

## Medicinal Herbs: Boon to Diabetic People

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### Abstract

Several medicinal herbs have been used by the rural communities and underdeveloped regions for the treatment of diabetes mellitus. However, not all are evaluated for their efficacy. Due to higher costs and severe side-effects of synthetic drugs, traditional medicines are being prescribed to overcome these problems. Diabetes is increasing at alarming rate worldwide. It is caused by the deficiency of insulin. Many plant extracts contain certain compounds which are helpful in controlling the sugar level. This review deals with the applications of medicinal plants in treating diabetes.

**Keywords:** *Diabetes mellitus, insulin, medicinal plants*

### Introduction

Diabetes mellitus is characterized by high blood glucose level also known as hyperglycemia [1-6]. It is a metabolic disorder caused by defects in insulin secretion or its action. Hyperglycemia can lead to various diseases like premature death, renal failure, artery diseases, neurological diseases etc. It is the most important metabolic disorder to hit the globe. Diabetes is one of the main causes of death worldwide in this century. Approximately 439 million people will have diabetes by 2030 and it is also one of the leading epidemic diseases in most of the developing countries [7-13]. The numbers of people suffering from diabetes are increasing worldwide thus raising concerns among the people. Diabetes mellitus can be categorized into-

- Type 1 Diabetes
- Type 2 Diabetes
- Gestational Diabetes

Type 1 Diabetes also known as IDDM i.e. Insulin Dependent Diabetes Mellitus is caused by autoimmune destruction of pancreatic  $\beta$  cells. Environmental effects and genetic dispositions are two main factors responsible for it [14-17].

Type 2 Diabetes also commonly known as NIDDM i.e. Non-Insulin Dependent Diabetes Mellitus is associated with lack of physical exercise and obesity which are the main causes responsible for the disease. It leads to the production of free oxygen radicals thus damaging the DNA and protein and leading to various serious complications [18-21].

Gestational Diabetes occurs in pregnant women. High amount of glucose is transferred to the fetus resulting in hyperinsulinemia in the fetus. This can lead to unbalanced growth of fetus and various neonatal complicated disorders [22-25].

Open access journals provide reliable information on current research and developments in the form of research and review articles, case reports etc. Journal of Diabetic Complications and Medicine aims to publish in the relevant areas including diagnosis, Diabetic Neuropathy, Coronary artery disease, Cardiovascular diseases and many more [26-29]. Journal of Diabetes & Metabolism publish articles on all aspects like juvenile diabetes, Diabetic Drugs, Gestational Diabetes, obesity related to diabetes etc. Pancreatic Disorders & Therapy covers research areas like Pancreatic disorders, pancreatic cancer, Pancreas anatomy, methods of detection, Inflamed pancreas etc [30-37].

There are many hypoglycemic agents to treat diabetes mainly including sulphonylureas, biguanides, thiazolidines, metformin, insulin,  $\alpha$ -glucosidase inhibitors etc. These are responsible to lower down the blood glucose level. However, they cause some severe side-effects and are expensive [38-46]. These side-effects can be liver toxicity, weight gain and gastrointestinal problems. Therefore, there is a need to adapt natural way to treat this disorder. Since ancient times, many rural communities who can't afford synthetic drugs are dependent on medicinal herbs for the treatment of diabetes. Over the past few years, medicinal plants have gain tremendous attention for the treatment of type 2 diabetes mellitus [47-56]. These plants contain flavonoids, polysaccharides, alkaloids and glycosides which are responsible to low down the blood glucose level. Moreover, the various combinations of agents from different types of plants have proved to be a remarkable approach for the treatment of diabetes mellitus. The advantages of using plants as the treatment source are that they cause less side-effects and are cost-effective [57-66].

## **Conclusion**

Diabetes mellitus is a combination of several heterogeneous metabolic disorders leading to macro and microvascular complications [67-76]. Increase in blood pressure, cholesterol and triglycerides level is occurred due to insulin deficiency. Insulin is secreted by  $\beta$ -cells of pancreas which is responsible to control the glucose level. Type 1 Diabetes affects mostly teens resulting in weight loss, frequent urination and thirst problems [77-90]. These patients do not have a family history and are lean. Type 2 Diabetes affects mostly adults. These patients are overweight and the disease is genetically passed to the future generations. The sedentary lifestyle is the main reason for the prevalence of this epidemic disease. It is necessary to take some preventive measures to reduce its impact on the people worldwide. Change in lifestyle and eating habits will definitely point the treatment and prevention in new directions [91-99].

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