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Medicinal Plant, Mucuna Prurita Hook., And Its Use As 'Antidote', In Amarkantak Biosphere Region, (M.P.)

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Abstract

The present study has offered immense scope and opportunities for the development of new medicine (drug). Some well has known modern drugs have been developed through ethnic (folklore) and traditional system of medicine. However, out of 1000 medicinal plant, only 15-20 % have so for been used for development of ethnobotanical sources for drugs by the ethnic (tribal) people in the Amarkantak area., A report only one specie Ethnomedicinal plant of "Kewanch I Kemach" (Mucuna. prurita Hook, syn P. pruriens Bak. FI. Br. Ind. DC.), family (Fabaceae) is present here.

Key words - Ethno medicinal plants, Anti dote, Amarkantak Biosphere region.

Introduction - The use of traditional medicine is widely accepted by rural people in Amarkantak biosphere.

Amarkantak is rich in medicinal and aromatic plant's having a biodiversity of about 300-500 species about 80 percent of these are collected from wild. Maheshwari (1992) reported that the country has many areas where the traditional medicine culture is rich and diverse, making it an ideal site for ethnobotanical study.

Amarkantak, a beautiful hill station in Anuppur district of Madhya Pradesh, is situated in 22° 41' N and 81° 46' E on the eastern most extremity of Maikal range. It is a holy place of pilgrimage and origin of river Narmada, Son, Johila and Mahanadi. It lies on a plateau at an altitude of approximately 1100 meters.

The forest vegetation of the Plateau is of sub tropical type dominated by Sal trees then, soil in usually latrite. The climate is monsoonic tide with well defined summer, rainy and winter. May and June are the hottest month December and January are the coldest Month (T.1-4°C). The average annual rain fall is 1000-1450 mm.

Anuppur, Amarkantak is the home of many ethnic groups. Within this small district, more than 12 ethnic groups and different castes live (Pranaya Verma 1994) viz., Agaria, Baiga, Kol, Gond, Pao Bheel, Bhaina, Kanvar, Bhumia, and Panika, etc. The density of Baiga & Gond Population is higher than others. They live in remote areas of the forest. They mainly depend on natural products of the forest for their livelihood and have retained their traditional cultures and folklores, due to close and constant association with the forests. They have fairly good knowledge of the medicinal and other value of their surrounding plants and mostly depend on them for the remedies of their ailments and diseases.

Study Sites - Four study sites were selected in different parts of Amarkantak as Bhundakona, Jaleshwar, Sonemuda and Narmada Kund (Mai ki bagiya) Bhundakona, Jaleshwar, Son muda, Podki, Bhejri, Bhamaria, Farrisemar, Bijauri, Lapti, Amgawa, Khati Bilaspur, Pamra, Kerha, Bhelma, Khursa, Harri, Sonhra, Vaihar, Barbaspur, Doniya, Sarhakona, Jamuna Dadar, Nonghati, Barsot, Johiiatola (Podki), Masnatola Kapilasangam, Tikritola, and also surrounding of Amarkantak, Bilaspur district- Kevchi, Padmania, Devergavan, Vedrapani, Jaleshwar, GramUmania **and** Dindauri district- Kabeer Chbutra, Pakri, Sonda, Karanjia, and Narigwara for the collection of plant's being used by tribes traditionally (ethnobotanically). These areas were selected on the basis of varied altitude and richness of species, which also comprise rich cultural diversity.

Notable Worker - The local healers and knowledgeable villagers were consulted during the field trips covering three different seasons during Ph.D. work Sep. 2004 - Jul 2005. Ethnomedicinal information were collected following the methods described by Jain (1965) and Jain & Rao (1976), Maheshwari & Singh (1965), Jain (1968), Sikarwar, Maheshwari (1992) & Jain & Tarafder 1970, Chopra et.al; 1958, 1969, Nadkarni, 1954., Knowledgeable people and medicine men were interviewed for recording medicinal use; parts used method of drug preparation, dosage and local name. Under enumeration plant names have been arranged

