

The Journal of Phytopharmacology

(Pharmacognosy and phytomedicine Research)

Research Article

ISSN 2320-480X
 JPHYTO 2018; 7(2): 199-202
 March- April
 Received: 06-03-2018
 Accepted: 17-04-2018
 © 2018, All rights reserved

Shyam Sundar Manna
 Ph.D. Student, School of Life Sciences,
 Sambalpur University, Jyotivihar, Burla,
 Odisha, India

Satyendra Prasad Mishra
 Professor and H.O.D., School of Life
 Sciences, Sambalpur University,
 Jyotivihar, Burla, Odisha, India

Correspondence:
Shyam Sundar Manna
 Ph.D. Student, School of Life Sciences,
 Sambalpur University, Jyotivihar, Burla,
 Odisha, India
 Email: ssmanna09[at]gmail.com

Ethnomedicinal survey of plants used by tribal in Lalgarh forest range, W.B., India

Shyam Sundar Manna*, Satyendra Prasad Mishra

ABSTRACT

Exploration of the traditional knowledge of the indigenous people is very important for revealing the uses of plants and plant parts for medicinal purpose. Once the medicinal use of these plants is known, their active ingredients have to be identified and their efficacy has to be tested scientifically. A good number of modern medicines are now available which has been formulated taking the traditional knowledge into consideration. Besides people all over the world now shift their attention to herbal drugs because they are comparatively safer and cheaper. In these contexts, ethnomedicinal studies are of great significance. In the present paper, attempts have been made enlist the ethnomedicinal plants of Lalgarh forest range of India. The study reveals that 52 different plant species are used by the local people to cure different diseases. Out of the 52 plant species, 17 are herbs, 20 trees, 11 shrubs, and 4 are climbers. The list of plant parts, habit, mode of their use and purpose has been documented in this study.

Keywords: Ethnomedicine, Tribal people, Jhargram, West Bengal, India.

INTRODUCTION

The plant is very much essential for the human being not only for breath but also for food, cloth, shelter and medicine with the advent of human civilization. From time immemorial mankind is using plant parts and its product for healing different human ailments ^[1]. The modern people used different allopathic and homeopathic medicines against different diseases. Nearly 80% of the world's populations depend on traditional medicine for their healthcare ^[2]. The tribal people of small isolated villages and native communities mainly used folk medicine for the treatment of common infections. Over 550 ethnic groups are found in the different geographical region ^[3]. The indigenous population of India constitutes 8.2% of the total population of the country which is four times higher than the total population of Australia ^[4]. Furthermore, the Scheduled Tribes (STs) constituting 5.5 percent of the total population of the West Bengal (census-2011) and 29.37% of the total population of newly formed Jhargram district. Different tribal communities are the inhabitant of the study site, such as Santal, Bhumij, Lodha, etc and they lived near the forest area.

Earlier, many investigations were carried out on different ethnobotanical aspects from different district of West Bengal ^[5-8]. It is also reported from others part of India ^[9-11]. But the Lalgarh forest range which was previously under Paschim Medinipur district; was almost in untouched condition mainly due to the Maoist activities for last few years. The tribals are prepared medicines from the extracts of leaves, seeds, fruits, bark, roots and sometime whole plant in the preparation of syrups. They acquire knowledge of medicinal properties of many plants by trial and error methods. This knowledge was passed on from one generation to another and is still available with the traditional healers that are to be codified before this knowledge is lost forever. In this present study, we report on the information collected from traditional practitioners to cure various diseases in Lalgarh forest range of West Bengal, India.

MATERIALS AND METHODS

Study area

The Lalgarh forest range is situated in newly formed Jhargram district on 4 April 2017, after bifurcation from the Paschim Medinipur district as the 22nd district of West Bengal, India ^[12] (Figure-1). It is mainly located in some part of Binpur-I block of the district (Figure-2). The forest range is scattered in patches within N-22°53'-22°68' longitude and E-87°08'-87°13' latitude. Its area is spread over an area of 7235.07 ha. The area is a part of Chhotonagpur plateau and covered with hard laterite stone. Its altitude ranges from 65m to 300 m. The average temperature ranges from 5°C in winter to 41°C in summer and

annual rainfall is 1400mm. The forest is a dry deciduous type.

