

Ethnobotanical uses of Medicinal Plants in Lalbagh Block of Murshidabad District, West Bengal

Sorita Mondal

Department of Botany, Berhampore Girls' College, Berhampore, Murshidabad, West Bengal

Abstract: The present paper deals with observation on Ethno-medicinal uses of plants by the tribal people of Lalbagh Block of Murshidabad District, West Bengal. Tribal medicine is an age-old therapeutic system, which is traditionally practice among different tribal communities for health care. The tribal people in the block of this district mainly depend upon the use of herbal medicine in curing the ailments & diseases. Twenty plant species belong into different plant families have been recorded from here. These plants species are effective for various common human ailments. This folk knowledge should be documented, and therapeutic validation of this herbal medicine is emphasized.

Keywords: Ethno-medicine, therapeutic value, tribal people, Lalbagh Block, Murshidabad

I. INTRODUCTION

Since time immemorial, human communities are dependent upon plant resources for their food, shelter and health care. Medicinal plants are the most important biological resources of the world. Medicinal plants play a major role in the rural areas of the third world countries. Herbal medicines are extensively used by the indigenous people of Asia, African and South American countries.

Rural India, inhabited by a number of ethnic groups with their diverse cultural practices, heavily depends on traditional system of medicine as a part of their lifestyle. According to World Health Organization (WHO) nearly 80% of the populations of developing countries rely on traditional medicines, mostly plant drugs, for their primary health care needs (AICRPE 1992-98). In fact it is well known that even in developed countries, the use of traditional medicines is quite prevalent. Modern pharmacopoeia also still contains at least 25% drugs derived from plants and many others which are synthetic analogues built

on prototype compounds isolated from plants (Pradhan and Rahaman, 2011). The indigenous system of medicine practiced in India is based mainly on the use of plants. Charak Samhita (1000BC-100AD) has recorded 2000 vegetable remedies. Ancient medicine was not solely based on empiricism and this is evident from the fact that some medicinal plants which were used in ancient times still have their place in modern therapy (Das and Mondal, 2012). Demand for medicinal plants is increasing in both developing and developed countries of the world due to growing recognition of natural products being non-narcotic, having no side-effects, easily available at affordable prices and sometime the only source of health care available to the poor. Ayurveda, which is one of the oldest systems of traditional healthcare system and yet living in traditions practiced widely in India, Sri Lanka and other countries has a sound philosophical and sound basis. Atharvaveda (around 1200 BC), Charak Samhita and Shusrut Samhita (1000- 500 BC) are the main classics that gives a detailed description of over 700 herbs. Herbal medicines are becoming popular worldwide due to its growing recognition of natural products being cheaper and without any side effects. Demands for medicinal plants are increasing in both developing and developed countries. Out of the 20,000 medicinal plants listed by the WHO globally India's contribution is 15-20%. In India, about 2,000 drugs used are of plant origin. India contains over 5% of the worlds' diversity though it covers only 2% of the earth's surface but it is also one of the biodiversity hotspots of the richest and highly endangered eco- regions of the world. In India, various communities use over 50% of the plant species of any ecosystem in ethno-medicine and in general over 7500 species are utilized in primary healthcare by various tribes as well as other local people (Tripathi *et al.*, 2013). Medicinal plants

are now under great pressure due to their excessive collection or exploitation. Continuous exploitation of several medicinal plant species and substantial loss of their habitats have resulted in the population decline of many high value medicinal plant species over the years. The degree of threat to natural populations of medicinal plants has increased because more than 90% of medicinal

plant raw material for herbal industries in India and also for export is drawn from natural habitats. The weakening of customary laws has often proved to be easily diluted by modern socio-economic forces. There are many other potential causes of rarity in medicinal plant species, such as habitat specificity, narrow range of distribution, land use disturbance, introduction of non-natives, habitat alteration, climatic changes, heavy livestock grazing, explosion of human population, fragmentation and degradation of population, population bottleneck and genetic drift (Sajem *et al.*, 2008).

