba*** L. (Malvaceae)

Syn. *Sida spinosa* L.

FGS, I : 114; FOB, I : 98, FBI, I : 323; ARM : 44

4.2 Kantalo Bala

4.3 50-100 cm. suberect, branched, woody herbs; leaves alternate; inflorescence axillary, solitary; flower yellow or seldom white; globose or nearly so; seed cuneate.

4.4 Common. Fls. & Frs. : Aug. – Dec.

4.5.1 10g seeds are taken once a day for a month as a tonic.

4.7 Root bark is Demulcent.

4.1 ***Sida cordata*** (Burm. f.) Borss. (Malvaceae)

Syn. *Sida veronicaefolia* Lamk.

FGS, I : 114;FOB, I : 97; FNG : 246; FBI, I : 322; ARM : 45

4.2 Bhoya Bala.

4.3 60 cm. perennial, patently hairy, prostrate of suberect herbs; leaves alternate; inflorescence axillary solitary; flower yellow, complete; fruit globose; seed brown.

4.4 Frequent. Fls. & Frs. : Throughout the year.

4.5.1 10ml leaf extract with cow milk is taken as cooling agent.(Thakor people)

3-6 g. powder or 10-20 ml. decoction of whole plant is taken twice a day for 7 days in weakness to get strength .

4.7 Fruits are tonic, cooling, astringent and antipyretic.

4.1 ***Sida cordifolia*** L. (Malvaceae)

FGS, II : 115; FOB, I : 99; FNG : 247; FBI, I : 324; ARM : 46

4.2 Bala (Baladana)

4.3 45-100 cm. herbs with white or grey tomentose; leaves alternate; inflorescence axillary solitary; flower complete, yellow; fruit dorsally rounded; seed ovoid or 3-gonous.

4.4 Common. Fls. & Frs. : Aug.-Dec.

4.5.1 2tsp. Infusion of roots is given for 3 days in bleeding piles.

Decocatin of root (about 5 cm. long 10 pieces of root boiled in a cup of water) is given orally twice a day for 5 days to cure fever.

One teaspoonful seed powder is taken twice a day for 15 days for improving impotency.

4.7 Roots are regarded as cooling, astringent, stomachic, tonic, febrifuge, demulcent and diuretic. Seeds are demulcent and aphrodisiac.

4.1 ***Sida ovata*** Forsk. (Malvaceae)

Syn. *Sida grewioides* Guill.;

FGS, I : 116; FOB, I : 98; FNG : 247; FBI, I : 323; ARM : 47

4.2 Bala.

4.3 50-120 cm. erect, grey-tomentose with stellatelly hairy herbs; leaves alternate; inflorescence axillary solitary; flower pale-yellow or white; fruit subglobose; seed reniform.

4.4 Common. Fls. & Frs. : Aug.-Feb.

4.5.1 10ml infusion of roots is given orally once a day for week in leucorrhoea.

4.7 Roots are cooling, astringent and diuretic.

4.1 ***Sida retusa*** L. (Malvaceae)

Syn. *Sida rhombifolia* L. ver. *retusa* Mast.;

FGS, I : 116; FOB, I : 99; FBI, I : 324; ARM : 48

4.2 Mahabala.

4.3 45-100 cm. slender stellately hairy, erect, herbs; leaves alternate; inflorescence axillary solitary; flower reddish-yellow; fruit nearly globose; seed dark-brown.

4.4 Common. Fls. & Frs. : Sep.-Dec.

4.5.1 10ml decoction of roots is given orally for 3days to cure fever.

10 g seeds are taken orally for a week in gonorrhoea and sexual debility.

4.7 Seeds are aphrodisiac. Roots are febrifuge and diuretic. Stem is demulcent and emollient.

4.1 ***Smilax zeylanica*** *L.* (Liliaceae)

Syn. *Smilax macrophylla* Roxb.

FGS, II : 683; FBI, VI : 309; FOB, III : 271; ARM : 428

4.2 Smilax (Sarsaparila)

4.3 Extensive, deciduous, woody, prickly climbers; leaves alternate, ovate; inflorescence in axillary; flower numerous, greenish; fruit berries; seed 3, up to 0.5 cm.

4.4 Cultivated in garden. Fls. & Frs. : Sep. – Mar.

4.5.1 Root extract is used as tonic.

4.1 ***Solanum indicum*** L. (Solanaceae)

FGS, I : 490; FOB, II : 336; FBI, IV : 234; ARM : 306

4.2 Moti rigni.

4.3 60-12- cm. Stout, erect, armed, very prickly, stellately hairy, shrubs; leaves alternate; inflorescence in drooping, extra-axillary; flower stellately heiry; fruit berry; seed minutely. Pitted, flat.

4.4 Common. Fls. & Frs. : July – Dec.

4.5.1 10ml root decoction is taken orally 3days in dry cough.

4.7 Roots is anthelmintic, astringent and carminative.

4.1 ***Solanum melongena*** L. (Solanaceae)

FGS, I : 491; FOB, II : 339; FBI, IV : 235; ARM : 307

4.2 Rigan.

4.3 30-90 cm. armed or unarmed, grey-stellate-tomentose, Prickly, much-branched, herbs; leaves alternate; inflorescence in short extra-axillary; flower bright to dark-purple; fruit berries; seed nearly spherical.

4.4 Common cultivated.

Fls. & Frs. : Throughout the year.

4.5.2 Wounds portion is brunt with the help of burning-woody stem of *rigan* (Solamum melongena L.). (Dog bite.)

4.5.3 Fruit used as Vegetable.

4.7 Unripe fruit is diuretic, stimulant, aphrodisiac, laxative, appetizer, expectorant and hypnotic.

4.1 ***Solanum nigrum*** L. (Solanaceae)

FGS, I : 491; FOB, II : 332; FNG : 283; FBI, IV : 229; ARM : 308

4.2 Kangani (Piludi)

4.3 25-90 cm. erect, unarmed annual herbs; leaves alternate; inflorescence extra axillary; flower small, white; fruit berries; seed discoid, minutely pitted.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 About 10 ripe fruits are given orally three times a day to children for a week to cure cough.

Fresh fruit juice is applied over forehead to get relief from headache.

Juice is given in doses of 6-8 ounces for treatment of chronic enlargement of liver.

Extract of leaves (1-2 drops) is applied over eye two or three times a day to cure conjunctivitis (eye).

The leaf extract is applied once a day for 2-4 days, externally against skin eruptions.

4.5.3 Ripe berries are eaten by children.

4.7 The plant part possesses hepatoprotective activity.

4.1 ***Solanum surattense*** Burm. f. (Solanaceae)

Syn. *Solanum xanthocarpum* Schard & Wendl.

FGS, I : 491; FBI, IV : 236; FNG : 283; FOB, II : 335; ARM : 309

4.2 Bhoy Ringani.

4.3 Perennial, diffuse very Prickly herbs. Leaves ovate-elliptic or oblong, pinnatifid, stellate hairy when young. Segments ovate, irregularly dentate. Flowers violet, in 2-6 fid cymes, calyx and corolla stellate hairy. Fruit globose, green, white mottled.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 5-7 fresh stamens are given orally to child for cough.

4-5 drops roots extract is poured in ear to cure pain (Thakor community).

4.5.2 Seed and leaf extract is applied on the sores and wounds of cattle.

4.7 Fruit hypotensive and effect on isolated ilium.

4.1 ***Solanum tuberosum*** L. (Solanaceae)

FGS, I : 492; FOB, II : 339; FBI, IV : 229; ARM : 310

4.2 Batata.

4.3 Low suberect herbs with underground tubers with ribbed-winged & pubescent stem; leaves irregularly pinnate-lobed; inflorescence lateral & terminal; flower pedicel 1-3 cm. long

4.4 Cultivated in farm. Fls. & Frs. : Feb. – Mar.

4.5.3 Tuber used as a Vegetable.
Whole plant used as a fodder.

4.6.3 Tubers commericially important.

4.7 Leaves are antispasmodic. Tuber is nutritive, galactagogue, diuretic, aperient and antiscorbutic.

4.1 ***Sonchus oleraceus*** L. (Asteraceae)
FGS, I : 394; FOB, II :119; FNG : 273; FBI, III : 414; ARM : 229

4.2 Dudhali Sonki.

4.3 40-85 cm. erect, annual herbs, leaves alternate, sessile, simple; inflorescence yellow, crowded in terminal corymbose; flower yellow; fruit compressed, oblong.

4.4 Very Common. Fls. & Frs. : Oct. – Feb.

4.5.1 10ml extract of whole plant is given orally for 3 days to cure fever.

4.7 The plant is sedative and tonic.

4.1 ***Sorghum bicolor*** (L.) Moench. (Poaceae)
FGS, II : 866; FOB, III : 511; FBI, VII : 183; ARM : 458

4.2 Juwar.

4.3 75-200 cm. tall, stout annuals, grass; leaves broadly lenceolate, flat, glabrous; inflorescence panicles 10-25 cm. long, dnsely thyrsoform decompound, with verticillate branches. Spikelets 0.3 – 0.5 cm. long, broadly ovate-lanceolate, hairy.

4.4 Cultivated crop. Fls. & Frs. : Throughout the year.

4.5.3 Fruit used as a food.
Stem & leaf used as a fodder.

4.7 Stem is blood purifier, nutritive and sweet. Seeds are cooling, nutritive and expectorant.

4.1 ***Spathodea campanulata*** P. Beauv. (Bignoniaceae)

FGS, I : 521; FOB, II : 410; ARM : 318

4.2 Pichkari plant.

4.3 10-15 m. evergreen or semideciduous, handsome trees; leaves opposite, or in whorls of 3; inflorescence complete, terminal; flower orange-red or scarlet; fruit capsule 15-20 x 4-5 cm. lanceolate, flat; seed ellipsoidal, winged membranous.

4.4 Planted in gardens and along roads. Fls : Feb. – May

4.1 ***Sphaeranthus indicus*** L. (Asteraceae)

FGS, I : 395; FOB, II : 84; FNG : 271; FBI, III : 275; ARM : 230

4.2 Gorakh Mundi.

4.3 30-45 cm. prostrate or procumbent, annual, divaricately branched herbs; leaves alternate, (sub) sessile; inflorescence heads 0.6-2 x 0.5-1.5 cm. pink to purple; flower purple, heterogamous; fruit Achemes 0.1 cm. long, oblong.

4.4 Common. Fls. & Frs. : Oct. – Apr.

4.5.1 10ml decoction of plants is taken orally once a day in digestive disorder.

4.1 ***Spilanthes calva*** DC. (Asteraceae)

FGS, I : 395; FBI, III : 307; FOB; II : 99; ARM : 231

4.2 Akkalgaro (Mariti)

4.3 20-45 cm. erect or ascending, scabrid annual herbs; leaves opposite, ovate; inflorescence heads 0.6-1.2 cm. across, flower hetero gamous & rayed; fruit achemes 0.15-0.2 cm. long.

4.4 Common in Taranga forest. Fls. & Frs. : Sep.-Jan.

4.5.1 The flower-heads chewed to relief toothache.

4.1 ***Spinacia oleracea*** L. (Chenopodiaceae)

RNS : 504; ARM : 377

4.2 Palak.

4.3 An erect, annual, smooth herb, 30-60 cm.; leaves alternate, ovate-oblong, obtuse or acute, variously lobed, smooth, soft, succulent; flowers unisexual, greenish: male flowers in terminal; leafless spikes;

female flowers in axillary clusters; fruits hard, compressed utricles, enclosed in a spined, capsule-like bocy; seeds vertical.

4.4 Cultivated vegetable crop. Fls. & Frs.: Dec. – Mar.

4.5.3 Leaves used as a vegetable (Bhaji)

4.7 Leaves are astringent, blood purifier, expectorant, antioxidant, diuretic, demulcent, restorative. Seeds are diuretic, demulcent.

4.1 ***Sterculia urens*** Roxb. (Sterculiaceae)

FGS, I : 124; FOB, I : 131; FNG : 249; FBI, I : 355; ARM : 55

4.2 Kadayo.

4.3 A deciduous tree with chlorophyll beneath the thin grayish-white bark; branches with leaf scars. Leaves long-petioled, 20-40 cm broad, cordate, lobed to less then half-way down. Flowers in 10-12 cm. long viscidly pubescent panicle, ca 5 x 5 mm., red-brown, tinebtise outside, yellowish green inside. Follicles with bristles.

4.4 Frequent. Fls. & Frs. : Nov. – May.

4.5.1 Gum is applied in eczema.

5-7g gum is taken orally to cure dysentery.

4.5.3 The roasted seeds are eaten.

4.5.4 The dry branches are used as a fuel.

Bark used for cordage.

Wood is light in weight hence it is used in preparation of toys and musical instrument.

4.6.3 Gum commercially important.

4.7 Gum is antiseptic, demulcent, deobstruent, antiphlogistic, emmenagogue, cooling, astringent.

4.1 ***Syzygium cuminii*** (L.) Skeels. (Myrtaceae)

Syn. *Eugenia jambolana*. Lamk.

FGS, I : 303; FOB, I : 523; FBI, II : 499; ARM : 176

4.2 Jambu.

4.3 Evergreen trees with grayish brown branchelets. Leaves elliptic-oblong, 7-15 x 4-9 cm. long. Panicles 5-10 cm. long. Calyx tube 4-6 mm. long;

petals white, caduceus. Berries oblong ellipsoid, 2-3 cm. long, red-purple or blackish, juicy.

4.4 Cultivated. Fls. & Frs. : Mar. – July.

4.5.1 Fresh juice of bark is given with goat's milk in diarrhoea in children(Vajnara Community).

1 tsp decoction of seeds is given thrice a day for a month in diabetes.

5.1 Fruit are edible.

5.2 Wood durable, for construction, agricultural implements, etc.

4.6.3 Wood and fruits commercially important.

4.7 The plant parts possesses hypoglycaemic and hypotensive activity.

4.1 ***Tagetes patula*** L. (Asteraceae)

RNS : 321; ARM : 232

4.2 Galgota (Hajari Gota)

4.3 45-75 cm. erect-herbs; leaves pinnately divided into linear- lanceolate segments; inflorescence solitary; fruit achemes linear, compressed or angular.

4.4 Cultivated in kitchen garden. Fls. & Frs. : Sep. – Nov.

4.5.1 2-3 drops of leaves juice is poured in ear for earache.

4.5.4 The beautiful flowers are used for preparing garlands.

4.1 ***Tamarindus indica*** L. (Caesalpiniaceae)

FGS, I : 278; FOB, I : 457; FNG : 262; FBI, II : 273; ARM : 146

4.2 Amli (Khati)

4.3 10-15 (20) m. large unarmed, evergreen tree; leaves alternate, abruptly-pinnately compound; inflorescence few flowered, terminal racemes; flower yellow with purple streaks; fruit pods subtorulose; seed dark, chocolate-brown.

4.4 Common. Fls. & Frs. : Mar.-Nov.

4.5.1 The powder of stem bark mixed with curd and given early morning to cure bleeding piles (Sankarbhai Raval).

1 tsp decoction of stem bark given thrice a day to cure diarrhoea.

4.5.2 Pods and leaves mixed with water are fed to animal to treat the stomach pain after eating castor.

4.5.3 Fruit has various uses in edible preparations like chutneys, pickles, etc.

4.5.4 Wood used as a firewood.

4.7 Flower is antiviral.

4.1 ***Tecoma stans*** (L.) H.B. & K. (Bignoniaceae)

Syn. *Stenolobium stans*, Seem.

FGS, I : 522; FOB, II : 410; ARM : 319

4.2 Pili Limdi.

4.3 4-6 m. glabrous tree; leaves opposite imparipinnately compound; inflorescence terminal, erect; flower bright-yellow; fruit capsule.

4.4 Common. Planted in garden. Fls. & Frs. : Throughout the year.

4.7 Root is vermifuge and diuretic.

4.1 ***Tecomella undulata*** (Sw.) Seem. (Bignoniaceae)

FGS, I : 523; FOB, II : 402; FNG : 287; FBI, IV : 378; ARM : 320

4.2 Ragat Rohido.

4.3 3-7 m. deciduous small trees; leaves opposite, simple; inflorescence corymbose few-flowered racemes; flower inodorous, reddish-yellow or orange-yellow; fruit capsule 20-50 cm. long, flat; seed wing very narrow.

4.4 Rare. Fls. & Frs. : Dec. – Apr.

5.1 Powderd stem bark is given orally once a day for a week to cure cough.

5g bark powder is given orally with water for a week in syphilis.

5g root powder of the bark given orally with water twice a day to cure internally in broken bones.

4.5.4 The wood is very strong and highly prized for furniture.

Wood is also used for prepration of various agriculture implements.

4.7 Bark is anti-inflammatory, anticancer, nutritive and blood purifier.

4.1 ***Tectona grandis*** L. f. (Verbenaceae)

FGS, I : 564; FNG: 290; FBI, IV : 570; FOB, II : 503; ARM : 345

4.2 Sag.

4.3 10-20 m. deciduous tree; bark pale-brown, rough; leaves opposite or whorled, broadly elliptic; inflorescence erect, terminal, branched; flower white or pale-blue, complete; fruit drupe subglobose; seed 2-4 ellipsoid-oblong.

4.4 Common in Taranga forest. Fls. & Frs. : Aug. – Dec.

4.5.1 10g seed extract is taken daily for three days to cure calculi.

4.5.4 Timber is famous all over the world for house building and furniture and agriculture implements.

4.6.3 Wood commercially important.

4.7 Flowers and seeds is Diuretic. Wood is laxative and sedative.

4.1 ***Tephrosia purpurea*** (L.) Pers. (Fabaceae)
FGS, I : 249; FOB, I : 346; FNG : 257; FBI, II : 112; ARM : 125

4.2 Sarpankho.

4.3 30-80 cm. up to 1 m. sometimes, much-branched, with woody base herbs; leaves alternate, imparipinnately compound; inflorescence extra axillary; flower bright-rosy-purple; fruit pods 1.5-4.8 x 0.4 cm., flat; seed oblong, somewhat compressed.

4.4 Very common. Fls. & Frs. : Throughout the year.

4.5.1 Paste of root bark is taken in small quantity to relief stomach pain.

4.5.2 Root are fed to animals against general swelling.

4.5.4 Whole plant using to making brush (*Savarna*)

4.7 Whole plant hypoglycemic, laxative and purgative.

4.1 ***Terminalia arjuna*** (Roxb.) W. &A. (Combretaceae)
FGS, I : 300; FOB, I : 509; FBI, II : 447; ARM : 168

4.2 Arjun Sadad.

4.3 Large evergreen trees with thin greenish or grayish white smooth bark and crimson red blaze. Leaves oblong or oblong-lenceolate, 7-15 cm. long, entire or crenate. Flowers in panicled spikes, ca 5 x 5 mm. white. Fruit 25-35 mm. long, wings 5-10 mm. broad, premorse above; striations ascending.

4.4 Planted on road side and forest. Fls. & Frs. : Mar.-Nov.

4.5.1 10g bark decoction is taken for a week in ulcer (Tribal people of Taranga Hills).

4.5.4 Timber & firewood.

4.7 Bark is astringent and hepatoprotective.

4.1 ***Terminalia bellirica*** (Gaertn.) Roxb. (Combretaceae)

FGS, I : 300; FOB, I : 508; FBI, II : 445; ARM : 169

4.2 Baheda.

4.3 Deciduous trees with dark grey and yellowish blaze. Leaves clustered at tip of brlets, elliptic-ovate, obtuse or cuspidate. Spikes solitary, axillary or extra-axillary. Flowers ca 5 mm. in size, creamy white. Fruit pyriform, ca 3 cm. long.

4.4 Frequent in Taranga forest.

Fls. : Jan.-May Frs. : Throughout the year.

4.5.1 Fruit powder is given for the treatment of cough in a dose of ½ – 1 g. with honey twice daily.

Fruit powder an ingredient of Ayurvedic preparation 'triphala' used for respiratory and gastric disorders.

4.5.2 Pounded fruit is applied in foot and mouth diseases.

4.7 Fruit anticancer, anti-inflammatory.

4.1 ***Terminalia catappa*** L. (Combretaceae)

FGS, I : 301; FOB, I : 511; FNG : 264; FBI, II : 444; ARM : 170

4.2 Desi Badam.

4.3 5-7 (25) m. deciduous trees; leaves alternate, coriaceous, obovate; inflorescence axillary, solitary; flower axillary, solitary; fruit drupe.

4.4 Planted. Fls. & Frs. : Throughout the year.

4.5.1 The juice of leaves is applied on forehead to relief headache.

4.5.3 The fruit is edible it is cooling astringent to bowels.

4.7 Fruits is cooling and astringent.

4.1 ***Terminalia chebula*** Retz. (Combretaceae)

FGS, I : 301; FBI, II : 446; FOB, I : 509; ARM : 171

4.2 Harde.

4.3 9-20 (25) m., much branched tree; leaves alternate or subopposite, simple; inflorescence axillary panicles; flower creamy-white or pale-yellow; fruit drupe.

4.4 Frequent in Taranga Forest. Fls. & Frs. : Mar. – Dec.

4.5.1 1tsp. fruit powder is given at night to cure constipition.

4.5.2 Crushed fruits are given orally to cure asthma.

4.6.3 Fruit power an ingredient of Ayurvedic preparation 'Triphala'.

4.7 Whole plant is antiviral and hypoglycemic.

4.1 ***Terminalia crenulata*** Roth. (Combretaceae)

Syn. *Terminalia tomentosa*. W. & A.

FGS, I : 301; FBI, II : 447; FOB, I : 499, ARM : 172

4.2 Sadad.

4.3 15-20 (25) m., erect, growing tree with straight trunk; leaves subopposite or the upper most alternate; inflorescence terminal; flower white or pale-creamy-yellow, fruit drupe.

4.4 Common in Taranga forest. Fls. & Frs. : Mar. – Dec.

4.5.1 Decoction of stem bark one teaspoonful is used to thrice a day for ulcer for fast healing.

4.5.4 Wood is used in preparation of furniture and agriculture implements.

4.7 Bark is Astringent.

4.1 ***Thespesia populnea*** (L.) Soland. (Malvaceae)

FGS, I : 117; FOB, I : 122; FBI, I : 345; ARM : 49

4.2 Paras Piplo.

4.3 8-15 m., evergreen tree; bark grey, smooth; leaves alternate, broadly ovate; inflorescence pendulous, axillary, solitary; flower sulphur yellow when fresh; fruit capsule globose, top depressed; seed ovoid or cuneate.

4.4 Frequent. Fls. & Frs. : Throughout the year.

4.5.1 3-4 fleshy leaves extract ground with an equal quantity of cow milk. This miture is taken on empty stomach early in the morning for seven days, it is effective remedy for jaundice.

4.7 Bark is Astringent and leaves is Analgesic. Whole plantis acrid, demulcent, alternative, conceptive, depurative, anti inflammatory, haemostatic, vulnerary, antidirrhoel and antibacterial.

4.1 ***Thevetia peruviana*** (Pers.) Merrill. (Apocynaceae)

Syn. *Thevetia neriifolia* Juss.;

FGS, I : 419; FOB, II : 207; FNG : 276; ARM : 257

4.2 Pili Karen.

4.3 Large shrubs; leaves alternate, sessile; inflorescence axillary dichasial few-flowered cymes; flower pale to bright yellow; fruit drupe 2.4 – 2.5 cm. long, ellipsoid-oblong.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Bark is bitter, used in intermittent fever.

4.5.2 Seed powder is applied on body to kill lice.

4.7 Whole plant is poisonous. Seeds are cathartic, abortifacient and emetic.

4.1 ***Tinospora cordifolia*** (Willd.) Miers. (Menispermaceae)

FGS, I : 56; FNG : Ad. No. 252; FBI, I : 97; FOB, I : 20; ARM : 6

4.2 Galo.

4.3 A deciduous climber with succulent corky stem. Leaves glabrous cordate. Branches send down slender, pendulous, fleshy roots. Male flowers clustered in the axils of small subulate bracts; petals broadly spathulate protecting the stamens when young; no pistillode. Female flowers solitary. Sepals green, petals flat, staminodes present. Drupes 1-3, dorsally convex and ventrally flat, small, style-scar sub-terminal.

4.4 Common on hedges.

Fls. & Frs. : Nov.-June

4.5.1 10ml decoction of stem is given thrice a day in fever (Vanjara Community).

10ml decoction of stem is taken orally once a day to control diabeties(Thakor community).