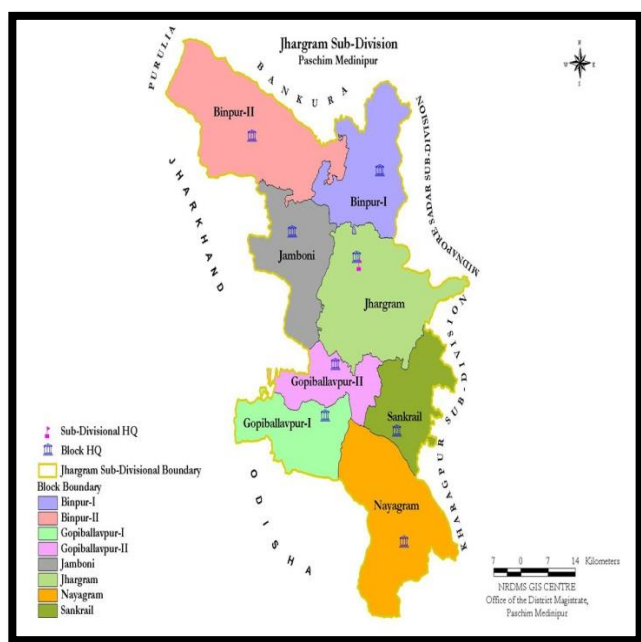
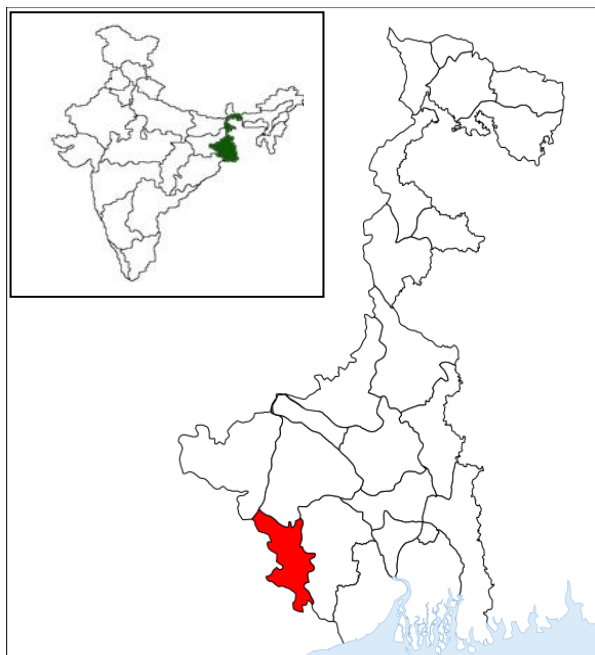


Figure 1: Map of W.B. & showing Jhargram district. **Figure-2:** Showing different blocks of Jhargram districts

Survey

Extensive field explorations and plant collection were carried out from tribal areas of the forest range during July 2015 to August 2017. The places of investigations were the rural and tribal villages of Lalgah block, like Birbhanpur, Tilaghagri, Patharpara, Laxshanpur,

Taldanga, Kumarbandh, Madhupur, Melkheriya etc. We were visited in different seasons to avail the plant resources in their flowering and fruiting condition.

The data were collected through interview, observation, and participation [13]. The interviews were taken individually and Focus Group Discussion (FGD) using semi-structure open-ended questionnaires as proposed in the standard literature [14]. The photograph of these plant species was taken during the field visits. The plants are noted as per their botanical name along with family, local name and medicinal uses. The plant specimen with inflorescence and propagules (corms, tubers, bulbils, culms e.t.c.) were collected using standard taxonomical procedures. The specimens were identified with the help of the local floras (Bengal Plants by David Prains). The Herbaria were Prepared according to conventional herbaria technique [15] and were deposited in the Herbarium of the Department of Botany, Panskura Banamali College (Autonomous), Purba Medinipur, W.B., India.

