

Indigenous Plants Reported For Hypoglycemic Activity

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ABSTRACT: *Plants are the only source of a well established traditional and modern drugs and phytochemicals. Many plant species are known in folk medicine of different cultures to be used for their hypoglycemic properties and therefore used for treatment of diabetes. The evaluation of these plants and of their active natural principles is logic way of searching for new drugs to treat this disease. The present paper deals with the uses of indigenous plants for curing diabetes.*

INTRODUCTION:

Modern medicine has made phenomenal progress in the treatment of several diseases. Yet, scientists are unable to find a successful and sure-cure therapy against certain diseases. Metabolic diseases such as diabetes have eluded the efforts made by scientists. So far, only palliative therapies have been discovered for them. In fact, there are serious side toxic effects as a result of prolonged use of such conventional drugs. It is therefore, essential to look for remedies from non-conventional sources, which can not only control diabetes successfully, but also cure it forever.

Diabetes is broadly of two types, namely, diabetes mellitus and diabetes insipidus. Diabetes mellitus is hereditary metabolic disorder characterized by hypoglycemia, glycosimias, hunger, thirst and gradual loss of weight and is considered to be obstinate and otherwise incurable disease as it needs a regular treatment and controlled diet throughout the life. It can be non-insulin dependent diabetes (NIDD) which tends to occur in older people and is often referred to as maturity onset diabetes. Insulin dependent diabetes (IDD) occurs usually in young people and therefore, Sometimes it is

referred as juvenile diabetes. In IDD, the insulin producing cells are so badly damaged that they can not produce insulin, even when stimulated by tablets or conventional drugs. Till 1950, control of diabetes was based entirely on insulin therapy. Unfortunately, some patients developed complications as a result of such conventional drugs and thus need for some other therapy was realized. Presently control of non insulin dependent diabetes relies on compounds from two classes; viz sulphonyl urea and biguanides although these drugs are widely accepted as being efficacious in many chemicals and plant extract has continued.

People have now become more conscious about health care products with side or after effects and this is the reason that an increased use of natural products for curing almost all the diseases has recorded a landmark in the field of pharmaceuticals. Many plant species are known in folk-medicine of different culture to be used for their hypoglycemic properties and therefore used for treatment of diabetes. The evaluation of these plants and of their active natural principles is logical way of searching for

new drugs to treat this disease. We have reviewed the relevant literature on the

plants, which have been experimentally studied for hypoglycemic activity.

Sl.No	Name of the Plant	Family	Part/Extract of Plant used
1	Acacia catechu ¹³	Mimosaceae	Ethanollic extract of wood
2	Acacia nilotica ³	Leguminosae	Extract of bark
3	Acalypha ciliate ³	Euphorbiaceae	Roots extract
4	Adiantum capilus vernis ³	Ploypodiaceae	Ethanollic extract of the plant
5	Aegle marmelos ³	Rutaceae	Leaf extract act alkaloid form leaf
6	Aesculus hippo castanun ³	Hippocastanaceae	Whole plant (five titerpenes olegoglycosides)
7	Alangium salvifolium ²	Alangiaceae	Leaf
8	Albezia lebbect ²	Mimosaceae	Root
9	Allium species ³ A. Sativum B. A. cepa	Liliaceae	Plant extract Plant extract
10	Aloe vera ³	Liliaceae	Leaves
11.	Anacardium occidentals ²	Anacardiaceae	Leaves
12	Andrographis pariculata ³	Acanthaceae	Aquous extract of plant
13	Anemarrhena asphodeloiedes ³	Liliaceae	Plant
14	Angelica archangelica ³	Umbelliferae	Plant
15	Annona muricata ²¹	Annonaceae	Bark, roots, leaves, seeds
16	Aralia elata ³	Araliaceae	Roots bark, root cortex, young shoots
17	Artocarpus communis ²¹	Moraceae	-
18	Asteracantha longifolia ³	Acanthaceae	Whole plant
19	Artemisia erbalba ³	Compositae	Aqueous extract of aerial parts of plants
20	Atylosia scarabaeoides ²⁰	Fabeaceae	Whole plant
21	Azadirachta indica ³	Meliaceae	Leaves
22	Barlena instata ²	Acanthaceae	Whole plant
23	Bidens biternata	Asteraceae	Leaves, roots
24	Bignomia tuiria ³	Bignoniaceae	Whole plant
25	Bixa orellana ³	Bixaceae	Leaves
26	Bombax batryticatus ³	Bombaeaceae	Hot water extract of plant
27	Bombax cieba ²	Bomaeace	Hot water extract of bark cortex

