



SIGNIFICANCE OF SOME THREATENED AND POTENTIAL ETHNOMEDICINAL PLANTS AMONG THE TRIBALS OF UTTAR PRADESH

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ABSTRACT

The human-plant intimate relationship dates back to the origin of human on this planet. With the development of social sense in primitive men, their dependence on the plant resources increased, not only for food, but also for fodder, fuel, drug and shelter. India has its glorious past of traditional medical system. Botanically derived medicinals have played a major role in human societies throughout history and prehistory but with the development of modern civilization, use of allopathic drugs are at increasing rate and use of herbal drugs is either restricted to few communities or areas only. But there are several tribal members of the family where use of herbal drugs is the cheapest and only way for the treatment of different ailments. The traditional healers or medicine-men have their own diagnostic and treatment systems, which they have acquired from their ancestors and long history of use pattern. The information about medicinal plants is mainly confined to the village physicians, chieftains of different communities and older. The intrinsic importance of these medicinal plants can very well prove as a potential source of new drugs, thus, their conservation is highly needed.

Keywords: Ethnomedicinal plants; Traditional medicines; Biodiversity; Drugs; Uttar Pradesh.

Introduction

India has a very rich biodiversity, unique physical and ethnic diversity, traditional culture, and much indigenous knowledge or tribal wisdom (Rao 1989; 1994). There are about 500 tribal and aboriginal communities in India living in close proximity to forests since time immemorial. Due to the close and long association with forests they have acquired tremendous knowledge of plants, plant produce and their uses in their daily needs and health care (Jain 1975, 1991; Dhawan et al. 1977; Maheshwari et al. 1981, 1986; Jain and Puri 1984; Ambasta, 1986; Singh et al. 1994; Singh 1997; Prakash and Singh 2000). In recent years, the habitat loss due to developmental programmes, overgrazing, animal husbandry and tourism has resulted in the loss of biodiversity. Natural causes such as floods, earthquakes and landslides also add to this tragedy. Many species are extinct or on the verge of extinction before they are known for their uses (Goel 1992; Biswas 1998; Prakash and Singh 2001). It is estimated that about 25,000 plant species are on the verge of extinction throughout the world (Jain and Sastry 1980). In order to categorize and update the list of threatened species, the International Union for Conservation of Nature and Natural Resources (IUCN) has recognized the categories on the basis of geographical range, populations and fragmentations of populations. The earlier categories, Extinct, Endangered, Vulnerable and Rare, have been superseded by the categories as Extinct (EX.), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Conservation Dependent (CD), Data Deficient (DD), Low Risk (LR), Not Evaluated (NE) (Nayar 1996). Jain and Sastry (1980) reported 135 species as being rare and threatened in Indian flora.

The native communities, with their unique traditional

cultures and indigenous knowledge are also depleting gradually due to modernization, urbanization, industrialization and other socio-economic developmental programmes for the upliftment of life and economy worldwide. The indigenous knowledge or local knowledge is empirical knowledge of a community relating to all activities ranging from land use and natural resources use, to management and other activities associated with the life sustainable process. The ethnomedicinal plant wisdom as a part of indigenous knowledge plays a vital role in the primary healthcare of the native communities. It has the potential for isolation of safe and effective drugs and for sustainable utilization of ethnomedicinal plant genetic resources and their conservation is highly needed. With this rationale, present study was conducted to record the ethnomedicinal wisdom of tribals of Uttar Pradesh. About 21 ethnomedicinally important plant species were recorded with the help of tribal people and village medicine-men of the state. The study indicates that the traditional medical system is well functioning in this state. The survey of the areas shows that some of the important plants are declining because of overexploitation and environmental disturbances.

Materials and Methods

The indigenous communities such as Kols, Kharwars, Gonds, Bhojas, Tharus, and Banmanus were surveyed in different seasons. The information about the uses of threatened ethnomedicinal plants was gathered with the help of local people, knowledgeable and experienced traditional healers and practitioners and confirmed through visits to different localities recorded. Identification of the plants was done with the help of National Botanical Research Institute, Lucknow. The voucher specimens were collected and deposited in the

herbarium of T.D.P.G. College, Jaunpur. The status of rarity was categorized based on our own observations and the IUCN Red List Criteria.

