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Review Article

# SOME ANTIDIABETIC ETHNIC PLANTS OF INDIA

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### ABSTRACT

Diabetes is one of the most dangerous diseases of today. India is one of the richest floristic regions of the world and globally known for traditional folk and herbal remedies. In the Indian system of medicine there are many plants which have been used to cure diabetes. Thirty ethnic plant species have been selected for this research work. The observations and information related to utility gathered from different communities of our society and compiled in this article, which will be very useful in pharmacology and pharmaceutical fields.

**Keywords:** Antidiabetic, Ethnic plants, India, Folk and herbal remedies.

### INTRODUCTION

Diabetes is one of the most dangerous diseases of today. It is the result of busy and lethargic life, bad habits of eating fast food are also responsible for its spread at global level. This disease gradually weakens the immune system and causes clinical complications in human body. In the Indian traditional system of medicine there are many plants which have been used to cure diabetes. India has oldest cultural tradition called "folk tradition" associated with the use of herbal plants based on indigenous beliefs, knowledge, skills and cultural practices concerned with human health. The whole world has utilized our age-old Vedic knowledge of plants by giving latest scientific back-up and also patenting our herbal plant wealth.

Since times immemorial plants have been a rich source for therapeutics. The earliest reference of the medicinal use of plants has been found in "*Rigveda*" (3500-1800 B.C.). In "*Atharva Veda*" we find the more varied use of drugs. It is the "*Ayurveda*" which is the ancient Indian system of medicines fully recognizes and utilizes the medicinal properties of plants. "*Charak Samhita*" is another earliest treatise on "*Ayurveda*" (1000 B.C.) which lists a total of 341 plants and plant products following use in health management. "*Sushruta Samhita*" (600 B.C.) also dealt with plants related to medicine. In India the indigenous system of medicines namely Ayurvedic, Siddha and Unani have been in existence from several centuries. Apart from India these systems are prevalent in Korea, China, Singapore, West Asia and many other countries.

The work of isolation of active principles from medicinal plants and characteristics can be traced to the beginning of 19th century. From crude drug Ma Huang (*Ephedra* Spp.) of China ephedrine was isolated in 1887 and later introduced as drug in 1925. Likewise from opium (*Papaver somniferum*) morphine was isolated in 1804 and introduced as drug in 1818. From *Cinchona* spp. of Peru, quinine was isolated in 1820 and introduced as drug in 1825.

During the past so many years, information on ethnomedicinal plants of India have been compiled and recorded by a number workers.<sup>1-21</sup>

### OBSERVATIONS AND DISCUSSION

Thirty important antidiabetic ethnic plants of our country have been selected and their enumerations are as follows:

1. ***Abrus precatorius* Linn.**

**Family:** Fabaceae

**Local Name:** Chirmi, Rati

**Parts Used:** Leaves

**Use & Dosage:** Leaf juice given twice a day for 25 days.

2. ***Abutilon indicum* Linn.**

**Family:** Malvaceae

**Local Name:** Atibala, Kanghi

**Parts Used:** Leaves

**Use & Dosage:** Seven leaves raw are eaten for seven days.

3. ***Acacia senegal* (Linn.) Willd.**

**Family:** Mimosaceae

**Local Name:** Khair, Kumat

**Parts Used:** Gum

**Use and Dosage:** Gum prescribed as a part of food for diabetic patients.

4. *Achyranthes aspera* Linn.

**Family:** Amaranthaceae

**Local Name:** Apaamarg, Undho kanto

**Parts Used:** Whole plant

**Use and Dosage :** The whole plant is used to control diabetes.

5. *Allium cepa* Linn.

**Family:** Liliaceae

**Local Name:** Piyaz, kanda

**Parts Used:** Leaves, Bulb

**Use and Dosage:** Regular use of onion 50 gm per day reduces insulin requirement of a diabetic patient from 40 to 20 units a day. Leaf juice two spoonfuls twice a day for a long time reduces the diabetes.

6. *Aloe vera* Linn.

