

# The Journal of Phytopharmacology

(Pharmacognosy and phytomedicine Research)

## Research Article

ISSN 2320-480X

JPHYTO 2022; 11(1): 12-16

November- December

Received: 10-10-2021

Accepted: 22-01-2022

©2021, All rights reserved

doi: 10.31254/phyto.2022.11103

### Somdatta Ghosh

Department of Botany, Midnapore  
College, Paschim Medinipur, West  
Bengal, India

### Happy Das

Department of Botany, Kharagpur  
College, Paschim Medinipur, West  
Bengal, India

### Somnath Bandopadhyaya

Paschim Medinipur District Court,  
Paschim Medinipur, West Bengal, India

### Correspondence:

Dr. Somdatta Ghosh

Department of Botany, Midnapore  
College, Paschim Medinipur, West  
Bengal, India

Email: [somdattaghosh@yahoo.co.in](mailto:somdattaghosh@yahoo.co.in)

## Ethnobotanical uses of plants and constrains in Pathra and its adjoining areas, Paschim Medinipur District, West Bengals

Somdatta Ghosh\*, Happy Das, Somnath Bandopadhyaya

### ABSTRACT

A survey was conducted in to collect the information about the plant diversity and uses of these plants by the local people in different purposes Pathra and its adjoining village areas in Paschim Medinipur district, W.B. This area is beside river Kangsabati, popular due to presence of some archaeological structures and natural beauty. The ethnobotanical study revealed that different plant species which is used by the villagers of Pathra, depends on these local plants, which have various economical aspects. Different parts of these plants help in the production of timber, medicine, jewellery. Fruit yielding plants and ornamental plants are also there. Different species of fungi, pteridophytes, monocots and dicots are there which created a rich diversity. But new generation tends to switch off towards chemical substitutes of the ethno-products. Now-a-days popularity of the area draws group of people to come here to celebrate different festivals like Holi and picnic. These situations lead to a negative impact on natural biodiversity of this area and its conservation, by loss of endangered plants, medicinal plants including soil erosion, soil toxicity as plastics and other nondegradable materials used by the tourists has deposited on the soil. In this paper we are trying to spread the information about the values of these local plants and also trying to aware the people to save the diversity of this area.

**Keywords:** Conservation, Diversity, Ethnobotanical, Paschim Medinipur, Soil erosion,

### INTRODUCTION

Paschim Medinipur district is the southern part of West Bengal under 22.4080° latitude and 87.3811° longitude with an area of 6308 km<sup>2</sup>; dominated by red lateritic soil. This district is well known for its rich plant diversity as per researcher's survey in Paschim and Purba Medinipur district [1,3,5,6,7,9]. Extensive ethnobotanical uses by peoples here also the causes of rich biodiversity as for need these plants are propagated or conserved. Pathra (22.45985°E and 87.77195°S) is a village near to Midnapore town with some heritage remnants of ancient temples. Villagers of Pathra and adjacent areas use various plants as medicine, as timber, as jewelry and also as different purposes. Rich traditional verbal knowledge has been passed down from generation to generation and it is reflected in their life style and behavior as they have a symbolic relationship with their natural habitat [2]. The biodiversity of particular vegetation pocket is the treasure trove of the raw material resources for the preparation of ethnomedicines, modern medicines, wooden materials, building materials, etc [10]. Different types of endangered, ethnobotanical plant species have observed in Pathra, this biodiversity rich area is a key source of ethnomedicine, timber, jewelry, etc. Plants of this area are economically important, so we could say that the vegetation of this area is ecologically as well as economically important. So, this area has a strong scope for socio economic development. Some adjoining areas of Pathra is basically river bank so high risk of soil erosion is always a major problem. To conserve these plants beside riverbank as well as biodiversity that may protect soil erosion and maintain ecological balance. Increasing deforestation for timber sources in saw mills, pollution with rapid urbanization, exerts a great impact on plant diversity in this area.

