

The Uses and Threats of Indian Medicinal Plants - A Review

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Abstract: India is a mega diversity country, contains approximately 45000 plant species. Among them 7000 medicinal plants are found. From 5000 years back to till now plant has been used as medicine. Information about the plants used as drug are also available in Charka Samhita, AtharvaVeda, Sushruta Samhita etc. The therapeutic properties of medicinal plant are conditioned by the presence of active substance like alkaloid, glycosides, vitamin, tannin and coumarin which physiologically effect the bodies of human and other animals. Medicinal plant can be used for wound healing, anti-diabetic and antifertility. In developing country there is an increase attempt to incorporate traditional medicine in health care. Now medicinal plants are under threat of extinction due to overgrazing, deforestation, urbanization, heavy metal pollution and their reckless use. Therefore enrichment of the gene bank of this medicinally important plant is urgently needed before they are lost from the world.

Keywords: Medicinalplant, India, Conservation, Threat

1. Introduction

From primitive period to till date, Plants positioned an important place in our life. They are used as nutrition, flavors for meal, remedy for different disease and food for animals. (Sekeroglu et al.2006). Uses of the medicinal plant in the traditional healthcare system is noticed in all over the world and now it is a part of modern science of medicine. (Jha & Kumur, 2003 Shukla, Gardner, 2006). Active substance of medicinal plant is used for therapeutic purpose as well as synthesis of various important drugs (Prashant Kumar and Vidyasagar, 2008). Approximately 80% of the world population depends on traditional medicine (plant extract) for primary healthcare. (Sandhya et al.2006). Traditional herbal products are safe, cost effective, without any side effect and easily affordable. Therefore it has huge demand in global market. In India the market is expanding at annual rate of 20% (Pesek et al.2008, Divya et al.2011). But, Industrialization, urbanization, deforestation, heavy metal pollution forced the existing medicinal plant to disappear. In India, among the medicinal plant about 20-25% species become endangered plant. (Jain et al.2006). Traditional knowledge about the medicinal plant and their uses is limited to some tribal people. Now a days the young ones of the tribes don't show any interest about traditional practices. This may cause a great loss of this traditional knowledge that has gained over several generations.

2. Methodology

There are some people in the tribal community, known as Ojha, Kabiraj, or Vaidyawho has complete knowledge about various medicinal plant and their uses to cure various disease. Kabiraj or Vaidya are identified by interrogation and requested them to help to collect data. They are very conservative about the disclosing knowledge of plant medicine. They thought that if knowledge is disclosed to others, the efficacy of the medicine will be lost. After understanding the purpose of spreading the traditional knowledge throughout the world, they agree to help.

Some questionnaire during ethnobotanical survey are-Date, Name of Informant, Age, Gender, Education, Locality. Who collect the plant? Why collect? which part is collected? How plant is collected? Whatever the plant material is stored or not. How long they are stored and why? Any conservation effort to save the medicinal plant.

The collected specimens were processed according to standard procedure for herbarium preparation.

3. Results

Some medicinal plant and their uses to treatment various disease:

S. no	Scientific name of the species	Local name of the species	Family of the species	Parts used of the species	Prescription
1	<i>Leucas aspera</i> (Willd.) Spreng.	Dhulpi	Lamiaceae	Herb Young plants	Leaves extract of leaves in gynaecological problem
2	<i>Croton banplandianum</i> Baill.	Ban dakait	Euphorbiaceae	Herb Leaves	Herb leaves paste used to stop bleeding
3	<i>Cynodon dactylon</i> Pers.	Durbaghas	(Poaceae)	Herb Whole plants	Roots extract used to cure leucorrhoea
4	<i>Jatropha gossypifolia</i> L.	Varenda	Euphorbeaceae	Stems and leaves	Stem and leaves extract used in treatment of male infertility
5	<i>Piper betle</i> L.	Pan	Piperaceae	Leaves	2 to 3 teaspoonful of leaves extract is used as anti-fertility agent of female, continued for 15 days, once in every morning
6	<i>AbormaAugusta</i> L. f	Ulotkambal	Sterculiaceae	Leaves	2 teaspoonful of leaves extract mixed with water and taken

