

Full Length Research Paper

Study of some Plants used as Medicine by Local People of Chaugan Village of Bankura District, West Bengal, India.

Santimoy Mondal* and Shyamal Kanti Mallick

Department of Botany, Ramananda College, Bishnupur, Bankura-722122, West Bengal, India.

Article history

Received: 19-08-2016

Revised: 26-08-2016

Accepted: 30-08-2016

Corresponding Author:

Santimoy Mondal

Department of Botany,
Ramananda College,
Bishnupur, Bankura-
722122, West Bengal,
India.

Abstract

The district Bankura of West Bengal is inhabited by a large number of tribals. The present study deals with an ethno-medico botanical survey and identification of different plants used by the tribal and rural people of Chaugan Village, Bishnupur, Bankura. Results revealed that region is rich in medicinal plants. 40 plant species of 26 families are used by the tribal people for several common diseases like bronchitis, urinary disease, jaundice, skin diseases, sexual disease etc. and several diseases of domestic animals also.

Keywords:- Tribals, Medicinal plants, Ethno-medicinal plants.

Introduction

Ethno-botany deals with the studies among the tribal and rural people for recording their unique knowledge about plant wealth and search of the new sources of herbal drugs, edible plants and other aspect of plants. The term "Ethnobotany" was first used by American Botanist John William Harsberger in 1895 to describe the study of people's use of plants, including medicinal plants. Use of plants to cure specific ailments is an age old practice in our country. It is considered as an indigenous system and has been documented in Ayurveda, Siddha, Unani and other type of therapies, but during the last century there has been a rapid extension of allopathic medicinal treatment in India and presently it has become one of the most prevalent systems of medicine in the modern society.

Plants are considered as the most important biological resources of the world. Since time immemorial, human communities are dependent upon plant resources for their food, shelter and health cure. According to World Health Organization (WHO) nearly 80% of the population of developing countries rely on traditional medicines mostly plant drugs, for their primary health care needs (AICRPE 1992-1998). Demand of 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, early available at affordable prices. Most literature related to ethno-botanical work (Namahata D and Mukherjee A, 1988, 1989; Mukherjee A and Namahata D, 1988; Ghosh A, 2002; Mallick S K and Behera N, 2009; Acharya J and Mukherjee A, 2010; Mallick H and Mallick S K, 2012; Mondal T and Biswas S, 2012; Mallick S K, Banerjee P, Saha A, 2012; Sinhababu A, Banerjee A, 2013; Rahaman C. H, Karmakar S, 2015;) is conducted in the different regions of Bankura district. But no work has been reported so far on Chaugan village of Bankura district of West Bengal and it is a rich vegetation area, on this background, the objective of this paper is to document their valuable information about the plants.

Materials and methods**Study area**

Bankura is one of the most important district of West Bengal where most of the area is adjacent to the forest. It is located in the western part of West Bengal. The district has been described as the connecting link between the plains of West Bengal on the East and the Chota Nagpur on the West. The adjacent districts are Burdwan in the North, Purulia in the West, Paschim Medinipur in the south and Hoogly in the South East. The geographical location of Bankura between 22°38' and 23°38' North latitude and between 86°36' and 87°46' East longitude. It has an area of 6,882 sq.km and total forest area 1,404 sq.km. It has the highest tribal population in the state.

Sampling area

For the purpose of the present study, a remote village "Chaugan" and its surrounding areas situated in the Eastern part of Bankura district was selected. This is a small village under Bishnupur Tehsil and the dwellers are mainly tribal. According to Census 2011, the total geographical area of this village is 332.25 hectares. Chaugan has a total population of 813 peoples and about 191 houses. Bishnupur is the nearest town to "Chaugan" which is approximately 6 km away from Bishnupur. The climate is tropical with distinct three seasons: Summer (March-June), Rainy (July-October), and Winter (November-February). The temperature varies from 12°C-42°C. Relative humidity ranges from 25%-85% around the year.