### MATERIALS AND METHODS

#### Study area

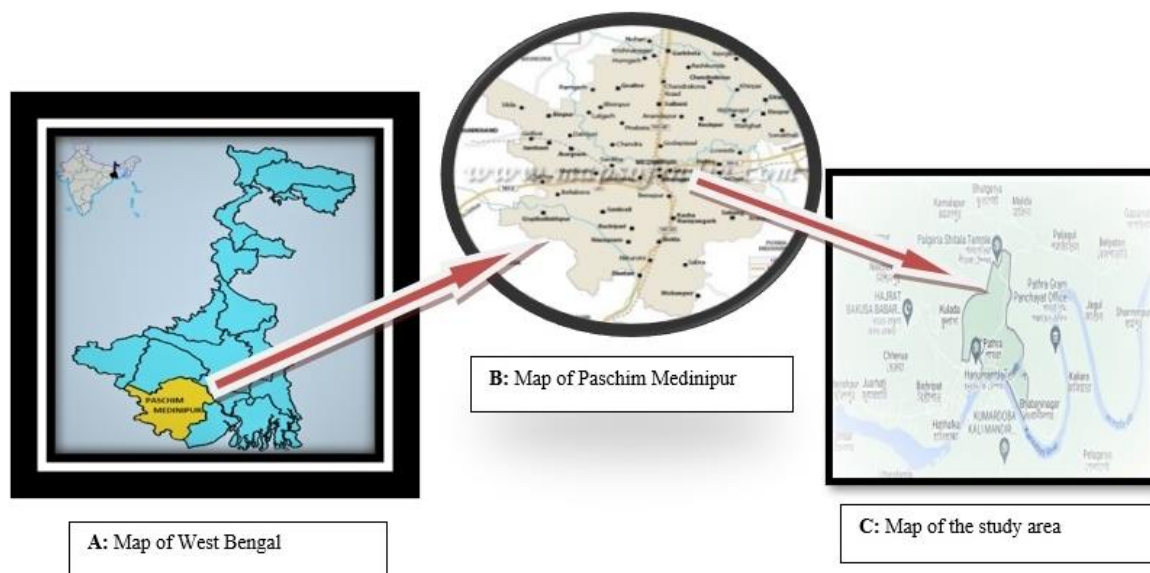
The survey area was village Pathra and its surroundings, situated in Paschim Medinipur district, West Bengal (22.45985°E and 87.77195°S); covering total 341.15 hect. geographical area. The place is located about 8.4 km distance from the Midnapur town, beside bank of the Kangsabati river; with alluvial soil, tropical mixed type of vegetation maximum mean temperature is  $\pm 45^{\circ}\text{C}$  during summer

and lowest mean temperature  $\pm 10^{\circ}\text{C}$  during winter. Annual rainfall is 1530 mm mostly within June to September. This area is known for some ancient temples.

**Collection Data Specimens**

Surveying was conducted in different time (April, August and December) at Pathra and its surroundings. Some specimens were collected in flowering stage. Specimens were identified with the help of Flora of British India [4] and Bengal Plants [8]. The list of collected plant names are arranged alphabetically (Table- 1,2,3,4) along with their family name, local name, habit, and ethnobotanical use.

**Map of the Study Area (Figure 1)**



**Figure 1:** Map of the Study Area

**RESULT**

Our present study is evidenced with ethnobotanical uses of total 66 plant species under 58 genera and 38 families. Maximum species belong to Apocyanaceae (6) family (Table 1). Four species belong to Acanthaceae family. Three species each belong to Asteraceae, Cucurbitaceae, Lamiaceae and Menispermaceae family. Two species each belong to Areaceae, Colchicaceae, Dioscoriaceae,

Euphorbiaceae, Malvaceae, Fabaceae and Moraceae family. One species each belong to rest of the families. Some plant species are rare and have high medicinal as well as economical value. Out of these 66 plant species 47 plants are medicinally important, 5 plants are ornamental (Table 2), 10 plants are fruit yielding (Table 3) and 5 plants are timber yielding (Table 4), some provides both medicinal and other uses.