4.5.2 Aerial root is given to animal to increase lactation.

4.7 Whole plant is hepatoprotective and hypoglycemic and blood purifier.

4.1 ***Trapa natans*** L. var. ***bispinosa*** (Roxb.) Makino. (Trapaceae)

FGS, I : 314; FBI, II : 590; FOB, I : 551; ARM : 182

4.2 Shinghoda.

4.3 Aquatic floating herbs of fresh water ponds; leaves alternate, floating; inflorescence axillary solitary; flower few white above water surface; fruit nut; seed few white above water surface.

4.4 Cultivated in Vadnagar & Visnagar ponds. Fls. & Frs.: Sep. – Dec.

4.5.3 Fruit is edible.

4.6.3 Fruits (Shingoda) commercially important (Vaghari tribes).

4.7 Fruit are cooling & tonic.

4.1 ***Trianthema portulacastrum*** L. (Aizoaceae)

Syn. *Trianthema monogyna* L.

FGS, I : 338; FOB, I : 589; FNG : 268; FBI, II : 660; ARM : 179

4.2 Satodo.

4.3 Subsucculent, prostrate, often radially spreading herbs; leaves subopposite, simple; inflorescence axillary, solitary; flower white or bright-pink; fruit capsule up to 0.5 cm., small; seed dull black, subreniform.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 5-7 leaves are taken orally for 3 day in jaundice.

4.7 Plant is anti-inflammatory, laxative, abortifacient, diuretic and emmenagogue.

4.1 ***Tribulus terrestris*** L. (Zygophyllaceae)

FGS, I : 140; FOB, I : 170; FNG : 251; FBI, I : 423; ARM : 66

4.2 Bethu Gokharu.

4.3 Procumbent or prostrate, hairy herbs; leaves opposite, unequal or sometimes alternate; inflorescence axillary or leaf opposed solitary; flower 1.5 cm. across, yellow; fruit schizocarp, 5-angled; seed several in each coccus with transverse partition between each coccus.

4.4 Common on waste plains.

Fls. & Frs. : Throughout the year.

4.5.1 10g. fruit powder is taken orally with water for month to cure kidney stone.

4.7 Whole plant is diuretic and blood purifier.

4.1 ***Trichodesma indicum*** (L.) R.Br. (Boraginaceae)

FGS, I : 456; FOB, II : 281; FNG : 280; FBI, IV : 153; ARM : 280

4.2 Unadha Fuli.

4.3 15-45 cm. erect, annual, much branched herbs; leaves opposite, sessile, ovate or oblong or lanceolate-oblong; inflorescence extra-axillary, solitary and in terminal; flower pale violet-blue; fruit pyramidal, apex subtruncate.

4.4 Common. Fls. & Frs. : July-Feb.

4.5.1 5-7 fresh leaf is taken orally for stomach upset.

4.5.2 100ml Leaf extract is fed to animal for bodyache.

4.7 Leaves are depurative, emollient, diuretic and expectorant.

4.1 ***Trichosanthes bracteata*** (Lam) Voigt. (Cucurbitaceae)

Syn. *Trichosanthes palmata* Roxb.

FGS, I : 331; FBI, II : 606; FOB, I : 560; ARM : 201

4.2 Rata Endravarna (Ratani)

4.3 Extensive, stout, woody climbers; leaves alternate, thin-coriaceous; inflorescence axillary 5-10 flowered racemes; flower $\pm$ 0.4 cm. across, monoecious; fruit berries 3.5-5 cm. across; seed numerous, ellipsoid.

4.4 Frequent. Fls. & Frs. : May – Aug.

4.5.1 10g. fruit powder is taken orally with water in asthma.

4.1 ***Trichosanthes cucumerina***. L. (Cucurbitaceae)

FGS, I : 332; FOB, I : 560; FNG : 267; FBI, II : 609; ARM : 202

4.2 Jangli Parvar.

4.3 Slender, succulent climber. Leaves long petioled, deeply lobed, 10-25 cm. broad. Flowers 3-5 cm. long. Fruit very long, up to 1 m. sometimes spiral; green with white stripes when young.

4.4 Common. Fls. & Frs. ; July – Oct.

4.5.1 10g. tuber powder is taken orally once a day for 3 days in colic.

4.7 Leaves is purgative and seeds is anthelmintic.

4.1 ***Trichosanthes dioica*** Roxb. (Cucurbitaceae)

FGS, I : 332; FBI, II : 609; ARM : 203

4.2 Parvar.

4.3 Dioecious, herbaceous, slender, trailing or climbing, strigosely hairy annuals climbers; leaves broadly ovate; inflorescence axillary, solitary; flower male and female flower as T. cucumerina; fruit berries 4-6 x 2-4 cm; seed 0.2 – 0.3 cm. broad.

4.4 Cultivated for vegetable. Fls. & Frs. : July – Oct.

4.5.3 Fruits are used as Vegetable.

4.7 Fruits is Anthelmintic, emetic and purgative.

4.1 ***Tridax procumbens*** L. (Asteraceae)

FGS, I : 397; FOB, II : 102; FNG : 273; FBI, III : 311; ARM : 233

4.2 Pardesi Bhangaro.

4.3 30-75 cm. erect or straggling, perennial, glabrous or thinly hairy, herbs; leaves simple, opposite, deeply; inflorescence heads 0.8-1.5 cm. across; flower sparsely clothed with weak spreading white hairs; fruit achemes turbinate.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Leaf paste is applied on cuts for stop bleeding (Vikramsinh Bihola).

4.7 Whole plant is diuretic.

4.1 ***Trigonella foenum-graecum***. L. (Fabaceae)

FGS, I : 253; FBI, II : 87; ARM : 126

4.2 Methi.

4.3 10-40 cm. erect, globrous or faintly hairy in younger parts, herbs; leaves alternate, tri-foliate pinnately compound; inflorescence 1-1.5 cm. long, terminal; flower creamy-yellow, subsessile; fruit pods 4.2-13.5 cm. long; seed about 20.

4.4 Cultivated vegetable crop. Fls. & Frs. : Throughout the year.

4.5.1 20g seeds are taken orally at night for 15days in diabetes and joint pain.

4.5.2 Fresh leaves and seeds mixed with fodder are fed to animals suffering from rheumatism.

4.5.3 Leaves are used as vegetable & seeds are used as a spices.
Seeds are used for making pickles.

4.7 Leaves are cooling, digestive, appetizer, diuretic, tonic, carminative, astringent, bitter.

4.1 ***Triticum aestivum*** L. (Poaceae)
FGS, II : 880; FOB, III : 574; FBI, VII : 367; ARM : 459

4.2 Ghau.

4.3 30-60 cm. tall, tufted herbs; culms tufted or not, terete; leaves linear-lanceolate, flat; inflorescence spikes 6-15 cm. long; grain oblong, ventrally grovved.

4.4 Cultivated crop. Fls. & Frs. : Nov. – Mar.

4.5.1 one cup extract of 8-10 days plant is taken daily in morning in cancer.

4.5.2 Paste of roasted seed mixed with fodder is fed to goats to cure gastric problems.

4.5.3 Fruit is used in making breads & chapatti for daily diet.
Whole plant use as a fodder.

4.6.3 Fruits (Cereals) commercially important.

4.7 Fruits is antipyretic and sedative.

4.1 ***Triumfetta rhomboidea*** Jacq. (Tiliaceae)
FGS, I : 135; FNG : 250; FBI, I : 395; FOB, I : 156; ARM : 64

4.2 Gol Zipti.

4.3 100-200 cm., Suffruticose herbs; leaves alternate; inflorescence axillary fascicles; flower 0.4-1 cm. broad, bright-yellow, complete, actinomorphic; fruit capsule; seed 1 per cell, trigonous.

4.4 Common. Fls. & Frs. : July – Oct.

4.5.1 Plant paste is applied twice a day for 7 days to cure pimples.

4.7 Whole plant is diuretic.

4.1 ***Triumfetta rotundifolia*** Lam. (Tiliaceae)
FGS, I : 135; FOB, I : 157; FNG : 250; FBI, I : 395; ARM : 65

4.2 Zipto.

4.3 30-100 cm., erect, stellately hairy, suffruticose herbs with branchlets stellate tomentose; leaves alternate; inflorescence terminal; flower complete, actinomorphic; fruit capsule; seed subconical or cuneate.

4.4 Common. Fls. & Frs. : Aug. – Oct.

4.5.1 10ml decoction of whole plant is given orally for a week to cure gonorrhoea.

4.7 Whole plant is Astringent.

4.1 ***Tylophora indica*** (Burm. f.) Merr. in Philip. (Asclepiadaceae)

Syn. *Tylophora asthmatica* W. & A.

FGS, I : 431; FOB, II : 228; FBI, IV : 44; ARM : 271

4.2 Dam Vel.

4.3 Twiner with subtomentose stem. Leaves oblong or ovate-oblong, apiculate, 5-10 cm. long with rounded or subcordate base, pubescent beneath. Flowers dull yellow, purple near base, on long filiform pedicles on a peduncled cyme. Follicles 5-10 cm. long.

4.4 Cultivated. Fls. & Frs. : July-Dec.

4.5.1 Infusion of leaves & roots is given early morning for a week in asthma .

4.7 Whole plant is anti-arthritic.

4.1 ***Typha angustata*** Bory & Chaub. (Typhaceae)

FGS, II : 695; FOB, III : 326; FNG : 302; FBI, VI : 489; ARM : 437

4.2 Gha Bajaryu.

4.3 1-2 m. erect, robust, perennial, scapigenous, marsh aquatic; leaves scape, vertical, base sheathing; inflorescence terminal, terete; flower monoecious, unisexual, incomplete; fruit nutlets up to 0.2 cm.

4.4 Common in water body.

Fls. & Frs. : Sep. – June.

4.5.1 Spike used external to stop bleeding from cuts (Premaji Barad).

Ash of inflorescence is applied on wounds and boils for fast healing.

4.5.4 Stem used for making roof of huts.

4.7 Inflorescence is antiseptic.

4.1 ***Urena lobata*** L. (Malvaceae)

FGS, I : 117; FOB, I : 106; FNG : 247; FBI, I : 329; ARM : 50

4.2 Jangli Bhindo.

4.3 30-90 cm. stellatelly hairy, erect, suffrutescent, tomentose, perennial herbs; leaves alternate; inflorescence axillary solitary; flower rose-coloured, clustered; fruit globose; seed reniform, grey.

4.4 Frequent. Fls. & Frs. : Aug. – Oct.

4.5.1 Four teaspoonful powder of seed with hot water is taken twice a day after meal for 7 days to cure diarrhoea and dysentery (tribal of Taranga Hills).

4.7 Whole plant is hypothermic.

4.1 ***Utricularia inflexa*** Forsk. (Lentibulariaceae)

FGS, I : 514; FBI, IV : 328; FOB; II : 389; ARM : 315

4.2 Arkjavar.

4.3 Terrestrial insectivorous, slender, glabrous aquatic having branched roots, furnished with globose small bladders; leaves obtuse; inflorescence simple, racemes; flower blue or bluish purple; fruit capsule; seed oblong-ellipsoid.

4.4 Rare. Fls. & Frs. : Aug. – Dec.

4.5.1 Paste of whole plant is applied on irriting skin for relief.

4.7 Whole plant is Astringent, diuretic.

4.1 ***Vallisneria spiralis*** L. (Hydrocharitaceae)

FGS, II : 652; FBI, V : 660; FOB, III : 171; ARM : 410

4.2 Vallisneria. (Jalsarporia)

4.3 Leaves radical, narrow, linear, varying in length with the depth of wate; inflorescence spathe shortly pedunculate; flower numerous; fruit included in the spathe; seed many seeded.

4.4 Fls. & Frs. : Dec. – Feb.

4.5.1 Leaves extract is applied externally on burning sensation.

4.7 Plant is demulcent, stomachic, cooling and refrigrent.

4.1 ***Vernonia cinerea*** (L.) Less. (Asteraceae)

FGS, I : 398; FOB, II : 65; FNG : 271; FBI, III : 233; ARM : 234

4.2 Sahadevi.

4.3 30-100 cm. erect, annual herbs; leaves alternate, simple; inflorescence heads 0.6-0.7 cm. across; flower pinkish-violet; involucral bracts; fruit achemes 0.12 cm. Long.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 5-7 flowers are taken to cure fever (Vanjara Community).

4.7 Leaves are sedative, febrifuge, stomachic, diaphoretic and alterative.

4.1 ***Vicoa indica*** (L.) DC. (Asteraceae)

FGS, I : 399; FBI, III : 297; FOB, II : 88; ARM : 235

4.2 Sonasali.

4.3 30-100 cm. slender, erect, rigid, liguose, herbs; leaves alternate or sub alternate; inflorescence heads 0.7-2 cm. across; flower ray florets 12-24, uni-seriate; fruit achemes 0.08-0.1 cm. long.

4.4 Frequent. Fls. & Frs. : Aug. – Feb.

4.5.1 10ml leaf decoction is taken early morning for stomach upset and dysentery(Thakor Community).

4.1 ***Vigna aconitifolia*** (Jacq.) Marechal, (Fabaceae)

FGS, I : 257; FOB, I : 403; FNG : 260; FBI, II : 202; ARM : 127

4.2 Math.

4.3 Suberect or diffuse, annual twinning herbs with hispid branchlets & angular stems; leaves alternate, tri-foliate pinnately compound; inflorescence axillary, racemes with peduncle; flower pale-to bright-yellow; fruit pods; seed $\pm$ 0.2 cm. 3-8, brown.

4.4 Cultivated crop. Fls. & Frs. : Aug. – Jan.

4.5.3 Seeds used as a pulse.

Whole plant used as a fodder.

4.6.3 Seeds (Pulses) commercially important.

4.7 Seeds are nutritive, antibilious, digestive, cardiac, expectorant and aphrodisiac. Root is narcotic.

4.1 ***Vigna radiata*** (L.) Wikzek. var. ***radiata*** (Fabaceae)

Syn. *Phaseolus radiates* L.

FGS, I : 258; FOB, I : 403; FBI, II : 203; ARM : 128

4.2 Adad.

4.3 30-60 cm. trailing or twining, slender, patently hairy erect climbers; leaflets 5-7 x 4-7.1 cm. ovate; inflorescence capitate racemes; flowers; flowers yellow; fruit pods 2-6.2 cm. long; seed green, aril not raised.

4.4 Cultivated crop. Fls. & Frs. ; Aug. – Dec.

4.5.2 Young leaves of (Amaranthus sp.) pounded with soaked seed of adad is applied on wounds.

4.5.3 Seeds used as pulse for making *papad* & sweets.

Plants used as a fodder.

4.6.3 Seeds (pulses) commercially important.

4.7 Seeds are digestive, nutritive, galactagogue and expectorant.

4.1 ***Vigna radiata*** (L.) Wikzek. ver. ***sublobata*** (Roxb.) Verdc. (Fabaceae)

FGS, I : 259; FBI, II : 203; FOB, I : 402; ARM : 129

4.2 Mug.

4.3 Trailing or suberect, wild, slender, patently hairy to nearly glabrous herbs; leaves alternate, trifoliate; inflorescence in capitate racemes; flower 0.8 cm. a cross; fruit pods 2.5 – 5 cm. long; seed subreniform.

4.4 Cultivated crop. Fls. & Frs. ; July – Nov.

4.5.1 Fruits used to cure consumption and inflammations.

4.5.3 Dry aerial parts use as a fodder.

Seeds use as a pulses.

4.6.3 Seeds (Pulses) Commercially important.

4.7 Seeds are digestive, nutritive, galactagogue and expectorant.

4.1 ***Vigna unguiculata*** Walp. subsp. ***cylindrica*** (L.) Eseltine. (Fabaceae)

FGS, II : 260; FBI, II : 205; FOB, I : 405; ARM : 130

4.2 Choli.

4.3 Trailing or twining annual with glabrous branchlets, herb; leaves alternate, trifoliate; inflorescence axillary racemes; flower bright-purple or liliac; fruit pods 6-20 cm. long; seed deep-pinkish-red.

4.4 Cultivated crop. Fls. & Frs. : Aug. – Dec.

4.5.3 Young pod use as a vegetable. Seeds are use as a pulses.
Whole plant use as a fodder.

4.6.3 Seeds (pulses) commercially important.

4.7 Green pods sweet and astringent. Seeds are diuretic, astringent, aphrodisiac, laxative and galactagogue.

4.1 ***Vitex negundo***. L. (Verbenaceae)
FGS, I : 564; FOB, II : 508; FNG : 291; FBI, IV : 583; ARM : 346

4.2 Nagod.

4.3 Large evergreen shrub, 3-5 m. high. Young branch tomentose, bark grey. Leaves 3-5 foliate. Leaflets petioulate, elliptic or lanceolate. Flowers purple hlue in 4-20 cm. long tomentose panicled cymes. Drupes globose, black.

4.4 Common. Fls. & Frs. : Throughout the year.

4.5.1 Root decoction (about 5 cm. long 10 roots boiled in a cup of water) is applied thrice a day for 3-4 dyas in joint pain (Raval Community).
Leaf juice is applied on swollen body parts.

4.5.2 Mouth of cattle is washed with leaf decoction of vitex negundo thrice daily for 3-5 days, for the treatment of a very prevalent common disease kharva-mova.
Leaf juice is applied to remove lice in children and young animals.

4.7 The extract of the plant part possesses antimicrobial activity.

4.1 ***Waltheria indica*** L.(Sterculiaceae)
FGS, I : 125; FOB, I : 144; FNG : 249; FBI, I : 374; ARM : 56

4.2 Khapat.

4.3 75 cm., perennial, erect, herbs; leaves alternate, simple; inflorescence axillary heads in clusters; flower 0.2-0.3 cm. across, yellow, sessile; fruit capsule; seed solitary smooth.

4.4 Frequent. Fls : Aug. – Sep.

4.5.2 Paste of flowering twig is bandaged on leg of animal to cure thrush.

4.5.3 Dry branches is used to making broom.

4.1 ***Withania somnifera*** (L.) Dunal., (Solanaceae)

FGS, I : 492; FOB, II : 341; FNG : 283; FBI, IV : 239; ARM : 311

4.2 Asvaghandha.

4.3 70-100 cm. erect, hoary tomentose shrubs; leaves alternate, chartaceous; inflorescence axillary umbellate cymes; flower complete, actinomorphic; fruit berries; seed $\pm$ 0.25 cm. across.

4.4 Common. Fls. & Frs. : Dec. – Mar.

4.5.1 Root powder (10 g or 1 teaspoonful) is taken with milk twice a day in cases of general debility.

Powdered roots are mixed with husk of Isabgoal in 1:1 ratio and given with milk (1 teaspoonful) twice a day in cases of spermatorrhoea.

4.7 Tubers is alexipharmic, anthelmintic, aphrodisiac and tonic.

4.1 ***Wrightia tomentosa*** R. & S. (Apocynaceae)

FGS, I : 420; FOB, II : 199; FBI, III : 653; ARM : 258

4.2 Dudhlo.

4.3 6-12 m. small tree abounding in yellow milky juice with divaricate scabrous branches; leaves opposite inflorescence teminal, dense, erect, corymbose tomentose; flower 1.4-1.8 cm. across; fruit follicles 2; seed 1.25-1.65 cm. long.

4.4 Common in Taranga forest. Fls. & Frs. : Dec.-Sep.

4.5.1 Extract of stem bark is given orally for 3 days to cure fever.

4.7 Flowers abortifacient and CNS depressant.

4.1 ***Xanthium strumarium*** L. (Asteraceae)

FGS, I : 400; FOB, II : 94; FNG : Ad.No.255; FBI, III : 303; ARM : 236

4.2 Gadariyu.

4.3 40-135 cm. annual, unarmed herbs, leaves simple, alternate; inflorescence heads 0.4-0.8 cm. across; flower monoecious; fruit achemes rudimentary.

4.4 Very common. Fls. & Frs. : Throughout the year.

4.5.1 The paste of leaves are applied to cure skin diseases (Raval Community).

4.7 The whole plant is sedative and cooling, laxative.

4.1 ***Xeromphis spinosa*** (Thunb.) Keay. (Rubiaceae)

Syn. *Randia dumetorum* Lamk.;

FGS, I : 361; FOB, II : 27; FNG : 270; FBI, III : 110; ARM : 222

4.2 Mindhal.

4.3 1-3 (5) cm. armed, deciduous trees; bark dark-brown or black, rough; leaves fascicles at the ends of suppressed branches; inflorescence terminal at the ends of short leaf-breaking branchlets; flower not more then 2.5 cm. across; fruit berries; seed numerous, compressed.

4.4 Rare. Fls. & Frs. : July-Dec.

4.6.1 The fruits are used by Hindus at the time of marriage ceremonies.

4.7 Bark is astringent, analgesic and flowers and roots is diuretic.

4.1 ***Yucca gloriosa*** L. (Liliaceae)

FGS, II : 672; FOB, III : 283; ARM : 427

4.2 Yucca.

4.3 A stemless or shortly truncated shrub up to 1-2 m; leaves flat, lanceolate; inflorescence dense, rhomboid with ascending branches on central; flower greenish-white.

4.4 Garden plant. Fls. & Frs. : July – Sep.

4.5.1 10ml infusion of leaves is taken orally in dysentery.

4.7 Whole plant is purgative.

4.1 ***Zea mays*** L. (Poaceae)

FGS, II : 882; FOB, III : 574; FBI, VII : 102; ARM : 460

4.2 Makai.

4.3 2-3 cm. high. Annual herbs; leaves linear, glabrous; inflorescence male panicles 25-30 cm. long; grain subglobose, seated on persistent glumes and lemmas.

4. Cultivated crop. Fls. & Frs. : July – Oct.

4.5.3 Fruit used as cereals.

Whole plant used as a fodder.

4.6.3 Fruits (Cereals) commercially important.

4.7 Grains is astringent.

4.1 ***Zingiber officinale*** Roscoe. (Zingiberaceae)

FBI, VI : 246; FOB, III : 242; ARM : 413

4.2 Aadu.

4.3 A herbaceous, rhizomatous perennial. Rhizomes are aromatic. The herb develops several lateral shoots in clumps which begin to dry when the plant matures. Leaves narrow, sub-sessile, linear-lanceolate, dark green, evenly narrowed to form a slender tip, flowers in spikes, greenish yellow with a small dark purple or purplish black tip.

4.4 Cultivated. Fls : Jan. – Feb.

4.5.1 Dry powder of rhizome mixed with jaggery and taken orally once a day for a week in cough.

4.5.2 A mixture of powder of *methi* (*Trigonella foenum-graecum* L.), *Ajwain* and *soonth* (*Zingiber officinale* Rosc.) along with jaggery is fed to animal.

4.5.3 Rhizome used in masala & condiment.

4.7 Rhizomes is carminative.

4.1 ***Zizyphus glabrata*** Heyne. ex. Roth. (Rhamnaceae)

Syn. *Zizyphus trinervia* Roxb.;

FGS, I : 155; FNG : 253; FBI, I : 633; FOB, I : 256; ARM : 84

4.2 Motu bor.

4.3 3-8 (10) m. armed or unarmed small tree; leaves convergent simple; inflorescence in axillary fascicled cymes; flower actinomorphic, perigynous or epigynous; fruit drupe; seed plano convex.

4.4 Common. Fls. & Frs. : Aug.-Apr.

4.5.3 Fruits edible.

4.7 Leaves is blood purifier.

4.1 ***Zizyphus mauritiana*** Lamk. (Rhamnaceae)

Syn. *Zizyphus jujuba* Lamk.;

FGS, I : 155; FOB, I : 256; FNG : 253; FBI, I : 632; ARM : 85

4.2 Bor.

4.3 Small spinescent trees. Leaves obliquely elliptic-oblong, 4-6 x 3-4 cm. white or brown, tomentose beneath. Flowers in axillary tomentose cymes or fasicles, ca 5 mm. across; greenish white. Fruit globose, ca 1.5 cm. diameter, fleshy.

4.4 Common. Fls. & Frs. : Sep.-Feb.

4.5.1 Two to three young leaves with leaf bud is given thrice daily for 5 days to cure cough (Thakor Community).

Paste of root bark is applied externally thrice a day to relief poisonous bites.

