

**Medicinal importance of underground plant parts from Fatehpur district, Uttar Pradesh, India**

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Abstract

Medico botanical investigation on underground plant parts utilised by the inhabitants for their health care in Fatehpur district of Uttar Pradesh, India was conducted. A total of 15 plant species distributed to 13 families are documented for their therapeutic uses. Most of the species are in local distribution and few species were cultivated in gardens. The study revealed that the area is rich in indigenous knowledge about the medicinal uses of plants. However, it is getting eroded rapidly due to modern cultural changes.

Key-Words: Medicinal uses, Underground parts, Fatehpur, U.P.

Introduction

Human life has directly or indirectly been associated with and affected by their environment. Human beings and plants share an age old relationship. Primitive man directly depended on nature (plants) not only for food but also for fodder, fuel and medicine. Curative properties of plants in India has been documented in ancient manuscripts because they are essential for human survival (Shastri and Chaturvedi, 1996). The reference to the potential of plants and herbs to cure human ailments and diseases in Rig Veda seems to be the earliest records. The Rich and diversified flora of India provides a valuable store house of medicinal plants. Many of today's drugs have been derived from plant sources. Over 400 tribal and other ethnic groups in India constitute about 7.5% of India's population. Besides them, forest dwellers and rural people also possess unique knowledge about plants (Jain, 1991). This traditional knowledge is handed down to generations orally and is extensively used for the treatment of common ailments. Some such tradition has still remaining among urban society. In recent past, attention has been paid on various aspects of ethno medico botany in Uttar Pradesh, where some areas bear very rich medicinal flora (Saxena and Vyas, 1981; Singh and Maheswari, 1983; Singh et al. 1987; Siddique and Husain, 1994; Khanna, 2002; Singhet al. 2002; Maliya, 2004; Jyotsana et al. 2010; Kapoor, 2010; Nigam and Sharma, 2010; Tiwari and Pandey, 2010; Chaudhary et al. 2011; Dar Bilal, 2011; Verma and Sharma, 2011; Kumar and Kumar, 2012; Semwal et al. 2012).

But, a limited work on ethnobotanical information of underground plant parts has been carried out in India by Swarnkar and Katewa (2008) in Rajasthan; Mall (2009) in North Central Tarai Forests of U.P. and Jyoti et al. (2011) in Andhra Pradesh. Therefore, present investigation has been taken in hand to document the medicinal importance of underground plant parts from district Fatehpur, U.P., India. The underground plant parts are generally storage organs below the soil surface. These organs may be a true bulb, corm, tuber, tuberous roots, rhizome or stolon. These parts have dual significance, firstly they can be used as food and secondly these have medicinal value. Carbohydrate and nutrient reserve are stored in these plant parts to support the growth of plant after the environmental stress.

Study area

Study area lies 122 km. south east from capital Lucknow of U.P. To its north is River Ganges- District Unnao and Rae-Bareilly; River Yamuna in south with district Hamirpur and Banda; Kanpur in west and Kaushambi and Allahabad in east. It covers total area of 4152 sq km. between 26.16 North latitude and 81.20 East longitudes at an elevation of 114.66 mt. above sea level. Climate is sub tropical. Seasonal variations is well marked with three seasons in the year – summer (March to June), rainy (July to September) and winter (October to February). It resembles the climate of Bundelkhand in south region and Awadh in north.

Methodology

Survey was conducted on different areas of the district. Collected plants were identified with the help of available literature (Duthie, 1960; Hooker, 1973). Informations were collected through interview and

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discussion with local inhabitants. Medicinal uses of collected plants were then crosschecked from relevant literature available (Nadkarni, 1908; Kirtikar and Basu, 1933, Chopra et.al.1956; Dastur, 1962, Jain,1991).

Results and Discussion

In the present study, 15 plant species belonging to 13 families (7 dicots and 6 monocots) were commonly used by natives of Fatehpur. Most of the species were cultivated in local places including home gardens. The data on botanical name, family, local name, plant parts used and their ethno-food and ethno-medicinal uses are tabulated in Table-1. The study concluded that despite dense urbanization, underground plant parts still play a key role in human health care and the local people of the district have preserved large bulk of knowledge on use of underground parts supporting the findings of Swarnkar and Katewa(2008); Mall(2009) and Jyoti et. al.(2011). The traditional medicinal practice is alive well due to belief in its effectiveness, little/no side effects and its cost effectiveness. However, this knowledge bank is vanishing fast as the current generation is not showing the same response as shown by the past generations. A generation gap is developed between generations due to change in family structure from joint to nuclear with change of life style. Another reason is lack of belief of young generation in traditional medicine system and increasing use of allopathic medicine due to their availability and efficacy. Therefore, documenting indigenous knowledge through ethnomedicinal studies is in dire need for conservation and utilization of natural resources from the area before inhabitants shift over to modern life style.

