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# Some Folk Antidiabetic Medicinal Herb of Himachal Pradesh

*Monika Rana and Meenakshi Rana*

## Abstract

The Prevalence of Diabetes Mellitus (DM) is increasing day by day at an alarming worldwide. As per the statics of International Diabetic Federation, currently worldwide approximately 463 million adults (20–79 years) affected with diabetes that is expected to increase rise to 700 million by 2045. Diabetes and its complications imposes an economic loss to people with diabetes and their families, and to health systems and national economy. Diabetes is a complex disease which link with multiple of factors. Present reviewdocument the information of traditional used Antidiabetic plants by the inhabitants of Nadaun, District Hamirpur, Himachal Pradesh, India. During the survey 31 Medicinal Plants have been documented on the basis of information collected from the respondents of the study area.

**Keywords:** diabetes, ayurveda, Himachal Pradesh, traditional medicines

## 1. Introduction

Diabetes mellitus (DM) is a serious lifelong disease characterized by elevation of blood glucose level in the body resulting from the defects in insulin secretion and insulin resistance [1, 2]. The global diabetes prevalence for all age-groups was estimated to be 9.3% in 2019 rising to 10.2% in 2030. The prevalence is lower in rural than the urban areas [3]. The total number of people with diabetes is estimated to rise from 171 million in 2000 to 366 million in 2030. Among DM, about 90 percent of population affected with Type 2 DM [4]. In addition to hyperglycemia, diabetes also associated with various vascular complications, which are the major causes of morbidity and death in diabetic Patients [5].

In Ayurveda Diabetes Mellitus (DM) is referred to as Madhumeha (means sweet urine disease). Madhumeha consists of two words-‘madhu and meha’ where ‘madhu’ denotes sweetness and ‘meha’ stands for urination. In Ayurveda, plants are known to be excellent source of drugs. Plant based drugs have been in use against various diseases since time immemorial. There is large number of drugs of herbal origin mentioned in Ayurveda texts, which were advised for treatment of Madhumeha [6]. Even today a huge number of population in the world used the medicinal plants for the treatment of Diabetes Mellitus [7]. As the incident and severity of Diabetes is increasing worldwide, it imposes an huge economic loss to people with diabetes and their families, and to health systems and national economy [8]. The importance of traditional plant medicines from the last decade goes on increasing with both medical and economic implications [9]. On the other hand the chemically synthetic hypoglycaemic agents used for the treatment of diabetes are not only expensive but also cause various complications and side effects to the health [10].

## 2. Materials and methods

Nadaun is a small town in Hamirpur district, located in central Himachal Pradesh, India, right near Beas River. The Town is situated between  $76^{\circ}18'$  –  $76^{\circ}49'$  East longitude and  $31^{\circ}52'30''$  North Latitudes. The track is hilly covered by Shivalik range and the elevation varies from 450 to 11,000 meters. As per the census of India 2011, it has a population of 4430. The Climate is characterized by an intensely hot summer, a pleasant cold season. The summer season from March to about middle of June is followed by the south-west monsoon season from mid-June to the end of September. October and first half of November constitute the post-monsoon period. The cold season is from mid-November to February. The minimum and maximum day time temperature varies between  $20^{\circ}$  and  $42^{\circ}$ . People in this region can easily understand Hindi and can communicate in that language.

In order to document the record frequent field surveys were conducted many times (**Figure 1**). A questionnaire contains the details of the plants, parts used, medicinal uses and mode of preparation of remedies is structured and informal talks were employed to gain the information about the use of plants as Antidiabetic. Any statistical survey is not used in the given study.



**Figure 1.**  
*Field survey.*

## 3. Result and discussion

Ethnobotany may be defined as the scientific study of the dynamic relationship between various plants and people. The present study highlighted the traditional herbal medicine used for the treatment of diabetes in the particular selected study area. During the survey, around 50 people, mostly old aged persons, were selected randomly for the study. Information of plants along with their common name, useful part, time of availability, mode of preparation and consuming is documented (**Table 1**). All the plants are photographed as a record (**Figure 2**). Most of the recorded plants are available from the wild growth, and some are cultivated by the local villagers. Mostly plant materials are preserved in dry powder form as these are available only in a particular season. Various methods of preparation of these herbal remedies were recorded during the study. The preparations were also consumed by the people in the form of juice, churna, chutney and chapattis. In the present study we found that people have a close relationship with the nature for their health care. As the importance of ethnobotanical studies goes on increasing day