**Table 1:** Plants used as ethnomedicinal plants-scientific name, family name, local name, habit and uses

S. No	Scientific Name	Family	Local Name	Habit/Status	Use
1	<i>Abroma augustum</i> (L.) L.f.	Malvaceae	Ulat kambal	Shrub (rare)	Root and bark of the plant is used in gynaecological disorders
2	<i>Achyranthes aspera</i> L.	Amaranthaceae	Apang	Herb (abundant)	Flowering inflorescence rubbed with sugar, are made into pills and given to people bitten by dogs
3	<i>Aloe vera</i> (L.) Burm.f.	Asphodelaceae	Ghritakumari	Herb (frequent)	Leaf extract is used to make medications for skin, such as wounds, frostbite, rashes, burn
4	<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	Chattim	Tree (frequent)	Bark is used as remedy in chronic diarrhea and dysentery
5	<i>Andrographis paniculata</i> (Burm.f.) Nees	Acanthaceae	Kalmegh	Herb (frequent)	Leaf and root are used in treatment of diabetes, high blood pressure, ulcer
6	<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	Anaras	Herb (Less frequent)	Leaf extract reduce blood cholesterol and improve digestion.
7	<i>Aristolochia indica</i> L.	Aristolochiaceae	Iswarimul	Climber (rare)	In case bowel complaints of children fresh juice of bark and leaves are used
9	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Neem	Tree (frequent)	Leaf is used to treat eye disorders, bloody nose, stomach disorders and skin diseases
10	<i>Barleria cristata</i> L.	Acanthaceae	Swethjhanti	Herb (Less frequent)	Whole plant is used as blood purifying component and treat dental problems
11	<i>Blumea lacera</i> (Burm.f.) DC	Asteraceae	Barokuksima	Herb (abundant)	Leaf extract used in treatment of cough and headache