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Table 1: Medicinal Uses of underground plant parts

	Botanical name	Local name	Family	Parts used	Medicinal uses
1.	<i>Allium cepa</i> L.	Pyaz	Amaryllidaceae	Bulb	Largely eaten as vegetable. Stimulant, diuretic, good for dysentery and flatulence.
2.	<i>Allium sativum</i> L.	Lahsun	Amaryllidaceae	Bulb	Bulbs eaten as a flavouring agent for vegetables. Cooked in mustard oil for massage in joint pains and inflammation. Power up immune system, cleans blood, as antibiotic and antifungal.
3.	<i>Arachis hypogea</i> L.	Moong-phali	Papilionaceae	Under ground pod (see ds)	Eaten raw or boiled or roasted, high in protein and magnesium, contribute to brain health and blood flow. Oil with monosaturated content good for health.
4.	<i>Asparagus racemosus</i> L.	Satawar	Liliaceae	Root tubers	Given in form of juice and powder for increasing lactation in nursing mother. Bleeding from nose, blood in urine, anthelmintic, in cutaneous diseases, diarrhoea and dysentery, rheumatism.
5.	<i>Beta vulgaris</i> L.	Chukander	Chenopodiaceae	Root	Beat juice is very nourishing and recommended for anemia. Eaten raw as salad.
6.	<i>Canna indica</i> L.	Keli	Cannaceae	Tuberous root	Young tubers eaten cooked. Contains starch used as arrowroot in thickening of puddings. Grown as

					an ornamental plant in gardens. Used as diuretic, stimulant, in women complaints.
7.	<i>Colocassia esculenta</i> (L.)Schott.	Arvi	Araceae	Corm (stem)	Used as vegetable, mixed with cumin powder to relieve piles. Corm used in sting of bees.
8.	<i>Crinum latifolium</i> L.	Sukh darshan	Amaryllidaceae	Bulb	Bulbs largely cultivated for ornamental purposes. Applied to piles, in rheumatism.
9.	<i>Curcuma longa</i> L.	Haldi	Zingiberaceae	Rhizome	Used as condiment. It is an auspicious article in all religious ceremonies in Hindu households. Mixed with warm milk and used in common cold. Juice of fresh rhizome is used as an antiseptic and antiparasitic for many skin diseases. Externally on indolent ulcers and a paste made from the powdered rhizome along with lime forms a remedy for inflated joints.
10	<i>Daucus carrota</i> L.	Gajar	Apiceae	Root	Roots used as a vegetable salad and pickle. Made into jam and Halawa. Juice is taken orally to strong eyesight. Increases the quality of urine.
11	<i>Ipomea batatus</i> (L.)Lam.	Sakar kandi	Convolvulaceae	Tuberous root	Root rich in carbohydrate. Consumed as fresh boiled or baked. Helps in repairing body tissues, lowering blood pressure and normalizing blood sugar level. Beneficial for vision and eye health. Protect from infection. It is a laxative.
12	<i>Nelumbo nucifera</i> Gaertn.	Kamal kakri	Nympaeaceae	Rhizome	Eaten as vegetable. Used in piles, chronic dyspepsia. Rhizome arrowroot given to children in diarrhoea and dysentery.
13	<i>Raphanus sativus</i> L.	Mooli	Cruciferae	Tuberous root	Roots are eaten raw as salad as well as vegetable. used for urinary complaints, piles and gastrodynic pains.
14	<i>Solanum tuberosum</i> L.	Aloo	Solanaceae	Tuber	Rich source of starch and used as a staple food. Slice of raw potato can be used directly over the burn to draw heat and pain from burned area. Used to relieve pain and swelling from an insect sting. Tubers being alkaline help to detoxify and balance excess acidity in body. Help to encourage healthy blood circulation and regulate blood pressure leading to a healthy heart.
15	<i>Zingiber officinale</i> Rose.	Adrakh	Zingiberaceae	Rhizome	It is eaten in various ways. Used as a stimulant, carminative and flavouring agent. Given in colic.