RESULTS AND DISCUSSION

This survey recorded 52 plant species belonging to 34 families and 51 genera. The plants have been enumerated alphabetically according to their scientific name, family, local name, habits, parts used and purpose of uses in Table-1. Fabaceae was dominant family among them, representing 7 species, followed by Apocynaceae (4 species) and Euphorbiaceae (3 species). 7 families are dispecific and 24 families are monospecific (Figure-3). In terms of habit (Figure-4), there are 20 species of trees (38%), 17 species of herbs (33%), 11 species of shrubs (21%) and 4 species of climbers (8%). In this study, most common plant parts used in the preparation of herbal medicine are leaves (21.15%), bark (13.46%) and whole plant (13.46%). Here also recorded some other plant parts used herbal medicine are flower, fruit, latex, rhizome, root, seed, stem and tuber (Figure-5).

The present study corresponds well with another study in Paschim Medinipur district which recorded a total of 50 medicinal plant species from 30 families [5] but is much lower than the different study from upper Brahmaputra valley of Assam [11] which recorded 86 species under 45 families.

These medicinal plants are usually grown in the forest in different eco-system. But due to extreme demographic pressure, overspreading urban sprawls and conversion of forestland to agricultural purpose; the forests are become fragmented and lying in the undeveloped states. As a result different medicinal plant species are becoming rare and endangered conditions. Recently few workers from Paschim Medinipur district were recorded 21 medicinal plant species; among them 6 plant species becoming endangered and rest of the plants considered as vulnerable, less common and near threatened status [16]. Almost all the species recorded in the present research work were collected from natural habit. Hence there is urgent need to check the over exploitation of natural population and conservation of medicinally important species of this region.

Table 1: Plants used in traditional medicine by tribal communities of Lalgargh forest range.