12	<i>Calotropis procera</i> (Aiton) W.T. Aiton	Asclepidaceae	Akanda	Shrub (frequent)	Leaf is used in digestive disorders
13	<i>Capparis zeylanica</i> L.	Capparaceae	Kalokera	Climber (Less frequent)	Leaves are used as antidote to snake bite and to cure small pox
14	<i>Cascabela thevetia</i> (L.) Lippold	Apocyanaceae	Gulancha	Tree (Less frequent)	Leaf or bark extract is taken to cure fever and to loosen the bowels
15	<i>Catharanthus roseus</i> (L.) G. Don	Apocyanaceae	Nayantara	Herb (frequent)	Leaf extract used in treatment of diabetes
16	<i>Cayaponia laciniosa</i> (L.) C. Jeffrey	Cucurbitaceae	Mala	Climber (rare)	Seed is used in metabolic disorders
17	<i>Centella asiatica</i> (L.) Urban	Apiaceae	Thankuni	Herb	Leaf is used in metabolic disorder
18	<i>Cheilocostus speciosus</i> (J. König) C. Specht	Apiaceae	Thankuni	Herb	Leaf is used in metabolic disorder
19	<i>Cissua quadrangularis</i> L.	Vitaceae	Harjora	Climber (frequent)	Stem is used in bone fractures and in weak bone treatment
20	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Telakucha	Climber (frequent)	Fruit used to treat leprosy, bronchitis and jaundice
21	<i>Cocculus hirsutus</i> (L.) Diels	Menispermaceae	Daipata	Climber (rare)	Leaves are used to treat skin disorders like infections and itchy skin
22	<i>Commelina benghalensis</i> L.	Commelinaceae	Kansira	Herb (abundant)	Whole plant is used as diuretic and anti-inflammatory agent
23	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	Swarnalata	Climber (Less frequent)	Plant parts are used to treat skin disease like itchy skin and cure body pain
24	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Durba	Herb	Leaf and stem are used as laxative agent
25	<i>Cyperus rotundus</i> L.	Cyperaceae	Muthaghas	Herb (frequent)	Leaf and stem paste used for treating digestive system disorders
26	<i>Dioscorea alata</i> L.	Dioscoriaceae	Chupri /Khamalu Alu	Climber (frequent)	Tubers used to treat stomach pain, and skin related problems
27	<i>Dioscorea bulbifera</i> L.	Dioscoriaceae	Kukuralu	Climber (frequent)	Bulbils used for treating dysentery and diabetes
28	<i>Dregea volubilis</i> (L. f.) Benth. ex Hook. f. 1883	Apocynaceae	Titakunja	Climber (rare)	Leaf paste along with pepper is a good remedy to treat dyspepsia
29	<i>Ficus hispida</i> L.f.	Moraceae	Dumur	Tree (frequent)	Fruit is used to treat constipation, leaf used for treating skin disease and diabetes
30	<i>Ficus religiosa</i> L. 1753 not Forssk. 1775	Moraceae	Ashatha	Tree (frequent)	Ripe fruits and bark are used to treat asthma
31	<i>Gloriosa superba</i> L.	Colchicaceae	Ognishikha	Herb (rare)	Leaf and tuber used to treat leprosy, gout and infertility
32	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Lal veranda	Shrub (frequent)	Leaf, stem and root, are used to cure stomach pain, and also used as blood purifier
33	<i>Justicia adhatoda</i> L.	Acanthaceae	Basak	Shrub (Less frequent)	Leaves are used to treat like common cold and cough
34	<i>Justicia gendarussa</i> Burm.f.	Acanthaceae	Jagatmadan	Shrub (Less frequent)	Leaves are used to treat bronchitis, and allergic disorders
35	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	Pathorkuchi	Shrub (Less frequent)	Leaf paste is used in healing and also reduces the pain
36	<i>Luffa aegyptica</i> Mill.	Cucurbitaceae	Dhundul	Climber (frequent)	The fruit has been used in leprosy
37	<i>Mikania micrantha</i> Kunth	Asteraceae	Taralata	Climber (abundant)	Leaf paste used to stop bleeding or used as healing agent
38	<i>Ocimum basilicum</i> L.	Lamiaceae	Dulal tulsi	Herb (Less frequent)	Leaves used to treat headaches, coughs and diarrhea.
39	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulsi	Herb (abundant)	Leaves used in cold and cough
40	<i>Pergularia daemia</i> (Forssk.) Chiov.	Apocynaceae	Ajashringi	Climber (frequent)	Roots, shoots and latex are used to treat cough and whooping cough
41	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	Apocyanaceae	Sarpagondha	Herb (rare)	Root is used for snake and reptile bites
42	<i>Ricinus communis</i> L.	Euphorbiaceae	Bherenda	Shrub (abundant)	Leaves and stem are used in treatment of stomach disorders like constipation
43	<i>Sida cordifolia</i> L.	Malvaceae	Berala	Herb (frequent)	Leaves are used to treat tuberculosis
44	<i>Solanum sisymbriifolium</i> Lam.	Solanaceae	Swetrangani	Herb (abundant)	Stem and leaves are used to control blood pressure and diarrhea
45	<i>Stephania japonica</i> (Thunb.) Miers	Menispermaceae	Akanadi	Climber (Less frequent)	Leaf paste applied on septic and roots used to treat diarrhea
46	<i>Tinospora sinensis</i> (Lour.) Merr	Menispermaceae	Padmagulancha	Climber (frequent)	Stems are used for treating piles
47	<i>Typhonium trilobatum</i> (L.) Schott.	Araceae	Ghat kochu ful	Herb (Less frequent)	Tubers are used to treat asthma and nausea

