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Review Paper

A Review of The Antidiabetic Properties of The Medicine Plants Found in the Sikkim Himalayas

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ABSTRACT

The small state Sikkim have a rich diversity of medicinal plants which is situated in Eastern Himalayan regions of India, from ancient times Sikkimese's peoples were believed on medicinal plants to treat basic health issues and conveniences in their traditional ways. This study highlights the potential of Sikkim's medicinal plants as antidiabetic. Out of 550 medicine 30 Plants found in Sikkim, plants have shown favourable anti-diabetic activity, considering them by their local Name, parts used, picture and treatment procedure in given table

INTRODUCTION

In the twenty first century, Diabetes has become one the most challenging worldwide diseases. Approximately 62 million patients suffer with diabetes in India. The most significant absolute figure among all countries[1]. It is approximated that there will be a surge in the disease among the Indian middle class with modern shift of lack of physical activities and the food habits and nutrition. The figure that is reckon is 101.2 million by the year 2030[2]. Traditionally, if we talk about India, there is well developed system of Ayurveda, Unani and Siddha which is fundamentally rest on the idea of plant derived drug which is stupendous. The natural plant-based employment of medicine is found all over the world from ancient time which developed in the regulated framework over time and space. There are many defects in this system, having the rudimentary knowledge however, these are crucial depository of human knowledge which propel the advancement of the knowledge in medicine[3]. In the present time we have various effective western knowledge of medication for the treatment of diabetes but excessive cost with side effect is a formidable hurdle for its management. The utilization of ayurvedic medicine for the effective treatment of diabetes has been in the practice since thousands of years in the Indian and chines culture and tradition. According to the recent data of WHO it is estimated that approximately 90% of the developing population

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are using the plant-based product in their traditional medicine practice. The list of plant given by WHO with the estimation of 21,000, it is recorded that around 2500 species are found in the Indian subcontinent. It is documented that 800 plants depict antidiabetic capacity[4].

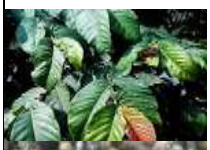
Sikkim is a one of the smallest states of India with total geographical area of 7096 square kilometres, which is located at Eastern Himalayans Region of India containing reach flora and fauna diversity. States that share borders with China-North, Nepal-West, Bhutan-East, West Bengal – south state[5].

According to the Biodiversity Board, Government of Sikkim, there are 424 medicinal plants documented and utilized by the local community in their traditional ways. The three ethnic groups of Sikkim - Lepcha, Bhutia and Nepali which they fully believed in medicinal plants for the treatment propose in different diseases and Illness from ancient period of time[6].

There are many prospects for alternative treatments with medicinal plants. The development of the clinical medical system is largely attributed to nature products, which are also an essential source of therapeutic substances. Sikkim's indigenous healing plants have been scientifically investigated and information about them has been strongly dissemination to help people improve their heath and understand more about effective medication treatments[7].

Sl. No	Botanical Name and Family	Common Name (Nepali)	Part Used	Traditionally Used For	Pharmacologically activity reported
1	*Anthocephalus cadamba* Family: Rubiaceae	Kadam 	Leaves	Inflammation	Antioxidant and Antidiabetic [8]
2	*Asparagus Racemosus* Family: Liliaceae	Kurilo 	Leaves	Diabetes	Hypoglycemic, Antioxidant and Hypolilidemic [9]
3	*Bauhinia vahlii* Family: Caesalpiniaceae	Verla 	Stem Bark	Diarrhea, Skin Disease	Antidiabetic [10]
4	*Berberis aristata* Family:	Chutro	Stem Bark	Inflammation, Wound healing	Antidiabetic [11]

					
5	*Callicarpa arborea* Family:	Guahelo 	Stem Bark	Fever and boils	Antidiabetic [12]
6	*Campylandra aurantiaca* Family: Asparagaceae	Nakima 	Flower, Rhizome	Diabetes mellitus, antimalarial, analgesic	Antioxidant and Hypoglycemic [13]
7	*Cassia fistula* Family: Caesalpiniaceae	Raj Briksha 	Leaves	Asthma, Diabetes and eczema	Antidiabetic [14]
8	*Centella asiatica* Family: Mackinlayaceae	Gora taprey 	Leaves	Asthma	Antioxidant, Antidiabetic [15]
9	*Chenopodium album* Family: Chenopodiaceae	Bethu saag 	Root	Piles, eye disease	Antidiabetic Antihyperlipidemic [16]
10	*Clerodendron infortunatum* Family: Verbenaceae	Chitu 	Leaves, Flower	Dysentery	Antihyperglycemic [17]