4.5.3 Fruits edible.

4.6.4 It grows well in dry areas as well. It could be cultivated for fruits

4.7 Bark is astringent, blood purifier.

4.1 ***Zizyphus nummularia*** (Burm. f.), W. & A. (Rhamnaceae)

Syn. *Zizyphus rotundifolia* Lamk.;

FGS, I : 156; FOB, I : 257; FNG : 253; FBI, I : 633; ARM : 86

4.2 Chani bor.

4.3 90-120 cm. thorny, bushy, divaricately branched shrubs; leaves alternate, subdistichous; inflorescence axillary fascicles; flower buds globose; fruit drupe; seed discoid, brown.

4.4 Common. Fls. & Frs. : July – Apr.

4.5.2 Root crushed and mixed with water is applied on the paining shoulder of the bullock, used befor plough.

4.5.3 Fruits edible.

4.7 Fruits is astringent.

4.1 ***Zizyphus rugosa*** Lamk. (Rhamnaceae)

FGS, I : 157; FOB, I : 258; FBI, I : 636; ARM : 87

4.2 Toran

4.3 Up to 6 m. armed, scandent, large, shrub, sometimes climbing; leaves alternate, distichos, broadly elliptic or ovate oblong; inflorescence terminal; flower incomplete; fruit drupe globose to pyriform; seed 1 turgid obovoid.

4.4 Frequent. Fls. & Frs. : Dec.-Apr.

4.5.1 Fresh bark is chewed to cure mouth ulcers (tribal people of Taranga Hills).

4.5.3 Fruits edible.

4.5.4 The dried branches are used as field fencing.

4.7 Unripe fruits are astringent.

4.1 ***Zornia gibbosa*** Span. (Fabaceae)

Syn. *Zornia diphylla* pers.

FGS, I : 261; FOB, I : 355; FNG : 258; FBI, II : 147; ARM : 131

4.2 Samarpani.

4.3 10-30 cm. annual, diffuse, wiry herbs; leaves alternate, digitately bi-foliate; inflorescence terminal and axillary; flower yellow, small; fruit pods; seed smooth.

4.4 Frequent. Fls. & Frs. : Aug.-Apr.

4.5.1 Paste of leaves is applied to cure sores .

4.5.3 Whole plant is used as fodder.

CHAPTER-V RESULTS AND DISCUSSION

5.1 The Problem

Conservation of biological resources and of the indigenous traditional knowledge is essential for sustainable development and managing of natural resources the world over. The history of indigenous knowledge as an old as the human race. This knowledge has always been very important for the people who generate it. It is a matter of survival for them. Many scientists, researchers and environmentalists all over the world are now striving to explore, know, document and use the resource base knowledge for the welfare of the wider human race. Documentation of ethnic groups' knowledge related to plant resources is known as 'Ethnobotany'. The study deals with the relationships of man to the plant he used or uses.

Even in remote places where modern science has not reached nor taught, people know much about diseases, medicines and so many things about diseases, the life , health and the welfare of humans and the universe. This has been going on years and years together and generation to generation through traditional teaching. They do selfless service to the humanity. Due to traditional medicines many diseases are cured and people in remote places are benefited. But the traditional people can not give a scientific base of it and hence modern science and society reject it calling it blind faith.

Taking in to account all the above stated determinants the aim of the present studies has been justified in making assessment the traditionally used biological resources and also conserving and revitalizing the traditional beliefs, so that age old cultures are not lost and to provide base for Pharmacological and Phytochemical studies. The studies have been made in order to record the shift and change in the ethnobotanical uses in the last ten decades. In order to study it the various sites of the Mehsana district were regularly visited every fortnight over the period of three years.

A great deal of meticulateness has been observed in recording the ethnobotanical uses and extreme caution has been borne in the identification of even the minor variations in the plant species. These studies have been made

with the postulation that in the last ten decades the forest vegetation has been eroded, owing to the proliferation of human activities.

5.2 The Site Characteristic & Ecoclimatic Variable

The climate of this district is characterized by a hot summer and general dryness in the major part of the year. The year may be divided into four seasons. The cold season is from December to February. The hot season from March to the middle of June is followed by the south-west monsoon season which continues upto about the end of September. October and November constitute the post-monsoon or transition period.

The annual rainfall in the district is received during the south-west monsoon months, June to September, the rainiest month being July. The rainfall in the district in general increases from the west towards the east.

The mean annual rainfall recorded was 840.6 mm for the period of 2004-2008. The monthly maximum rainfall in the last five years was 575 mm in the month of September 2005 where as, the minimum rainfall was 5 mm (October-2004). It is evident from the table that the rainfall is ambient.

After February, there is rapid increase in the temperatures. May and the early part of June before the onset of the south-west monsoon constitute the hottest part of the year. The mean daily maximum temperature 42.1^0C (May) and the mean daily minimum is 7.3^0C (February). Nights during June are comparatively hotter than in May. The heat in summer is intense and on individual days the maximum temperature may reach over 42.1^0C. with the advance of the monsoon into the district by about the middle of June.

During last five years (2004-2008) the mean maximum relative humidity was 86.2% while the mean minimum relative humidity was 50.1%. However, the maximum relative humidity in last five years was 92.0% (August-2006) and minimum was 35.0% (May-2005).

During the monsoon season the skies are mostly moderately to heavily clouded. In the rest of the year the skies are generally clear or lightly clouded.

Winds are generally light with some increase in speed during the latter part of the summer and early part of the monsoon season. During the period from April to July, the winds blow mostly from directions between south and west, the south-westerlies predominating. The winds are light and variable in direction during October, the easterlies and north-easterlies being more common in the mornings and the westerlies and north-westerlies occasionally in the afternoons. During the period from November to March, while the morning winds are mostly between north and east, the afternoon winds are generally from directions between west and north.

5.3 The Floristic Catalogue

Analysis of information presented in appendix-I indicates that various tribes inhabitant of Mehsana district possess rich knowledge about plant resource. This is evident form the following fact.

- A total of 460 angiosperm plant species belonging to 324 genera of 102 families have been identified and recorded for ethnobotanical uses.
- The ratio of monocotyledons and dicotyledons is 1:5 of families, 1:6.53 for genera and 1:7.85 of species.
- The ration of family to genera and species in 1:3.18:4.5
- Among dicotyledons 140 genera, 213 species and 48 families belongs to polypetalae. 105 genera, 141 species and 24 families belongs to gamopetalae, while 36 genera, 54 species and 13 families belongs to apetalae.
- Among monocotyledons 43 genera and 52 species belongs to 17 families.

It is evident from the appendix-I that *Poaceae* is the largest family among monocotyledons, where as *Fabaceae* and *Malvaceae* are the largest families among the dicotyledons. The monocotyledons a part from *Poaceae* and *Cyperaceae* has been poorly represented.

Table 5.1 : Distribution of angiosperm plant species of the Mehsana district among families (f) and genera (g) and genera/family (g/f) and species/family(s/f).

Angiosperms	Families		Species		Genera		g/f	s/f
	No.	%	No.	%	No.	%		
Dicotyledons	85	83.3	408	88.7	281	86.7	3.3	4.8
Monocotyledons	17	16.7	52	11.3	43	13.3	2.53	3.05
Total	102	100	460	100	324	100	3.18	3.98

Table 5.2 gives a comparative account of the dominant ten families of the Mehsana district. Present study (2008), Yogi (1970), Saxton & Sedgwick (1918), Shah (1978). While taking into account the existing researches and records it is commonly observed that Poaceae family headed but in present study Fabaceae is a dominant.

Table 5.2 : Comparative analysis of ten dominant families in descending order of their occurrence in the Mehsana district in context of the country and state.

Sr. No.	Mehsana district (Present study 2008)	North Gujarat (Yogi-1970)	North Gujarat (Saxton & Sedwick 1918)	Gujarat (Shah – 1978)
1	Fabaceae	Poaceae	Poaceae	Poaceae
2	Malvaceae	Papilionaceae	Asteraceae	Leguminoseae
3	Poaceae	Cyperaceae	Acanthaceae	Cyperacaea
4	Cucurbitaceae	Asteraceae	Euphorbiaceae	Asteraceae
5	Euphorbiaceae	Euphorbiaceae	Cyperaceae	Acanthaceae
6	Solanaceae	Convolvulaceae	Rubiaceae	Euphorbiaceae
7	Caesalpiniaceae	Acanthaceae	Papilionaceae	Malvaceae
8	Asteraceae	Cucurbitaceae	Cucurbitaceae	Convolvulaceae
9	Acanthaceae	Amaranthaceae	Convolvulaceae	Lamiaceae
10	Convolvulaceae	Rubiaceae	Amaranthaceae	Scrophulariaceae

Maximum flowering and fruiting is observed during December and minimum during June (Table 5.3) while 136 plant species remain throughout the year in flowering and 136 species in fruiting.

Table 5.3 : flowering and fruiting seasons of plants in Mehsana district.

Month	Flowering and Fruiting
January	163
February	149
March	138
April	113
May	84
June	72
July	111
August	166
September	191
October	196
November	188
December	201
All Months	136

5.4 Physiognomic Classification

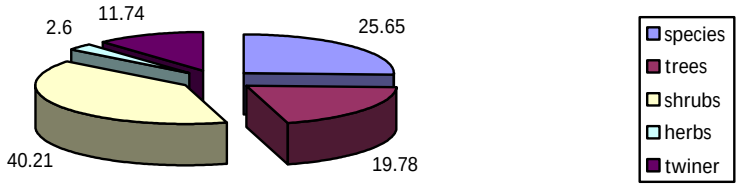
5.4.1 Habit

Out of the total 460 flowering species 25.65 % are trees, 19.78% shrubs, 40.21 % herbs, 2.60 % Twiner and 11.74 % are climber. (Table 5.4, Appendix-I). This study shows that herbaceous plant (ephemeral plants) are dominating the forest. This is probably owing to the semi- arid conditions and erratic rainfall. Further, the scrubby plant species (small trees and shrubs) can be observed as the dominant perennial vegetation of the area.

Table 5.4 : Habit of the plant species occurring in the Mehsana district.

Sr. No.	Habit	No. of species	Percentage (%)
1	Tree	118	25.65
2	Shrub	91	19.78
3	Herb	185	40.21
4	Twiner	12	2.60
5	Climber	54	11.74
	Total	**460**	100

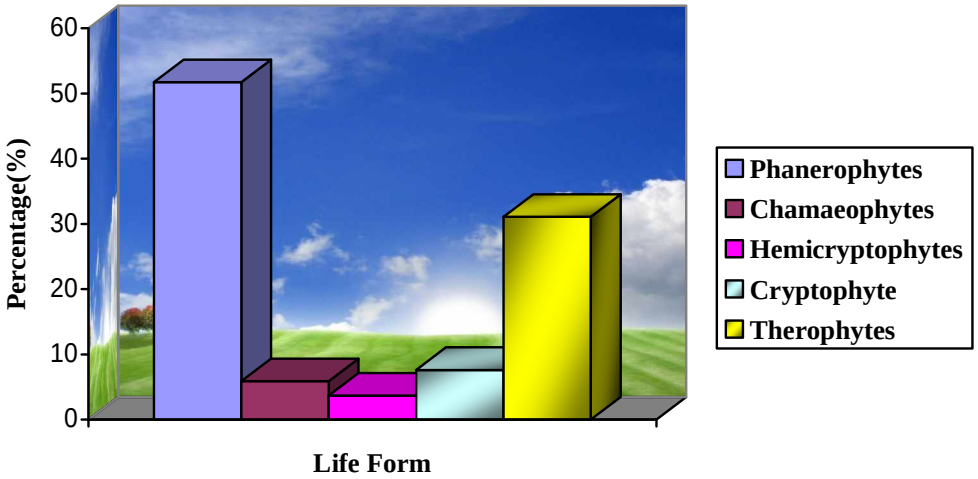
Fig. 5.1 : Habit of the flora of the Mehsana district.



5.4.2 Life Form

The various life form classes (Raunkiar, 1934) as phanerophytes (nano, micro, meso, mega, epi) are represented by 51.74 % species while chamaeophytes account for 5.87% species, hemicryptophytes 3.69% species cryptophyte (geo, helo, hydro) by 7.60 % and therophytes are represented by 31.08 % of the total number of species. The phanerophytes and therophytes dominate in all the parts (Appendix-I, Figure 5.2). The biological spectrum reflects the adaptation of plants to environment and primary climate (Smith, 1980). Geographically widely separated plant communities can be very usefully compared with one another on the basis of biological spectrum. Since life forms are related to the environment, biological spectrum is also and indicator of prevailing environment.

Fig. 5.2 : Life Form Spectrum Of The Ethnobotanical Useful Flora Of The Mehsana District. (In General)



5.5 Plant Uses at a Glance

Of the 460 species listed, 106 are used for human consumption; they can be termed as edible; 329 of them are useful in human medicare; 80 for veterinary medicine; 63 for fodder; and 13 for miscellaneous uses like house construction, furniture, implements, firewood, etc. Many species are used for more than one purpose.

5.6 Food Plants

From the details in the previous chapters, we can conclude that the deficiency of nutritional constituents such as vitamins, minerals and carbohydrates, protein the rural inhabitant and tribal people of Mehsana district supplement their food with a number of wild edible plants. So their relationship to plant is dependent primarily on the question; "how to use it ?" or most often "can it be eaten ?" Given below is a list of 10 most important plants for their subsistence. These are listed in order of priority assigned by the author after careful scrutiny during his field trips to study the reliance of the rural inhabitant and tribal people of Mehsana district on these plants. Then follows a list of famine foods or plants for crisis-management. This list is arbitrary, because in a famine situation anything that is edible at hand will be consumed; thus, in reality, many more than these 10 plants are used as famine-foods. But this gives an idea as to how they tide over unfavorable conditions.

5.6.1 Important Edible Plants (Including species)

1. *Triticum aestivum* (Ghau)
2. *Pennisetum typhoides* (Bajaro)
3. *Oryza sativa* (Chokha)
4. *Vigna radiata* (Mug)
5. *Cajanus cajan* (Tuver)
6. *Vigna radiata* (Adad)
7. *Sorgham bicolor* (Juvar)
8. *Zea mays* (Makai)

9. *Cicer arientium* (Chana)
10. *Vigna unguiculata* (Choli)

5.6.2 Important Famine – Food

1. *Capparis decidua* (Kerdo)
2. *Cordia dichotoma* (Moto Gundo)
3. *Manilkara hexandra* (Rayan)
4. *Morus alba* (Shetur)
5. *Syzygium cumini* (Jambu)
6. *Zizyphus nummularia* (Chani Bor)
7. *Cordia grahaf* (Gundi)
8. *Tamarindus indica* (Khati Ambli)
9. *Ficus racemosa* (Umbaro)
10. *Emblica officinalis* (Ambla)

5.6.3 Agricultural Crops

1. Cereals & Millets

Kharif : *Sorghum bicolor, Pennisetum typhoides, Oryza sativa*

Rabi : *Triticum aestivum*

2. Pulses

Kharif : *Cajanus cajan, Vigna radiata, Lablab purpureus, Vigna aconitifolia, Vigna unguiculata*

Rabi : *Cicer arietinum, Pisum sativum*

3. Vegetables

Kharif : *Brassica oleracea* var. *botrytis, Brassica oleracea* var. *capitata, Abelmoschus esculentus, Capsicum annum, Solanum melongena, Lablab purpureus, Cucumis sativus, Legenaria leucantha, Momordica charantia, Momordica dioica, Coccinia grandis, Luffa acutangula, Luffa cylindrica, Spinosa oleracea, Trichosanthes dioica, Vigna unguiculata*

Rabi : *Lycopersicon lycopercicum, Raphanus sativus, Daucus carota, Trigonella foenum-graceum, Ipomoea batatas, Solanum tuberosum, Pisum sativum, Cyamopsis tetragonoloba, Allium cepa, Beta vulgaris*.

4. Condiments & Spices

Kharif : *Capsicum annum, Zingiber officinale*

Rabi : *Coriandrum sativum, Allium sativum, Cuminum cyminum, Foeniculum vulgare, Anethum graveolens, Trigonella foenum-graeum, Curcuma domestica, Brassica juncea*

5. Oil

Kharif : *Gossypium herbaceum, Gossypium barbadense, Sesamum indicum, Arachis hypogea, Ricinus communis*

Rabi : *Brassica juncea*

6. Sugar

Rabi : *Saccharum officinarum*

7. Narcotics

Rabi : *Nicotiana tabacum*

8. Fibers

Kharif : *Gossypium herbaceum, Gossypium barbadense, Crotolaria juncea, Hibiscus cannabinus*

9. Fodder

Kharif : *Sorghum bicolor, Zea mays, Echinochloa frumentacea,*

Rabi : *Hordeum vulgare, Medicago sativa, Daucas carota, Zea mays, Raphnus sativus*

5.7 Medicinal Uses

The rural inhabitant and tribal people of Mehsana district attribute most of the ills of life to spirits and often seek the aid of magical practices to get rid of such ills (Roy : 457-58). Besides the ‘pats’ (spirits), there are other agents, like some animals, reptiles, birds and even humans that can cast an ‘evil-eye’ on people, animals, or crops and bring about unhappiness, illness, destruction and death.

But over the years, due to experience and tradition, they have learned that many of these evils can be corrected and illnesses can be cured by careful use of plants, magic and propitiatory sacrifices. Many of the ordinary illnesses, though basically believed to be due to spirits, are curable by herbal remedies.

In all, about 417 medical prescriptions are assigned for the 329 plants used for human health care. In most cases, details of the mode of preparation, administration and dosage are given.

A reference to the broad nature of biological activity of plants (based on CDRI report of biological screening) is given where available. This will help to compare and authenticate some of the traditional uses in terms of a modern pharmacological basis (Appendix-III).

5.8 Most Important Medicinal Plants Used By Rural Inhabitant And Tribal People Of Mehsana District

Since the list of plants used for treatment of diseases is long, for our purpose, 12 most important ones are identified for this analysis. The table shows the name of the plant, number of prescriptions assigned to it in this study and also the available data on the Biological activity.

Table 5.5 : Most Important Medicinal Plants Used By Rural Inhabitant And Tribal People Of Mehsana District

No.	Name of Plant	No. of prescriptions	Biological Activity
1	*Solanum nigrum*	5	Hepatoprotective
2	*Azadirachta indica*	4	Amoebicidal, Antiviral
3	*Achyranthes aspera*	4	Cardio tonic activity
4	*Adhatoda zeylanica*	3	Respiratory stimulant
5	*Alangium salvifolium*	3	Antiprozoal
6	*Aloe barbadensis*	3	Hypolipidaemic, Laxative
7	*Asphoelelus tenuifolius*	3	Antiseptic, Blood purifier
8	*Cassia fistula*	3	Antiviral, Antibacterial, Anticancer
9	*Celosia argentea*	3	Diuretic, Cooling, Blood purifier, Astringent

10	*Polygala chinensis*	3	Anti-inflammatory, Antipyretic
11	*Ricinus communis*	3	Antiamoebic, Diuretic
12	*Sesamum indicum*	3	Aphrodisiac, Coolant, Diuretic

Most of the remedies used by the rural inhabitant and tribal people of Mehsana district are traditional. But the curative properties of some corroborate with the results of biological screening. The long-standing practice and traditional knowledge, though not testified by modern scientific screening, appear to a great extent reliable.

Some particular trends can be inferred from these uses, such as different species belonging to one genus seem to be effective for the same disease. For example *Gomphrena celosioides* and *G.globosa* for cough and cold, and *Ocimum canum* and *O.sanctum* for fever.

5.9 Ethnoveterinary

Animal husbandry is one of the major activities, next to agriculture which contributes significantly to the economy of various tribes of Mehsana district. According to the Census of 2003, live stock in district is 7,22,080 viz. Cow 153561, Buffalo 474366, Sheep 12282, Goat 81871 etc. 40 veterinary dispensaries are located in Mehsana district.

As the economy is animal based, well being of their animals is paramount importance to them for their treatment, they use as many as 80 plant species (Appendix-IV). They use there for loss of appetite, flatulence, stomach disorders, promoting lactation, constipation, body swelling, to expel placenta, foot-hoof root infection. By and large, the plant drug is administered orally. Root and leaves are widely used for the treatments of veterinary diseases..

5.10 Commerce and Cottage Industries Based On Minor Forest Product

Forest depletion has been rapid and the direct demand on forests has been mounting, yet, the situation is not very bad, because the tribals, if left on their own to manage their affairs, have an inbuilt system of balancing their

needs and care of their environment and ecology. Due to various factors, it is unfortunate that they cannot be left on their own. They need to be brought into the national mainstream to catch up with the surrounding development activities. A careful management of the resources is required, so that the tribals can be self-sufficient in their own environment.

Listed below are important plants of economic, commercial and industrial value. Balanced exploitation of these can help them to achieve economic prosperity and consequently a better standard of life. They are listed according to the priority of economic products presently exploited from them :

Table 5.6 : Commerce And Cottage Industries Based On Minor Forest Product

	Name of the plant	**Economic Products**
1.	*Brassica juncea*	Seed for oil
2.	*Brassica oleracea* L. var. *botrytis*	Flower
3.	*Brassica oleracea* L. var. *capitata*	Leaf
4.	*Cocos nucifera*	Fruit
5.	*Cuminum cyminum*	Fruit
6.	*Gossypium arboreum*	Seed - oil & fibre
7.	*Hibiscus cannabinus*	Cordage
8.	*Indigofera tinctoria*	Dye
9.	*Ipomoea batatas*	Root
10.	*Jatropha curcas*	Seed oil
11.	*Lepidium sativum*	Seed
12.	*Mangifera indica*	Fruit
13.	*Moringa oleifera*	Fruit
14.	*Musa paradisiaca*	Fruit
15.	*Nicotiana tabacum*	Leaf
16.	*Oryza sativa*	Grain
17.	*Pennisetum typhoides*	Grain
18.	*Plantago ovata*	Seed
19.	*Saccharum officinarum*	Stem

20.	*Solanum tuberosum*	Tuber
21.	*Sterculia urens*	Gum
22.	*Syzygium cuminii*	Fruit
23.	*Tectona grandis*	Wood
24.	*Terminalia chebula*	Fruit
25.	*Trapa natans* L. var. *bispinosa*	Fruit
26.	*Triticum aestivam*	Grain
27.	*Vigna aconitifolia*	Pulse
28.	*Vigna radiata* (L.) var. *radiata*	Pulse
29.	*Vigna radiata* (L.) var : *sublobata*	Pulse
30.	*Vigna unguiculata* (L.) subsp. *cylindrical*	Pulse
31.	*Zea mays*	Grain

This list comprises only about half the number of plants of economic value. Some plants that have great economic potential but are not tapped by the people of Mehsana district also need a mention. *Annona sqamosa,Carica papaya, Psidium guajava* etc. are some of the plants that grow well in the area, but are not yet properly exploited by the people of Mehsana district.

The list of economic plants will be incomplete without a mention of the important wood-yielding trees of the area. *Dalbergia sissoo* are the important among them *Azadirachta indica* also are commonly used.

5.11 Religious Associations

The rural inhabitant and tribal people believe some plants having good omen and some others are ominous. Some plants are held sacred. Some plants are used in worship of gods. The leaves and flowers of some plants are offered to God. Some parts of certain plants are used in marriages ceremony.

38 plants have religious and symbolic value : *Adansonia digitata, Aegle marmelos, Amaranthus lividus, Anthocephalus indicus, Calotropis giganatea, Calotropis procera, Cannabis sativa, Cicer arietinum, Citrus limon, Cocos nucifera, Crataeva nurvala, Crinum asiaticum, Cucurbita maxima, Cynodon*

dactylon, Datura innoxia, Datura metel, Desmostachya bipinnata, Echinops echinatus, Ficus amplissima, Ficus religiosa, Gmelina arborea, Guzuma ulmifolia, Hibiscus rosasinensis, Mangifera indica, Musa paradisica, Nelumbo nucifera, Nerium indicum, Nyctanthes arbortritis, Nymphaea stellata, Ocimum basillicum, Ocimum sanctum, Oryza sativa, Pandanus tectorius, Prosopis cineraria, Salvadora persica, Santalum album, Sesamum lacinatum, Xeromphis spinosa

5.12 Socio-Cultural Importance

Almost all plants of economic and religious uses have some social significance. But some 7 of them have very significant socio-cultural importance. *Prosopis cineraria, Ficus amplisisima, Salvadora persica, Mangifera indica, Polaylthea longifolia, Tagetes patula, Xeromphis spinosa.*

Palli festival is celebrated during 'Navaratri' in North Gujarat. It is celebrated on the eighth night of Navaratri in many villages of Vijapur taluka as well as that of Mehsana district. A grand procession is taken out in the village on that day. The chariot for *Palli* is prepared from the wood of *Prosopis cineraria*.