alphabetically. The correct botanical name is followed by family within parentheses, local names, medicinal uses name of tribe locality. All the specimens have been deposited in the Botany department Govt. P. G. College Shahdol (M.P.) Some local worker studied here like Pverma- (1994), M. P. Singh (2001) & S.L.Bondya, K. K. Khanna et al. (2005). Methodology - The method adopted for the ethnomedicinal study was adopted by Jain 1981. During the study knowledgeable person rural areas of Amarkantak regions & Pushprajgrah block with Shahdol division survey during Sep. 2004 - Jul 2005. Information was collected from tribals medicine men and vaidyas and some formers, about the interviewed therapeutic used of plants in the treatment of various diseases. Information about used and local name of plants was secured from the information. The collected plant specimens were identified by consulting Flora of British India by Benthum and Hooker (1872-1879). Voucher specimens of the species collected are deposited in the Department of Botany Govt. P.G. College Shahdol, Madhya Pradesh (M.P). Enumeration of plants - Correct botanical names are arranged alphabetically following Hara et.al. (1978, 1982) and Hara and Williams (1979) followed by family in brackets, vernacular name in apostrophe and collection number in brackets. Other details given are plant parts used, quantity of plant parts, details of preparation method, and mode of use.

(1) *Mucuna prurita*, (Hook.) syn. ; *M. Pruriens* Bak. (DC.) (FABACEAE) Common & Regional Name: *LN. - Kemach; H. & P. - Kawanch; Eng. - Cow hage; B. - Atkusa S. - Atmagupta; Bo. - Kuhili; Mai. - Corivalli; Shoriyanam; Mara.-Karacha Tam- Punippidukkan, Punaikkali; Tel. - Pilliadugu, Dulagondi;*

Vegetative Character - An annual herbaceous climber, papilionate are distinguished by anomalous secondary thickening, 'Mucuna' stem has secondary growth resembling Cycas or beet root. Root- tap branched. Stem - herbaceous, climber, branched, hairy. Leaf - compound tripinnate leaf (dorsal) upper surface smooth and ventral surface hairy, Inflorescence- racemose, solitary flower bisexual irregular complete, zygomorphic perigynous Calyx - 5 sepals, Corolla -5 petals., Androecium 10 stamens ovary superior., Fruit - brown colour, hairy, legume., 2-4 inches long S shape. Hair is poisonous seed- spots etc. Found all over M.P. Flowering Sept. Oct. Medicinal part use as root, leaf & seeds.

Fig. 1 Mucuna prurita Hook. Fruits and Flowers.

Fig. 2 Rubia cordifolia Linn. Qian., Cao (Rubiaceae) Flowring and Fruiting stage.

Mode of Use :

Use - Paste of roots and seeds two spoons and "Majitha" *(Rubia cordifolia Linn.* Qian. Cao (Family Rubiaceae) stem paste2-3 spoons, "Tulsi" *(Ocimum sanctum* LJ leaves 2- 5 spoons together given orally 3-4 times a day to cure snake bite and other insects bite.

Chemical Substance: Root *I*, **Seed contain :**

Biological Properties - Root- Aphrodisiac, Anthelmintic, Bitter, Diuretic Febrifuge, Emollient, Purgative, Sweet, Stimulant, Thermogenic, Astringent, Laxative, Nervine Tonic.