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					two times daily for 1-2 month for the treatment of irregular menstruation, and painful menstruation.
7	<i>Heliotropium indicum</i> L.	Hatisur	Boraginaceae	Leaves and inflorescence	Leaves and inflorescence of the plant is applicable as remedy of indigestion and remedy of male infertility.
8	<i>Saraca asoca</i> (Roxb.) de Wilde.	Ashoke	Caesalpiniaceae	Leaves and bark	Paste of leaves and bark, 2 teaspoonful mixed with water taken twice daily continued for 2 month, for the treatment of irregular menstruation, and in uterine disorder.
9	<i>Alstonia scholaris</i> (L.) R. Br	Chhatim	Apocynaceae	Leaves	Leaves decoction enhance male fertility one tea-spoonful decoction taken for 1 month, once daily.
10	<i>Marsilea quadrifolia</i> L.	Susni	Marsileaceae	Seeds, flowers	Dust of leaves with water two teaspoon full daily at tea time is effective for the treatment of female anti fertility.
11	<i>Anthocephalus kadamba</i> Miq.	Kadamba	Rubiaceae	Leaves	Leaves paste with honey enhance male fertility. one teaspoonful decoction taken for 1 month, once daily.
12	<i>Areca catechu</i> Linn.	Supari	Arecaceae	Fruit	Fruits soaked in water for decomposition. The decomposed fruits effective as female infertility agent.
13	<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae	Leaves	Leaves paste used as male fertility reducer.
14	<i>Bambusa arundinacea</i> (Retz.) Willd.	Bans	Poaceae	Stem	Paste of soft stem used as male anti fertility component, once daily for two months.
15	<i>Brassica juncea</i> Coss	Rai	Brassicaceae	Oil	Female anti fertility agent. Used regularly for one month two table spoon daily after breakfast.
16	<i>Cannabis sativa</i> Linn.	Bhang	Moraceae	Leaves	Used as both male and female anti fertility medicine. Leaves paste with honey prescribed for 2 to 3 months regularly 2 table spoon.
17	<i>Carica papaya</i> Linn.	Papaya	Caricaceae	Leaves	Leaves paste with talan prescribed for daily once in empty stomach.
18	<i>Cuminum cyminum</i> Linn.	Jira	Apiaceae	Fruit	Jira soaked in water and a cup of soaked water is prescribed for male anti fertility treatment.

Some active compound from medicinal plant extract that has pharmaceutical properties:

Sl. No	Scientific name	Family	Tribal name	Other name	Parts used	Active principle
1	<i>Abutilon indicum</i> (L.) Sweet.	Malvaceae	Mirubaha	Beng.-Potari Hindi-Kanghi	Root	Linoleic, oleic, palmitic and stearic acid; Raffinose and astringent substances.
2	<i>Achyranthes aspera</i> L.	Amaranthaceae	Chirchit	Beng.-Apang Hindi-Latjira	Root	β -sitosterol, γ -sitosterol, ecdysterone, hentriacontane, saponin, oleanolic acid.
3	<i>Calotropis gigantea</i> (L.) R. Br.	Asclepiadaceae	Akana	Beng.-Akanda Hindi-Ak	Latex	Akandrin, calotropin, uscharon, calotoxin, calactin, gigantol, giganteol, β -amyryl, β -calotropol etc.
4	<i>Centratherum anthelminticum</i> (L.) O. Kuntze.	Asteraceae	Saoraj	Beng.-Somraj Hindi-Somraj	Seed	Brassicasterol, Stigmasterol, bitter resin acid, oxygenated acid.
5	<i>Crotalaria prostrata</i> Rott. Ex Willd	Fabaceae	Chotojhununi	Beng.-Junkha Hindi-Junkha	Root	*Chemical constituent is not commonly available.
6	<i>Desmodium gangeticum</i> (L.) DC.	Fabaceae	Titakhari	Beng.-Salpani Hindi-Sarivan	Root	Isoflavonoid phytoalexin-desmocarbin, genistein, 2'-hydroxygenistein, dalbergioidin, diphysolone and kievitone.
7	<i>Desmodium triflorum</i> (L.) DC.	Fabaceae	Chatpati/ charchini	Beng.-Kudaliya Hindi-Kudaliya	Root	2'-O-Glucosylvitexin, (+) pinitol, apigenin, vitexin and isovitexin.
8	<i>Madhuca indica</i> J. F. Gmel.	Sapotaceae	Mahua	Beng.-Mahwa Hindi-Mahua	Flower	β -sitosterol, quercetin, dihydroquercetin, caoutchouc, tannin etc.
9	<i>Mucuna pruriens</i> (L.) DC.	Fabaceae	Alkushi	Beng.-Alkusi Hindi-Kiwach	Root	Mucunine, mucunadine, prurienine, indole-3-alkylamines, choline.
10	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Chitaway	Beng.-Chitraka Hindi-Chita	Root	Plumbagin, 3-chloroplumbagin, 3, 3-biplumbagin, binaphthoquinone, zeylinone, elliptinone, droserone.
11	<i>Sida rhombifolia</i> L.	Malvaceae	Bagjati	Beng.-Lalberela Hindi-Sahadevi	Root	Ephedrine, lignin, quinqzoline, β -phenethylamines, steroid, phytosterol, resin etc.

4. Discussion

Rural people from their personal experience know that traditional remedies are great source of natural product that help in maintaining human health. They don't know the science behind them. But they knew that some medicinal plant are highly effective when used at therapeutical doses.

The information generated from the study will help in making mass awareness regarding conservation needs of medicinal plant and also promotion of ethnomedicinal botany knowledge. The local herbalists collect the plants in non scientific method; therefore botanical collection technique should be employed to aid protection and conservation purposes. The importance of biodiversity and traditional medicine for society may need co operation, collaborative conservation, innovation and practices.

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