A wooden grate holding the pious fire is kept on this chariot. Believers add 'Ghee' to this holy fire to keep it kindled during the course of the procession. Then, this chariot is put on the outskirts of the village at the end of the procession.

In addition to the above said *Palli* celebration one more *Palli* is celebrated in the Kadava Patidar Chamunda Mataji temple situated at Kolavada village in Vijapur taluka. This *Palli* is celebrated for being blessed by the Goddess on the auspicious occasions of a birth of a son and for the son of a daughter who has given him birth at her father's home. It is held after 11 years. The tradition has been in practice since ages. Believers find a typical kind of contentment in pleasing the happiness and prosperity according to them. This *Palli* is prepared from the wood of *Ficus amplisisima*. Seven kinds of cereals are placed on it and after igniting lamps on a four sides of it, people set out in

the form of a procession at the auspicious time to offer and place it before the almighty Goddess.

A wooden baton with a sharp edge called '*Khandi*' is used to worship fire during the festival of Holy in this '*Khandi*' is prepared from the stem of *Salvadora persica*. Pious fire in the form of the burning coals is taken out from the fire of holy with the help of this *Khandi* and later on after bringing it home the holy fire is worshipped.

5.13 Conservation

The rural inhabitant and tribal peoples do not have any well-defined conservation strategy of the kind we understand in modern terms. But they do conserve plants that are socially, medically, economically and culturally significant to them.

In general the rural inhabitant and tribal peoples also follow certain rules regarding collection of the root from any climber or shrub, i.e. take roots only from one side of the plant; if these are not enough, then take roots from another plant; always avoid one's shade falling directly on the plant while removing the root; and for removing bark remove bark from down to up, instead of from up to down as all are wont to do. All these general rules help in preserving the plants from destruction.

However, unscrupulous slashing of forests, felling of trees for wood, etc. still go on. So, there is need for a systematic effort for conservation.

During this study, the author tried to have some idea of rare plants in the area and has come across at least 10 plants which find mention in recent literature like the **Red Data** series and other publications on rare and threatened plants of India published by BSI (Jain & Rao. 1983, Jain & Sastry. 1984, Nayar & Sastry. 1988, 1990).

Rare Plants

1.	*Anogeissus pendula*	Safed Dhav
2.	*Anogeissus serica*	Dhav
3.	*Ceropegia bulbosa*	Kundher

4.	*Curcuma inodora*	Chhichhodo
5.	*Dregea volubilis*	Dodi
6.	*Gloriosa superba*	Vachhnag
7.	*Gymnema sylvestre*	Madhunashini
8.	*Leptadenia reticulata*	Dodi
9.	*Tecomella undulata*	Ragat Rohido
10.	*Tylophora indica*	Damvel

During field trips, the author also found another 10 plants which are scarce in the area. Some of these may be common in other parts of India. But to preserve diversity in this area this scarcity needs attention.

These plants are

1.	*Adansonia degitata*	Rukhdo
2.	*Acacia chundra*	Kher
3.	*Tecomella undulata*	Ragat Rohido
4.	*Terminalia chebula*	Harde
5.	*Boswellia serrata*	Saladi Gugal
6.	*Grewia hirsuta*	Khad Dhamni
7.	*Gymnema sylvestre*	Madhunashini
8.	*Anogeissus serica*	Safed Dhavdo
9.	*Dalbergia latifolia*	Lal Sisam
10.	*Xeromphis spinosa*	Mindhal

5.14 Agricultural Implements

The rural inhabitant and tribal people use various tools for agricultural activities e.g. Plough, Cart, Damaniyu, Axe, Parani, Khappo, Karab, Leveler etc. It is used in extensive agriculture and used for, sowing, cutting, winnowing and harvesting plant stalks and also digging soil. They also use simple country ploughs for turning soil. Total 19 plant species are used in preparation of tools like ‘tripod’ tool handles and to prepare instruments used in agriculture. All most in each village and in each farm or field species such as bamboo, *Acacia*

spp., *Tectona grandis* and *Dalbergia sissoo* are implements. It is a characteristics feature of this area (Appendix-IV).

Table 5.7 : List of the plants used in preparation of agricultural implements

Sr. No.	Botanical name	Local name	Agricultural implements
1	*Acacia nilotica*	Baval	Wheel of cart
2	*Alangium salvifolium*	Ankol	Plough, Harrow
3	*Anogeissus latifolia*	Dhavdo	Tool handle
4	*Anogeissus pendula*	Safed Dhav	Plough and Tool handles
5	*Anogeissus sericea*	Dhav	Plough, Dantal
6	*Azadirachta indica*	Limdo	*Dhusari*, Chawal
7	*Bambusa arundinacea*	Vans	Tool handle
8	*Cordia grahaf*	Nani Gundi	Third support of cart
9	*Dalbergia latifolia*	Sisam	Cart axles and plough
10	*Dalbergia sissoo*	Moto Sisam	Cart axles and plough
11	*Drypetes roxburghii*	Putranjiva	Tool handle of rake
12	*Eacalyptus citriodora*	Nilgiri	Part of plough
13	*Manilkara hexandra*	Rayan	*Perni*
14	*Mitragyna parvifolia*	Dharakadam	*Khapo* and *Perni*
15	*Peltophorum pterocarpum*	Tamrafali	Handle of *Kodari* & *Pavda*
16	*Syzygium cumini*	Jambu	Agricultural implements
17	*Tecomella undulata*	Ragat Rohido	*Orani*
18	*Tectona grandis*	Sag	*Samar*
19	*Terminalia crenulata*	Sadad	Various agri. implements

5.15 Field fences

Fencing the boundaries of their fields is primary effort of rural inhabitant and tribal farmers towards protecting the crop. Even through improved techniques are available the tribal “still uses brush wood and thorny branches, as a safe guard against cattle intrusion in his farm” for obvious reasons.

Some of the basic considerations for selection of the materials for this purpose are :

- Impenetrability

By simple mechanical obstruction

By presence of deterring devices e.g. thorns

- Unpalatably to cattle
- Barrier to sight
- Wind breaker
- Soil protector
- Dense foliage
- Easy propagation
- Other economic benefits or utility

Yielding product which may fetch cash returns capability of supporting other plants. The fencing may comprise of live plants or branches of single species or two or more these logs of *Acacia* spp. and *Euphorbia neriifolia*, were observed forming fencings, such fencings of stout wooden logs are common in areas with ample timber resources. Live fencings of *Caesalpinia crista, Azima tetracantha* (Appendix-IV).

5.16 Fodder

The fodder value of the plant species, occurring in the Mehsana district is great importance. The forest of Taranga Hills to be utilized for fodder. Thus most of the grasslands are used for grazing purposes. Both monocotyledons as well as dicotyledons are used as fodder. Mostly in monsoonal and post monsoonal months. The free grazing of grass and non grass species is a common practice. After the monsoons the culms, leaves etc. of almost all the crop species are collected and stored after they are harvested. Thus, if one hand the grasses. Provide the bulk forage for animal consumption some of the arboreal species catering to the fodder need (viz. *Zizyphus nummularia, Acacia* spp. *Prosopis chilensis* etc.) provide foliage and young pod to cattle, sheep, goats and camels during the odd periods. Though not wide spread, cultivation of some crops especially for fodder (viz. *Zea mays, Medicago sative, Sorghum bicolor, Pennisetum typhoides, Daucus carota*) is carried out at a minor scale.

Appendix-IV gives a list of 63 fodder plants of the most prominent dicotyledons.

These plants are fed to cattle either singly or in combination of other plant parts. Interestingly, some of these species are not enumerated in the list of fodder plants (400 species) of India (Annon, 1994). At the same time, their wisdom regarding forage utilization should be essentially incorporated in the modern management practices. The present finding indicates that this region holds rich diversity in forages.

5.17 Fuel

In this region 39 plant species of families like *Mimosaceae, Malvaceae, Euphorbiaceae* and *Tiliaceae* etc. are used as fuel. People collect the fuel by collecting dry plants parts, crop plant residue and dry fencing branches of trees. Some time unwanted and obstacle creating branches of ornamental plants are also cut, dried and used as a fuel for their household purpose. Mehsana district people never used some plant as fuel like *Ficus religiosa, Aegle marmelos, Gmelina arborea* and *Prosopis cineraria* because they believed that these are the holy trees (Appendix-IV).

5.18 Domestic Implement

17 species of plant used in preparation of domestic implements. These kinds of implements are interwoven in the rural inhabitant and tribal people life style. The various plant parts are utilizing for broom, brush etc (Appendix-IV).

5.19 House Building

15 species of plant used in house building to make furniture, shelters, doors and windows etc. (Appendix-IV).

5.20 Masticatories

In the area of investigation, two of the known hallucinogens viz. *Cannabis sativa* and tobacco. Of these the former is important in the social

context, especially during festivals like Shivratri during which in form of Bhang. It is largely consumed. Throughout the various tribes in tobacco smoking. Tobacco smoking is exceedingly popular in this tribal region.

5.21 Miscellaneous

Analysis of information indicates that rural inhabitant of study area possesses rich knowledge. About plant resource around them. This is evident the following fact (Appendix-IV).

5.21.1 Fiber

8 species of plant used as fibre for preparation of strings, ropes and stuffing.

5.21.2 Toothbrush

5 species of plants used as toothbrush.

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5.21.3 Musical Instrument & Toys

4 species of plants used as musical instrument & toys. These people have few but unique musical instruments.

5.22 Contribution to ethnobotany of Mehsana district

In the present studies, a total of 460 spp of angiosperm have been recorded of which dicots constitutes 408 spp and 52 spp monocots belonging to 324 genera of 116 families. However, in an earlier survey of the some part of Mehsana district, Patel (2002) in his checklist has enlisted as many as 523 plant species (455 dicots, 68 monocots). While Chaudhary (2003) in his checklist has enlisted as many as 411 plant species (353 dicots, 58 monocots) for ethnobotanical uses from the Vadnagar, Visnagar, Kheralu and Mehsana taluka of Mehsana district. Patel (2002) emphasized on ecofloristic aspect hence the number of species are higher than the present study. While number of species is

higher in present study than the Chaudhary (2003) because entire district is covered in present study for ethnobotanical uses.

Table 5.8 : Comparison Of Floristic Catalogue With Patel (2002) And Chaudhary (2003)

		Patel (2002)	Chaudhary (2003)	Present Study
Total Family		105	146	102
Family	Dicot	86	128	85
	Monocot	19	18	17
Total Genera		343	326	324
Genera	Dicot	288	281	281
	Monocot	55	45	43
Total Species		523	411	460
Species	Dicot	455	353	408
	Monocot	68	58	52

In present study, 118 tree species and 91 shrub species are recorded. It is higher than the earlier worker Patel (2002) and Chaudhary (2003). While herb, climber and parasites species are less in number than the earlier worker. Today less number of people identify the herb and climber plants hence its ethnobotanical use is less in the study site (Table 5.8).

Table 5.9 : Comparision Of Habit With Patel (2002) And Chaudhary (2003)

	Patel (2002) No. of Species	Chaudhary (2003) No. of Species	Present study No. of Species
Tree	79	70	118
Shrubs	80	70	91
Herbs	279	202	185
Climber	76	68	64
Parasite	09	01	02
Total	523	411	460

Patel (2002) studies life form of plant species while Chaudhary (2003) not give any account about life forms present study and Patel (2002) indicates the dominance of therophytes over the life forms indicates a highly disturbed condition of the habitat due to overgrazing and over exploitation, Dry climate also the combine with grazing problems.

Table 5.10 : Comparision Of Life Form With Patel (2002) and Chaudhary (2003).

Life Form	Patel (2002) No. of Species	Chaudhary (2003) No. of Species	Present study No. of Species
Phanerophytes	160	-	237
Chamaephytes	63	-	27
Hemicrytophytes	14	-	17
Cryptophytes	13	-	35
Therophytes	272	-	144

In the present studies, a total of 329 plant species have been recorded for medicinal uses. Patel (2002) recorded 44 plant species, Chaudhary (2003) recorded 288 plant species for medicinal uses. Higher number in present study indicates extensive survey and the covering of larger geographical area than the earlier worker.

In present studies, medicinal uses for 47 diseases are recorded. Patel (2002) noted medicinal uses for 29 diseases while Chaudhary (2003) noted medicinal uses for 32 diseases. Patel (2002) not worked on other ethnobotanical uses. Chaudhary (2003) noted 19 other ethnobotanical uses. In present studies, 29 other ethnobotanical uses are noted.

In present studies, plant species used for dyes, fibres, fodder, fuel, pulses, cereals and millets, toothbrush, religious plant etc. are much higher in number than the Chaudhary (2003). (Table 5.11) while Chaudhary (2003) not noted single plant for 17 different other uses which is accounted in present studies.

Table 5.11 : Comparison of Medicinal & Other Uses With Patel (2002) And Chaudhary (2003)

		Patel (2002)	Chaudhary (2003)	Present Study (2009)
Medicinal	Plants	44	288	329
	Diseases	29	32	47
Other uses				
Agriculture implements		-	16	19
Domestic uses		-	05	17
Dyes		-	04	06
Fibers		-	07	08
Religious plants		-	13	38
Food		-	-	30
Edible fruits		-	-	41
Fodder plants		-	75	63
Fuel wood		-	22	39
Ornamental		-	-	43
Vegetables		-	38	39
Veterinary		-	02	80
Miscellaneous		-	06	13
Shelter and Housing		-	-	15
Toys		-	-	02
Fencing		-	02	20
Mouth fresheners		-	-	05
Pulses		-	04	07
Cereals & Millet		-	05	07
Condiments & Spices		-	11	11
Oils		-	14	09
Beverages		-	03	01
Jaggary		-	-	01
Gums		-	08	06
Toothbrush		-	13	05
Narcotics		-	02	02
Socio-cultural		-	-	07
Beutification		-	-	03
Commercial aspect		-	-	31

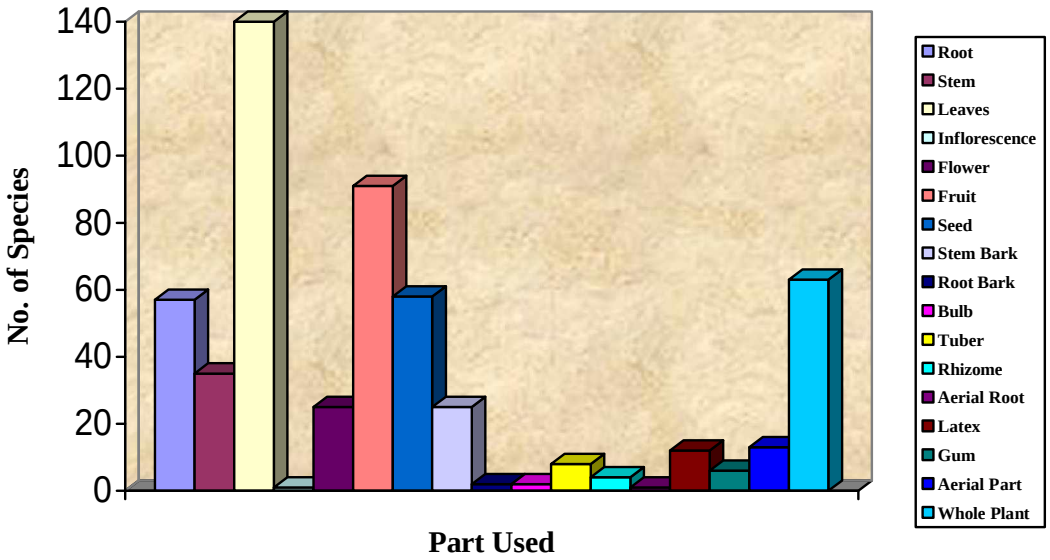
5.23 Less Known Uses

Various uses reported by the rural and tribal people were compared with those mentioned from other parts of India nad elsewhere, as reported in ethnobotanic literature. 56 uses reported by the Rural and Tribal people do not seem to be recorded in the literature. These plants are : *Acalypha indica* (Ringworm), *Acanthospermum hispidum* (Yellow Fever), *Adina cordifolia* (Jaundice), *Alangium salvifolium* (Rheumatism), *Aloe barbadensis* (Menstruation), *Alstonia scholaris* (Malaria Fever), *Annona reticulata* (Dental complaints), *Antigonon leptopus* (Hypertension), *Argemone mexicana* (Skin disease), *Asphodelus tenuifolius* (Kidney stone), *Azadirachta indica* (Fodder), *Azima tetracantha* (Fencing), *Blepharis maderspatensis* (Ulcer), *Cleome gynandra* (Fever), *Clerodendrum inerme* (Rheumatism), *Crotolaria filipes* (Shelter and Housing), *Cuscuta reflexa* (Skin), *Dentella repens* (Skin), *Ficus amplissima* (Religious-Palli), *Foeniculum vulgare* (Shelter and Housing), *Gomphrena celosioides* (Cough), *Heliotropium ellipticum* (Earache), *Hibiscus cannabinus* (Mouth Freshners), *Holoptelea integrifolia* (Rheumatism), *Holoptelea integrifolia* (Shelter and Housing), *Hydrilla varticilata* (Skin), *Ipomoea nil* (Dandruff), *Jatropha curcus* (Leakemia), *Kickxia ramosissima* (Blood suger), *Lapidium sativum* (Broom), *Madhuca indica* (Oils-Doliyu), *Mirabilis jalapa* (Piles), *Moringa oleifera* (Eye complaints), *Mukia maderaspatana* (Dental), *Pandanus tectorius* (Veterinary), *Parkinsonia aculeata* (Dog bite), *Passiflora edulis* (Headache), *Peristrophe bicalyculata* (Swelling), *Plumeria rubra* (Gynec disorders), *Polyalthia longifolia* (Urinary problem), *Prosopis cineraria* (Religious-*Palli*), *Ricinus communis* (Shelter and Housing), *Salvadora persica* (Religious-*Khandi*), *Sesamum indicum* (Shelter and Housing), *Sida acuta* (Pain), *Sida retusa* (Fever), *Solanum nigrum* (Skin), *Spharanthus indicus* (Stomach disorder), *Tagetes patula* (Earache), *Tecomella undulata* (Cold), *Tectona grandis* (Calculi), *Tephrosia purpurea* (Stomach pain), *Trichosanthes bracteata* (Asthama), *Triumfetta rotundifolia* (Gonorrhoea), *Vicoa indica* (Dysentery), *Weltheria indica* (Veterinary),

Table 5.11 : Uses Of Various Parts Of Plant Species In Mehsana District By Rural People

Sr. No.	Parts Used	Species	
		Number	Percentage %
1	Root	57	10.50
2	Stem	35	6.45
3	Leaves	140	25.78
4	Inflorescence	1	0.18
5	Flower	25	4.60
6	Fruit	91	16.78
7	Seed	58	10.68
8	Stem Bark	25	4.60
9	Root Bark	2	0.36
10	Bulb	2	0.36
11	Tuber	8	1.47
12	Rhizome	4	0.73
13	Aerial Root	1	0.18
14	Latex	12	2.21
15	Gum	6	1.10
16	Aerial Part	13	2.39
17	Whole Plant	63	11.60

Figure 5.3 : Uses Of Various Parts Of Plant Species In Mehsana District By Rural People



CHAPTER-VI CONCLUSION

Present work carries the results of a study of Ethnobotany among the Mehsana district of Gujarat. It gives the salient features of their plant utilization and management strategies. They have a rich ethnobotanic heritage that is however disappearing due to the rapid pace of acculturation, modernization and technological developments. To date, no exhaustive ethnobotanic study had been done in the Mehsana district. There are ethnographies in the Mehsana district, like Patel (2002) Chaudhary (2003). But these give very little ethnobotanic data. Some ethnobotanic studies have already been done in particular area (Taranga forest, Visnagar, Vadnagar, Kheralu) and not covered whole Mehsana district. But no systematic ethnobotanic study was available in the Mehsana district, therefore, it was considered important to make such a study.

The researcher has made efforts to make this an inter-disciplinary study. By giving details on the habitat, the physiography, vegetation, agriculture, daily routine of the rural people, social and religious environments, and the rural people's management of plant resources and their concept of conservation and taxonomy.

Chapter IV delineates the fact that the rural people life is clearly related to plants. 460 species of plants of ethnobotanic importance are described in this chapter. The usefulness of this work for the scientific fraternity as well as the common people was kept in mind while describing them. So, the description of each plant is grouped under seven categories : botanical name and citation, local name(s), short morphological description, availability, flowering, fruiting and field number, ethnobotanic uses, notes on socio-cultural commercial and conservational aspects and the reported biological activities.

Efforts are made to give the detailed ethnomedical uses of plants among the rural people of Mehsana district, hoping that in the face of rapid economic liberalization and the consequent rise in price of medicines, they can manage their ordinary health problems with medicines available at hand.

Most of the life-support activities of rural people are related to subsistence and their plant use is governed by on consideration : “how useful is a particular plant for them ?” Thus rural people emphasis in plant use and management is a subsistence management. Their concept of conservation and management is explained in Chapter V. By providing a list of 10 most important food plants and 10 plants used as famine food, the researcher shows that the rural people are self sufficient and can survive the severest conditions.

During data collection on the medicinal uses a survey on the most common diseases prevalent in the area and their remedies was also conducted. It was found that skin diseases, diarrhoea, fever, cough & cold, stomach disorders are the five most common diseases occurring in this area.

One interesting aspect of their veterinary medical care is the role assigned to some superstitious practices in treating the animals. For example the manner in which *Anona squamosa* leaf and *Azadirachta indica* leaf are employed for curing veterinary wounds without administering the medicine is interesting.

By and large, the people who live in the rural areas are dependentfully on the plants. Their plant management strategy is a subsistence one. As more and more rural people get educated and trained in various trades, they tend to migrate to the nearby towns and cities in search of jobs. Though they carry along with them their traditional knowledge.

Suggestions

From the foregoing discussion, it is clear that these people are basically wise, eco-friendly and have a self-sufficient and self-reliant subsistence system. To improve and uplift their lives and economy, the state government should adopt the following pronged strategy. Firstly, suitable laws need to be enacted to protect their lands from environmentally unsound activities. Secondly, these people must be involved in all programmes pertaining to conservation and sustainable utilization of their plant resources. Thridly, suitable incentives should be provided to them to cultivate some of the important medicinal and

wild food plants in their vicinity/gardens. Overall, these strategies would help in ensuring conservation of the Mehsana biodiversity.

1. Through study of the plant species not observed for ethnobotanical uses during the present investigation are to be searched for the necessary correction.
2. Conservation strategies must be prepared and implemented for the different habitants.
3. Sustainable uses of biological resources must be organized for the area.
4. Management programme for the local communities with effective conservation method and resource utilization.
5. Restoration of native plant species richness and diversity to maintain stable productivity in ecosystem of the area to be considered for the conservation programme.
6. Cultivation of useful medicinal plant which are native of this region is required.
7. Grazing and tree cutting may be prevented.
8. Soil erosion may be checked and soil conservation required.

SUMMARY

1. **For Abiotic Variables** :

- Ø The average total rainfall in last five years is **840.6** mm. The maximum rainfall recorded was **1150** mm in years 2005 and lowest rainfall recorded was **456** mm in year 2008.
- Ø The hottest month during the last ten years is May. The average maximum temperature of month May during last five years is **29.25**˚C. The coldest month during the last ten years is January. The average temperature of month January during last ten years is **22.03**˚C.
- Ø The relative humidity begins to increase from the month of January and this tendency is continue up to month of August. The highest relative human humidity is **92** % recorded in month of August during 2006.
- Ø The mean daily wind speed was more than **6** km/h. During April, May, June and July more than **3**% km/h during the month of January, February and March and it remained less than **3** km/h in the remaining months during the years.

2. For Floristic Studies :

- Ø In the present studies, a total of **460** species of angiosperms constitutes plant species of **213** dicots belonging to **140** genera of **48** families, **52** monocots belonging to **43** genera of **17** families the ratio of dicots to monocots species is worked out to **1:5.**
- Ø The ratio of family to genera and species is **1:3.18:4.5**. The ratio of monocotyledons to dicotyledons is **1:5.**of families, **1:6.53** for genera and **1:7.85** of species.
- Ø In the comparison to the rest of the country ratio of genera to species of study site is **1:6.59**.
- Ø Fabaceae, Malvaceae, Poaceae and Cucurbitaceae are the most dominant family in the study site which has **34, 19, 18** and **18** species respectively.

