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## Ethnobotanical Values of Antidiabetic Plants of M.P. Region, India

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### Abstract

Diabetes mellitus is the leading cause of death after heart disease & cancer in many developed countries. The complications of diabetes affect the eye, kidney, and nervous system. Diabetes is a major cause of blindness, renal failure, amputation, heart attacks and stroke. Diabetes mellitus is a clinical condition characterized by increased blood glucose level (hyperglycemia) due to insufficient or inefficient insulin. An important feature of diabetes is that the body cells are starved of glucose despite its very high concentration around i.e, scarcity in plenty. Plants have been used both in the prevention and cure of various diseases of humans and their pets. With the advent of human civilization, many systems of therapy have been developed primarily based on plants. Ayurveda, Homeopathy, Sidda, Unani etc. are our traditional systems of medicines. Many wild plants have also been used for medicinal purposes and some of them considered to be poisonous.

**Keywords:** Diabetes mellitus, Ayurved, Homeopathy, Sidda, Unani, Blindness.

### Introduction

Ethnobotany is the study of the relationship between plants and people: From "ethno" - study of people and "botany" - study of plants. Ethnobotany is considered a branch of ethnobiology. Ethnobotany studies the complex relationships between plants and cultures. Ethnobotany is a multidisciplinary science defined as the interaction between plants and people. The relationship between plants and human cultures is not limited to the use of plants for food, clothing and shelter but also includes their use for religious ceremonies ornamentation and health care. In the past, ethnobotanical research was predominately a survey of the plants used by villagers. A trained botanist identified the plants and recorded their uses. Sometimes an anthropologist was present to translate the disease descriptions, but rarely was a physician available to identify the disease. Medicinal plants used to treat hypoglycemic or hyperglycemic conditions are of considerable interest for ethno-botanical community as they are recognized to contain valuable medicinal properties in different parts of the plant and numbers of plants have shown varying degree of hypoglycemic and antihyperglycemic activity. People uses wild plants in many types of different way to meet his basic needs such as food, shelter and clothing, this is the basic need of human. Plants are used as a medicine for treatment of internal and external diseases. In developed countries such as United States, Canada, Germany, Australia and New Zealand 20-25% medicinal plant drugs constitute of the total drugs, while in the fast developing countries such as China, India, Brazil, Indonesia and Russia 80-85% much contribution is in countries. There are 250000 higher plant species are known in the earth, more than 85,000 plant species are medicinal. Collection of information and documentation of traditional knowledge plays an important role in scientific research on drug development. WHO depicts that over 80% of world's population depends on biological resources for their primary healthcare demands. Diabetes is a metabolic syndrome of etiologies characterized by chronic hyperglycemia with abnormalities in carbohydrate, fat and protein metabolism due to defect in insulin secretions. Diabetes is associated with long term damage such as malfunction of eyes, kidneys, nerves, heart and blood vessels.

Different types of diabetes mellitus have been identified and categorized as:

- 1. Type I diabetes:** It is also referred as IDDM (Insulin dependent diabetes mellitus or Juvenile diabetes). Type I DM results from the body's failure to produce insulin and requires the person to inject insulin.

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2. **Type II diabetes:** It is also referred as NIDDM (Non-insulin-dependent diabetes mellitus or “adult-onset” diabetes). Type II DM results from insulin resistance, a condition in which cells fails to use insulin properly which sometimes combined with absolute insulin deficiency.
3. **Gestational Diabetes:** Is when pregnant women, who have never had diabetes before, have a high blood glucose level during pregnancy. It may precede development of type NIDDM i.e. non-insulin dependent diabetes mellitus. Other forms of diabetes mellitus include congenital diabetes, which is due to genetic defect of insulin secretion, cystic fibrosis related diabetes, steroid diabetes induced by high dose of glucocorticoids and several forms of monogenic diabetes.

### Material and Method

Bhopal region is one of the important regions of Madhya Pradesh. Many types of medicinal plants (Tree, Herb, & Shrub) are found in Bhopal region. Bhopal is very forward area but here also used people medicinal plants for various treatments. Mostly peoples are dependent on the medicinal plants and this region is also rich in medicinal plants. Before survey of medicinal plants our main goal is the study of that area then surveyed the medicinal plants having antidiabetic activity. The survey started from July 2012 to September 2013. Then collected plants were identified taxonomically using the Indian medicinal plant literature to ascertain the nomenclature. Medicinal plants used for the treatment of different types of diseases by local peoples of Bhopal region, Madhya Pradesh. Vindiya Herble also used medicinal plants for making medicine. After survey and local people give information of some antidiabetic plants On the basis of survey, people information and also field guides help these are some antidiabetic plants.

### *Aegle marmelos (correa)*

**Local Name** : Bel  
**Family Name** : Rutaceae  
**Parts used** : Fruit  
**Medicinal Properties** : Aphthamia, Alterative, Anti-scorbutic, Carminative, Cholera, Colic, Cooling, Diabetes, Diarrhea, Digestive, Dysentery, Fever, Heart tonic, Jaundice, Nutritive, Respiratory disorders.

### *Azadirachta indica A. juss*

**Local Name** : Neem  
**Family Name** : Meliaceae  
**Parts used:** Leaves, bark  
**Medicinal Properties** : Anthelmintic, Antifungal, Antibacterial, Antiviral, Antiseptic, Asthma, Chicken pox, Contraceptive, Cosmetics uses, Cough, Diabetes, Eye Disorders, Fever, Healthy hair, Leprosy, Malaria, Pain, Skin diseases, Toothbrush, Tongue cleaner, Urinary disorders, Ulcer, Wounds.

