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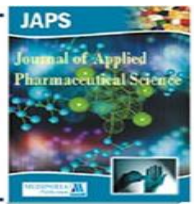

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Ethno-medicinal Species of genus *Ficus* L. Used to Treat Diabetes in Pakistan

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ABSTRACT

The present paper deals with species of genus *Ficus* L. used for the treatment of diabetes by different communities in Pakistan. Diabetes Mellitus is a syndrome of disordered metabolism in which β cells damaged or work improperly, it is caused by hereditary and environmental causes, resulting in abnormally high blood sugar levels. In this present investigation, it is observed that the local communities and herbal practitioners use 8 species of genus *Ficus* (Moraceae) *F. bengalensis, F. virens, F. racemosa, F. carica, F. lacor, F. hispida* and *F. microcarpa* to treat diabetes in Pakistan. Plant specimens collected, identified, preserved and mounted were deposited in the department of Plant sciences, Quaid-i-Azam University, Islamabad, Pakistan for future references.

Key words: Diabetes, *Ficus*, decoction, infusion, blood glucose.

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INTRODUCTION

Diabetes is the world's largest endocrine disease associated with increased morbidity and mortality rate (Sophia and Manoharan, 2007). Diabetes is a metabolic syndrome of multiple etiologies characterized by chronic hyperglycemia with abnormalities in carbohydrate, fat and protein metabolism due to defect in insulin secretions (Kadhirvel et al., 2010). Diabetes mellitus is also associated with long term complications including retinopathy, nephropathy, neuropathy and angiopathy and several others (Sharma et al., 2010). Diabetes is one of the common metabolic disorders and 1.3% of the population suffers from this disease throughout the world (Raghunathan and Raghunathan, 1992). According to International Diabetes Federation (IDF) in 2007, 246 million people worldwide affected by diabetes mellitus and making the disease one of most non-communicable global disease and fourth leading cause of death in world.

Pakistan is endowed with the wealth of medicinally important plants and has ancient herbal treatment methods where traditional alternative medicines are popularly practiced among the large segment of its population (Arayne et al., 2007). Unani system is dominant in Pakistan but the ethno medicinal plants use is also seen in the remote areas. (Ahmad *et al.*, 2003). Plant derivatives with antidiabetic potentials have been used in traditional healing systems around the world (Yeh et al., 2003). A variety of ingredients present in medicinal plants are thought to act on a variety of targets by various modes and mechanisms. They have potential to impart therapeutic effect in complicated disorders like diabetes and its complications (Tiwari and Rao, 2002). The main objective of this study was to assess the diversity of ethnomedicinal species of genus *Ficus* used by Pakistanis and document the traditional medical practices followed to treat diabetes. Therefore, documenting indigenous knowledge is important from the view point of conservation of biological resources and their sustainable utilization in the management of diabetes and its related complications.

MATERIAL AND METHODS

Sample collection and preservation

Four field trips were arranged in order to collect information about the ethno-medicinal uses of plants by the local people during 2010 in different areas of Pakistan to treat diabetes. Collect plant materials, drying, mounting, preparation, preservation of plant specimens and voucher specimen submitted to herbarium of Quadi-i-Azam University, Islamabad.

Ethnomedicinal knowledge

A questionnaire method was adopted for documentation of indigenous ethnomedicinal knowledge. The interviews and discussions were carried out from local herbal practitioners, to document ethnomedicinal uses. The collected plant specimens were carefully identified with the help of experts of Quaid-i-Azam University, Islamabad and Flora of Pakistan (Nasir and Ali, 1985).

RESULTS

Ficus Bengalensis L**.**
Part Used: Aerial roots, bark
Indigenous Use:

1. The stem bark is extracted in hot water and extract is given orally to the patient.
2. By eating Fruits to reduce blood glucose.
3. Regular chewing of fresh prop root tips can reduce blood glucose level.

Ficus racemosa Roxb.
Part used: Bark, Fruit
Indigenous Use:

1. Decoction of ripe fruits use in diabetes.
2. Decoction of stem bark reduces blood glucose.

Ficus Lacor Ham.
Part used: Fruit
Indigenous Use:
Powder of dried ripe fruits is used to treat diabetes.

Ficus religiosa L.
Part used: Bark
Indigenous use:
The bark boil in hot water and the extract is given orally to the diabetic person.

Ficus microcarpa L.f**.**
Part used:Fruit, leaves
Indigenous use:
Fresh leaves and fruits taken in equal quantity and grind them, taken orally is best remedy to treat diabetes.

Ficus virens Dryand.
Part Used: Leaves
Indigenous use:
Leaves are used to treat diabetes.

Ficus carica L.
Part Used: Leaves
Indigenous Use:
The decoction of leaves used to cure diabetes.

Ficus hispida L.f.
Part Used: Bark
Indigenous use:
Infusion of bark used as remedy to treat diabetes.

DISCUSSION

It has been studied previously the antidiabetic potential of genus *Ficus*. Different types of organic and inorganic extracts of some of these plants have applied on diabetic laboratory animals mostly rats. Ethanolic extract of aerial roots, bark and fruit of *F.bengalensis* lowers the blood glucose level of diabetic rats (Singh et al., 2009). All of the plant species are reported to be quite effective remedies for different diseases such as diarrhea, boils, jaundice, tumor, ulcers, cold and even cancer. Due to the lack of modern communications, as well as poverty, ignorance and unavailability of modern health facilities, most people especially rural people are still forced to practice traditional medicines for their common day ailments (Azaizeh et al., 2003). The indigenous traditional knowledge of herbal plants of communities where it has been transmitted orally for many years is fast disappearing from the face of world due to transformation of traditional culture (Hussain et al., 2008).

CONCLUSION

The present study indicated the use of *Ficus* species to control diabetes. There is a need to study further pharmacological activity, toxicological effects and the exact mechanism of the drug. As they are an ideal alternative drugs in especially under develop countries. In this regard the species of genus *Ficus* (Moraceae) are the potential natural source to cure a global problem, Diabetes, and can be used as additive source in nutraceutical and biopharmaceutical industries.

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