- Ø The habit revealed that out of **460** flowering plants. Herbs (**185** species) contributed **40.21**% of plant species, followed by trees, climber, shrub, twiner respectively.
- Ø The maximum flowering and fruiting is observation in the month of **Dec.** It is followed by Oct., Sept., Nov. and Aug.

3. **For Ethnobotanical Studies :**

- Ø A Total if **460** angiosperms plant species belonging to **324** genera of **102** families have been identified and recorded for ethnobotanical uses.
- Ø **329** plant species are recorded for medicinal value. They utilize singly or in combination for the treatment of **47** ailments. Amongst these **80** plants species are used in ethnoveterinary.
- Ø **106** plant species are used for edible purpose have been documented. Amongst these **70** plant species are cultivated and **36** plant species of wild.
- Ø **19** plants species are recorded for the use or preparation of agriculture Implements, **04** plants are used in musical instruments and toys, **15** plants are used in shelter and housing, **39** plants are used for fuel, **08** plants are used for fibre.
- Ø **17** plants species are in the domesticated use are recorded, **38** religious plant species, **02** plant species are intoxicants.
- Ø Gum are prepared from **6** plant species, **5** plant species used as toothbrush and various oil are prepared from.
- Ø **20** plant species are used as live/dried field fences.
- Ø **63** plant species are used as fodder.
- Ø **56** plant species reported as less known uses.

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[Ψ] Original reference not seen

APPENDIX – I LIST OF THE ETHNOBOTANICAL PLANT USED BY VARIOUS TRIBES IN THE MEHSANA DISTRICT.

Note : Arranged as per Bentham and Hooker (1901-1903)

F.	G.	BOTANICAL NAME	LOCAL NAME	HABIT	LIFE FORM	FLOWERING & FRUITING	ARM SP.NO.
1		ANNONACEAE					
	1	*Annona reticulata* L.	Ramfal	t	Ph-meso	Sep.-May.	1
		Annona squamosa L.	Sitafal	t	Ph-meso	Apr.-Aug.	2
	2	*Polyalthia longifolia* (Sonn.)Th. W.	Asopalav	T	Ph-mega	Dec.-Aug.	3
2		MENISPERMACEAE					
	3	*Cissampelos pareira* L.	Venivel	S-cl-tw	Ph-micro	June-Oct.	4
	4	*Cocculus hirsutus* (L.) Diels.	Vevadi	US-sc	Ph-nano	Nov.-Apr.	5
	5	*Tinospora cordifolia* (Willd.) Miers.	Galo	S-cl-tw	Ph-micro	Nov.-June	6
3		NYMPHAEACEAE					
	6	*Nelumbo nucifera* Gaertn.	Kamal	H-aq-rhi	C-hydro	Aug.-Oct.	7
	7	*Nymphaea stellata* Willd.	Nilkamal	H-aq	C-hydro	Aug.-Nov.	8
4		PAPAVERACEAE					
	8	*Argemone mexicana* L.	Darudi	H-e-spiny	Th	Nov.-June	9
5		BRASSICACEAE					

	9	*Brassica juncea* (L.) Czern.	Rai	H-e	Th	Dec.-Mar.	10
		Brassica oleracea L. ver. Botrytis	Fulevar	H-e	Th	Throughout the year	11
		Brassica oleracea L. ver. Capitata	Cobbij	H-e	Th	Throughout the year	12
	10	*Lepidium sativum* L.	Aseliyo	H-e	Th	Jan.-Apr.	13
	11	*Raphanus sativus* L.	Mulo	H-e-tub	C-geo	Nov.-Apr.	14
6		CAPPARACEAE					
	12	*Cadaba fruticosa* L.	Talio hemkand (khordu)	S-sc	Ph-micro	Nov.-June	15
	13	*Capparis decidua* (Forsk.) Edgew.	Kerdo	S-spiny	Ph-micro	Feb.-Sept.	16
		Capparis sepiaria L.	Kanther	S-spiny	Ph-micro	Feb.-June	17
		Capparis zeylanica L.	Govindfal (Granthila)	S-cl-spiny	Ph-micro	Dec.-Jan.	18
	14	*Cleome gynandra* L.	Dholi talavani	H-e-b	Th	June-Dec.	19
		Cleome viscosa L.	Pili talavani	H-e-b	Th	Throughout the year	20
	15	*Crateva nurvala* Buch. Ham.	Vay varano	t	Ph-meso	Feb.-June	21
	16	*Maerua oblongifolia* (Forsk.) A. Rich.	Maerua	S-sc	Ph-micro	Oct.-Feb.	22
7		FLACOURTIACEAE					
	17	*Flacourtia indica* (Burm.f.) Merr.	Lordi	S-thorny	Ph-micro	Feb.-May	23
8		POLYGALACEAE					
	18	*Polygala chinensis* L.	Pili bhoysan	H-selp	Th	June-Oct.	24
9		CARYOPHYLLACEAE					

	19	*Polycarpea corymbosa* (L.) Lamk.	Jangali soa	H-e	Th	July-Feb.	25
	20	*Polycarpon prostratum* (Forsk.) A.&S.	Sureta	H-Ge	Th	Nov.-Feb.	26
10		PORTULACACEAE					
	21	*Portulaca grandiflorum* Hk.f.	Chini gulab	H-p-fl	Ch	Throughout the year	27
		Portulaca oleracea L.	Moti luni	H-p-fl	Ch	Throughout the year	28
		Portulaca quadrifida L.	Jini luni	H-p-fl	Ch	Throughout the year	29
		Portulaca suffruticosa Wight.	Portulaca	H	Ch	Throughout the year	30
11		ELATINACEAE					
	22	*Bergia capensis* L.	Jaljambvo	H-e	Th	Aug.-Oct.	31
12		MALVACEAE					
	23	*Abelmoschus esculentus* (L.) Moench.	Bhinda	S	Ph-micro	July-Dec.	32
		Abelmoschus manihot (L.) Medic.	Kantalo bhindo	S	Ph-micro	Aug.-Jan.	33
		Abelmoschus moschatus Medic.	Kasturi bhindo	S	Ph-micro	July-Sept.	34
	24	*Abutilon indicum* (L.) Sweet	Kanski	S	Ph-micro	Throughout the year	35
	25	*Althea rosea* (L.) cav.	Khaira	S	Ph-micro	Oct.-June	36
	26	*Gossypium arboreum* L.	Deshi kapas	S	Ph-micro	Dec.-Mar	37
		Gossypium barbadense L.	Jangli kapas	S	Ph-micro	Oct.-may	38
		Gossypium herbaceum auct.	Kapas	US	Ph-micro	Oct.-Apr.	39
	27	*Hibiscus cannabinus* L.	Bhindi	S-pricky	Ph-micro	Aug.-Dec.	40

		Hibiscus ovalifolius (Forsk.) Vahl.	Chanak bhindi	S	Ph-micro	Aug.-Mar.	41
		Hibiscus rosa-sinensis L.	Jasud	US-se	Ph-nano	Throughout the year	42
	28	*Sida acuta* Burm. f.	Bod	US-se	Ph-nano	Aug.-Feb.	43
		Sida alba L.	Bala	US-se-spiny	Ph-nano	Aug.-Dec.	44
		Sida cordata (Brum. f.) Borss.	Bhoybala	US-se	Th	Throughout the year	45
		Sida cordifolia L.	Bala Dana	US-e	Th	Aug.-Dec.	46
		Sida ovata Forsk.	Bala	US-se	Ph-nano	Aug.-Feb.	47
		Sida retusa L.	Maha bala	US-	Ph-nano	Sep.-Dec.	48
	29	*Thespesia populnea* (L.) Soland.	Paraspiplo	t	Ph-meso	Throughout the year	49
	30	*Urena lobata* L.	Jangali bhindo	H	Ph-micro	Aug.-Oct.	50
13		BOMBACACEAE					
	31	*Adansonia digitata* L.	Rukhdo	T	Ph-mega	Apr.-Dec.	51
	32	*Bombax ceiba* L.	Shimlo	T-pricky	Ph-mega	Jan.-June	52
14		STERCULIACEAE					
	33	*Guazuma ulmifolia* Lam.	Khoto rudrax	T	Ph-mega	Throughout the year	53
	34	*Helicteres isora* L.	Marda shing	t	Ph-meso	July-Apr.	54
	35	*Sterculia urens* Roxb.	Kadayo	t	Ph-meso	Nov.-May	55
	36	*Weltheria indica* L.	Khapat	US-e	Ph-nano	Aug.-Sep.	56

15		TILIACEAE					
	37	*Corchorus aestuans* L.	Chhunchh.	H-Se	Th	Aug.-Dec.	57
		Corchorus capsularis L.	Shan(chhunchh)	H-e	Th	Aug.-Dec.	58
		Corchorus tridens L.	Chunchho	H-Se	Th	Aug.-Sep.	59
		Corchorus trilocularis L.	Tridhari chhunchh	H-e	Th	July-Apr.	60
	38	*Grewia hirsuta* Vahl.	Khad dhamni	S	Ph-micro	July-Nov.	61
		Grewia subnequalis DC.	Falsa	S	Ph-micro	Feb.-July	62
		Grewia tiliaefolia Vahl.	Dhaman	T	Ph-mega	Mar.-July	63
	39	*Triumfetta rhomboidea* Jacq.	Gol gipti	US	Ph-nano	July-Oct.	64
		Triumfetta rotundifolia Lam.	Zipto	US	Ph-nano	Aug.-Oct.	65
16		ZYGOPHYLLACEAE					
	40	*Tribulus terrestris* L.	Bethu gokhru	H-p	Th	Throughout the year	66
17		BALSAMINACEAE					
	41	*Impatiens balsamina* L.	Tanmaniya	H-e	Th	July-Dec.	67
18		OXALIDACEAE					
	42	*Oxalis corniculata* L.	Navari	Hse/p	Th	throughout the year	68
19		RUTACEAE					
	43	*Aegle marmelos* (L.) Corr.	Bili	t-thorny	Ph-meso	Apr.-Sep.	69
	44	*Citrus limon* (L.) Burm. f.	Limbu	T	Ph-meso	Throughout the year	70

		Citrus medica L.	Bijoru	T	Ph-meso	Throughout the year	71
	45	*Limonia acidissima* L.	Kothi	T	Ph-meso	Mar.-Dec.	72
	46	*Murraya koenigii* (L.) Spreng	Mitho limdo	T	Ph-meso	Feb.-May	73
		Murraya paniculata (L.) Jack.	Kamini	T	Ph-meso	Throughout the year	74
20		SIMARUBIACEAE					
	47	*Ailanthus excelsa* Roxb.	Arduso	T	Ph-mega	Jan.-May	75
21		BALANITACEAE					
	48	*Balanites aegyptiaca* (L.) Del.	Ingoriyo	t-thorny	Ph-meso	Dec.-July	76
22		BURSERACEAE					
	49	*Boswellia serrata*, Roxb.	Saladi gugal	T	Ph-mega	Jan.-May	77
	50	*Commiphora wightii* (Arn.) Bhandari	Gugal	S-thorny	Ph-micro	Jan.-May	78
	51	*Garuga pinnata*, Roxb.	Kakad	T	Ph-mega	Jan.-May	79
23		MELIACEAE					
	52	*Azadirachta indica*, A. Juss.	Limdo	T	Ph-mega	Feb.-June	80
	53	*Melia azedarach* L.	Bakan limbdo	T	Ph-mega	Throughout the year	81
24		CELASTRACEAE					
	54	*Celastrus paniculatas*, Willd.	Malkangani	S-Sc-tw	Ph-micro	Apr.-Nov.	82
	55	*Maytenus emarginata* (Willd.) D. Hou.	Viklo	S-thorny	Ph-micro	Nov.-Feb.	83
25		RHAMNACEAE					

	56	*Zizyphus glabrata*, Heyne.	Motu bor	t-spiny	Ph-meso	Sep.-Feb.	84
		Zizyphus mauritiana, Lamk.	Bor	t-spiny	Ph-meso	Sep.-Jan.	85
		Zizyphus nummularia, (Burm.f.)W.&A.	Bor ni jat	s-spiny	Ph-meso	July-Dec.	86
		Zizyphus rugosa, Lamk.	Mota bor	s-spiny	Ph-meso	Dec.-Apr.	87
26		VITACEAE					
	57	*Cissus quadrangularis* L.	Hadsankal	S-Cl-tend-succ	Ph-micro	June-Dec.	88
	58	*Cayratia carnosa* Lamk.	Khat khatumbo	H-Cl-sc	Th	July-Oct.	89
27		SAPINDACEAE					
	59	*Cardiospermum halicacabum* L.	Kagdodiyo	H-Cl	Th	July-Feb.	90
	60	*Dodonaea viscosa* (L.) Jacq	Jakhmi	S-Se	Ph-micro	Sep.-Feb.	91
	61	*Sapindus laurifolius* Vahl.	Aritha	T	Ph-mega	Sep.-Mar.	92
28		ANACARDIACEAE					
	62	*Anacardium occidentale* L.	Kaju	T	Ph-mega	Sep.-Apr.	93
	63	*Lannea coromandelica* (Houtt.) Merrill.	Moyno	T	Ph-mega	Jan.-July	94
	64	*Mangifera indica* L.	Ambo	T	Ph-mega	Jan.-July	95
29		MORINGACEAE					
	65	*Moringa concanensis* Nimneo.	Kadvo saragavo	t	Ph-meso	Oct.-Dec.	96
		Moringa oleifera Lamk.	Sargavo	t	Ph-meso	Throughout the year	97

30		FABACEAE (PAPILIONACEAE)					
	66	*Abrus precatorius* L.	Chanothi	S-cl-tw	Ph-micro	July-Mar.	98
	67	*Alysicarpus bupleurifolius* (L.) Dc.	Samarvo	H-se	Th	Aug.-Oct.	99
	68	*Arachis hypogaea* L.	Magfali	H-se/p	H	July-Nov.	100
	69	*Butea monosperma* Lamk.	Khakhro	T	Ph-mega	Dec.-June	101
	70	*Cajanus cajan* (L.) Mill Sp.	Tuver	S	Ph-micro	Aug.-Apr.	102
	71	*Canavalia ensiformis* DC.	Talvardi	H-cl	Th	Aug.-Jan.	103
	72	*Cicer arienitum* L.	Chana	H-se/p	Th	Oct.-Mar.	104
	73	*Clitoria ternatea* L.	Garni Bibari	h-e/se	Th	Throughout the year	105
	74	*Crotalaria filipes* Bth.	Adadiyo	US	Ph-nano	Aug.-Jan.	106
		Crotalaria juncea L.	Shan	US-e	Ph-nano	Aug.-Feb.	107
		Crotalaria retusa L.	Ghugharo	US	Ph-nano	July-Apr.	108
	75	*Cyamopsis tetragonoloba* L.	Guvar	H-e	Th	Throughout the year	109
	76	*Dalbergia latifolia* Roxb.	Sisam	T	Ph-mega	Jan.-Oct.	110
		Dalbergia sissoo Roxb.	Sisso	T	Ph-mega	Mar.-Nov.	111
	77	*Derris indica* (Lam.) Bennet.	Karanj	T	Ph-mega	Feb.-July	112
	78	*Dolichos trilobus* L.	Jangali papdi	H-cl	Th	Sep-Oct.	113
	79	*Indigofera cordifolia* henye.	Gali	H-p	Th	Throughout the year	114
		Indigofera linifolia Fetz.	Jinki Gali	H-p	Ch	July-Feb.	115

		Indigofera oblongifolia Forsk.	Zil	US-e-b	Ph-nano	Apr.-Dec.	116
		Indigofera tinctoria L.	Gali	US	Ph-nano	Aug.-Jan.	117
	80	*Lallab purpureus* (L.) Sweet.	Val papdi	H-Cl	Th	Oct.-May	118
	81	*Medicago sativa* L.	Rajko	H-e	Th	Throughout the year	119
	82	*Mucuna prurita* Hk.f. Baker	Kuvench	H-cl	Th	Sep.-Dec.	120
	83	*Pisum sativum* L.	Vatana	H-e	Ph-micro	Dec.-Apr.	121
	84	*Rhynchosia minima* (L.) Dc. Ver	Dariya vel	H-cl	Th	Aug.-Dec.	122
	85	*Sesbania grandiflora* (L.) Pers.	Agathiyo	t	Ph-meso	Nov.-Feb.	123
		Sesbania sesban (L) Merr	Inchad (Shevari)	S-e	Ph-micro	Oct.-Mar.	124
	86	*Tephrosia purpurea* (L.) Pers.	Sarpankho	US-e/se	Ph-micro	Sep.-Feb.	125
	87	*Trigonella foenum-graecum* L.	Methi	H-e	Th	Throughout the year	126
	88	*Vigna aconitifolia* (Jacq.) Marechal	Math	H-twin..	Th	Aug.-Jan.	127
		Vigna radiata L. var. *radita*	Adad	H-cl	Th	Aug.-Dec.	128
		Vigna radiate L. var *sublobata*	Mug	H-cl	Th	July-Nov.	129
		Vigna unguiculata (L.) Walp	Choli	H-cl	Th	Aug.-Dec.	130
	89	*Zornia gibbosa* Span.	Samarpani	H-e	Th	July-Sep.	131
31		CAESALPINIACEAE					
	90	*Bauhinia racemosa,* Lamk.	Kanchnar	t	Ph-meso	Feb.-June	132
	91	*Caesalpinia crista* L.	Kanchaka	S-pricky	Ph-micro	July-Dec.	133

		Caesalpinia pulcherrima, (L.) Swartz.	Galtoro	S	Ph-micro	Throughout the year	134
	92	*Cassia absus* L.	Chimed	H-e	Th	Aug.-Dec.	135
		Cassia auriculata L.	Aval	S	Ph-micro	Throughout the year	136
		Cassia fistula L.	Garmalo	T	Ph-mega	Mar.-June	137
		Cassia italica Mill.	Mindhi aval	H-se	Ch	June-Jan.	138
		Cassia occidentalis L.	Kasundro	S	Ph-micro	Throughout the year	139
		Cassia pumila Lamk.	Nani chimed	H-se/p	Th	Aug.-Dec.	140
		Cassia tora L.	Kuvadiyo	H-e	Th	Aug.-Dec.	141
	93	*Delonix regia* (Boj.) Rafi.	Gulmohor	T	Ph-mega	Mar.-Aug.	142
	94	*Parkinsonia aculeata* L.	Ram baval	t-spiny	Ph-meso	Jan.-May	143
	95	*Peltophorum pterocapum* Backer.	Tamrafali	T	Ph-mega	Throughout the year	144
	96	*Saraca ashoca* (Roxb.) Willd.	Ashok	T	Ph-mega	Dec.-Apr.	145
	97	*Tamarindus indica* L.	Khati Ambali	T	Ph-mega	Mar.-Nov.	146
32		MIMOSACEAE					
	98	*Acacia chundra* (Roxb.) Willd.	Kher	T-spiny	Ph-mega	June-Feb.	147
		Acacia farnesiana (L.) Willd.	Tal baval	t-spiny	Ph-meso	Aug.-Mar.	148
		Acacia jacquemontii, Bth.	Rato baval	S-spiny	Ph-micro	Dec.-June	149
		Acacia leucophloea Willd.	Harmo baval	t-spiny	Ph-meso	Oct.-Jan.	150
		Acacia nilotica (L.) Del.	Deshi baval	t-spiny	Ph-meso	July-Dec.	151

		Acacia pennata Willd.	Kherio baval	L-pricky	Ph-meso	July-Mar.	152
		Acacia senegal Willd.	Gorad	t-spiny	Ph-meso	Aug.-Mar.	153
		Acacia torta (Roxb.) Craib.	Isarialy baval	t-spiny	Ph-meso	July-Mar.	154
	99	*Albizzia lebbeck* (L.) Benth.	Shirish, Sharsdo	T	Ph-mega	July-Mar.	155
	100	*Mimosa pudica* L.	Lajamni	H-e-spiny	Th	Throughout the year	156
	101	*Pithecellobium dulce* (Roxb.) Bth. & Hk.	Goras amli	T	Ph-mega	Dec.-June	157
	102	*Prosopis chilensis* (Molina) Stuntze	Gando baval	t-sc	Ph-meso	Aug.-May	158
		Prosopis cineraria (L.) Druce.	Sijado	T-pricky	Ph-mega	Aug.-May	159
	103	*Samanea saman* Merr.	Rato sarsado	T	Ph-mega	Mar.-May	160
33		ROSACEAE					
	104	*Rosa multiflora* L.	Gulab	S-pricky	Ph-micro	Throughout the year	161
34		CRASSULACEAE					
	105	*Kalanchoe pinnata* (Lam.)Merr.	Panphuti	H-e-succ	H	Jan.-Feb.	162
35		COMBRETACEAE					
	106	*Anogeissus latifolia* Wall.	Dhavdo	t	Ph-meso	Sep.-Dec.	163
		Anogeissus pendula Edgew	Safed dhav	t	Ph-meso	Apr.-Jan.	164
		Anogeissus serica Brandis	Dhav	t	Ph-meso	Dec.-Apr.	165
	107	*Combretum ovalifolium* Roxb.	Madhvel	Cl	Ph-meso	Jan.-May	166

	108	*Quisqualis indica* L.	Modhumalti	S-sc	Ph-meso	Throughout the year	167
	109	*Terminalia arjuna* (Roxb.) Wt. & Arm.	Arjun sadad	T	Ph-mega	Mar.-Nov.	168
		Terminalia bellirica Roxb.	Behead	T	Ph-mega	Jan.-May	169
		Terminalia catappa L.	Badam	T	Ph-mega	Throughout the year	170
		Terminalia chebula Retz.	Harde	T	Ph-mega	Mar.-Dec.	171
		Terminalia crenulata Roth.	Sadad	T	Ph-mega	Mar.-Feb.	172
36		MYRTACEAE					
	110	*Callistemon laceolatus* DC.	Bottle brush	T	Ph-mega	Feb.-Apr.	173
	111	*Eucalyptus citriodora* Hk.	Nilgiri	T	Ph-mega	Jan.-Feb.	174
	112	*Psidium guajava* L.	Jamphal	t	Ph-meso	Throughout the year.	175
	113	*Syzygium cumini* (L.) Skeels	Jambu	T	Ph-mega	Mar.-July	176
37		LYTHRACEAE					
	114	*Ammannia baccifera* L.	Jalaagiyo	H-e	C-helo	Throughout the year	177
	115	*Lawsonia inermis* L.	Mhendi	S	Ph-micro	Throughout the year	178
38		AIZOACEAE					
	116	*Trianthema portulacastrum* L.	Satodo	H-p-succ-b	Th	Throughout the year	179
39		PUNICACEAE					
	117	*Punica granatum* L.	Dadam	t-thorny	Ph-meso	Throughout the year	180
40		ONAGRACEAE					

	118	*Ludwigia perennis* L.	Panvel	H-e	Th	Aug.-Jan.	181
41		TRAPACEAE					
	119	*Trapa natans* L.	Shingodec	H	H	Sep.-Dec.	182
42		CARICACEAE					
	120	*Carica papaya* L.	Papaya	t	Ph-meso	Throughout the year	183
43		PASSIFLORACEAE					
	121	*Passiflora edulis,* Sims	Krushna kamal	H-cl-tend	Th	Throughout the year	184
		Passiflora foetida L.	Jangali krushna kamal	H-cl	Th	Aug.-Dec.	185
44		CUCURBITACEAE					
	122	*Benincasa hispida* Cogn	Safed Kolu	H-cl	Th	Sep.-Oct.	186
	123	*Citrullus colocynthis* (L.) Schrader	Indravarna	H-p/se-tend	Ch	Throughout the year	187
	124	*Coccinia grandis* (L.) J.O.Voight.	Gilodi	H-cl-tend	Th	Throughout the year	188
	125	*Cucumis callosus* (L.) Rottl.	Kothimadu	H-p/cl-tend	Th	July-Feb.	189
		Cucumis melo L.	Tarbuch	H-p	Th	Sep.-Nov.	190
		Cucumis sativas L.	Kakadi	H-p	Th	Throughout the year	191
	126	*Cucurbita maxima* Duch.	Kolu	H-cl	Th	July-Oct.	192
	127	*Lagenaria leucantha,* (Duch.) Rusby.	Dudhi	H-cl	Th	Throughout the year	193
	128	*Luffa acutangula* L. var.*acutangula*	Turiya	H-cl	Th	Throughout the year	194
		Luffa acutangula L. var. *amara*	Kadva Turiya	H-cl	Th	July-Sep.	195