Since most of the tribal or ethnic communities do not have their own script and written language, the information about prescription, pharmacology, attitude towards diseases, diagnosis, etc. of the age-

old tribal medicine system is lying unclaimed. The people belonging to modern societies are not fully aware of this traditional knowledge system. In our national agenda, documentation, conservation, preparation of databases of medicinal plants and their cultivation are now priority issue. Researchers are focusing mainly on ethno-botanical and ethno-medicinal investigation to fulfil the increasing demand of herbal products. The traditional knowledge of herbal medicine is much enriched here in the district due to its diversified plant wealth and this valuable knowledge which is still surviving in the tribal culture must be documented immediately before it gets lost forever. Thus it has become imperative to collect the information related with ethno medicine and document the same for further scientific studies.

II. MATERIALS AND METHODS

The present study deals with the indigenous knowledge related with ethno-medical uses of plants used by the tribal as well as the local people of Murshidabad district, West Bengal. The district Murshidabad is one of the smallest districts of the state West Bengal, India that is full of natural resources.

Table 1. Medicinal plants used by the tribal people of Murshidabad district in West Bengal

SL NO.	ANICAL NAME	FAMILY	TRIBAL/ LOCAL NAME	PARTS USED	AILMENTS	MODE OF ADMINISTRATI ON
1.	<i>Azadirachta indica</i>	Meliaceae	Nim	Fruit, Leaf, Stem bark	Malaria, Stomachache, impotency	Leaves, stem bark boiled in water and the decoction is taken orally
2.	<i>Ficus benghalensis</i>	Moraceae	Bat	Latex	Paronychia (nail infection)	Latex collected from the plants is warmed and applied externally on the affected nail of toes twice in a day.
3.	<i>Terminalia cuneata</i>	Combretaceae	Arjun	Bark	Heart trouble	Bark paste mixed with ghee (clarified butter) and taken one teaspoonful once in the morning in empty stomach for seven days
4.	<i>Calotropis gigantea</i>	Asclepiadaceae	Akanda	Leaf Root Latex	High fever Snake bite Skin irritation	Fresh leaves are chewed for snake bite. Juice of leaves is used for fever. Latex is used for skin diseases
5.	<i>Piper nigrum</i>	Piperaceae	Golmorich	Fruits	Anticancer, Antioxidant	Black pepper is stimulating to the digestive system, expectorates coughs, and helps to clear the lungs of congestion

6.	<i>Mimosa pudica</i>	Mimosaceae	Lajjabati	Root Leaf	Dysentery, Bleeding wounds	The fresh juice of leaves is given internally to stop bleeding. The paste of the leaves is applied externally on piles, fissures, skin wounds, ulcers, etc. The root powder, in a paste form is also applied to vaginal prolapse
7.	<i>Datura metel</i>	Solanaceae	Dhutura	Leaf	Antimicrobial, epilepsy, hysteria, insanity, heart diseases, skin diseases	Leaves are used for scabies, eczema and allergy. Application or drinking of leaf juice relieves pain and swelling. Leaf juice is mixed with a little opium and applied to the affected area to reduce swelling of gums or base of ears
8.	<i>Ficus hispida</i>	Moraceae	Dumar	Leaf Bark	Antiasthmatic, Chest pain	Juice of leaves, Powder of bark

9.	<i>Cissus quadrangularis</i>	Vitaceae	Harjora	Stem	Fracture bone	Stems are banded with fracture bone
10.	<i>Curcuma longa</i>	Zingiberaceae	Halud	Rhizome	contraception, swelling, insect stings, wounds, whooping cough, inflammation, internal injuries, pimples, injuries	Sweetened milk boiled with the turmeric is the popular remedy for cold and cough. It is given in liver ailments and jaundice.
11.	<i>Aegle marmelos</i>	Rutaceae	Bel	Leaf Fruit	Anticancer, Antimicrobial	Fruit is used to make juice. Leaf juice is used for antimicrobial
12.	<i>Holarrhena antidysenterica</i>	Apocynaceae	Kurchi	Root Leaves Bark	Acidity, Diarrhoea, Fever, Malaria	Decoction of the bark is administered orally. Leaves are boiled with water and taken orally till the fever cure. Equal amount of leaves of kurchi and <i>Cyperus rotundus</i> L. are ground into a fine powder.
13.	<i>Alstonia scholaris</i>	Apocynaceae	Chhattin	Bark Leaves	Abdominal pain, Fever, Anti cancer, dysentery, diarrhea, skin disorders	Bark paste is effective in leprosy, skin diseases, chronic & foul ulcer.
14.	<i>Tamarindus indica</i>	Cesalpiniaceae	Tentul	Leaves Fruit	Jaundice, worm infection, constipation, pyretic, dysentery, loss of appetite, alcohol toxicity, vomit, worm infection, Burn wound	Leaf is used as a hot juice or decoction. Consumed as pulp
15.	<i>Spondias pinnata</i>	Anacardiaceae	Amra	Roots Bark Leaves Fruits	Regulating menstruation, Snake-bite, Dysentery, Acidity, Astringent	Juice of roots, Paste of bark, Leaf powder and bark powder is useful in dysentery, Tender leaves mixed with sugar is useful in acidity,