Sampling method

An intensive field study was conducted twice in a month for Ethno medicinal survey in different areas of village from March 2016 to July 2016. Data of the same is presented below. Local medicine man and the old villagers were the main source of information. Various plants were collected from the surrounding vegetation and shown to village medicine man and information has been collected regarding the local name, parts used, method of preparation, doses of medicine, medicinal property etc. Concern plant specimen were collected and identified by standard taxonomic methods by correct botanical name with its family, local name, and their uses and some of them were processed for herbarium, that will be deposited in the herbarium of Botany Department, Burdwan University, Burdwan.

Results

In the present investigation 40 species of medicinal plants belonging to 26 families were found. Out of the families 5 were belongs to monocotyledons, 20 families were dicotyledons and 1 family is pteridophyte(Fig:-1). The major plant families used by the tribal for their health care are Fabaceae (5 species) followed by Amaranthaceae, Asclepiadaceae, Asteraceae, Euphorbiaceae(3 species), Araceae (2 Species), Acanthaceae, Aizoaceae, Asparagaceae, Boraginaceae, Cactaceae, Convolvulaceae, Crassulaceae, Cyperaceae, Labiatae, Liliaceae, Marsileaceae, Meliaceae, Mimosaceae, Oxalidaceae, Rubiaceae, Saptoaceae, Scrophulariaceae, Solanaceae, Sterculiaceae, Zingiberaceae. These ethno-medicinally important plants were categorized into 4 types: 22 Herbs, 10 Shrubs, 4 Climbersand 4Trees (Fig:-2). Different parts of medicinal plants were used as medicine by the local traditional health healers.

Among the different plant parts the leaves are most frequently used for the treatment of diseases followed by root, whole plant parts, latex, seed, stem etc.(Fig:-3). From the study it was found that plants are mostly used to treat different diseases such as: cough and cold, jaundice, dysentery, toothache, pox, skin diseases (chhuli, ring worm) etc. by applying the preparation in the form of extracts, pastes, juices, powder and sometimes in combination with other parts of same or different plants and other substances such as honey, sugar, cow milk, goat milk are also used in various preparations. The detailed lists of various plants are used by the tribal along with their scientific names with respective families, local names and mode of use has been presented below in (Table:- 1) alphabetical order.