		Luffa cylindrical (L.) M. J. Roem.	Galka	H-cl	Th	July-Sep.	196
		Luffa echinata Roxb.	Kukadvel	H-cl-tend	Th	Aug.-Oct.	197
	129	*Momordica charantia* L.	Karela	H-cl-tend	Th	Throughout the year	198
		Momordica dioica Roxb.	Kankoda	H-cl-tend	Th	Mar.-Aug.	199
	130	*Mukia maderaspatana* (L.) M. Roem.	Chanak Chibhdi	H-cl-tend	Th	July.-Nov.	200
	131	*Trichosanthes practeata* Voigt.	Rata Indrayana	H-cl	Th	May-Aug.	201
		Trichosanthes cucumerina L.	Jangali Parvar	H-cl-tend	Th	July-Oct.	202
		Trichosanthes dioica Roxb.	Parvar	H-cl-tend	Th	July-Oct.	203
45		CACTACEAE					
	132	*Opuntia elatior* Mill.	Phapdo thor	S-spiny-succ	Ph-micro	Dec.-Apr.	204
46		MOLLUGINACEAE					
	133	*Glinus lotoides* L.	Mitho Okhrad	H-p	Ch	Throughout the year	205
		Glinus oppositifolia L.	Kadvo Okhrad	H-Se	Ch	Throughout the year	206
47		APIACEAE					
	134	*Anethum graveolens* L.	Suva	H-e	Th	Throughout the year	207
	135	*Centella asiatica* (L.) Urb.	Brahmi	H-p	H	Throughout the year	208
	136	*Coriandrum sativum* L.	Dhana	H-e	Th	Throughout the year	209
	137	*Cuminum cyminum* L.	Jiru	H-e	Th	Oct.-Mar.	210

	138	*Daucus carota* L.	Gajar	H-tub	C-geo	Dec.-Apr.	211
	139	*Foeniculum valgare* Mill.	Valiari	H-e	Th	Nov.-Apr.	212
48		ALANGIACEAE					
	140	*Alangium salvifolium* (L.f.) Wang.	Ankol	t-spiny	Ph-meso	Feb.-June	213
49		RUBIACEAE					
	141	*Adina cordifolia (Roxb.)* Bth. & Hk.f.	Hardarvo	T	Ph-mega	July-Mar.	214
	142	*Anthocephalus indicus* A. Rich.	Kadam	t	Ph-mega	Sep.-Dec.	215
	143	*Dentella repens* (L.) Forst.	Parpat ni Jat	H-p-cre	Ch	Sep.-Apr.	216
	144	*Gardenia turgida* Roxb.	Dikamari	S	Ph-micro	Oct.-Feb.	217
	145	*Ixora arborea* Roxb.	Ixora(Nevari)	t	Ph-mega	Mar.-Apr.	218
		Ixora coccinea L.	Lal Ixora	S	Ph-micro	Throughout the year	219
	146	*Mitragyna parvifolia* Korth.	Kadam	T	Ph-mega	Apr.-Dec.	220
	147	*Oldenlendia corymbosa* L.	Pit Papado (Parpat)	H-se	Th	Throughout the year	221
	148	*Xeromphis spinosa* (Thunb.)Keay.	Mindhal	t-spiny	Ph-meso	Dec.-Jan.	222
50		ASTERACEAE					
	149	*Acanthospermum hispidum* DC.	Gokhru	H-e	Th	Aug.-Feb.	223
	150	*Blumea lacera* DC.	Kapurio	H-e	Th	Dec.-Jan.	224
		Blumea mollis (Don.) Merr.	Chanchadmari	H-Se	Th	Nov.-Feb.	225
	151	*Echinops echinatus* Roxb.	Suliyo utkanto	H-e-spiny	Th	Oct.-Jan.	226

	152	*Eclipta prostrata* L.	Bhangro	H-se/p	Th	Throughout the year	227
	153	*Launaea procumbens* (Roxb.) Ram & Raj	Bhopatri	H-se/p	H	Throughout the year	228
	154	*Sonchus oleraceus* L.	Dudheli sonki	H-e	Th	Oct.-Feb.	229
	155	*Sphaeranthus indicus* L.	Gorakhmundi	H	Th	Oct.-Apr.	230
	156	*Spilanthes calva* Dc.	Akkalgaro	H	Th	Sep.-Jan.	231
	157	*Tagetes patula* L.	Gulgoto	H-e	Th	Sep.-Nov.	232
	158	*Tridex procumbens* L.	Pardeshi bhangaro	H-se	Ch	Throughout the year	233
	159	*Vernonia cinerea* (L.) Less.	Sahadevi	S	Ph-nano	Throughout the year	234
	160	*Vicoa indica* (L.) DC.	Sonsali	H-e-b	Th	Aug.-Feb.	235
	161	*Xanthium strumarium* L.	Gadariyu	H-e-spiny	Th	Throughout the year	236
51		PLUMBAGINACEAE					
	162	*Plumbago zeylanica* L.	Chitrak	US-Sc	Ph-nano	Throughout the year	237
52		SAPOTACEAE					
	163	*Madhuca indica* J.F. Gmel.	Mahudo	T	Ph-mega	Mar.-July.	238
	164	*Manilkara hexandra* (Roxb.) Dub.	Rayan	T	Ph-mega	Sep.-Apr.	239
		Manilkara zapota (L.) van Royen.	Chiku	t	Ph-micro	Throughout the year	240
	165	*Mimusops elengi* L.	Borsali	T	Ph-mega	June-Mar.	241
53		EBENACEAE					

	166	*Diospyros cordifolia* Roxb.	Dheki	T	Ph-mega	Feb.-July.	242
		Diospyros melanoxylon Roxb.	Timbru	T	Ph-mega	Mar.-Aug.	243
54		OLEACEAE					
	167	*Jasminum officinale* L.	Jui	S-Sc	Ph-micro	Throughout the year	244
	168	*Nyctanthes arbor-tristis* L.	Parijatak	t	Ph-meso	Aug.-Feb.	245
55		SALVADORACEAE					
	169	*Azima tetracantha* Lam.	Kajad	S	Ph-micro	Apr.-June	246
	170	*Salvadora oleoides* Decne	Pilddi	t	Ph-meso	Nov.-Feb.	247
		Salvadora persica L.	Vakhado	t	Ph-meso	Nov.-Mar.	248
56		APOCYNACEAE					
	171	*Alstonia scholaris* R.Br.	Saptparni	t	Ph-meso	Sep.-Nov.	249
	172	*Carissa congesta* Wt.	Karamda	S-sc-thorny	Ph-micro	Feb.-June	250
	173	*Catharanthus pusillus* (Murr.) G. Don.	Sangkhi (Paravati Rai)	H-e	Th	July-Sep.	251
		Catharanthus roseus (L.) G.Don.	Barmasi	US-e-w	Th	Throughout the year	252
	174	*Holarrhena antidysenterica* A.DC.	Kadvo Indrajav	S-e	Ph-micro	Jan.-Dec.	253
	175	*Nerium indicum* Mill.	Lal Karen	S	Ph-micro	Throughout the year	254
	176	*Plumeria rubra* L.	Khad Champo	t	Ph-meso	Throughout the year	255
	177	*Rauvolfia tetraphylla* L.	Sarpgandha	H	Th	Throughout the year	256
	178	*Thevetia peruviana* (Pers.) Merr.	Pili Karen	t	Ph-meso	Throughout the year	257

	179	*Wrightia tomentosa* R. & S.	Dudhlo	t	Ph-meso	Throughout the year	258
57		ASCLEPIADACEAE					
	180	*Asclepias curassavica* L.	Kakatundi	H-e	Ph-micro	Throughout the year	259
	181	*Calotropis gigantia* (L.) R. Br.	Safed Ankado	S-e	Ph-micro	Throughout the year	260
		Calotropis procera (Ait.) R. Br.	Ankado	S-e	Ph-micro	Throughout the year	261
	182	*Ceropegia bulbosa* Roxb.	Kundher	H-cl-tub	C-geo	July-Dec.	262
	183	*Cryptostegia grandiflora* R. Br.	Rubar Vel	S-cl	Ph-micro	Throughout the year	263
	184	*Dregea volubilis* (L.f.) Benth.	Dodi	S-cl	Ph-nano	June-Dec.	264
	185	*Gymnema sylvestre* (Retz.) Schult.	Madhunashini	Cl	Ph-micro	Aug.-Sept.	265
	186	*Hemidesmus indicus* R. Br.	Dudhvel	US-cl/p	Ph-nano	Sep.-June	266
	187	*Leptadenia pyrotechnica* Decne	Khip	S-Sc	Ph-micro	Aug.-Jan.	267
		Leptadenia reticulata Wight & Arn.	Dodi	S-cl	Ph-micro	Throughout the year	268
	188	*Pentatropis capensis* (L.f.) Bullock.	Shingroti	US-cl	Ph-micro	Aug.-Dec.	269
	189	*Pergularia daemia* (Forsk.) Chiov.	Chamar Dudheli	US-cl	Ph-nano	Oct.-Mar.	270
	190	*Tylophora indica* (Burm.f.) Merr.	Damvel	US-cl	Ph-nano	July-Dec.	271
58		GENTIANACEAE					
	191	*Enicostema hyssopifolium* Willd.	Navli	H-e	Th	June-Dec.	272
59		EHRETIACEAE					
	192	*Cordia dichotoma* Forst.	Vad Gundo	t	Ph-meso	Feb.-June	273

		Cordia gharaf Ehrenb.	Gundi	t	Ph-meso	Apr.-Jan.	274
		Cordia perrottetii, Wt.	Jangali Gundi	t	Ph-meso	Dec.-May	275
	193	*Ehretia laevis* Roxb.	Dantrango	t	Ph-meso	Dec.-May	276
60		BORAGINACEAE					
	194	*Coldenia procumbens* L.	Okhrad	H-p	Ch	Nov.-June	277
	195	*Heliotropium ellipticum* Ledeb.	Nilkattei	H	Th	Mar.-Aug.	278
		Heliotropium ovalifolium Forsk.	Hathi sundhi	H-e/se	Th	Sep.-June	279
	196	*Trichodesma indicum* (L.) R. Br.	Undhafuli	H-e	Th	July-Feb.	280
61		CONVOLVULACEAE					
	197	*Argyreia nervosa* (Burm.f.) Boj.	Samudrasosha	S-cl	Ph-micro	Aug.-Oct.	281
	198	*Convolvulus arvensis* L.	Khetrau fudardi	H-cl-tw	Ch	Oct.-Jan.	282
		Convolvulus microphyllus (Ruth.) Sieb ex Spr.	Dholi shankhavali	H-se/p	Ch	Throughout the year	283
	199	*Evolvulas alsinoides* L.	Kali shankhavali	H-p	Ch	Throughout the year	284
	200	*Ipomoea aquatica* Forsk.	Nara vel	H-p-aq	C-helo	Throughout the year	285
		Ipomoea batatas (L.) Lamk.	Shakkariya	H-p-tub	C-geo	Aug.-Oct.	286
		Ipomoea cairica (L.) Sweet.	Naravel	H-cl	Th	Throughout the year	287
		Ipomoea fistulosa Mart. ex. Choisy	Nafat Vel	S-sc	Ph-micro	Throughout the year	288
		Ipomoea nil (L.) Roth.	Kalandana	H-cl-tw	Th	Aug.-Feb.	289

		Ipomoea obscura (L.) Ker-Gawl	Vadfudardi (Vaj Vel)	H-cl	Th	July-Dec.	290
		Ipomoea pes-caprae (L.) Sweet.	Maryad Vel	H-p	Ch	Throughout the year	291
		Ipomoea pes-tigridis L.	Vaghpadi ni Vel	H-cl-p	Th	Aug.-Dec.	292
		Ipomoea quamoclit L.	Kamlata (Ganesh Vel)	H-cl	Th	Throughout the year	293
	201	*Rivea hypocrateriformis* (Desr.) Choisy	Fang Vel	S-cl	Ph-micro	Aug.-Mar.	294
62		CUSCUTACEAE					
	202	*Cuscuta chinensis* Lamk.	Nani Amarvel	H-Cl-tw-b	Ph-epi	Aug.-Oct.	295
		Cuscuta reflexa Roxb.	Moti Amarvel	H-Cl-twi	Ph-epi	Nov.-Apr.	296
63		SOLANACEAE					
	203	*Capsicum annum* L.	Marcha	H-e	Th	Throughout the year	297
	204	*Cestrum diurnum* L.	Din ka raja	t	Ph-meso	Throughout the year	298
		Cestrum nocturnum L.	Ratrani	t	Ph-meso	Throughout the year	299
	205	*Datura innoxia* Mill.	Dhaturo	US	Ph-nano	Throughout the year	300
		Datura metel L.	Kalo dhaturo	US	Ph-nano	Throughout the year	301
	206	*Lycopersicon lycopersicum* (L.) Karst.	Tameta	H-se	Th	In all seasons.	302
	207	*Nicotiana tabacum* L.	Tamaku	H-e	Th	Mar.-Apr.	303
	208	*Physalis longifolia* Nutt.	Moti popati	H-e	Th	July-Sep.	304
		Physalis minima L.	Ran popati	H-e	Th	July-Sep.	305
	209	*Solanum indicum* L.	Moti-ringani	US-pricky	Ph-nano	July-Dec.	306

		Solanum melongena L.	Ringan	US-pricky	Ph-nano	Throughout the year	307
		Solanum nigrum L.	Kangani piludi	H-e	Th	Throughout the year	308
		Solanum surattense Burm. f.	Bhoy ringani	H-e-pricky	Ch	Throughout the year	309
		Solanum tuberosum L.	Batata	H-tub	Ph-micro	Feb.-Mar.	310
	210	*Withania somnifera* (L.) Dunal	ashvagandha	US	Ph-nano	Dec.-Mar.	311
64		SCROPHPHULARIACEAE					
	211	*Bacopa monnieri* (L.) Pennell.	Bam (Kadvi luni)	H-p-p	Ch	July-Dec.	312
	212	*Kickxia ramossisima* (Wall.) Janch.	Kanoti (Bhintchati)	H-se/p-b	Th	Throughout the year	313
	213	*Lindenbergia muraria* P. Bruhel	Patthar-chat (Bhintchati)	H-e	Th	Throughout the year	314
65		LENTIBULARIACEAE					
	214	*Utricularia inflexa* Forsk.	Ark-javar	H	H	Aug.-Dec.	315
66		BIGNONAICEAE					
	215	*Kigelia pinnata* (Jacq.) DC.	Topgola	T	Ph-mega	Feb.-June	316
	216	*Millingtonia hortensis* L.	Buch (Akash limdo)	T	Ph-mega	Throughout the year	317
	217	*Spathodea campanulata* Beauv.	Pichkari Plant.	T	Ph-mega	Feb.-May.	318
	218	*Tecoma stans* (L.) H.B. & K.	Pili limbadi	t	Ph-meso	Throughout the year	319
	219	*Tecomella undulata* (Sm.) Seem.	Ragat-rohido	T	Ph-mega	Dec.-Apr.	320

67		PEDALIACEAE					
	220	*Pedalium murex* L.	Mota gokhru	H-se/p	Ch	July-Jan.	321
	221	*Sesamum indicum* L.	Tal	H-e	Th	Aug.-Sep.	322
		Sesamum lacinatum Klein ex. Willd.	Adbau tal	H-p	Th	July.-Sep.	323
68		MARTYNIACEAE					
	222	*Martynia annua* L.	Vichhudo	H-e-b	Ph-nano	July-Dec.	324
69		ACANTHACEAE					
	223	*Adhatoda zeylanica* Medic.	Ardushi	S	Ph-micro	Dec.-June	325
	224	*Andrographis paniculata* (Burm.f.) Wall.	Lilu karyatu	H-e	Th	Aug.-Oct.	326
	225	*Barleria prionitis* L.	Pilo kantashelio	US-spiny	Ph-nano	Throughout the year	327
	226	*Blepharis maderaspatensis* (L.) Roth.	Utigan	H-p	Ch	Oct.-Feb.	328
		Blepharis repens (Vahl.) Roth.	Zinku utigan	H-p	Ch	Throughout the year	329
	227	*Dipteracanthus prostratus* (Poir) Nees.	Kali ghavani	US-se	Ph-nano	Throughout the year	330
	228	*Hygrophila auriculata* (Schum.)Heine.	Kantashelio (Astercantha)	H-e-spiny	C-helo	Sept.-Mar.	331
		Hygrophila serpyllum (Nees.) T. Anders.	Sarpat	H-e-spiny	C-helo	Oct.-Mar.	332
	229	*Justicia diffusa* Willd.	Kalo araduso	H-se	Th	July-Dec.	333

	230	*Lepidagathis trinervis* Walld.	Harancharo	H-p	H	Aug.-Apr.	334
	231	*Neuracanthus sphaerostachyus* (Nees.) Dalz.	Aakhro	H-e	Th	Aug.-Jan.	335
	232	*Peristrophe bicalyculata* (Retz.) Nees.	Kali Aghedi	H-e	Th	Throughout the year	336
	233	*Ruellia tuberosa* L.	Bandukdi	H-tub	C-geo	July-May	337
	234	*Rungia repens* (L.) Nees.	Khadsalio	H-e	Th	July-Sept.	338
70		VERBENACEAE					
	235	*Clerodendrum inerme* (L.) Garth.	Vad mahedi	S	Ph-micro	Throughout the year	339
		Clerodendrum multiflorum (Burm.f.) O. Ktze.	Arani	S	Ph-micro	Oct.-Feb.	340
	236	*Gmelina arborea* L.	Savan	t	Ph-meso	Jan.-Apr.	341
	237	*Lantana camara* L.ver. *aculeata* (L.)	Gandhati (Indradhanw)	S-sc-pricky	Ph-micro	Throughout the year	342
		Lantana salvifolia Jacq.	Indradhanu (Dhanidariya)	S	Ph-micro	Throughout the year	343
	238	*Phyla nodiflora* (L.) Greene.	Ratvelio	H-p-b	C-helo	Throughout the year	344
	239	*Tectona grandis* L.	Sag	T	Ph-mega	Aug.-Dec.	345
	240	*Vitex negundo* L.	Nagod	t	Ph-meso	Throughout the year	346
71		LAMIACEAE					

	241	*Anisomeles indica* (L.) O. Ktze.	Chodharo	H-e	Th	Throughout the year	347
	242	*Leucas cephalotes* (Roxb.) Spreng.	Doshi no kubo	H-e	Th	Aug.-Feb.	348
	243	*Mentha spicata* L.	Fudino	H-se	H	Not seen	349
	244	*Ocimum basilicum* L.	Damro	H-e	Th	Throughout the year	350
		Ocimum canum Sims.	Jangali tulsi	H	Th	Throughout the year	351
		Ocimum gratissimum L.	Takmaria	S	Ph-micro	Throughout the year	352
		Ocimum sanctum L.	Tulsi	H-e	Th	Throughout the year	353
72		PLANTAGINACEAE					
	245	*Plantago ovata* Forsk.	Isabgul	H	Ph-micro	Jan.-Feb.	354
73		NYCTAGINACEAE					
	246	*Boerhavia chinensis* (L.) Druce.	Satodi	H-p	Ch	Throughout the year	355
		Boerhavia diffusa L.	Punarnava (Nani Satodi)	H-p	Ch	Throughout the year	356
		Boerhavia verticillata, Poir.	Moti Satodi, Punarnava	H-se/p	Ch	Aug.-Dec.	357
	247	*Bougainvillea spectabilis* Willd.	Boganvel	S-spiny	Ph-micro	Throughout the year	358
	248	*Mirabilis jalapa* L.	Gulbas	H-e	Th	Throughout the year	359
74		AMARANTHACEAE					
	249	*Achyranthes aspera* L.	Aghedi	H-e	Th	Sep.-Jan.	360

	250	*Aerva javanica* (Burm.f.) Juss.	Gorakh ganjo	H-e	Th	Aug.-Feb.	361
	251	*Alteranthera pungens* HB. & K.	Pani ni bhaji	H-Se/p	Ch	Aug.-Dec.	362
		Alteranthera sessilis (L.) DC.	Jalbhaji	H-se/p	Ch	Throughout the year	363
	252	*Amaranthus hybridus* L.	Rajgaro	H-e	Th	Nov.-Mar.	364
		Amaranthus lividus L.	Tandaljo	H-e	Th	Throughout the year	365
		Amaranthus spinosus L.	Kantalo dambho	H-e-spiny	Th	Throughout the year	366
	253	*Celosia argentea* L.	Lambda (marashikha)	H-e	Th	Aug.-Dec.	367
	254	*Digera muricata* (L.) Mart.	Kanjariyu	H-e	Th	Throughout the year	368
	255	*Gomphrena celosioides* Mart.	Batan	H-Sep	Ch	Throughout the year	369
		Gomphrena globosa L.	Batan	H-e	Th	Throughout the year	370
	256	*Pupalia lappacea* (L.) Juss.	Ganjetiyu (Gadar zipto)	US-sc	Ph-nano	Throughout the year	371
75		BASELLACEAE					
	257	*Basella rubra* L.	Poi	Cl	Ph-nano	Throughout the year	372
76		POLYGONACEAE					
	258	*Antigonon leptopus* Hk. & Arn.	Icecream vel	H-Cl-tub	C-geo	Sep.-May	373
	259	*Polygonum plebeium* R. Br.	Geniyo okhrad	H-p	Th	Throughout the year	374
77		CHENOPODIACEAE					
	260	*Beta vulgaris* L.	Bit	H-tub	C-geo	Dec.-Mar.	375

	261	*Chenopodium album* L.	Chil ni bhaji	H-e	Th	Nov.-Apr.	376
	262	*Spinacia oleracea* L.	Palak	H-se	Th	Dec.-Mar.	377
78		ARISTOLOCHIACEAE					
	263	*Aristolochia bracteata* Retz.	Batakvel	H-p-b	Th	July.-Dec.	378
79		LORANTHACEAE					
	264	*Dendrophthoe falcata* (L.f.) Etting.	Vando	H	Ph-para	Nov.-Feb.	379
80		SANTALACEAE					
	265	*Santalum album* L.	Chandan	t	Ph-meso	Mar.-July	380
81		EUPHORBIACEAE					
	266	*Acalypha indica* L.	Vinchi kanta	H-e	Th	June.-Dec.	381
	267	*Cicca acida* Merr.	Khata ambla	t	Ph-meso	Mar.-June	382
	268	*Croton bonplandianum* Baill.	Croton	H-e	Th	Throughout the year	383
	269	*Drypetes roxburghii* (Wall.) Hurus.	Putranjiva	T	Ph-mega	July-Dec.	384
	270	*Emblica officinalis* Gaerth.	Aambala	t	Ph-meso	Mar.-Sep.	385
	271	*Euphorbia heterophylla* Labill.	Lalpati	H-e	Th	Throughout the year	386
		Euphorbia hirta L.	Vadi dudhi	H-se	Th	Throughout the year	387
		Euphorbia milli Ch.des.	Crown throns	S-spiny	Ph-micro	Throughout the year	388
		Euphorbia neriifolia L.	Vad thor	S-scucc	Ph-micro	Dec.-Apr.	389
		Euphorbia pulcherrima Willd. ex	Lalpati	S	Ph-micro	Throughout the year	390