**Family:** Liliaceae

**Local Name:** Ghritkumari, Gwarbhata

**Parts Used:** Succulent Leaves

**Use and Dosage:** Decoction of Leaves is taken to control diabetes.

7. *Aristolochia bracteolata* Lamk.

**Family:** Aristolochiaceae

**Local Name:** Kalipad, Gandan, Pattra-bunga

**Parts Used:** Leaves

**Use and Dosage:** Powdered leaves one teaspoonful is taken with water, daily in the morning.

8. *Asparagus racemosus* Willd.

**Family:** Liliaceae

**Local Name:** Satawari, Satamuli

**Parts Used:** Leaves

**Use and Dosage:** Boiled tuberous roots are eaten once a day or powdered tuberous roots mixed with powdered leaves of *Gymnema sylvestra* have been found to be effective against diabetes.

9. *Azadirachta indica* A.Juss.

**Family:** Meliaceae

**Local Name:** Neem, Nimba,

**Parts Used:** Bark,Leaves, Flowers, Neem oil,

**Use and Dosage:** Juice of stem-bark is mixed with equal amount of fresh cow's milk, taken for seven days early in the morning on empty stomach. Bark soaked in water overnight, taken regularly; roasted bark powder with butter milk for 40 days, once a day and roasted flowers also reduces blood sugar. Chewing 4-5 leaves daily can control diabetes. Decoction of equal amount of dried, powdered leaves of bel (*Aegle marmelos*), neem and tulsi (*Ocimum sanctum*) is given to control diabetes.

10. *Bacopa monnieri* (Linn.) Wettst.

**Family:** Scrophulariaceae

**Local Name:** Brahmi, Baam

**Parts Used:** Leaves

**Use and Dosage :** Leaf juice given twice a day for one month for controlling diabetes.

11. *Boerhaavia diffusa* Linn.

**Family:** Nyctaginaceae

**Local Name:** Punarnava, santa

**Parts Used:** Whole plant

**Use and Dosag :** Two spoonful of juice is given twice a day for 40 days.

12. *Butea monosperma* (Lamk.) Kuntze.

**Family :** Fabaceae

**Local Name:** Palas, Dhauk, Tesu

**Parts Used:** Leaves, Stem, Flowers

**Use and Dosage:** Decoction of stem and leaves two glassful given daily to control diabetes. Extract of seven flowers soaked in 500 ml. of water overnight should be given in the morning for 5-6 weeks.

13. *Calotropis procera* Br.

**Family:** Asclepiadaceae

**Local Name:** Aak, aakro, Madak

**Parts Used:** Roots

**Use and Dosage:** Extraction of roots is given to control diabetes.

14. *Carica papaya* Linn.

**Family:** Caricaceae

**Local Name:** Papeeta, Hajarkakri

**Parts Used:** Leaves, Fruits

**Use and Dosage :** Juice of green fruits taken twice a day and a few latex drops also swallowed with boiled water to control diabetes.

15. *Cassia fistula* Linn.

**Family:** Fabaceae

**Local Name:** Amaltas, Sanbati

**Parts Used:** Leaves, Fruits, Stem bark

**Use and Dosage:** Powdered Leaves are taken with milk, given twice a day for 20 days.

16. *Catharathus roseus* (Linn.) G.Don.

**Family:** Apocyanaceae

**Local Name:** Sadabahar

**Parts Used:** Root bark

**Use and Dosage:** Eating raw root bark can control diabetes..

17. *Centella asiatica* Linn.

**Family:** Apiaceae

**Local Name:** Brahmi-buti, Phuladi

**Parts Used:** Leaves, whole plant

**Use and Dosage:** Juice of leaves or whole plant is given to control diabetes.

18. *Cinnamomum tamala* (Buch.Ham.) Nees.

**Family:** Lauraceae

**Local Name:** Tamal, Tejpatta, Tejpatra

**Parts Used:** Leaves

**Use and Dosage:** Powdered leaves one teaspoonful thrice a day for one month reduces blood sugar and promotes insulin secretion.

19. *Citrullus colosynthis* (Linn.) Schard.