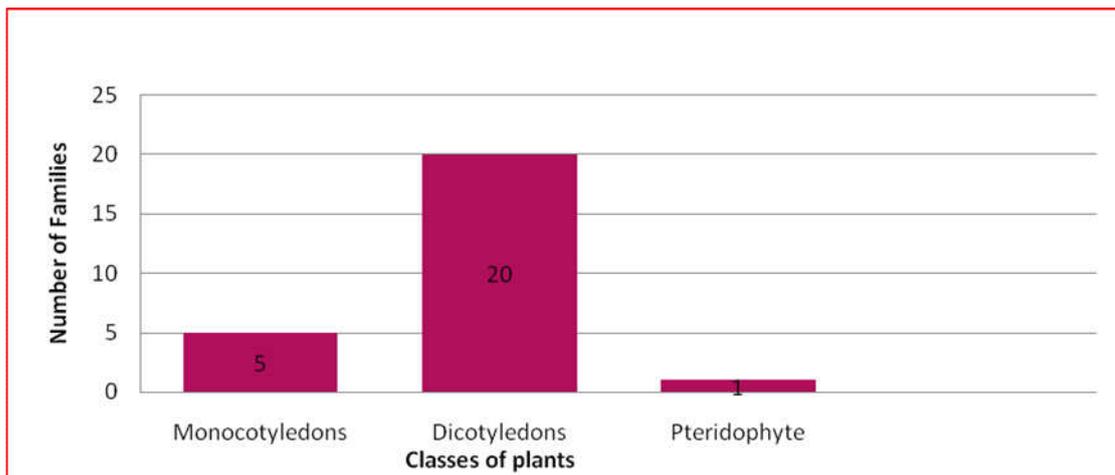


Fig- 1 Showing Different Classes of Plants

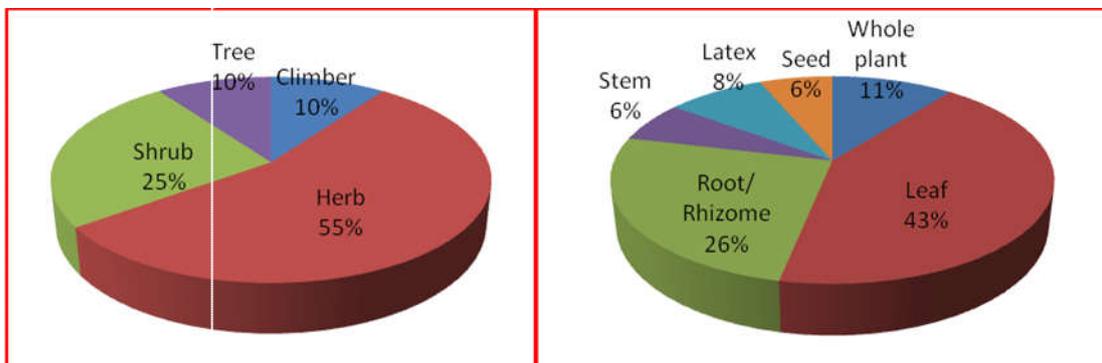


Fig-2 Graphical representation of habit distribution

Fig-3 Graphical representation of different plant parts in use

Table:-1 Ethno-medicinal Uses of Concerned Plants

SL. No.	Scientific Name	Family	Local Name	Medicinal uses
1	<i>Abrus precatorius</i> Linn.	Fabaceae	Kunch	Seeds with leaves of bamboos are given to cattle to treat constipation.
2	<i>Acacia nilotica</i> (L.) Delile.	Mimosaceae	Babla	Young twig with atop rise are made into paste and given to cure blood dysentery.
3	<i>Achyranthesaspera</i> Linn.	Amaranthaceae	Chirchiri /Apang	Leaf extract applied for the treatment of jaundice.
4	<i>Acoruscalamus</i> Linn.	Araceae	Bach	Rhizome dust administered with honey to cure extreme jaundice.
5	<i>Aervajavanica</i> Juss exSchutt.	Amaranthaceae	Labishalyaka rani	Whole plant paste is applied on cuts and wounds to stop bleeding. Leaf paste used to treat chhuli, one type of skin disease.
6	<i>Aloe barbadensis</i> Mill.	Liliaceae	Ghritkumari	Leaf juice is applied to treat achene.
7	<i>Amaranthus spinosus</i> Linn.	Amaranthaceae	Kantanotey	Root paste with black piper taken at morning to stop white discharge.
8	<i>Ambromaugusta</i> Linn. f.	Sterculiaceae	Olatkambal	Root extracts with piper is effective to break sterility.
9	<i>Amorphophallus campanulatus</i> Blume ex. Decne.	Araceae	Ole	Stem rubbed in body part to cure furuncle.
10	<i>Asparagus racemosus</i> Wild.	Asparagaceae	Satmuli	Root kept in water over night and then water is taken at empty stomach to treat pain, ulcer, paste applied on wounds.
11	<i>Atylosias carabaeoides</i> Benth.	Fabaceae	Ban kurti	Leaf paste used to cure throat swelling of cattle. Whole plant is given to cattle to cure diarrhea.
12	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem	Leaf paste applied to cure skin disease; decoction is applied in wounds to protect against infection, young leaves are eaten as a purifier of blood.
13	<i>Blumealacera</i> (Burm. f.) De.	Asteraceae	Kukshime	Leaf extract with sugar is useful in treatment of chicken pox, cholera.
14	<i>Butea frondosa</i> Roxb.	Fabaceae	Palash	Leaf petioles liquid is taken in a small piece of cotton and then placed in infected teeth to reduce pain and infection.
15	<i>Bryophyllum pinnatum</i> (Lam.) Kurz.	Crassulaceae	Patharkuchi	Leaf paste used to stop bleeding, crushed leaf with 8-10 black pipers is useful against diarrhea.
16	<i>Cajanuscajan</i> (L.) Huth.	Fabaceae	Arhar	Leaf (8-10 pc) crushed and the juice is taken at morning in empty stomach to cure jaundice.
17	<i>Calotropisgigantea</i> (Linn.) R.Br. ex Ait.	Asclepiadaceae	Akanda	Latex with mustard oil and molasses are used in case of dog bite and other poisonous insects bite.
18	<i>Cereus pterogonus</i> Lamaire.	Cactaceae	Manasa	Roots of this plant mixed with the roots of bena (<i>Vetiveriazizanioides</i>) and chatumansa (<i>Opuntiadillenii</i>) along with the seeds of black piper to remove the pimple.
19	<i>Croton bonplandianum</i> Baill.	Euphorbiaceae	Churchuti	Leaf juice used as antiseptic in cuts and wounds.
20	<i>Curcuma amada</i> Roxb.	Zingiberaceae	Am ada	Rhizomes dust with ajwanand black piper are given to cattle to cure sores in mouth, throat swelling and high fever.
21	<i>Cyperus rotundus</i> Linn.	Cyperaceae	Mutha	Roots with bark of kurchi (<i>Holarrhenaantidysentrica</i>) are boiled in water and the filtered is drink to