Chemical Substance:- Root and Seeds yields - Plant *(iMucuna prurita,* Hook.) seeds against snake venom poisoning *M. prurita,* is one of the plants that have been shown to be active against snake venom and, indeed, its seeds are used in traditional medicine to prevent the toxic effects of snake bites, which are mainly triggered by potent toxins such as neurotoxins, cardio toxins, cytotoxins, phospholipase, A2 (PLA2), and proteases (Guerranti et al., 2002). In Plateau State, Nigeria, the seed is prescribed as a prophylactic oral anti-snakebite remedy by traditional practitioners, and it is claimed that when the seeds are swallowed intact, the individual is protected for one full year against the effects of any snake bite (Guerranti et al., 2001). The mechanisms of the protective effects exerted by M. pruriens seed aqueous extract (MPE), were investigated in detail, in a study involving the effects of *Echis carinatus* venom (EV) (Guerranti et al., 2002). In vivo experiments on mice showed that protection against the poison is evident at 24 hours (short-term), and 1 month (long term) after injection of MPE (Guerranti et al., 2008). MPE protects mice against the toxic effects of EV via an immune mechanism (Guerranti et al., 2002)., MPE contains an immunogenic component, a multiform glycoprotein, which stimulates the production of antibodies that cross-react with (bind to) certain venom proteins (Guerranti et al., 2004). This glycoprotein, called gpMuc (see Table 1), is composed of seven different isoforms with molecular weights between 20.3 and 28.7 k Da, and pi between 4.8 and 6.5 (Di Patrizi et al., 2006) 'Carbohydrate, Phenols, Steroids, Glycosides, Tannin, Fe, Ca, Mg, K,AI&Zn, Reddish, Viscous Oil, Alkaloids Mucunine & Mucunadine.

Ref. Sinha and Sinha, (2001).

1. Stem extracts: *Rubia cordifolia Linn.* Qian Cao - All the solvent extracts of stem revealed that they were positive for anthraquinones, flavonoids, glycosides, phenols and saponins. The stem extracts have shown negative result for alkaloids, tannins, steroids and quinones of all the solvent extracts of stem, and the various solvent extracts of root samples have shown more intense colour than stem and leaf extracts. The solvent extracts such as methanol, chloroform, acetone, petroleum ether and aqueous extracts of root possessed anthraquniones, glycosides, saponins, steroids, phenols, flavonoids and were negative for alkaloids, tannins and quinones in all solvent extracts of root.

Result and discussion - The most frequently used traditional phytotherapies are those against gastro-intestinal problems as in other areas in Amarkantak (Pranaya Verma 1994) in old Shahdol district. The survey provides anti psoriasis plants sufficient ground to believe that traditional medicinal practice using native medicinal plants is alive and well functioning in the study area. In many communities, wild plant's species are used as important parts of the primary healthcare system due to belief in the effectiveness, lack of modern medicines and medication and poor economic status of people. The treatment of diseases with plants and plants products also causes no side effects. It is cost effective too.

A large number of commercially important medicinal plants species are over exploited by person's involved in the trade of medicinal plants.

3. Stem extracts: **Rubia cordifolia Linn. Qian Cao** - The plant significance of standardized procedures for crude drug extraction (medicinal plant parts) is to attain the therapeutically desired portions and to quit unwanted material by treatment with a selective solvent. These extracts after standardization are used as medicinal agent such as in the form of tinctures of further processed to be incorporated in any dosage form such as capsules and tablets. These products contain complex mixture of many secondary metabolites, such as alkaloids, glycosides, flavoniods, terpeniods and lignins.

Lack sustainable harvesting methods, inadequate knowledge about forest management and lack of financial resources are the main causes of over-exploitation have been reported. These plants are collected illegally in large numbers from different areas of Amarkantak and supplied to contractors at low rates. According to local people, these activities have led to decline in the population of the medicinal plant species in the forests. If the practices were managed properly, the forest resources and medicinal plant species will provide good service

in medication and subsistence needs.

The concepts of community forestry programme are developing among the user groups which can be taken as a good sine towards conservation and sustainable use of forest resource and medicinal plants.

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References :-

1. Anonymous, 1968 Medicinal plants of India, Vol. 1.11. CSIR New Delhi.
2. Chandra, G. 1970., Chemical composition of the flower oil of Nyctanthes arbor-tristis Linn. Indian perfume 14 (pt. I), 19.
3. Dhingra, V. K., Seshadri T. R. and Mukherjee S. K. 1976., Carotenoid glycosides of Nyctanthes arbor-tristis Linn. Indian J. Chem. 14B, 231.
4. Chopra, R.N. Chopra I.C. and Verma, B.S. 1968., Supplement to Glossary Indian medicinal plants, CSIR New Delhi.
5. Bhattacharjee, S.K. 1998, S.K. 1998., Handbook of Medicinal plants. Pointer publishers, New Delhi.