Results

The potential uses of the threatened ethnomedicinal plants as claimed and practiced by the tribals are arranged alphabetically giving information on local names, family, locality, tribal, mode of administration, and distribution in the tabular form (Table 1). Distributions of the species have been provided on the basis of literature published earlier. The status of rarity is categorized based on our own observations and the IUCN Red List Criteria.

Table 1: Useful threatened ethnomedicinal plants in the state of Uttar Pradesh

| Name of the plants | Family | Local names | Locality | Tribes | Medicinal uses | Distribution | Status of rarity |
|-----------------------------|----------|---------------------|--------------------------------------|------------------|---|--|------------------|
| <i>Abrus precatorius</i> L. | Fabaceae | Ghumchi, Rati | Sonbhadra, Varanasi, Nainital, Kheri | Gond, Kol, Tharu | For the treatment of leucorrhoea, rheumatism, sciatica, impotency, as contraceptive | Plains of U.P., on rocky soil, more or less throughout India | VU |
| <i>Acorus calamus</i> L. | Araceae | Bach, Bal, Ghorbach | Kheri, Sonbhadra | Tharu, Gond | For curing bronchitis, cough and cold and diarrhea, As antidote for snakebite. | In marshy places, wild, throughout India | VU |

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|-------------------------------------|----------------|----------------------------|--------------------------------------|---------------------|--|--|----|
| <i>Asparagus adscendens</i> Roxb. | Liliaceae | Satar | Gorakhpur, Sonbhadra, Varanasi | Tharu, Gond, Kol | To women which increases secretion of milk, the decoction of the root mixed with decoction of <i>Bombax ceiba</i> is used for sexual strength and vigour | Sal forest of terai region of U.P., Western Himalayan region | VU |
| <i>Berberis lycium</i> Royle | Berberidaceae | Kashmoe | Kheri, Sonbhadra | Tharu | As eye drops in eye inflammation, in skin diseases and diabetes | Dry valleys of the Himalaya | EN |
| <i>Calotropis gigantea</i> Ait. | Asclepiadaceae | Sivtara | Raebareilly, Varanasi, Gorakhpur | Kol, Tharu, Bhootia | For curing cholera, rheumatism, asthma, corn, skin infection | Dry hills in U.P. | VU |
| <i>Celastrus paniculatus</i> Willd. | Celastraceae | Umjan, Mujhansi, Kakundani | Sonbhadra, Varanasi, Nainital, Kheri | Gond, Kol, Tharu | For the treatment of tumour cancer, for treating rheumatism and gout, seed oil is massaged on joint pain | Occurs in subtropical Himalayas | CR |

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|--------------------------------------|----------------|-------------------|---------------------------|---------------------|--|--|----|
| <i>Chlorophytum tuberosum</i> Bak. | Liliaceae | Safed Musli | Gorkhpur | Tharu | For maintaining sexual strength and vitality | Sal forest of terai region of U.P. | CR |
| <i>Drimia indica</i> L. | Liliaceae | Ban Piyaz | Varanasi | Kol | For abortion | Plains of U.P., on rocky soil, more or less throughout India | CR |
| <i>Euphorbia fusiformis</i> Buch. | Euphorbiaceae | Ban muli | Gorkhpur, Bahraich, Kheri | Tharu | In paralysis, for the treatment of rheumatism and gout | Western Himalaya foothills | CR |
| <i>Gloriosa superba</i> L. | Liliaceae | Karhari, Kalihari | Varanasi, Gorkhpur, | Kol, Tharu, Bhootia | In rheumatism and gout | Along with the sub-Himalayan tracts and terai region | CR |
| <i>Gymnesylvestre</i> (Retz.) Schult | Asclepiadaceae | Gurmar | Varanasi, Sonbhadra | Kol | In the treatment of diabetes | Bundelkhand, Saharanpur, dry hills in U.P. | VU |
| <i>Hedyscium spicatum</i> Buch. | Zingiberaceae | Kapoor-kachhri | Kheri | Bhootia | Used as anti-inflammatory | Subtropical region of western Himalaya | VU |