				stop loose motion.
22	<i>Elephantopus scaber</i> Linn.	Asteraceae	Mayurjhuti	Roots with flattened rice are crushed and make into pills and effective against bloody urine.
23	<i>Eupatorium odoratum</i> L.	Asteraceae	Vabri	Leaves are crushed and the liquid is used in skin wounds to stop bleeding.
24	<i>Evolvulus nummularius</i> L.	Convolvulaceae	Bhuisushni	Whole plant juice is used to treat amoebic dysentery.
25	<i>Gymnema sylvestris</i> (Retz) R.Br. ex Schult.	Asclepiadaceae	Gurmar	Leaves are useful in diabetes patients.
26	<i>Heliotropium indicum</i> Linn.	Boraginaceae	Hatisur	Leaf paste applied to treat against infection, wounds and poisonous insect stings.
27	<i>Hemides musindicus</i> R. Br.	Asclepiadaceae	Anantamul	Root powders with cow milk are given to mother to promote production of breast milk.
28	<i>Jatropha curcas</i> Linn.	Euphorbiaceae	Bag varena	Latex with honey/sugar are used to treat dysentery, and used as preventive medicine of pox.
29	<i>Jatropha gossypifolia</i> Linn.	Euphorbiaceae	Lalvarena	Latex applied to treat injury and pains in gums and teeth.
30	<i>Justicia adhatoda</i> Linn.	Acanthaceae	Basak	Juice with honey taken to treat cold, cough, and bronchitis.
31	<i>Marsilea minuta</i> Linn.	Marsileaceae	Sushni	Whole plant with ajwan is crushed and make into pills and used to treat dysentery both in man and cow also.
32	<i>Mimusops elengi</i> Linn.	Sapotaceae	Bakul	Seeds rubbed into paste and applied to treat insect bite, scorpion sting.
33	<i>Mollugo perfoliata</i> Linn.	Aizoaceae	Gimasak	Root with zinger are made into paste and taken at everyday early morning to treat pox.
34	<i>Ocimum sanctum</i> Linn.	Labiatae	Radhatulsi	Leaves extracts with honey given to children to cure cold and cough.
35	<i>Oxalis corniculata</i> Linn.	Oxalidaceae	Amrul	Leaves extracts with cow milk are used to treat diarrhea and dysentery.
36	<i>Paederia scandens</i> (Lour.) Merrill.	Rubiaceae	Gandal	Leaves juice taken in empty stomach as blood purifier and in jaundice treatment.
37	<i>Scoparia dulcis</i> Linn.	Scrophulariaceae	Mithapata	Leaf juice taken at early morning to cure painful urination. Whole plant extract used to treat diabetes.
38	<i>Solanum sisymbriifolium</i> Lam.	Solanaceae	Sadkantakeri	Seed paste applied to treat toothache. Root decoction as a preventive medicine of pox.
39	<i>Tephrosia purpurea</i> (Linn.) Piers.	Fabaceae	Ban neel	Leaf paste with mustard oil used in case of body pain.
40	<i>Tridax procumbens</i> Linn.	Asteraceae	Targanda	Leaf juice used to stop bleeding in cut and wounds.