### *Butea monosperma (Lam.) Kuntz*

**Local Name** : Palas  
**Family Name** : Papilionaceae  
**Parts used** : Whole plant  
**Medicinal Property** : Bleeding piles, Diabetes, Diarrhea, Dysentery, Eczema, Huemorrhages, Infusion, Leucorrhoea, Pimples, Ringworms, Skin ulcers, Sores, Swellings, Vaginal disease

### *Catharanthus roseus (L.) G. Don*

**Local Name** : Sadabahar  
**Family Name** : Apocynaceae  
**Parts used** : Leaves, Flower, Root  
**Medicinal Properties** : Anti-Cancer, Asthma, Diabetes, Dysentery, Dyspepsia, High blood Pressure, Leukemia, Low blood pressure, Lymphoma, Menorrhagia, Malaria, Purgative, Tootache.

### *Carica papaya (Linn)*

**Local Name** : Papita  
**Family Name** : Caricaceae  
**Parts used** : Fruit, seed  
**Medicinal Properties** : Abdominal disorders, Amenorrhoea, Atherosclerosis, Cancer, Dengue Fever, Diabetic, Diarrhoea, Dysentery, Dyspepsia, Heart attacks, Heart Disease, High blood pressure, Hyperacidity, Malaria, Strokes, Wounds.

### *Cassia fistula (Linn)*

**Local Name** : Amaltas  
**Family Name** : Caesalpiniaceae  
**Parts used** : Fruit, leaves, root-bark, stem-bark  
**Medicinal Properties** : Antioxidant, Blood sugar, Blood purification, Cold, Cough, Diabetes, Fever, Leprosy, Pyoderma, Ringworm, Skin disease, Ulcer, Wounds.

### *Curcuma longa L.*

**Local Name** : Haldi  
**Family Name** : Zingiberaceae  
**Parts used** : Whole plant  
**Medicinal Properties** : Abdominal pains, Anemia, Anti-inflammatory, Antimicrobial, Antioxidant, Antispasmodic, Blood purifying, Cancerous, Cold, Cough, Diabetes..

### *Ficus religiosa (Linn)*

**Local Name** : Pipal  
**Family Name** : Moraceae  
**Parts used** : Seed, latex, Bark  
**Medicinal Properties** : Asthma, Boils, Bruises, Cardiac weakness, Diabetes, Diarrhea, Epilepsy, Gastric problems, Gonorrhoea, Inflammatory disorders, Infectious, Jaundice, Mumps, Neck problems, Sexual disorders, Swollen Lymphatic gland, Ulcers, Wounds.

### *Hibiscus rosa sinesis (Linn)*

**Local Name** : Gurhal  
**Family Name** : Malvaceae  
**Parts used** : Flowers, Root, Leaves  
**Medicinal Property** : Aphrodisiac, Arthritis, Coughs, Diabetes, Headache, High blood pressure, Headache, Liver disorders, Menstrual disorders, Piles, Stimulate Blood Circulation, Ulcer, Wounds.

### *Melia azedarac*

**Local Name** : Bakain  
**Family Name** : Meliaceae  
**Parts used** : Root, bark  
**Medicinal Properties** : Amla having the property of Amenorrhoea. It is also used for Burning sensation. It is useful for Cough. Amla is used for the treatment of Diabetes, Fever, Headache, Leprosy, Lumbago, Rheumatism, Sciatica, Scrofula, Urinary tract Infection, Ulcer, Vata, Wounds, Vomiting.

***Emblica officinalis***

<b>Local Name</b>	:	Amla, gooseberry
<b>Family Name</b>	:	Euphorbiaceae
<b>Parts used</b>	:	Fruit
<b>Medicinal property</b>	:	Antidiabetic

It helps in regulating blood sugar. It is very powerful anti-inflammatory herb, a wonderful antioxidant and a natural Source of Vitamin C. Amla helps scavenge free radicals. Amla is powerful food for the brain. Amla helps to shows lower cholesterol. Amla also helps maintain the functioning of the liver, increases hemoglobin, red blood cell count. It is useful for Cough, Bronchitis, and Asthma. Amla cleanses the mouth, strengthens the teeth. Its decoction is used in hyperacidity and with honey as an anthelmintic. The presence of Amla results in an enhanced cell survival, decreased free radical production and higher antioxidant level.

***Phyllanthus niruri***

<b>Local Name</b>	:	Bhui Amla
<b>Family Name</b>	:	Euphorbiaceae
<b>Parts used</b>	:	Entire plant
<b>Medicinal property</b>	:	This herb acts as a protective shield and curative medicine for jaundice and other liver diseases. It is also used for menstruation and uterus problems in women. It benefits people with kidney stones.

***Mallotus philippinesis***

<b>Local Name</b>	:	Kamala, Red kamala
<b>Family Name</b>	:	Euphorbiaceae
<b>Parts used</b>	:	Leaf, bark, seed, fruit
<b>Medicinal property</b>	:	According to ayurveda, leaves are bitter, cooling and appetizer. Fruit is heating, purgative, anthelmintic, vulnerary, detergent, maturant, carminative, alexiteric and useful in treatment of bronchitis, abnormal diseases, spleen enlargement and antidiabetic also.

**Conclusion**

Natural products discovered from medicinal plants have play an important role in the treatment of diabetes. The present study revealed that the leaves of *phyllanthus niruri*, *Mallotus philippinesis*, *Emblica officinalis*, *Melia azedarac*, *Hibiscus rosa sinesis* plants has a potential source of useful drugs due to the presence of phytochemicals & can be utilized in the treatment of many diseases and can also be exploited for use in the pharmaceutical & cosmetic industries. However, further studies required to isolate active principle from the crude extract for proper drug development.

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