28	Borassus flabellifer ³	Palmea	Ethanollic extract of root of female palm of B. Flanellifer
29	Bougainvillea spectabilis ³	Nyctaginaceae	Leaf Juice
30	Boussingaultia spectabilis ³	Basellaceae	Plant
31	Brassica species ³ B. oleraceae B. Juncea	Cruciferae	Aqueous extract
32	Bridelia ferruginea ³	Euphorbiaceae	Leaves
33	Bumelia sarfouum ³	-	Root bark
34	Butea monosperma ²	Fabeaceae	Flower
35	Cajanus cajan ¹⁵	-	Seed
36	Calligonum comosum ³	Polygonaceae	Water extracts of plant
37	Camllia sinensis ³	Theaceae	Hot water extract
38	Caralluma tuberculata ³	Asclepiaceae	Plant extract
39	Carica papaya	Caricaceae	Plant leaves
40	Carum fistula	Leguminosae	Ethanollic extract of roots
41	Casearia elliptica	-	-
42	Cassia auriculata ^{4,27} Cassia coptium ¹ Cassia fistula ²³ Cassia occidentalis ²³	Coesalpinaceae Caesalpinaceae	Flower Seeds Bark, leaves, roots Whole Plant
43	Catharanthus roseus ²	Apocynaceae	Leaf, flower, plant extract
44	Cephalandra indica ^{3,5}	Cucurbitaceae	Roots & fruits
45	Chrysanthemum morifolium ²³	Compositae	Hot water extract of plant
46	Cinnamomum tamala ³	Lauraceae	Ethanollic extract of leaves
47	Cissampelos pareira ^{2,23}	Menispermaceae	Root
48	Citrus reticulata ²⁴	Rutaceae	Fruits
49	Coccinia species ³ C. indica D. Charantia	Cucurbitaceae	Ethanollic extracts of plant
50	Colchicum luteum ³	Liliaceae	Crude plant and ethanollic extract
51	Commelina communis ³	Commelinaceae	Plant extract
52	Cuminum cyminum ³	Apiaceae	Seed Powder
53	Curcuma longa ³	Zingiberaceae	Ethanollic extract of rhizome
54	Cymopsis tetragonoloba ¹⁴	Leguminosae	Seeds, petroleum extract of plants
55	Dalbergia sissoo ¹¹	-	Plant
56	Daucus carota ³	Umbelliferae	Ethanollic extract of rhizome