**Table 2:** Fruit yielding plants with their Scientific name family name, local name and habit

S. No	Scientific Name	Family	Local Name	Habit
1	<i>Annona reticulata</i> L.	Annonaceae	Nona (frequent)	Tree
2	<i>Borassus flabellifer</i> L.	Arecaceae	Taal (abundant)	Tree
3	<i>Mangifera indica</i> L.	Anacardiaceae	Aaam(frequent)	Tree
4	<i>Musa × paradisiaca</i> L.	Musaceae	Kala(frequent)	Herb
5	<i>Phoenix sylvestris</i> (L.) Roxb.,	Arecaceae	Khejur(frequent)	Tree
6	<i>Phoenix accaulis</i> Roxb.	Arecaceae	BanKhejur(frequent)	Tree
7	<i>Grewia asiatica</i> L	Malvaceae	Falsa (frequent)	Tree
8	<i>Syzizium cumini</i> L	Myrtaceae	Jam(frequent)	Tree
9	<i>Zizyphus jujuba</i> Mill	Rhamnaceae	Kul(frequent)	Tree
10	<i>Flacourtia indica</i> Merr	Salicaceae	Boichi (lessfrequent)	Tree
11	<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	Anaras ( less frequent)	Herb

**Table 3:** Plants used for timber yielding plants with their Scientific name, family name, local name and habit

S. No	Scientific Name	Family	Local Name	Habit
1	<i>Flacourtia jangomas</i> (Lour.) Raeusch.	Salicaceae	Paniala	Tree (less frequent)
2	<i>Litsea glutinosa</i> (Lour.) C.B.Rob	Lauraceae	Menda pata	Tree (less frequent)
3	<i>Tectona grandis</i> L.f.	Lamiaceae	Segun	Tree (frequent)
4	<i>Albizia lebeck</i> (L)Benth	Fabaceae	Siris	Tree(frequent)
5	<i>Vachelia nilotica</i> (L) Hurter and Mabb	Do	Babla	Tree(frequent)
6	<i>Azadirachta indica</i> A.Juss., 1830	Meliaceae	Neem	Tree (frequent)

**Table 4:** Scientific name of the ornamental plants with their family name, local name and habit

S. No	Scientific Name	Family	Local Name	Habit
1	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Futka	Climber (less frequent)
2	<i>Clitoria ternatea</i> L.	Fabaceae	Aparajita	Climber (frequent)
3	<i>Gloriosa superba</i> L.	Colchicaceae	Ognishikha	Herb (rare)
4	<i>Hiptage benghalensis</i> (L.) Kurz	Mapighiaceae		Climber (rare)
5	<i>Passiflora foetida</i> L.	Passifloraceae	Jhumkolata	Climber (less frequent)



**Figure 2:** Plants in Pathra

**Figure Legends:** 1- Conversation with local people, 2- *Ficus hispida*, 3- *Jatropha gossypifolia*, 4- *Typhonium trilobatum*, 5- *Stephania japonica*, 6- *Litsea glutinosa*, 7- *Coccinia grandis*, 8- *Sida cordifolia*, 9- *Ricinus communis*

## DISCUSSION

The survey revealed that the area has a rich ethnomedicinal sources which the villagers of low income can easily avail and can afford a healthy organic lifestyle. Though some villagers have rich knowledge and on practice of ethnobotanical uses, new generation is going distracted or indifferent in ethnobotanical uses and introduction of chemicals is shifting them to depend on market products in daily uses rather than safer plant parts. This alteration of lifestyle not only reducing ethnobotanical knowledge among them, the need of conservation of biodiversity is being reduced, as they are growing concepts as those are less important. This shifting and over exploitation of trees for timber and fuel-wood without replanting may affect the biodiversity in this area in future. The increased tourism and urbanization are another cause of the shifting of lifestyle and pollution as byproduct of those is a threat to biodiversity in near future.