		Klotz.					
		Euphorbia thymifolia L.	Nani dudhali	H-se/p-b	Th	Throughout the year	391
		Euphorbia tirucalli L.	Kharsani thor	S-succ	Ph-micro	Not seen	392
	272	*Jatropha curcus* L.	ratanjyot	S	Ph-micro	Throughout the year	393
		Jatropha gossypifolia L.	Nepalo	S	Ph-micro	Throughout the year	394
	273	*Kirganelia reticulata* (Poir.) Baill.	Kamboi	S	Ph-meso	Aug.-Jan.	395
	274	*Pedilanthus tithymaloides* (L.) Poir.	Vilayti kharasani	S	Ph-micro	Jan.-May	396
	275	*Phyllanthas fraternus* Webster.	Bhoy-ambali	H-e	Th	Nearly in all season	397
	276	*Ricinus communis* L.	Aranda	S	Ph-micro	Nearly in all season	398
82		MORACEAE					
	277	*Ficus amplissima* Sm.	Pipar (pimpli)	T	Ph-mega	Dec.-May	399
		Ficus benghalensis L.	Vad	T	Ph-mega	Receptacles : Oct.-June	400
		Ficus carica L.	Anjir	T	Ph-mega	Receptacles : July-Mar.	401
		Ficus hispida L.	Kalo umbaro	T	Ph-mega	Receptacles : July-Oct.	402
		Ficus racemosa L.	Umbaro	T	Ph-mega	Throughout the year	403
		Ficus religiosa L.	Pipalo	T	Ph-mega	Receptacles : Dec.-May	404
	278	*Morus alba* L.	Shetur	t	Ph-meso	July-Dec.	405
83		ULMACEAE					
	279	*Holoptelea integrifolia* (Roxb.) Planch.	Kanji	t	Ph-mega	Dec.-May	406

84		CANNABINACEAE					
	280	*Cannabis sativa* L.	Ganjo, Bhang	S	Ph-micro	Not seen	407
85		CASUARINACEAE					
	281	*Casuarina equisetifolia* L.	Sharu	T	Ph-mega	Throughout the year	408
86		HYDROCHARITACEAE					
	282	*Hydrilla varticillata* (L.f.) Royal	Hydrilla	H-aq	C-hydro	Oct.-Dec.	409
	283	*Vallisneria spiralis* L.	Jalsarpolia (Vllisneria)	H-aq	C-hydro	Dec.-Feb.	410
87		ZINGIBERACEAE					
	284	*Curcuma domestica* Val.	Haldar	H-tub	C-geo	Feb.-Apr.	411
		Curcuma inodora Blatter.	Chhichhodo	H-tub	C-geo	June-Nov.	412
	285	*Zingiber officinal* L.	Aadu	H-rhi	C-geo	Jan.-Feb.	413
88		MUSACEAE					
	286	*Musa paradisiaca* L.	Kel	T	Ph-meso	Throughout the year	414
89		AMARYLLIDACEAE					
	287	*Crinum asiaticum* L.	Nag daman	H-bulb	C-geo	Throughout the year	415
	288	*Pancratium triflorum* Roxb.	Pankreshiyam	H-bulb	C-geo	Throughout the year	416
90		AGAVACEAE					
	289	*Agave americana* L.	Ketaki	S-r-pricky	H	Sep.-Dec.	417
	290	*Polianthes tuberosa* L.	Gul chhadi	H-tub	C-geo	Aug.-Dec.	418

91		DIOSCOREACEAE					
	291	*Dioscorea alata* L.	Ratalu	H-tub-bulb-cl	C-geo	July-Mar.	419
		Dioscorea bulbifera L.	Kanak	H-tub-bulb-cl	C-geo	All part of the year	420
92		LILIACEAE					
	292	*Allium cepa* L.	Dungali	H-bulb	C-geo	Feb.-Apr.	421
		Allium sativum L.	Lasan	H-bulb	C-geo	Dec.-Feb.	422
	293	*Aloe barbadensis* Mill.	Kuamwarpathu	H-sto-pricky	H	June-Mar.	423
	294	*Asparagus racemosus* Willd.	Shatavari	S-cl-spiny-tub	Ph-micro	Sep.-Dec.	424
	295	*Asphodelus tenuifolius* Cav.	Dungaro	H-e	Th	Dec.-Mar.	425
	296	*Gloriosa superba* L.	Vachhnag	H-cl-tub	C-geo	July-Oct.	426
	297	*Yucca gloriosa* L.	Yucca	S-tub	Ph-meso	July-Sept.	427
93		SMILECACEAE					
	298	*Smilax zeylanica* L.	Smilax	Cl	Ph-micro	Sep.-Mar.	428
94		PONTEDERIACEAE					
	299	*Eichhornia crassipes* (Mart.) Solms.	Eichhornia	H-aq	C-helo	Oct.-Nov.	429

95		COMMELINACEAE					
	300	*Commelina benghalensis* L.	Motushishmuliyu	H-p-b	Th	Aug.-Jan.	430
		Commelina diffusa Burm. f.	Shishmuliyu	H-p-b	Th	Aug.-Oct.	431
		Commelina forskalaei Vahl.	Shishmuliya ni jat	H-p-b	Th	July-Oct.	432
	301	*Murdannia nudiflora* (L.) Bruckn.	Murdannia	H-p-b	Th	Aug.-Oct.	433
96		ARECACEAE (PALMAE)					
	302	*Cocos nucifera* L.	Naliyeri	T	Ph-mega	Throughout the year	434
	303	*Phoenix sylvestris* (L.) Roxb.	Khajuri	T	Ph-mega	Mar.-July	435
97		PANDANACEAE					
	304	*Pandanus tectorius* soland.	Kevdo	S-spiny	Ph-micro	July-Oct.	436
98		TYPHACEAE					
	305	*Typha angustata* Bory & Chaub	Gha bajariyu	H-e	C-helo	Sep.-June	437
99		ARACEAE					
	306	*Amorphophallus campanulatus* Roxb. Blume.	Suran	H-tub	C-geo	Fls : Apr. Frs : Not seen	438
100		ALISMATACEAE					
	307	*Sagittaria sagittifolia* L.	Swamp potato	H-aq	C-geo	June-Sep.	439
101		CYPERACEAE					
	308	*Cyperus eleusinoides* Kunth.	Moth ni jat	H-rhi	C-geo	July-Dec.	440

		Cyperus exaltatus Retz.	Godha chiyo	H-rhi	C-geo	July-Dec.	441
		Cyperus rotundus L.	Moto chiyo	H-rhi	C-geo	July-Dec.	442
102		POACEAE					
	309	*Aristida adscensionis* L.	Uth-lampdo	H-se-tf	H	Aug.-Jan.	443
	310	*Bambusa arundinacea* L.	Bamboo	T	Ph-meso	Aug.-Jan.	444
	311	*Cymbopogon citratus* (DC.) Stapf.	Lili cha	H-e-tf	H	Not seen	445
		Cymbopogon martinii L. (Roxb.) Wats.	Gandharu ghas	H-e-tf	H	Oct..-Jan.	446
	312	*Cynodon dactylon* (L.) Pers.	Dharo	H-p-tf	H	Throughout the year	447
	313	*Dendrocalamus strictus* Ness.	Nakor vans	t	Ph-meso	Dec.-Mar.	448
	314	*Desmostachya bipinnata* (L.) Stapf.	Dabh	H-e-sto	H	Throughout the year	449
	315	*Echinochloa frumentacea* Limk.	Banti	H-e	Th	Oct.-Jan.	450
	316	*Eleusine indica* (L.) Gaertn.	Kodra	H-e-tf	Th	Aug.-Jan.	451
	317	*Hordeum vulgare* L.	Jav	H-e	Th	Feb.-Mar.	452
	318	*Oryza sativa* L.	Chokha	H-e	C-helo	July-Oct.	453
	319	*Pennisetum typhoides* (Burm.f.) Stapf & Hubb.	Bajaro	H-e	Th	Aug.-Jan.	454
	320	*Saccharum bengalense* Retz.	Munj	H-e	H	Oct.-Dec.	455
		Saccharum officinarum L.	Sherdi	H-e	H	Sep.-Dec.	456
	321	*Setaria glauca* (L.) P. Beauv.	Chipatiyani jat	H-e	Th	July-Nov.	457

	322	*Sorghum bicolor* (L.) Monech.	Juvar	H-e	Th	Throughout the year	458
	323	*Triticum aestivum* L.	Ghau	H-e	Th	Nov.-Mar.	459
	324	*Zea mays* L.	Makai	H-e	Th	July-Oct.	460

Abbreviations of appendix-I

HABIT
H = Herb
Se = Suberect
tf = tufted
fl = fleshy
r = radiculor rosette
T = Medium to Tall tree
S = Shrub
e = erect
cl = Climber
tw = twiner
Spin = Spiny
p = Prostrate
aq = aquatic
Succ = Succulent
para = Parasite
pr = Pseudo rosette
Sto = Stolon
w = woody
US = Undershrub
rhi = Rhizomatus
tub = Tuberous
Cre = Creeping
t = Small tree
Sc = Scandent

LIFEFORM
Ph = Phanerophytes
mega
meso
micro
nano
epi = epiphyte
Ch = Chamaephyte
H = Hemicryptophyte
C = Cryptophyte
geo = geophyte
helo = helophyte
hydro = hydrophyte
Th = Therophyte

APPENDIX-II INDEX TO FAMALIES

Name of the Family	Total number of Genera and Spp.	Total number of Spp. in the Genus
Acanthaceae	12/14	*Adhatoda*(1), *Andrographis*(1), *Barleria*(1), *Blepharis*(2), *Dipteracanthus*(1), *Hydrophila*(2), *Justicia*(1), *Lepidagathis*(1), *Neuracanthus*(1), *Peristrophe*(1), *Ruellia*(1), *Rungia*(1).
Agavaceae	2/2	*Agave*(1), *Polianthes*(1).
Aizoaceae	1/1	*Trianthema*(1).
Alangiaceae	1/1	*Alangium*(1).
Alismataceae	1/1	Sagittaria(1).
Amaranthaceae	8/12	*Achyranthes*(1), *Aerva*(1), *Alternanthera*(2), *Amaranthus*(3), *Celosia*(1), *Digera*(1), *Gomphrena*(2), *Pupalia*(1).
Ampeliedeae	2/2	*Cayratia*(1), *Cissus*(1).
Amaryllidaceae	2/2	*Crinum*(1), *Pancratium*(1).
Anacardiaceae	3/3	*Anacardium*(1), *Lannea*(1), *Mangifera*(1).
Annonaceae	2/3	*Annona*(2), *Polyalthia*(1).
Apiaceae	6/6	*Anethum*(1), *Centella*(1), *Cuminum*(1), *Daucus*(1), *Foeniculum*(1), *Coriandrum*(1)
Apocynaceae	9/10	*Alstonia*(1), *Carissa*(1), *Catharanthus*(2), *Holarrhena*(1), *Nerium*(1), *Plumeria*(1), *Rauvolfia*(1), *Thevetia*(1), *Wrightia*(1).
Araceae	1/1	*Amorphophallus*(1).

Arecaceae	2/2	*Cocos*(1), *Phoenix*(1).
Aristolochiaceae	1/1	*Aristolochia*(1).
Asclepiadaceae	11/13	*Asclepias*(1), *Calotropis*(2), *Ceropegia*(1), *Cryptostegia*(1), *Dregea*(1), *Gymnema*(1), *Hemidesmus*(1), *Leptadenia*(2), *Pentatropis*(1), *Pergularia*(1), *Tylophora*(1).
Asteraceae	13/14	*Acanthospermum*(1), *Blumea*(2), *Echinops*(1), *Eclipta*(1), *Launaea*(1), *Sonchus*(1), *Sphaeranthus*(1), *Spilanthes*(1), *Tagetes*(1), *Tridex*(1), *Vernonia*(1), *Vicoa*(1), *Xanthium*(1).
Balanitaceae	1/1	*Balanites*(1).
Balsaminaceae	1/1	*Impatiens*(1).
Basellaceae	1/1	*Basella*(1).
Bignoniaceae	5/5	*Kigelia*(1), *Millingtonia*(1), *Spathodea*(1), *Tecoma*(1), *Tecomella*(1).
Bombacaceae	2/2	*Adansonia*(1), *Bombax*(1).
Boraginaceae	3/4	*Coldenia*(1), *Heliotropium*(2), *Trichodesma*(1).
Brassicaceae	3/5	*Brassica*(3), *Lepidium*(1), *Raphanus*(1).
Burseraceae	3/3	*Boswellia*(1), *Commiphora*(1), *Garuga*(1).
Cactaceae	1/1	*Opuntia*(1).
Caesalpiniaceae	8/15	*Bauhinia*(1), *Cassia*(7), *Caesalpinia*(2), *Delonix*(1), *Peltophorum*(1), *Parkinsonia*(1), *Saraca*(1), *Tamarindus*(1).
Cannabinaceae	1/1	*Cannabis*(1).
Capparaceae	5/8	*Cadaba*(1), *Capparis*(3), *Cleome*(2), *Crateva*(1), *Maerua*(1).

Caricaceae	1/1	*Carica*(1).
Caryophyllaceae	2/2	*Polycarpea*(1), *Polycarpon*(1).
Casuarinaceae	1/1	*Casuarina*(1).
Celastraceae	2/2	*Celastrus*(1), *Maytenus*(1).
Chenopodiaceae	3/3	*Beta*(1), *Chenopodium*(1), *Spinacia*(1).
Combretaceae	4/10	*Anogeissus*(3), *Combretum*(1), *Terminalia*(5), *Quisqualis*(1).
Commelinaceae	2/4	*Commelina*(3), *Murdannia*(1).
Convolvulaceae	5/14	*Argyreia*(1), *Convolvulus*(2), *Evolvulas*(1), *Ipomoea*(9), *Rivea*(1).
Crassulaceae	1/1	*Kalanchoe*(1).
Cucurbitaceae	10/18	*Benicasa*(1), *Citrullus*(1), *Coccinia*(1), *Cucumis*(3), *Cucurbita*(1), *Lagenaria*(1), *Luffa*(4), *Momordica*(2), *Mukia*(1), *Trichosanthes*(3).
Cuscutaceae	1/2	*Cuscuta*(2).
Cyperaceae	1/3	*Cyperus*(3).
Dioscoreaceae	1/2	*Dioscorea*(2).
Ebenaceae	1/2	*Diospyros*(2).
Ehretiaceae	2/4	*Cordia*(3), *Ehretia*(1).
Elatinaceae	1/1	*Bergia*(1).
Euphorbiaceae	11/18	*Acalypha*(1), *Cicca*(1), *Croton*(1), *Drypetes*(1), *Emblica*(1), *Euphorbia*(7), *Jatropha*(2), *Kirganelia*(1), *Pedilanthus*(1), *Phyllanthus*(1), *Ricinus*(1).
Fabaceae	24/34	*Abrus*(1), *Alysicarpus*(1), *Arachis*(1), *Butea*(1), *Cajanus*(1), *Canavalia*(1), *Cicer*(1), *Clitoria*(1), *Crotolaria*(3), *Cyamopsis*(1), *Dalbergia*(2), *Derris*(1), *Dolichos*(1), *Indigofera*(4), *Lablab* (1), *Medicago*(1), *Mucuna*(1), *Pisum*(1), *Rhynchosia*(1), *Sesbania*(2),

		Tephrosia(1), *Trigonella*(1), *Vigna*(4), *Zornia*(1).
Flacourtiaceae	1/1	*Flacourtia*(1).
Gentianaceae	1/1	*Enicostema*(1).
Hydrocharitaceae	2/2	*Hydrilla*(1), *Valllisneria*(1).
Lamiaceae	4/7	*Anisomeles*(1), *Leucas*(1), *Mentha*(1), *Ocimum*(4).
Lentibulariaceae	1/1	*Utricularia*(1).
Liliaceae	6/7	*Allium*(2), *Aloe*(1), *Asparagus*(1), *Asphodelus*(1), *Gloriosa*(1), *Yucca*(1).
Loranthaceae	1/1	*Dendrophthoe*(1).
Lythraceae	2/2	*Ammannia*(1), *Lawsonia*(1).
Malvaceae	8/19	*Abelmoschus*(3), *Abutilon*(1), *Althea*(1), *Gossypoium*(3), *Hibiscus*(3), *Sida*(6), *Thespesia*(1), *Urena*(1).
Martyniaceae	1/1	*Martynia*(1).
Meliaceae	2/2	*Azadirachta*(1), *Melia*(1).
Menispermaceae	3/3	*Cissampelos*(1), *Cocculus*(1), *Tinospora*(1).
Mimosaceae	6/14	*Acacia*(8), *Albizia*(1), *Mimosa*(1), *Pithecellobium*(1), *Prosopis*(2), *Samanea*(1).
Molluginaceae	1/2	*Glinus*(2)
Moraceae	2/7	*Ficus*(6), *Morus*(1).
Moringaceae	1/2	*Moringa*(2).
Musaceae	1/1	*Musa*(1).
Myrtaceae	4/4	*Callistemon*(1), *Eucalyptus*(1), *Psidium*(1), *Syzygium*(1).
Nyctaginaceae	3/5	*Boerhaavia*(3), *Bougainvillea*(1), *Mirabilis*(1).
Nymphaeaceae	2/2	*Nelumbo*(1), *Nymphaea*(1).
Oleaceae	2/2	*Jasminum*(1), *Nyctanthes*(1).
Onagraceae	1/1	*Ludwigia*(1).

Oxalidaceae	1/1	*Oxalis*(1).
Pandanaceae	1/1	*Pandanus*(1).
Papaveraceae	1/1	*Argemone*(1).
Passifloraceae	1/2	*Passiflora*(2).
Pedaliaceae	2/3	*Pedalium*(1), *Sesamum*(2).
Plumbaginaceae	1/1	*Plumbago*(1).
Plantaginaceae	1/1	*Plantago*(1).
Poaceae	16/18	*Aristida*(1), *Bambusa*(1), *Cymbopogon*(2), *Cynodon*(1), *Dendrocalamus*(1), *Desmostachya*(1), *Echinochloa*(1), *Eleusine*(1), *Hordeum*(1), *Oryza*(1), *Pennisetum*(1), *Saccharum*(2), *Setaria*(1), *Sorgham*(1), *Triticum*(1), *Zea*(1).
Polygalaceae	1/1	*Polygala*(1).
Polygonaceae	2/2	*Antigonon*(1), *Polygonum*(1).
Pontederiaceae	1/1	*Eichornia*(1).
Portulacaceae	1/4	*Portulaca*(4).
Punicaceae	1/1	*Punica*(1).
Rhamnaceae	1/4	*Zizyphus*(4).
Rosaceae	1/1	*Rosa*(1).
Rubiaceae	8/9	*Adina*(1), *Anthocephalus*(1), *Dentella*(1), *Gordenia*(1), *Ixora*(2), *Mitragyna*(1), *Oldenlendia*(1), *Xeromphis*(1).
Rutaceae	4/6	*Aegle*(1), *Citrus*(2), *Limonia*(1), *Murraya*(2).
Salvadoraceae	2/3	*Azima*(1), *Salvadora*(2).
Santalaceae	1/1	*Santalum*(1).
Sapindaceae	3/3	*Cardiospermum*(1), *Dodonaea*(1), *Sapindus*(1).
Sapotaceae	3/4	*Madhuca*(1), *Manilkara*(2), *Mimusops*(1).

Scrophulariaceae	3/3	*Bacopa*(1), *Kickxia*(1), *Lindenbergia*(1).
Simarubiaceae	1/1	*Ailanthus*(1).
Smilacaceae	1/1	*Smilex*(1).
Solanaceae	8/15	*Capsicum*(1), *Cestrum*(2), *Datura*(2), *Lycopersicon*(1), *Nicotiana*(1), *Physalis*(2), *Solanum*(5), *Withania*(1).
Sterculiaceae	4/4	*Gauzuma*(1), *Helicteres*(1), *Sterculia*(1), *Weltheria*(1).
Tiliaceae	3/9	*Corchorus*(4), *Grewia*(3), *Triumfetta*(2).
Trapaceae	1/1	*Trapa*(1).
Typhaceae	1/1	*Typha*(1).
Ulmaceae	1/1	*Holoptelea*(1).
Verbenaceae	6/8	*Clerodendrum(*2), *Gmelina*(1), *Lantana*(2), *Phyla*(1), *Tectona*(1), *Vitex(*1).
Vitaceae	2/2	*Cissus*(1), *Cayratia*(1)
Zingiberaceae	2/3	*Curcuma*(2), *Zingiber*(1).
Zygophyllaceae	1/1	*Tribulus*(1).

APPENDIX-III INDEX TO MEDICINAL USES

Anaemia	*Saccharam officinarum*
Antiseptic	*Azadirachta indica, Glinus oppositifolius*
Apitiser	*Momordica charantia*
Asthama	*Acalypha indica, Adhatoda zeylanica, Butea monosperma, Garuga pinnata, Limonia acidissima, Trichosanthes bracteata, Tylophora indica*
Bite	*Achyranthes aspera, Alangium salvifolium, Boerhavia verticillata, Canavalia ensiformis, Capcicum annuum, Cassia occidentalis, Celosia argentea, Martynia annua, Parkinsonia aculeata, Polygala chinensis, Zizyphus mauritiana*
Blood Pressure	*Rauvolfia tetraphylla*
Blood Purifier	*Alysicarpus bupleurifolius, Cicca acida*
Blood Sugar	*Bambusa arundinacea, Crotolaria Juncea, Cassia fistula, Catharanthus roseus, Citrullus colocynthis, Coccinia grandis, Gymnema sylvestre, Kickxia ramosissima, Momordica charantia, Neuracanthus sphaerostachyus, Syzygium cuminii, Tinospora cordifolia*
Bone fracture	*Cissus quadrangularis, Tecomella undulata*
Bronchitis	*Caesalpinia pulcherrima, Lindenbergia muraria, Maerua oblongifolia*
Cancer	*Triticum aestivam*
Cholera	*Psidium guajava*
Constipation	*Cassia etalica, Plantago ovata, Terminalia chebula, Vigna radiata*
Coolant	*Centella asiatica, Commelina benghalensis, Sida cordata*
Cough, Cold	*Adhatoda zeylanica, Aerva javanica, Allium cepa, Calotropis gigantia, Cassia fistula, Dioscorea bulbifera, Eucalyptus citriodora, Flacourtia indica, Gomphrena celosioides, Gomphrena globosa, Leucas cephalotes Ocimum sanctum, Polygonum plebium, Pupalia lappacea, Solanum indicum, Solanum nigrum, Solanum surattense, Tecomella undulata, Terminalia bellirica, Zingiber officinale, Zizyphus mauritiana,*
Dental	*Annona reticulata, Cajanus cajan, Carica papaya, Calotropis procera, Desmostachya bipinnata, Kreganelia reticulata, Manilkara*

	hexandra, Mukia maderaspatana, Plumeria rubra, Portulaca oleracea, Spilanthus calva,
Diarrohea & Dysentery	*Aegle marmelos, Albizia lebbeck, Basella rubra, Bombax ceiba, Brassica juncea, Celosia argentea, Coculas hirsutus, Corchorus capsularis, Cordia gharaf, Dalbergia latifolia, Dalbergia sissoo, Eclipta prostrata, Emblica officcnalis, Euphrobia hirta, Ficus benghalensis, Glinus lotoides, Helicteres isora, Holarrhena antidysentery, Ipomoea batatas, Mangifera indica, Musa paradisiaca, Ocimum gratissimum, Pergularia daemia, Punica granatum, Saraca asoca, Sterculia urens, Syzygium cuminii, Tamarindus indica, Urena lobata, Vicoa indica, Yucca gloriosa*
Ear, Nose, Thaought	*Achyranthes aspera, Allium sativum, Capparis decidua, Crinum asiaticus, Cucurbita maxima, Cynodon dactylon, Heliotropium elliptica, Leptadenia pyrotechnica, Morus alba, Sesamum indicum, Solanum surattense, Tagetes patula,*
Eye	*Anthocephalus indicum, Cassia absus, Ceropegia bulbosa, Clerodendrum multiflorum, Clitoria ternatea, Cucumis sativas, Ehretia laevis, Grewia hirsuta, Ixora coccinea, Lepidium sativum, Leptadenia reticulata, Moringa oleifera, Oxalis corniculata, Sesbania sesban, Solanum nigrum*
Fever	*Acanthospermum hispidum, Adhatoda zeylanica, Alstonia scholaris, Andrographis paniculata, Azadirachta indica, Bauhania racemosa, Caesalpinia crista, Cassia fistula, Cleome gynandra, Corchorus trilocularis, Corchorus aestuans, Cymbopogon citratus, Cyperus rotundus, Dipteracanthus prostratus, Eleusine indica, Enicostema hyssopifolium, Gmelina arborea, Hibiscus ovalifolius, Lepidagathis trinervis, Ocimum canum, Ocimum sanctum, Phyllanthus fraternus, Polycarpaea corymbosa, Polygala chinensis, Sida cordifolia, Sida retusa, Sonchus oleraceus, Thevetia peruviana, Tinospora cordifolia, Vernonia cinerea, Wrightia tomentosa*
Galectoglogus	*Aloe barbadensis, Alternanthera sessilis, Cyperus rotundus*
Gonorrhoea	*Triumfetta rotundifolia*
Gynec Disorder	*Aloe barbadensis, Anethum graveolens,*