57	<i>Dioscorea dumetorum</i> ³	Dioscoreaceae <i>Dioscorea bulbifera</i>	Aqueous fraction of the methanol extract of tubers Dioscoreaceae Tubers
58	<i>Dodonea viscosa</i> ¹⁸	Sapindaceae	Fractions Obtained
59	<i>Echinops ecinitis</i> ¹⁹	-	Fractions Obtained
60	<i>Emblica officinalis</i> ²	Euphorbiaceae	Leaf
61	<i>Enicostemma axillare</i> ¹²	Gentianaceae	Plant
62	<i>Eriobotrya japonica</i>	Rosaceae	Methylated extract of plant
63	<i>Eugenia cumini</i> ¹⁵	Myrtaceae	Seeds
64	<i>Ficus species</i> ³ <i>F. bengalensis</i> <i>F. glomerata</i>	Moraceae	Stem bark Alcoholic extract of bark
65	<i>Gmelina arborea</i> ²	Verbenaceae	Wood
66	<i>Gewia tiliifolia</i> ⁸	Tiliaceae	Plant
67	<i>Gymnema sylvestre</i> ⁸	Asclepadeaceae	Leaves
68	<i>Hamiltonia suaveolens</i> ¹⁶	-	Alcoholic extract of roots
69	<i>Helicteres isora</i> ²	Sterculiaceae	Root
70	<i>Hibiscus vitifolius</i> ³	Malvaceae	Bioside form fresh petals
71	<i>Holarrhena antidysenterica</i> ³	Apocynaceae	Aqueous and alcoholic extract of seeds
72	<i>Hyptis suaveolens</i> ²	Labiataeae	-
73	<i>Indigofera tinctoria</i> ²⁸	Fabaceae	Whole plant
74	<i>Inula racemosa</i> ³	Compositae	Alcoholic extract of roots
75	<i>Ipomea batatas</i> ³ <i>Ipomea cornea</i>	Convolvulaceae “	Hot water extract
76	<i>Juglans regia</i> ³	Junglandaceae	Ethanollic extract
77	<i>Juniperus communis</i> ³	Cupressaceae	Plant decoction
78	<i>Justica adhatoda</i> ²	Acanthaceae	Leaf, root
79	<i>Kydia calycina</i> ²	Malvaceae	Bark
80	<i>Lagerstroemia species</i> <i>L. speciosa</i> ³ <i>L. Parviflora</i>	Lythraceae	Tannin free spray dried extract
81	<i>Laea indica</i> ²	Leeaceae	Leaf
82	<i>Laurus nobilis</i>	Lauraceae	Ethanollic extract
83	<i>Lycli sps</i> ³ <i>L. cortex</i> <i>L. folium</i>		
84	<i>Lupinus teris</i> ³	Legfuminosae	Plant
85	<i>Mangnifera indica</i> ¹	Anacardiaceae	Dried seed

86	<i>Malvia verticellata</i> ³	Malvaceae	Glycons from plant
87	<i>Medhuca longifolia</i> ²	Moringaceae	Methonolic extract of root bark
88	<i>Moringa oleifera</i> ³	Moringaceae	Methonolic extract of root bark
89	<i>Mimosa pudica</i> ³	Moringaceae	Methonolic extract
90	<i>Mirabilis falapa</i> ²¹	Nyctaginaceae	
91	<i>Momordica charantia</i> ³	Cucubitaceae	Ethanolic extract pulp juice, methonolic extract, seeds, aqueous extract
92	<i>Mori folium</i> ³		Hot water extract Methanol extract
93	<i>Morinada lucida</i>	Rubiaceae	Aqueous extract
94	<i>Morus aiba</i> ³	Moraceae	Hot water extract of cortex
95	<i>Mucuna puriens</i> ¹	Papilionaceae	-
96	<i>Murraya koenigii</i> ³	Rutaceae	Plant
97	<i>Musa sapientum</i> ³	Musaceae	Powder from juice of inflorescence stalk
98	<i>Nelumbo nucifera</i> ³	Nymphaeaceae	Powder of sun dried flowers, aqueous and alcoholic extract
99	<i>Nicotiana glutinosa</i> ³	Solanaceae	Laves
100	<i>Ocimum sanctum</i> ³	Libiateae	Alcoholic extract
101	<i>Olea europaea</i>	Oleaceae	Leaf glycerol—alcoholic macerates of shoots and leaves
102	<i>Opuntia ficus indica</i> ³	Cactaceae	Plant
103	<i>Papaver soniferum</i> ³	Papaveraceae	Seed plant
104	<i>Parkia speciosa</i> ³	Leguminosae	Chloroform extract
105	<i>Panax notoginseng</i> ³	Araliaceae	Plant
106	<i>Pedaliium Murex</i> ¹		Dired fruit
107	<i>Peganum harala</i> ³	Rutaceae	Plant
108	<i>Phoenix sylvestris</i> ²	Aracaceae	Leaf
109	<i>Phyllanthus</i> sps ³ <i>P.niruri</i> <i>P.amarus</i>	Euphorbiaceae	Alcoholic extract of leaves plant
110	<i>Physallis phyladelphica</i> ¹⁰ .	Solanaceae	Calyx
111	<i>Picrorhiza kurroa</i> ¹	Scrophulaniaceae	Dired rhizoma
112	<i>Polygonatum officinnalae</i>	Liliacea	Methanolic extract of rhizome