					Diarrhoea Throat diseases	
--	--	--	--	--	---------------------------	--

Generally, the two types of interviews were taken, firstly of individuals and secondly of groups. Of individuals, persons were selected at random on the way or entering a hut finding out knowledgeable individuals from the village or also the Headman. In group interviews more than one individual were approached, our purpose explained, and interviews taken. They were requested to collect specimens of the plants they knew or to show the plant species on site. The collected plant species have been carefully identified with the help of different Floras and standard literature (Datta and Banerjee, 1978; Jain, 1987; Jain, 1991; Sanyal, 1994; Maheswari, 2000; Tribedi and Sharma, 2004). In this context present investigation has been carried out to provide the significant information regarding traditional uses of plant wealth as folk medicine by the tribal people as well as the local people of Murshidabad district, West Bengal which are the new addition to the district inventory of ethno-medicine.

III. RESULTS AND DISCUSSION

Locally available plants are used by the tribal people as their household remedies and various purposes (Table 1). The data has been verified from the ethnic people of different tribal areas. Statistically, information for treating a particular ailment from different informants certainly reflects the accuracy and authenticity of the folk drugs employed. In our investigation we found that tribal people as well as local people of Murshidabad district use these plants in different ways which is devoid of Ayurvedic and Unani medicinal system. Altogether 15 plant species belonging to 10 families have been recorded from the district. These plant species are effective for various common human ailments. During the course of investigation it has been observed that a particular plant is sometime prescribed for different ailments in different localities and some Vaidya's (Ayurvedic physicians) apply a mixture of plants for remedy of diseases. That means all these plants are useful for curing the ailments. The plants are enumerated in (Table-1) with their botanical name, family, parts along with their ethnomedicinal uses. The local or tribal people of this

area follow the mode of application of medicinal herbs by the help of local Vaidyas and Kabiraj or their own experience. External applications (mostly for skin diseases, snake bites and wounds) and internal consumption of the preparations were involved in the treatment of diseases. They obtain a variety of plant products from wild plants to fulfill their own needs as they belonging to economically weaker sections of the society. In the tribal areas the rules and regulations by which the tribal people were traditionally governed are now being gradually abolished by the young literate generations. According to the ethnic healers, the modern generations are least interested to learn and practice the traditional herbal therapy of healing various health disorders. They are very much afraid of the abolishment of the practice. Another crucial factor responsible for such change is the migration of youth from tribal areas to urban areas. The gap is further widened due to the consumption of modern medicine. Therefore, the importance of recording indigenous knowledge based technology as described here become essential in view of rapid socio economic and cultural changes and for high technique low cost solution. Religious and cultural faith, poor economy and lack of modern medicinal facilities in the villages of the study area seem to be the cause of utilization of these plants. While conducting the survey the inhabitant revealed that most of the people are dependent on plants and they also prefer it. Due to rapid increase in human population and biotic interference some species gradually getting abolished from their natural habitats. In our investigation we found that old ethnic healers are afraid of the extinction of the medicinal plants due to anthropogenic activities. Some of the ethnic healers are concerned about the purpose and collect the rare plants from the forest and cultivate in their gardens.

Now, traditional knowledge regarding the use of medicinal plants has been threatened in its existence and is gradually being lost from the traditional society due to erosion of its culture. It is now high time for us to document the herbal traditional knowledge before it gets lost from the tribal society forever and simultaneously to conserve these medicinal plant

resources also. The data provided in this study will finally be helpful to prepare the district as well as state inventory on folk medicine. The various folk medicinal uses of plants recorded here in this investigation need further scientific studies for their therapeutic validation.