Sl. No.	Scientific Name	Family	Local name	Habit	Parts	Uses
1	<i>Abutilon indicum</i> (L.)Sweet emend.Hochr.	Malvaceae	Pateri	Shrub	Root	Heart disease
2	<i>Acacia nilotica</i> (L.)Wild ex Delile	Fabaceae	Babul	Tree	Bark	Diarrhea
3	<i>Acalypha indica</i> L.	Euphorbiaceae	Muktojhuri	Herb	Leave	Insect bite
4	<i>Adhatoda zeylanica</i> . Medico.	Acanthaceae	vashak	Shrub	Leave	Bronchitis.
5	<i>Aegle marmelos</i> Corr.ex Roxb.	Rutaceae	Bel	Tree	Root	Urinary troubles.
6	<i>Albizia procera</i> (Roxb.)Benth	Fabaceae	Siris	Tree	Bark	Killing hair lice
7	<i>Alstonia scholaris</i> (L.)R.Br.	Apocynaceae	Chhatim	Tree	Latex	Chest pain
8	<i>Alternanthera sessilis</i> LR.Br.ex DC	Amarantheaceae	Sanchi	Herb	Whole plant	Night blindness
9	<i>Andrographis paniculata</i> (Burm.f.)Wall.ex Nees	Amarantheaceae	Kalmegh	Herb	Leave	To improve digestion
10	<i>Annona squamosa</i> L.	Annonaceae	Ata	Tree	Seed	Remove hair lice
11	<i>Argemone mexicana</i> L.	Papaveraceae	Sheal kata	Herb	Whole plant	Eye disease
12	<i>Aristolochia indica</i> L.	Aristolochiaceae	Isher-mul	Herb	Leave	Anti dotes in snake bite
13	<i>Asparagus recemosus</i> Wild	Asparagaceae	Satamul	Herb	Tuber	Bloody urine
14	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem	Tree	Seed	Ringworm
15	<i>Bauhinia acuminata</i> L.	Fabaceae	Kanchan	Tree	Leave	Malarial fever
16	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Punarnova	Herb	Whole plant	Jaundice
17	<i>Bombax ceiba</i> L.	Bombacaceae	Simul	Tree	Stem	Children diarrhea
18	<i>Butea monosperma</i> (O.Kuntz) Taub.	Fabaceae	Palash	Climber	Flower	Diarrhea of pregnant women
19	<i>Calotropis procera</i> (Ait)R.Br.	Asclepiadaceae	Akond	Shrub	Latex	Septic wounds
20	<i>Cassia fistula</i> L.	Fabaceae	Badarlathi	Tree	Fruit	Cough of children
21	<i>Catharanthus roseus</i> (L.)G.Don.	Apocynaceae	Nayantara	Herb	Leave	Cancerous wounds
22	<i>Cissus quadrangularis</i> Linn.	Vitaceae	Harjora	Climber	Stem	Bone fracture
23	<i>Cleistanthus collinus</i> (Roxb.) Benth. ex Hook.f.	Phyllanthaceae	Kargalli	Tree	Bark	Sore in finger
24	<i>Coccinia grandis</i> (Linn.) Voigt	Cucurbitaceae	Telakucha	Climber	Root	Vomiting
25	<i>Costus speciosus</i> Koen. Ex Retz. Smith	Zingiberaceae	Keo	Herb	Rhizome	Urinary troubles and piles
26	<i>Croton bonplandianum</i> Baill	Euphorbiaceae	Churchuri	Shrub	Latex	Bleeding of new cut
27	<i>Curcuma amada</i> Roxb.	Zingiberaceae	Amada	Herb	Rhizome	Asthma and bronchitis.
28	<i>Cuscuta reflexa</i> Roxb.	Cuscutaceae	Alok-jui	Herb	Whole plant	Bone fracture
29	<i>Dalbergia sissoo</i> Roxb.	Fabaceae	Sisoo	Tree	Leave	Cooling agent
30	<i>Datura metel</i> L.	Solanaceae	Dhutra	Shrub	Seed	Poisonous chemical
31	<i>Eclipta prostrata</i> L.	Asteraceae	Keshute	Herb	Leave	Promoting hair growth
32	<i>Ficus benghalensis</i> L.	Moraceae	Bat	Tree	Latex	Genital disease.
33	<i>Helicteres isora</i> Linn.	Sterculiaceae	Atmora	Shrub	Fruit	Body pain of children
34	<i>Heliotropium indicum</i> L.	Boraginaceae	Hatisur	Herb	Leave	Eczema
35	<i>Hemigraphis hirta</i> (Vahl)T.Anders	Acanthaceae	Mushakani	Herb	Whole plant	Diarrhea, dysentery
36	<i>Holarrhena pubescens</i> (Buch-Ham)Wall.ex DC.	Apocynaceae	Kurchi	Tree	Bark	Glandular tumors
37	<i>Jatropha curcas</i> L.	Euphorbiaceae	Sada varenda	Shrub	Latex	Fixing loose teeth
38	<i>Lannea coromandelica</i> (Houtt.) Merrill	Anacardiaceae	Doka	Tree	Bark	Ulcer
39	<i>Madhuca longifolia</i> (Koenig)Macbride	Sapotaceae	Mahua	Tree	Flower	Alcoholic beverage
40	<i>Ocimum tiniflorum</i> L.	Lamiaceae	Kalo-tulsi	Herb	Whole plant	Urinary troubles
41	<i>Oxalis corniculata</i> L.	Oxalidaceae	Amrul	Herb	Leave	Headache
42	<i>Rauwolfia serpentina</i> Benth.ex.Kurz	Apocynaceae	Sarpagandha	Shrub	Rhizome	Snake bite
43	<i>Semecarpus anacardium</i> Linn. F.	Anacardiaceae	Soso	Tree	Fruit	Asthma
44	<i>Shorea robusta</i> Gaertn.f.	Dipterocarpaceae	Sal	Tree	Bark	Cholera
45	<i>Solanum nigrum</i> L.	Solanaceae	Kakmachhi	Herb	Whole plant	Kidney trouble.
46	<i>Strychnos nuxvomica</i> L.	Loganiaceae	Kuchila	Tree	Bark	Stomach pain
47	<i>Tephrosia purpurea</i> (L.) Piers	Fabaceae	Ban neel	Shrub	Stem	Toothache
48	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	Bahera	Tree	Fruit	Dyspepsia
49	<i>Terminalia chebula</i> Retz.	Combretaceae	Haritaki	Tree	Fruit	Dyspepsia
50	<i>Tinospora cordifolia</i> (Willd)	Menispermaceae	Gulancha	Shrub	Stem	Jaundice and diabetes
51	<i>Tylophora indica</i> (Burm.f.)Merrill.	Asclepiadaceae	Antmul	Climber	Root	Diarrhea
52	<i>Vitex negundo</i> L.	Verbenaceae	Nishinda	Shrub	Leave	Skin disease