Discussion

The materials are prepared at home whenever necessary by crushing, boiling, mixing the materials, preparing the pastes etc. for medicinal purpose. Although these people are very poor but they have their own unique culture and life style. Both the tribal and other local people of the district depend on the plants for day to day medicinal purposes as well as other purpose. The use of herbal medicine is wide spread in this region with higher percentage of ethnics as well as non-ethnic population also relying on it. This is because of lack of awareness; shyness and lack of modern medicinal facilities available in their region and the high cost of modern medical system for treatment are unaffordable by this poor ethnic people. The information documented in this work is totally from primary sources being based on the uses of locally available plants by the people as their household remedies. The medicine varies according to the symptoms and with the tribe and place it means that a particular plant is sometimes prescribed for different ailments in different localities and sometimes they apply a mixture of plants for remedy of diseases. The observation of present study showed that traditional medicine plays a significant role among the local people of Bankura.

Conclusion

As a result of this survey many interesting and useful information about the plants was gathered. Total 40 numbers of plants species were recorded which are used as medicine. It includes trees, shrubs, herbs and climbers etc. People who extensively and solely use these plants as medicine found to be no side effects. From this study it has been concluded that in Chaugan only very small portion of population still depends on natural resources and now they became gradually changed with modern system of life. The study revealed some new findings after comparison of previous literature, such as the application of *Abrus precatorius* Linn. for the remedy of constipation of cattle's, *Acorus calamus* Linn for the remedy of extreme Jaundice *Amorphophallus campanulatus* Blume ex. Decne. for the remedy of furuncle, *Butea frondosa* Roxb. in the remedy of pain and infection in teeth, *Cereus pterogonus* Lam. to cure pimple. These findings should be clarified by proper research work.

Acknowledgement

Authors thank to the local people of Chaugan village of Bankura for their information about the medicinal value of the plants. Special thanks to Mr. Tapan Lohar, the local kabiraj of this area for his kind help in this work.

Reference

- Acharya J and Mukherjee A. 2010. Herbal therapy for urinary ailments as documented from Bankura district (West Bengal). Indian J. Sci. Res. 1(1): 67-69.
- Ghosh A. 2002. Ethnoveterinary medicines for the tribal areas of Bankura and Medinipur district, West Bengal. Indian Journal of Traditional Knowledge. 1: 93-95.
- Mallick H and Mallick S. K. 2012. Medicinal plants used by the tribals of Natungram village district Bankura, West Bengal. International Journal of Basic and Applied Sciences. 1(2): 131-133.
- Mallick S K and Behera N. 2009. Phytosociological analysis of ethnomedicinal tree species in Goaltore forest area of Medinipur, West Bengal. Non-Timber Forest Products. 16 (3):187-190.
- Mallick S. K. Banerjee P, Saha A. 2012. Medicinal plants used by the tribals of Ratanpur village of Bankura, West Bengal. International Journal of life sciences. 1(2): 82-86.
- Mondal T and Biswas S. 2012. Ethnoveterinary uses of some medicinal plants of Bankura district, West Bengal. Life Sciences Leaflets. 5: 47-49.
- Mondal T, Biswas S. 2012. Ethno veterinary uses of some medicinal plants of Bankura district, West Bengal. Life Sci. leaflets. 5: 47-49.
- Mukherjee A and Namahata D. 1988. Herbal veterinary medicine as practiced by the tribals of Bankura districts Journal of Bengal Natural Hist. Soc. 7(1): 69-71.
- Namahata D and Mukherjee A. 1989. Some common practices of herbal medicines in Bankura district, West Bengal. India Journal of Forestry. 12(4): 318-321.
- Namahata D. and Mukherjee A. 1988. Ethnomedicine in Bankura district, West Bengal. Indian J. Applied and Pure Bio. 3(2): 53-55,
- Rahaman C. H, Karmakar S. 2015. Ethnomedicine of Santal tribe living around Susunia hill of Bankura district, West Bengal, India: The quantitative approach. J App Pharm Sci. 5(02): 127-136.
- Sinhababu A, Banerjee A. 2013. Documentation of some ethnomedicinal plants of family Lamiaceae in Bankura District, West Bengal, India. Int. Res J Bio Sci. 2(6): 63-65.