	Cardiospermum halicacabum, Clerodendrum multiflorum, Dendrocalamus strictus, Drypetes roxburghii, Plumeria rubra
Haircare	*Aristolochia barcteolata, Balanites aegyptica, Derris indica, Eclipta prostrata, Emblica officinalis, Ipomoea nil, Nyctanthes arbortritis, Sesamum indicum*
Headache (Ache & Pain)	*Aerva javanica, Calotropis procera, Cissampelos pareira, Dregea volubilis, Gardenia turgida, Lannea coromandelica, Padilanthus tithymaloides, Passiflora edulis, Sida acuta, Solanum nigrum, Terminalia catappa*
Hypertension	*Alstonia scholaris, Antigonon leptopus*
Impotency	*Sida cordifolia*
Insecticide	*Annona squamosa, Blumea lacera, Blumea mollis, Convolvulus arvensis*
Joint Disease (Rheumatism, Knee pain, Artharites)	*Alangium salvifolium, Ammannia baccifera, Boswellia serrata, Catharanthus pusillus, Clerodendrum inerme, Coldenia procumbens, Commelina forskalaei, Dolichos trilobus, Hemidesmus indicus, Holoptelea integrifolia, Ipomoea pes-carpae, Kigelia pinnata, Launaea procumbery, Moringa concanesis, Murraya Paniculata, Ricinus communis, Salvadora persica, Trigonella foenum-graecum, Vitex negundo*
Kidney	*Asphoelelus tenuifolius, Citrus medica, Kalanchoe pinnata, Murraya koenigili, Tectona grandis, Tribulus terrestris*
Leakemic	*Jatropha curcas*
Leaver (Joundice)	*Adina cordifolia, Borhavia diffusa, Citrullus colocythis, Lagenaria leucantha, Luffa echinata, Maytenus emarginata, Oldenlandia corymbosa, Phyllanthus fraternus, Solanum nigrum, Thespesia populnea, Trianthema portulacastrum*
Leucorrhoea	*Sida ovata*
Mental Disorder	*Cassia tora, Justicia diffusa*
Mucus	*Anisomeles indica*
Piles	*Abutilon indicum, Achyranthes aspera, Canavalia ensiformis, Cayratia carnosa, Cocos nucifera, Dioscorhea alata, Ipomoea quamoclit, Mimusops elengi, Mirabilis jalapa, Plumbago zeylanica, Sapindus laurifolius, Sida cordifolia, Tamarindus indica,*
Ricket	*Melia azedarach*

Sex Disorder	*Achyranthes aspera, Mucuna prurita, Pedalium murex, Sida retusa*
Skin (Boil, Ringworm)	*Abutilon indicum, Acalypha indica, Allium cepa, Aloe barbadensis, Amaranthus spinosus, Annona squamosa, Argemone mexicana, Argyreia nervosa, Asclepias curassavica, Azadirachta indica, Balanites aegyptica, Barleria prionitis, Calotropis gigantia, Capparis zeylanica, Cassia auriculata, Cassia occidentalis, Cassia tora, Celastrus paniculatus, Celosia argentea, Cleome gynendra, Cleome viscosa, Crotolaria retusa, Croton bonplandianus, Cucumis sativas, Curcuma domestica, Cuscuta reflexa, Cuscuta chinensis, Cyamopsis tetragonoloba, Cymbopogon martinii, Dentella repens, Derris indica, Diospyros cordifolia, Echinops echinatus, Euphorbia thymifolia, Euphorbia tirucalli, Ficus benghalensis, Ficus religiosa, Foenicum valgare, Gloriosa superba, Hibiscus rosa-sinensis, Hydrilla varticillata, Hygrophila serpyllum, Indigofera linifolia, Ipomoea obscura, Jatropha gossypifolia, Lantana camara, Lepidagathis trinervis, Leucas cephalotes, Ludwigia perennis, Madhuca indica, Nerium indicum, Oxalis corniculata, Pandanus odoratissimus, Passiflora foetida, Pentatropis capensis, Pupalia lappacea, Ricinus communis, Sagittaria sagittifolia, Sesamum indicum, Sesbania grandiflora, Solanum nigrum, Sterculia urens, Tecomella undulata, Tridax procumbans, Triumfetta rhomboidea, Typha angustata, Utricularia inflexa, Vallisneria spiralis, Xanthium strumarium, Zornia gibbosa*
Spermatorrhoea	*Ruellia tuberosa, Withania somniferum*
Spleen	*Salvadora oleoides*
Stomach disorder	*Abrus precatorius, Allium sativum, Alternanthera pungens, Anogeissus latifolia, Azima tetracantha, Caesalpinia crista, Carica papaya, Citrus limon, Corchorus tridens, Cuminum cyminum, Mentha spicata, Murdannia nudiflora, Nycatnthes arbortritis, Ricinus communis, Sphaeranthus indicus, Tephrosia purpurea, Terminalia bellirica, Trichodesma indicum, Trichosanthes cucumerina, Vicoa indica,*
Swellings	*Albizia labbeck, Asphodelus tenuifolius,*

	Boerhavia chinensis, Boerhavia verticillata, Commelina forskalaei, Cryptostagia grandiflora, Euphorbia heterophylla, Ficus racemosa, Peristrophe bicalyculata, Polygala chinensis, Rungia repens, Vitex negundo
Tonic	*Anogeissus latifolia, Asparagus racemosus, Asphodelus tenuifolius, Convolulas microphyllas, Evolvulus alsinoides, Nelumbo nucifera, Physalis minima, Sida alba, Sida cordata, Smilax zeylanica, Withania somniferum*
Ulcer (Mouth Stomach)	*Abrus precatorius, Acacia chundra, Acacia nilotica, Azadirachta indica, Blepharis maderaspatensis, Cajanus cajan, Cordia perrottetii, Ficus racemosa, Heliotropium ovalifolium, Indigofera cordifolia, Lantana salvifolia, Portulaca quadrifida, Terminalia arjuna, Terminalia crenulata,*
Urinary Problem	*Amaranthus lividus, Asparagus racemosus, Bacopa monnieri, Blepharis repens, Blepharis maderaspatensis, Bombax ceiba, Butea monosperma, Cadaba fruticosa, Crateva nurvala, Cynodon dactylon, Digera muricata, Hygrophila auriculata, Kalunchoe pinnata, Mimosa pudica, Oryza sativa, Phyla nodiflora, Polyalthia longifolia*
Vermifuge (Worm)	*Alangium salvifolium, Dodonaea viscosa,*

APPENDIX-IV INDEX TO OTHER USES

Agriculture implements	*Acacia nilotica, Alangium salvifolium, Anogeissus latifolia, Anogeissus pendula, Anogeissus sericea, Azadirachta indica, Bambusa arundinacea, Cordia grahaf, Dalbergia latifolia, Dalbergia sissoo, Drypetes roxburghii, Eucalyptus citriodora, Manilkara hexandra, Mitragyna parvifolia, Peltophorum pterocarpum, Syzygium cuminii, Tecomella undulata, Tectona grandis, Terminalia crenulata,*
Beutification	*Aloe barbadense, Cicer arietinum, Cyperus rotundus*
Beverages	*Madhuca indica*
Cereals & Millet	*Eleusine indica, Oryza sativa, Pennisetum typhoides, Sorghum bicolor, Triticum aestivum, Zea mays*
Condiments / Spices	*Allium sativum, Brassica juncea, Capsicum annum, Coriandrum sativum, Cuminum cyminum, Curcuma domestica, Foeniculum vulgare, Mentha spicata, Murraya koenigii, Trigonella foenum-graecum, Zingiber officinale*
Domestic uses	*Bambusa arundinacea, Butea monosperma, Cocos nucifera, Cordia dichotoma, Dalbergia latifolia, Dalbergia sissoo, Dendrocalamus strictus, Gmelina arborea, Holoptelea integrifolia, Lannea coromandelica, Lepidium sativum, Phoenix sylvestris, Tecomella undulata, Tectona grandis, Tephrosia purpurea, Terminalia arjuna, Terminalia crenulata, Waltheria indica*
Dyes	*Acacia chundra, Butea monosperma, Curcuma domestica, Impatiens balsamina, Indigofera tinctoria, Lawsonia inermis*
Edible fruits	*Annona reticulata, Annona squamosa, Carica papaya, Carissa congesta, Cocos nucifera, Cordia dichotoma, Cordia grahaf, Cucumis callosus, Cucumis melo, Emblica officinalis, Ficus carica, Ficus racemosa, Garuga pinnata, Grewia subinequalis, Holoptelea integrifolia, Kigelia pinnata, Leptadenia reticulata, Limonia acidissima, Madhuca indica, Mangifera indica, Manilkara hexandra, Manilkara zapota, Mimusops elengi, Morus alba, Mukia maderaspatana, Musa paradisiaca,*

	Nymphaea stellata, Phoenix sylvestris, Physalis longifolia, Pithecellobium dulce, Psidium guajava, Punica granatum, Solanum nigrum, Sterculia urens, Syzygium cuminii, Tamarindus indica, Terminalia catappa, Trapa natans, Zizyphus glabrata, Zizyphus mauritiana, Zizyphus nummularia, Zizyphus rugosa
Fencing	*Acacia chundra, Acacia farnesiana, Acacia jacquemontii, Acacia leucophloea, Acacia nilotica, Acacia pennata, Acacia senegal, Azima tetracantha, Caesalpinia crista, Capparis decidua, Dendrocalamus strictus, Euphorbia neriifolia, Euphorbia tirucalli, Ipomoea fistulosa, Ixora arborea, Lantana camara, Maytenus emarginata, Opuntia elatior, Prosopis chilensis, Zizyphus rugosa*
Fibers	*Agave americana, Crotolaria juncea, Hibiscus cannabinus, Sida acuta, Sterculia urens, Gossypium arboreum, Gossypium barbadense, Gossypium herbaceum*
Fodder plants	*Abelmoschus manihot, Acacia farnesiana, Acacia nilotica, Adina cordifolia, Alternanthera sessilis, Amaranthus hybridus, Amaranthus lividus, Arachis hypogaea, Aristida adscensionis, Azadirachta indica, Blepharis maderaspatensis, Brassica oleracea* var. *botrytis, Brassica oleracea* var. *capitata, Cicer arietinum, Commelina benghalensis, Commelina diffusa, Commelina forskalaei, Cortolaria filipes, Cucumis callosus, Cucumis melo, Cucumis sativus, Cucurbita maxima, Cyamopsis tetragonoloba, Cynodon dactylon, Cyperus nutans, Cyperus rotundus, Echinochloa frumentacea, Eleusine indica, Gossypium arboreum, Gossypium barbadense, Gossypium herbaceum, Grewia tiliaefolia, Horderum vulgare,Ipomoea aquatica, Ipomoea batatas, Ipomoea fistulosa, Ipomoea nil, Ipomoea pes-tigridis, Justicia diffusa, Lepidium sativum, Maytenus emarginata, Medicago sativa, Oryza sativa,Pennisetum typhoides, Pisum sativum, Pithecellobium dulce, Polycarpaea corymbosa, Polycarpon prostratum, Portulaca oleracea, Portulaca suffruticosa, Prosopis chilensis, Prosopis cineraria, Rhynchosia minima, Saccharum officinarum, Setaria glauca,*

	Solanum tuberosum, Sorghum bicolor, Triticum aestivum, Vigna aconitifolia, Vigna radiata var. *radiata, Vigna radiata* var. *sublobata, Zea mays, Zornia gibbosa,*
Food and extra uses	*Abelmoschus esculents, Acacia nilotica, Acacia senegal, Amaranthus hybridus, Anacardium occidentale, Arachis hypogaea, Benincas hispida, Capparis decidua, Carissa congesta, Cassia tora, Ceropegia bulbosa, Cicca acida, Cocos nucifera, Cordia dichotoma, Diospyros melanoxylon, Emblica officinalis, Ficus carica, Pennisetum typhoides, Ricinus communis, Rosa multiflora, Salvadora oleoides, Salvadora persica, Sapindus laurifolius, Sesamum indicum, Sterculia urens, Triticum aestivum, Vigna aconitifolia, Vigna radiata* var. *radiata, Vigna radiata* var. *sublobata, Zea mays*
Fuel wood	*Abelmoschus esculentus, Acacia jacquemontii, Acacia leucophloea, Acacia nilotica, Acacia pennata, Ailanthus excelsa, Albizia lebbek, Anisomeles indica, Caesalpinia pulcherrima, Cajanus cajan, Callistemon lanceolatus, Capparis decidua, Cassia fistula, Casuarina equisetifolia, Cordia perrottetii, Delonix regia, Diospyros melanoxylon, Eucalyptus citriodora, Euphorbia neriifolia, Ficus amplissima, Ficus benghalensis, Ficus hispida, Ficus racemosa, Gossypium arboreum, Gossypium barbadense, Gossypium herbaceum, Grewia subinequalis, Hibiscus cannabinus, Lannea coromandelica, Parkinsonia aculeata, Peltophorum pterocarpum, Pithecellobium dulce, Prosopis chilensis, Salvadora oleoides, Salvadora persica, Samanea saman, Sterculia urens, Tamarindus indica, Terminalia arjuna,*
Gums	*Acacia nilotica, Acacia senegal, Anogeissus latifolia, Boswellia serrata, Commiphora wightii, Sterculia urens,*
Jeggary	*Saccharum officinarum*
Magico religious plants	*Adansonia digitata, Aegle marmelos, Amaranthus lividus, Anthocephalus indicus, Calotropis gigantia, Calotropis procera, Cannabis sativa, Cicer arietinum, Citrus limon, Cocos nucifera, Crateva nurvala, Crinum asiaticum, Cucurbita maxima, Cynodon dactylon, Datura innoxia, Datura metel,*

	Desmostachya bipinnata, Echinops echinatus, Ficus amplissima, Ficus religiosa, Gmelina arborea, Guazuma ulmifolia, Hibiscus rosasinensis, Mangifera indica, Musa paradisiaca, Nelumbo nucifera, Nerium indicum, Nyctanthes arbortristis, Nymphaea stellata, Ocimum basillicum, Ocimum sanctum, Oryza sativa, Pandanus odoratissimus, Prosopis cineraria, Salvadora persica, Santalum album, Sesamum lacinatum, Xeromphis spinosa
Miscellaneous	*Barleria prionitis, Boswellia serrata, Butea monosperma, Cassia tora, Commiphora wightii, Crotalaria juncea, Luffa acutangula* var. *acutangula, Luffa acutangula* var. *amara, Nicotiana tabacum, Pancratium triflorum, Polianthes tuberosa, Ricinus communis, Tagetes patula,*
Mouth fresheners	*Anethum graveolens, Coriandrum sativum, Emblica officinalis, Foeniculum vulgare, Hibiscus cannabinus,*
Musicology	*Mangifera indica, Sterculia urens*
Narcotics	*Cannabis sativa, Nicotiana tabacum*
Oils	*Arachis hypogaea, Brassica juncea, Gossypium arboreum, Gossypium barbadense, Gossypium herbaceum, Jatropha curcas, Madhuca indica, Ricinus communis, Sesamum indicum*
Ornamental	*Alstonia scholaris, Althea rosea, Antigonon leptopus, Basella rubra, Bougainvillea spectabilis, Caesalpinia pulcherrima, Callistemon lanceolatus, Catharanthus roseus, Cestrum diurnum, Cestrum nocturnum, Clerodendrum inerme, Combretum ovalifolium, Crinum asiaticum, Euphorbia heterophylla, Euphorbia milli, Euphorbia pulcherrima, Euphorbia thymifolia, Gardenia resinifera, Gomphrena globosa, Guazuma ulmifolia, Hibiscus rosa-sinensis, Ipomoea cairica, Ipomoea quamoclit, Ixora coccinea, Jasminum officinale, Kalanchoe pinnata, Mirabilis jalapa, Pedilanthus tithymaloides, Pancratium triflorum, Passiflora edulis, Phoenix sylvestris, Polianthes tuberosa, Polyalthia longifolia, Portulaca grandiflora, Quisqualis indica, Rauvolfia tetraphylla, Rosa multiflora, Samanea saman, Santalum album, Saraca asoca, Smilax zeylanica, Spathodea campanulata, Tagetes*

	patula
Pulses	*Cajanus cajan, Cicer arietinum, Pisum sativum, Vigna aconitifolia, Vigna radiata* var. *radiata, Vigna radiata* var. *sublobata, Vigna unguiculata*
Shelter and housing	*Adina cordifolia, Bambusa arundinacea, Brassica juncea, Cajanus cajan, Cocos nucifera, Crotalaria filipes, Cyperus exaltatus, Dendrocalamus strictus, Diospyros melanoxylon, Foeniculum vulgare, Holoptelea integrifolia, Leptadenia pyrotechnica, Saccharum bengalense, Sesamum indicum, Typha angustata,*
Socio-cultural	*Ficus amplissima, Mangifera indica, Polyalthia longifolia, Prosopis cineraria, Salvadora persica, Tagetes patula, Xeromphis spinosa*
Toothbrush	*Acacia nilotica, Azadirachta indica, Derris indica, Ficus benghalensis, Kirganelia reticulata*
Toys	*Millingtonia, hortensis, Sterculia urens*
Vegetables	*Abelmoschus esculentus, Allium cepa, Amaranthus lividus, Amorphophallus campanulatus, Beta vulgaris, Brassica oleracea* var. *botrytis, Brassica oleracea* var. *capitata Cajanus cajan, Capsicum annum, Chenopodium album, Coccinia grandis, Coriandrum sativum, Cucumis sativus, Cucurbita maxima, Cyamopsis tetragonoloba, Daucus carota, Ipomoea batata, Lablab purpureus, Lagenaria leucantha, Leptadenia reticulata, Luffa acutangula, Luffa cylindrica, Lycopersicon lycopersicum, Madhuca indica, Momordica charantia, Momordica dioica, Moringa oleifera, Murdannia nudiflora, Pisum sativum, Portulaca oleracea, Portulaca quadrifida, Raphanus sativus, Rivea hypocrateriformis, Solanum melongena, Solanum tuberosum, Spinacia oleracea, Trichosanthes dioica, Trigonella foenum-graecum, Vigna unguiculata,*
Veterinary medicinal uses	*Abutilon indicum, Acacia nilotica, Achyranthes aspera, Adansonia digitata, Adhatoda zeylanica, Aegle marmelos, Ailanthus excelsa, Allium cepa, Allium sativum, Aloe barbadense, Amaranthus spinosus, Anacardium occidentale, Anethum graveolens, Annona squamosa, Argemone mexicana, Aristolochia bracteoata, Azadirachta indica, Bauhinia racemosa, Bergia capensis, Brassica juncea, Caesalpinia crista, Calotropis*

	procera, Capparis sepiaria, Capsicum annuum, Cassia auriculata, Cassia fistula, Cassia italica, Cicer arietinum, Citrus limon, Clerodendrum multiflorum, Commiphora wightii, Coriandrum sativum, Cucumis callosus, Cucurbita maxima, Cuminum cyminum, Curcuma domestica, Cynodon dactylon, Datura innoxia, Datura metel, Dendrophthoe falcata, Echinochloa frumentacea, Eichhornia crassipes, Euphorbia neriifolia, Euphorbia thymifolia, Ficus benghalensis, Ficus religiosa, Gossypium herbaceum, Hibiscus cannabinus, Hordeum vulgare, Indigofera oblongifolia, Jatropha gossypifolia, Lawsonia inermis, Mangifera indica, Moringa oleifera, Murraya koenigii, Musa paradisiaca, Nicotiana tabacum, Oryza sativa, Pandanus odoratissimus,, Pennisetum typhoides, Ricinus communis, Salvadora persica, Sapindus laurifolius, Sesamum indicum, Solanum melongena, Solanum surattense, Tamarindus indica, Tephrosia purpurea, Terminalia bellirica, Terminalia chebula, Thevetia peruviana, Tinospora cordifolia, Trichodesma indicum, Trigonella foenum-graecum, Triticum aestivum, Vigna radiata var. *radiata, Vitex negundo, Waltheria indica, Zingiber officinale, Zizyphus nummularia,*

APPENDIX-V

ETHNOBOTANICAL SURVEY

Questionnaire

Form A

Place……...

Serial No…… Recorded by ……...

Informer Name……... Date ……...

Tribe …….. Remarks …….

Age …… …….

Sex …… ……

0.1 General Consideration.

0.1.1 Name of Tribe.

0.1.2 Location.

0.1.2.1 Name of Place, Village, Dist., State.

0.1.3 Environment.

1.0 Cultural Settings.

1.1 Area under forest.

1.1.1 Major forest produce (Give briefly; details to go in form B).

1.1.2 Minor forest produce.

1.1.3 Hunting.

1.1.4 Fishing.

1.1.5 Misc. forest produce.

1.1.6 Any forestry practice.

1.2 Area under cultivation.

1.2.1 Agricultural produce.

1.2.1.1 Major crops list.

1.2.1.2 Minor crops list.

1.2.1.3 Agricultural calendar.

1.2.2 Agricultural operations.

1.2.3 Agricultural Improvements.

1.3 Occupation other then agriculture

1.3.1 Main – Main Hrs.

1.3.2 Subsidiary months.

1.3.3 Cottage Industry.

1.3.4 The medicine man.

1.3.4.1 Personal particulars.

1.3.4.1.1 Name 1. Age

2. Sex

1.3.4.2 Method of prescription.

1.3.4.3 Surgery

1.4 Animal husbandry.

1.4.1 List of animals.

1.4.2 Feed requirements of animals.

1.5 Cultivable waste.

1.6 Non-cultivable area.

Information On Plants Used By Tribal People

Form B

Place, State, Distt., Village …… Reporter ……...

……...

Tribal or family …….. Date …….

Informer Name …….

Tribe / Caste …….

Age ……. Sex ……..

Timbers

0.1 Tools.

- 0.1.1 Tools in agriculture.
- 0.1.2 Tools in hunting.
- 0.1.3 Tools in collecting wild foods, etc.
- 0.1.4 Tools in weaving.
- 0.1.5 Tools in spinning.
- 0.1.6 Tools in dyeing.
- 0.1.7 Tools in painting.
- 0.1.8 For wood work.
- 0.1.9 For basketry.
- 0.1.10 For pottery.
- 0.1.11 For fishing.
- 0.1.12 Tools in forestry.

0.2 Utensils used for cooking and eating.

0.3 Cart Building.

0.4 Furniture etc.

0.5 Toys and carving

1.0 Food.

- 1.1 Normal human diet.
  - 1.1.1 Cereals.
  - 1.1.2 Pulses.
  - 1.1.3 Vegetables

1.1.3.1 Leafy

1.1.3.2 Roots & Tubers

1.1.3.3 Other vegetables.

1.1.4 Oils & Fats.

1.1.5 Fruits.

1.1.6 Condiments.

1.1.7 Milk.

1.1.8 Egg, Fish etc.

1.1.9 Sweets.

1.1.10 Taboos.

1.2 Special diet.

1.2.1 For sick.

1.2.2 For expectant mothers.

1.2.3 For nursing mothers.

1.2.4 For old and invalids.

1.2.5 For guests.

1.2.6 On festivals and ceremonies.

1.2.7 During fasts.

1.3 Miscellaneous actions about food.

1.3.1 Offerings to God before meals.

1.3.2 Bathing or any other action essential before meals.

1.3.3 Posture while eating.

1.3.4 Any particular action after food, i.e. smoking, sleep, rest etc.

1.4 Fodders.

1.4.1 Cultivated.

1.4.2 Wild.

1.5 Any foods offered to deities.

1.5.1 As a usual practice.

1.5.2 On festivals.

1.5.3 Distributed as Prasad of Gods.

2.0 Plants used in medicine :

Local Name	Bot. Name	Part Used	How medi cine prepared	How used	Source

3.0 Dyes & Tans.

4.0 Fuel and light.

5.0 Waxes, detergents.

6.0 Perfumes, oils.

7.0 Resins, gums, mucilage.

8.0 Insecticides.

9.0 Beverages.

10.0 Miscellaneous.

11.0 Fibres used

12.0 Plants used for ornaments.

- 12.1 Natural cosmetics.
- 12.2 Natural colours.
- 12.3 Natural beads.

13.0 Any other unusual utilization or application of plants.

Note : Translated version of Gujarati questionnaire.