**Family:** Cucurbitaceae

**Local Name:** Indaryan, Tumba

**Parts Used:** Roots, Fruits, Seeds

**Use and Dosage:** Roots, fruits and seeds taken raw or after making paste can control diabetes..

20. *Cleome viscosa* Linn.

**Family:** Capparaceae

**Local Name :** Arkakanta  
**Parts Used :** Whole plant  
**Use and Dosage :** Whole plant juice is used to control diabetes. .

21. *Clitoria ternatea* Linn.

**Family:** Fabaceae  
**Local Name:** Aparajita, Vishnu-kranta, Gokarni  
**Parts Used:** Flowers  
**Use and Dosage:** Flower juice is given for controlling diabetes.

22. *Coccinia grandis* ( Linn.) Voigt.

**Family:** Cucurbitaceae  
**Local Name:** Bimla, Kanduri, Tindori  
**Parts Used :** Roots, Leaves, Fruits, Whole plant  
**Use and Dosage:** Aqueous extract of roots, leaves and mucilage from young fruits is given twice or thrice a day to control diabetes.

23. *Coriandrum sativum* Linn.

**Family:** Apiaceae  
**Local Name:** Dhanyaka, Dhania  
**Parts Used:** Leaves  
**Use and Dosage:** Half a cup of freshly prepared infusion from 100gm. Leaves is taken on empty stomach every morning, 30 minutes before breakfast for 20-30 days.

24. *Ficus benghalensis* Linn.

**Family:** Moraceae  
**Local Name:** Bargad, Barh  
**Parts Used:** Prop roots  
**Use and Dosage:** Regular chewing of prop root tips can control diabetes.

25. *Foeniculum vulgare* Gaertn.

**Family:** Apiaceae  
**Local Name:** Madhurika, Saunf  
**Parts Used:** Seeds  
**Use and Dosage:** Powdered seeds ½ teaspoonful is taken with water daily in the morning to control diabetes.

26. *Gymnema sylvestre* (Retz.) R.Br.

**Family:** Asclepiadaceae  
**Local Name:** Madhunashini, Gurmar  
**Parts Used:** Leaves  
**Use and Dosage:** Leaves either chewed or its 15-30 gm. Of powder is taken with water to control diabetes.

27. *Hibiscus rosa-sinensis* Linn.

**Family:** Malvaceae  
**Local Name:** Japa- pushpam, Gurhal  
**Parts Used:** roots, Buds  
**Use and Dosage:** One young bud is chewed and eaten per day, early in the morning before taking meals for 10 days or until the level of sugar reduces to the tolerance.

28. *Momordica charantia* Linn.

**Family:** Cucurbitaceae  
**Local Name:** Karavella, Sushavi, Karela  
**Parts Used:** Fruits  
**Use and Dosage:** Vegetable of its fruits or fruit paste in water one teaspoonful in empty stomach or raw fruits are taken every morning with water reduces blood sugar.

29. *Syzygium cuminii* ( Linn.) Skeel.

**Family:** Myrtaceae

**Local Name:** Jambu, Jamun

**Parts Used:** Bark, Seeds, Fruits

**Use and Dosage:** Decoction of bark useful against diabetes. 3-5gm. Powdered seeds, thrice a day, for 3-4 months with butter are taken daily in the morning. Mature fruits raw are also taken to reduce sugar level. The leaves and seeds are used to control diabetes. The gum obtained from big trees is also used regularly to control diabetes.

30. *Trigonella foenum graecum* Linn.

**Family:** Fabaceae

**Local Name:** Methi

**Parts Used:** Seeds

**Use and Dosage:** Chewing seeds with close mouth in morning can control diabetes..

### CONCLUSION

Analysis of data related with 30 indigenous antidiabetic plants reveals that ethnic people of India have been using these plants and their parts in the form of decoction, infusion, extract, paste and powder for the traditional system of herbal medicines for treatment of diabetes.

By proper formulations, phytochemical analysis and clinical trials, these plants can be useful for drug and pharmaceutical industries to help mankind to fight against this most dreaded disease diabetes.

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