11	*Costus Speciosus* Family: Costaceae	Betlaure 	Rhizome	Diabetes	Antidiabetic Antilipidemic [18]
12	*Dioscorea alata* Family: Dioscoreaceae	Ghartarul 	Fruit	Piles, Constipation	Antioxidant, Antidiabetic [19]
13	*Drymaria cordata* Family: Caryophyllaceae	Abhijalo 	Leaves	Pneumonia, Infant fever, Sinusitis	Antidiabetic [20]
14	*Edgewotthia gardener* Family: Thymelaeaceae	Argaily 	Flower, Stem bark	Fish poison	Antidiabetic [21]
15	*Fagopyrum esculentum* Family: Polygonaceae	Mithey phapur 	Bran	Haemostasis Ulcer	Antioxidant Hypolipidemic Antidiabetic [22]
16	*Ficus semicordata* Family: Moraceae	Khasrey khaneu  	Root, Fruit, Leaves	Bladder Complaints	Antioxidant Antidiabetic [23]
17	*Fraxinus floribunda* Family: Oleaceae	Lakuri 	Bark	Diabetes, Gout Boils	Antihyperlipidemic Antidiabetic [24]
18	*Garuga pinnata*	Dubdabay	Bark	Dislocation Bone Wound healing	Antidiabetic [25]

	Family: Burseraceae				
19	*Gloriosa superb* Family: Liliaceae	Langarey tarul 	Root tuber	Aarthritis	Antioxidant Antidiabetic [26]
20	*Jatropha curcas* Family: Euphorbiaceae	Hathikana 	Bark	Dysentery Skin disease	Antidiabetic [27]
21	*Oxalis corniculata* Family: Oxalidaceae	Chariamilo 	Entire Plant	Dysentery Fever Anemia Appetite	Antidiabetic Antioxidant [28]
22	*Oroxylum indicum* Family: Bignoniaceae	Totala 	Flower	Asthama Dysentery	Antioxidant Antidiabetic [29]
23	*Physalis minima* Family:	Raasbhari 	Fruit	Diuretic Inflammation	Hypoglycemic [30]
24	*Rubus ellipticus* Family: Rosaceae	Aeiselu 	Fruit	Astringent Kidney tonic	Antidiabetic Antioxidant [31]
25	*Smilax zeylanica* Family: Smilacaceae	Kukur Daaino 	Rhizome	Urinary compliant Dysentery	Antidiabetic [32]

26	*Stephania glabra*	Tamarkey 	Tubers, Root	Diabetes Tuberculosis Fever	Antidiabetic [33]
27	*Syzygium cumini* Family: Myrtaceae	Jyamuna 	Stem bark	Diabetes	Antidiabetic [34]
28	*Tamaarindus indica* Family: Caesalpiniaceae	Teet - teetee 	Fruit pulp	Ulcer Inflammation	Antioxidant Hypolipidemic Antidiabetic [35]
29	*Tinospora cordifolia* Family: Menispermaceae	Gurjo 	Root	Diabetes	Antidiabetic [36]
30	*Zingiber officinale* Family:	Aduwa 	Rhizome	Fever, Cold	Antidiabetic [37]

CONCLUSION

Northeastern India is the habitat to a vast variety of special plant species that are extensively utilized in traditional medical practices. Different parts of various plants such as leaves, Fruit, steam bark, Root, flowers etc shown different therapeutical bioactivity for the treatment for different diseases. Out of 424 medicinal plants species documented by Government of Sikkim, 30 medicinal plants species have discussed in this mini- review which shown Anti-diabetes properties. Further research and studies can be carried out in different medicinal plants which show medicinal value like anti-diabetes. researching the undiscovered plants resources in Sikkim, India, could show the way for the pharmaceutical industry to create novel, lifesaving medication that will improve the health of individuals.

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