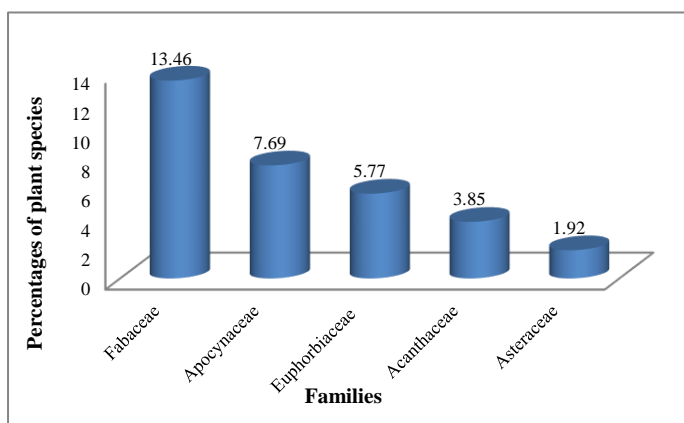


Figure 2: Diagram showing some important families with their occurring species percentages.

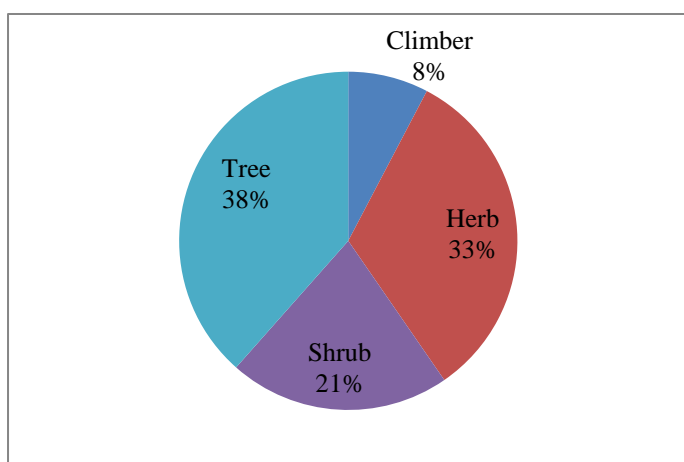


Figure 3: Pie diagram showing different plant habits.

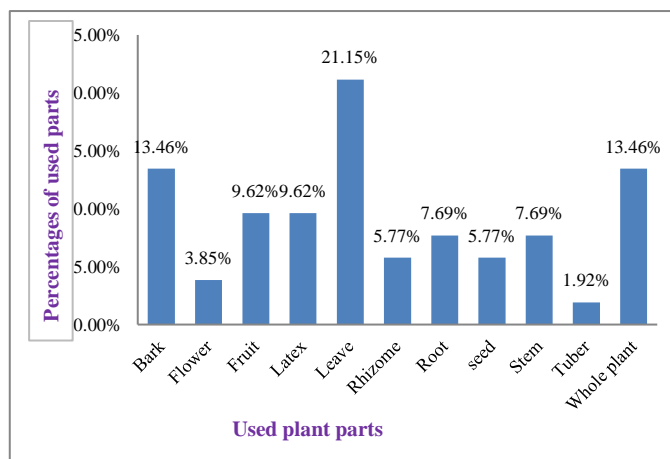


Figure 4: Diagram showing percentages of different used plant parts.