113	<i>Pongania pinnata</i> ²	Fabeacea	Flower
114	<i>Prosopis fratta</i> ³	Leguminosae	Aqueous solution of root extract
115	<i>Prunus davidiana</i> ³	Rosaceae	Methanolic extract
116	<i>Pterocarpus species</i> ³ <i>P. marsupium</i> <i>P. Santalius</i>	Leguminosae	Decoction, ethanolic extract of wood, aqueous extract Ethanolic extract of wood
117	<i>Punica granatum</i> ³	Punaceae	Rind extract
118	<i>Rauvolfia serpentina</i> ³	Apocynaceae	-
119	<i>Rehmannia glutinosa</i> ³	Scrophulariaceae	Ethanol ppt. fraction from rhizome
120	<i>Ricinus communis</i> ²	Euphorbiaceae	Root stem leaf
121	<i>Rosmarinum officinalis</i> ³	Labiatae	Volatile oil from leaf
122	<i>Rubia cardifolia</i> ⁷	Rubiaceae	
123	<i>Salacia sps.</i> ³ <i>S. macrosperma</i> <i>S. oblong</i> <i>S. reticulata</i>	Celastraceae	Ethanolic extract alcoholic extract of roots Chloroform eluted fraction Aqueous extract
124	<i>Sanguisorba sps</i> ³ <i>S. minor</i> <i>S. officinalis</i>	Rosaceae	Tannins and triterpens
125	<i>Sarcopoterium spinosum</i> ³	Rosaceae	Root bark
126	<i>Saussuria lappa</i> ³	Compositae	Powdered drug
127	<i>Scellrocarya biocarya</i>	Anacardiaceae	Decoction of bark
128	<i>Scoparia dulcis</i> ⁶	Scrophulariaceae	Whole plant
129	<i>Semecarpus anacardium</i> ⁷	Anacardiaceae	Fruit
130	<i>Senegale radix</i> ³	Polygalaceae	Saponins Isolated
131	<i>Solenia amplexans</i> ²	Cucurbitaceae	Leaf
132	<i>Spathodea campanulata</i> ³	Bignoniaceae	Stem bark decoction
133	<i>Swertia sps</i> ³ <i>S. chirayata</i> <i>S. japonica</i>	Gentianaceae	Hexane fraction Aqueous ethanolic extract
134	<i>Syzygium cumunii</i> ²	Myrtaceae	Leaf
135	<i>Tecoma stans</i>	Bignoniaceae	Aqueous extract of stem & leaf
136	<i>Tephrosia purpurea</i> ¹⁷	Papilionaceae	Aqueous extract of seed
137	<i>Terminalia chebula</i> ²	Combretaceae	Fruit
138	<i>Tinospora sps</i> ³ <i>T. crispa</i> <i>T. cardifolia</i> ²⁶	Menispermaceae	Aqueous extract of stem stem
139	<i>Tricosanthes sps</i> ³	Cucurbitaceae	

	T.diocia T.Kirilowii		Ethanollic extract roots
140	Togonella foenum ³	Leguminosae	Seed powder, methanol & water, soluble dietary fibre
141	Vernonia amygdalina ³	Composite	Aqueous extract of plant
142	Vespase nidus ³		Hot water extract
143	Withamia somnifera ²	Solonsveae	Dried root
144	Xanthium pungens ³	Compositae	Plant
145	Xanthium strumarium ⁹	Compositae	Seeds
146	Zingiba effcinale ³	Zingiberaceae	Ethanollic extract
147	Zizyphus species ³ Z. fufaiba ²⁵ Z. sativa Z. spira Zzuzupa ²³	Rhamnaceae	Seeds Alcoholic extract Butanol extract of leaves Seeds

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