IV. CONCLUSION

Necessary steps should be taken to prevent the extinction of these highly medicinally important plants. To avoid biodiversity extinction some measures should be taken, like, cultivation of rare medicinal plants, provision of training and extension services to farmers engaged in cultivation of medicinal plants, establishment of herbal gardens in forest areas and creation of seed bank. This type of studies is extremely necessary to prepare a database of the valuable indigenous medicinal plants and their issues for mankind. The data may also be useful for developing a project on cultivation technique for these economically important medicinal plants for the improvement of these ethnic groups. As this is a field investigation further research is yet to be initiated in the laboratory to find out noble medicines.

ACKNOWLEDGEMENT

The authors are thankful to Professor J. P. Keshri, Department of Botany, University of Burdwan for his valuable suggestion and comments on present investigation.

REFERENCES

- [1] Chadwick, D.J., and Marsh, J. 1994. Ethnobotany and the Search for New Drugs, John Wiley and Sons, Chichester, UK. Pp 43-59.
- [2] Das, P.K., and Mondal, A.K. 2012. A report to the rare and endangered medicinal plants resource in the drydeciduous forest areas of Paschim Medinipur district, West Bengal, India. *International Journal of Drug Discovery and Herbal Research* 2(2): 418-429.
- [3] Datta, S.C., and Banerjee, A.K. 1978. Useful weeds of West Bengal rice fields. *Economic Botany* 32: 297-310.
- [4] Jain, S.K., and Mudgal, V. 1999. A handbook of Ethnobotany. Bishen Singh Mahendra pal Singh, Dehradun, India.
- [5] Jain, S.K. 1987. A manual of Ethnobotany. Scientific Publishers, Jodhpur, India. Pp 225.
- [6] Jain, S.K. 1989. Methods and Approaches in Ethnobotany. NBRI, Lucknow, India. Pp 9-12.
- [7] Jain, S.K. 1991. Glimpses of Indian Ethnobotany. Oxford and IBH Publishing Company Private Limited, New Delhi, India. Pp 218-231.
- [8] Jain, S.K. 1997. Contribution to Indian Ethnobotany. Scientific Publ., Jodhpur, India.
- [9] Kirtikar, K.R., and Basu, B.D. 1935. Indian Medicinal Plants. Revised by E. Blatter, J.F. Caius and K. S. Mhaskar. Lalit Mohan Basu Publishers, Allahabad, India. 4(2): 419-424.
- [10] Maheswari, J.K. 2000. Ethnobotany and Medicinal plants of Indian Sub-continent. Scientific Publishers, Jodhpur, India. Pp 1-27.
- [11] Martin, G. 1995. Ethnobotany-A method manual. Chapman and Hall, London. Pp 111- 122.
- [12] Pal, D.C., and Jain, S.K. 1998. Tribal Medicine. Naya Prokash, Kolkata, India. Pp 8-9.
- [13] Rahaman, C.H., and Mandal, S. 1998. Ethnomedicinal studies of some plants of Purnea district, Bihar. *Indian Journal of Landscape Systems and Ecological Studies* 21(1): 173- 179.
- [14] Sajem, A.L., Rout, J., and Nath, M. 2008. Tribal knowledge and status of some rare and endemic medicinal plants of North Cachar Hills district of Assam. *Northeast India Ethnobotanical Leaflets*. 12: 261-275.
- [15] Sanyal, M.N. 1994. Flora of Bankura District, West Bengal. Bishen Singh Mahendra pal Singh, Dehradun, India. Pp 555.
- [16] Sharma, P.P., and Singh, N.P. 2001. Ethnobotany of Dadar, Nagar Haveli and Damans. Botanical Survey of India, Kolkata, India Pp 322.
- [17] Singh, V. and Pandey, R.P. 1998. Ethnobotany of Rajasthan, India. Scientific Publishers, Jodhpur, India.
- [18] Tribedi, P.C., and Sharma, N.K. 2004. Ethnomedicinal plants. Pointer publishers, Jodhpur, India. Pp 213.

- [19]Tripathi, S., Roy, S., Mondal, A.K., and Verma, N.K. 2013. Rare ethnomedicinal plants of south West Bengal, India with their different medicinal uses: Needs conservation. *International Journal of Life Science Biotechnology and Pharma Research* 2(2): 114-122.