CONCLUSION

The information collected from the tribal people and compiled in this paper may be of great use for further research in the field of ethno-medico-botany, taxonomy and pharmacology by researchers in future. It is utmost important to document this information for the future generation, otherwise, it will be lost forever with the death of local healers. For our ignorance, many herbal drugs are patented. It is essential to conservation, cultivation and sustainable utilization of these medicinal plant species.

Acknowledgement

We are especially thankful to the tribal communities of study sites for their kind cooperation. They are sharing their ethnomedicinal knowledge freely and cheerfully with us. We are also acknowledge thankfully to Prof. Niranjan Behera of Sambalpur University, for his kind suggestion.

REFERENCES

- Sahu AR, Behera N, Mishra SP. Use of Ethnomedicinal Plants by Natives of Bargarh District of Orissa, India. *Ethnobotanical Leaflets*. 2010; 14:889-910.
- World Health Organization (WHO). Regional Office for Western Pacific, research guidelines for evaluating the safety and efficacy of herbal medicines. Manila, 1993; p. 94.
- Anonymous. *Ethnobiology in India* –A Status Report (of All India Coordinated Project on Ethnobiology). Ministry of Environment & Forests, Govt. of India, New Delhi. *Ethnobiology in India*, 1994.
- Agrawal P. How much the Indigenous Women of Jharkhand, India are in Disadvantageous Condition: Finding's from India's National Family Health Survey. 2009; <http://paa2009.princeton.edu/papers/90455> (24/12/2017).
- Ghosh R, Sarkhel S. Ethnomedicinal Practices of the tribal Communities in Paschim Medinipur District, West Bengal. *Asian J. Biol. Sci.* 2013; 4(4):555-560.
- Ghosh A. Ethnomedicinal plants used in West Rarrh region of W.B, *Natural Product Radiance*. 2008; 7(5):461-465.
- Ghosh A. Herbal folk remedies of Bankura and Medinipur districts, W.B, *Indian Journal of Tradition Knowledge*. 2003; 2(4):393-396.
- Das PK, Mondal AK. The dye yielding plants used in traditional art of 'Pachitra' in Pingla and mat crafts in Sabang with prospecting proper medicinal value in the Paschim Medinipur district, West Bengal, India. *International Journal of Life Sciences Biotechnology and Pharma Research*. 2012; 1(2):158-171.
- Negi VS, Maikhuri RK, Vashishtha DP. Traditional healthcare practices among the villages of Rawain valley, Uttarkashi, Uttarakhand, India. *Indian Journal of traditional knowledge*. 2011; 10(3):533-537.
- Panda A, Mishra MK. Ethnomedicinal survey of some wetland plants of South Orissa and their conservation. *Indian Journal of traditional knowledge*. 2011; 10(2):296-303.
- Kutum A, Sarma R, Hazarika D. An ethnobotanical study of mishing tribe living in fringe villages of kaziranga national park of assam, india. *Indian Journal of Fundamental and Applied Life Sciences*. 2011; 1(4):45-61.
- Jhargram to be state's 22nd district on April 4. *Millennium Post*. 22 March, 2017. <http://www.millenniumpost.in/kolkata/jhargram-to-be-states-22nd-district-on-april-4-221352> (25 December 2017).
- Jain SK. *Ethnobotany: Its Scope and Study*, Indian Museum Bulletin. 1967; 2:39-43.
- Karehed J, Odulug E. An ethnobotanical study among the Maasai of the Loita Hills, Kenya, and Minor field studies No 14, Swedish University of Agricultural Sciences, International office, Uppsala. 1997.
- Mitra JN. *An Introduction to Systematic Botany and Ecology*. The World Press Private Limited, Kolkata, 1974.
- Das PK, Mondal AK. A Report to the Rare and Endangered Medicinal Plants Resources in the dry deciduous Forest areas of Paschim Medinipur district, West Bengal, India. *IJDDHR*. 2012; 2(2):418-429.

HOW TO CITE THIS ARTICLE

Manna SS, Mishra SP. Ethnomedicinal survey of plants used by tribal in Lalgargh forest range, W.B., India. *J Phytopharmacol* 2018; 7(2):199-202.