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|--|-----------------|--------------------------------|---------------------|-----------|--|--|----|
| <i>Helminthostachyella zeylanica</i> Hook.f. | Ophioglossaceae | Kamraj | Gorkhpur | Tharu | Given in spermatorrhoea and to improve memory | Occur rarely in the Sal forest of terai region of U.P. | CR |
| <i>Hemidesmus indicus</i> (L.) R. Br | Asclepiadaceae | Chher-dudhiya, Padhin, Kapoori | Sonbhadra, Varanasi | Gond, Kol | For the treatment of diabetes, given orally as an antidote to snake bite | Forest of U.P. | VU |
| <i>Perilla frutescens</i> (L.) Britt. | Lamiaceae | Bhanjiri | Kheri | Tharu | Seed oil is massaged twice a day in arthritis for a long time | Western Himalaya | VU |
| <i>Piper longum</i> L. | Piperaceae | Peeper, Farpiiper | Kheri | Tharu | The ripe fruit powder mixed with honey is given for cough and cold, root powdered for headache | Wild in terai region of Himalaya | EN |

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|--|--------------|--|---------------------|--------------|---|---|----|
| Pygmeo-premna herbacea (Roxb.) Mold. | Verbenaceae | Gat hiyavad, Bhan, Gthiavat | Varanasi, Kheri | Kol, Tharu | The paste of the whole plant is made into pills and given three times a day for fifteen days for the treatment of rheumatism and gout, warm root paste is applied externally for the treatment of rheumatoid arthritis and gout | Subtropical Himalaya | CR |
| Rauwolfia serpentina (L.) Benth. Ex Kurz | Apo cynaceae | Jhabarbarua, Chhotachand, Sarpagan dha | Kheri | Tharu, Bhoxa | The extract of the root is given two times for three days to cure fever and blood pressure | More or less throughout the hotter parts of India | VU |
| Andrographis paniculata (Burm.) Wall ex Nees | Acanthaceae | Kirayat, Kal megh | Gorkhpu r, Varanasi | Tharu | Used as tonic, influenza, bronchitis, decoction is used in jaundice | In waste cultivated in garden places, more or less throughout India | VU |

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|--|---------------|------------|------------------|-------|---|--------------------|----|
| Costus speciosus (Koenig ex Retz.) Smith | Zingiberaceae | Kew | Kheri, Gorkhpu r | Tharu | Rhizomes are cooked and eaten, used as tonic, in fever etc. | Sal forest of U.P. | EN |
| Dioscorea deltoidea Wall. ex kunth | Dioscoreaceae | Gun, Kithi | Kheri | Tharu | Used in rheumatic and ophthalmic diseases as a oral contraceptive | Western Himalaya | EN |

Discussion and Conclusion

The resurgence of interest in green medicine is due to many reasons that the number of diseases and disorders are increasing day by day and prices spent on medicines are also increasing. Even some diseases like asthma, cancer, diabetes, epilepsy, filaria, jaundice, rheumatism, gout and arthritis are still incurable in allopathic systems of medicine. The loss of biodiversity resulting in extinction of many useful species has also posed a serious concern to the global medical scientists and researchers. With this point of view medicinal plants have become one of the main concerns of the world conservation organizations. Systematically more attempts to study and document the medicinal plants of the Indian sub continent are seriously needed. There is also a need to establish herbal drug centres for collecting, processing and preparation of ethno-medicine and to develop cultivation, farming and documentation of potential and promising ethnomedicinal plants in social forestry operation for improving the life and economy of the local tribal and rural peoples. The establishment of some more wild life sanctuaries, national parks and biosphere reserves in botanical rich areas and hot spots are also required for the protection and conservation of valuable biodiversity.

Therefore, there is urgent need to document complete biodiversity, prioritize useful threatened plants, and conserve them *in-situ* and *ex-situ* for sustainable utilization in health care and human welfare.

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