S.No	Botanical name	Family	Local name	Part of plant	Antidiabetic use
1	<i>Acacia catechu</i>	Fabaceae	Khair	Heartwood	Katha (extract of heartwood)
2	<i>Aegle marmelos</i>	Rutaceae	Bil	Fruit, leaf	Fruits eaten as a powder, leaf consumed empty stomach early in morning
3	<i>Allium cepa</i>	Liliaceae	Pyaz	Bulb	As salad, and as chutney
4	<i>Allium sativum</i>	Liliaceae	Lehsun	Bulb	Bulbs are consumed empty stomach in early morning.
5	<i>Aloe vera</i>	Liliaceae	Kwar	Leaf	Juice is consumed
6	<i>Azadirachta indica</i>	Meliaceae	Neem	Leaf	Tendor leaves are used
7	<i>Berberis aristata</i>	Berberidaceae	Kashmal	Bark	Decoction of bark with water
8	<i>Carica papaya</i>	Caricaceae	Papita	Fruit	Ripe fruit is consumed
9	<i>Carissa spinarum</i>	Apocynaceae	Garnu	Fruit	Ripe fruit is consumed
10	<i>Colocasia esculenta</i>	Araceae	Arbi	Leaf	Cooked
11	<i>Curcuma longa</i>	Zingiberaceae	Haldi	Rhizomes	Dry rhizomes powder consumed with milk
12	<i>Gymnea sylvestre</i>	Apocynaceae	Gudmar	Leaf	Consumed as powder
13	<i>Lagenaria siceraria</i>	Cucurbitaceae	Lauki	Fruit	Juice of fruit is used with amla juice and also cooked as vegetable
14	<i>Momordica charantia</i>	cucurbitaceae	Karela	Fruit	Used as vegetable and juice
15	<i>Mentha arvensis</i>	Lamiaceae	Pudina	Leaf	As juice, and chutney
16	<i>Murraya koenigii</i>	Rutaceae	Gandhla	Leaf	Fresh leaves consumed empty stomach in morning
17	<i>Ocimum sanctum</i>	Lamiaceae	Tulsi	Leaf	Decoction of leaf with water
18	<i>Phyllanthus emblica</i>	Euphorbiaceae	Amla	Fruit	Ripe fruit consumed, and as dry fruit powder
19	<i>Pogostemon benghalensis</i>	Lamiaceae	Kali Basuti	Leave	Fresh leaves are used
20	<i>Prunus persica</i>	Rosaceae	Aadu	Fruit	Ripe fruits are consumed
21	<i>Psidium guajava</i>	Myrtaceae	Amrood	Fruit	Ripe fruit is consumed
22	<i>Syziium cumini</i>	Myrtaceae	Jamun	Fruit	Fresh fruits is consumed, seed used as powder

S.No	Botanical name	Family	Local name	Part of plant	Antidiabetic use
23	<i>Terminalia ballerica</i>	Combretaceae	Bahera	Fruit	As powder
24	<i>Terminalia chebula</i>	Combretaceae	Harda	Fruit	As powder
25	<i>Tinospora cardifolia</i>	Menispermaceae	Giloe	Stem	Powder is consumed in empty stomach
26	<i>Trigonella foenumgraceum</i>	Fabaceae	Methi	Seed	Seeds are consumed as powder with water in empty stomach and overnight soaked with water
27	<i>Triticum aestivum</i>	Poaceae	Kanak	Plant	Plant juice is used, and consumed as sprouted
28	<i>Vinca rosea</i>	Apocynaceae	Sadavahar	Leaf	Fresh leaves and leaves powder used as treatment
29	<i>Vitex negundo</i>	Lamiaceae	Vana	Leaf	Tendor leaves used
30	<i>Zingiber officinalis</i>	Zingiberaceae	Sonth, adrak	Rhizomes	As such, and as pickle
31	<i>Ziziphus jujuba</i>	Rhamnaceae	Ber	Fruit	Ripe fruit used

**Table 1.**  
Antidiabetic plants recorded from Nadaun, Hamirpur District.







**Figure 2.**  
*Plants used traditionally for the treatment of diabetes.*

by day, it is mandatory preserve the information's about the knowledge of folk-lore medicinal plants which is use by local communities before it is permanently disappear.

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