## CONCLUSION

Village Pathra is a combination of history and plant diversity; archaeological importance bridges with plant diversity. The flora of this area is source of food, fodder, medicine, fuel etc. This area has rich plant diversity and ethnobotanical uses and knowledge, but rapid urbanization and exposure to modern world showing a tendency to neglect the same. Tourist pressure in this area increasingly changes the ecosystem harmony, that can hamper the growth and diversity of the local plants. Government along with local people may adopt necessary steps to protect plant diversity of the area from destruction. Sustainable development approaches may provide a good conservation strategy for this area. There is a great opportunity for local employment on the basis of scientific cultivation and use of ethnobotanical plants.

## Acknowledgement

We like to thank all the villagers of Pathra and the villagers of its surrounding areas to provide us the information about the plants which they use in different purposes. Special thanks to Sahil Khan for introducing with local people and providing information about the local use of plants.

## REFERENCES

1. Bhakat RK. Socio-cultural and ecological perspectives of a sacred grove from Midnapore district' *Science and Culture*. 2003; (69):371-374.
2. De DK. Grass Flora of Medinipur District, Ph.D. Thesis, Vidyasagar University: West Bengal; 2002.
3. Dey D, Tikait D, Sen R, Dutta S. Impact on tourism on medicinal plant diversity of Jorsha, Futiyari and Patloi dam of Purulia, West Bengal, India. *International Journal of Environmental Sciences*. 2020;9(3):77-82.
4. Hooker JD, Hooker JD. *Flora of British India*, Vol. I-VIIBSI, Calcutta: 1892-1897.
5. Maji S, Sikdar JK. Sedges and grasses of Midnapore district, West Bengal. *J.Econ. Taxon. Bot.* 1983; 4(1): 233-254.
6. Mukherjee AK, Banerjee LK. Three new plant records along Midnapore coast of West Bengal, *J. Bombay Nat. Hist Soc.* 1968; 65:268-269.
7. Pant NC, Pandey DK, Banerjee SK, and Mishra TK. Some common Ethnobotanical practices of Lodha Community of Midnapore, West Bengal. *J.Trop.Forestry*. 1993; 9(3): 215-218.
8. Prain D. *Bengal Plants*, Volumes I & II. Calcutta: 1903.
9. Rao TA, Mukherjee AK, Banerjee LK. Vascular plants of the coastal Midnapur district, West Bengal. *Indian For.* 1970; 96:668-677.

10. Samanta AK. Floristic diversity of Pathra and its adjoining areas, Paschim Medinipur district, West Bengal. *International Research Journal of Basic and Applied Sciences*. 2020; 3-12.
11. Samanta AK, Panda S. Diversity in angiospermic climbers in Midnapore districts, West Bengal. *J.Econ. Taxon. Bot.* 35 (4):715-726.
12. Sasmal B, Biswas KK, Mondal. Aquatic angiospermic plants of Purba Medinipur District, West Bengal with reference to their sustainable uses. *Environment and Ecology*. 2009; 27(2A): 733-737.
13. Maji S, Sikdar JK. Sedges and grasses of Midnapore district, West Bengal. *J.Econ. Taxon. Bot.* 1983; 4(1): 233-254.
14. Mukherjee AK, Banerjee LK. Three new plant records along Midnapore coast of West Bengal, *J. Bombay Nat. Hist Soc.* 1968; 65:268-269.
15. Pant NC, Pandey DK, Banerjee SK, and Mishra TK. Some common Ethnobotanical practices of Lodha Community of Midnapore, West Bengal. *J.Trop.Forestry*. 1993; 9(3): 215-218.
16. Prain D. *Bengal Plants*, Volumes I & II. Calcutta: 1903.
17. Rao TA, Mukherjee AK, Banerjee LK. Vascular plants of the coastal Midnapur district, West Bengal. *Indian For.* 1970; 96:668-677.
18. Samanta AK. Floristic diversity of Pathra and its adjoining areas, Paschim Medinipur district, West Bengal. *International Research Journal of Basic and Applied Sciences*. 2020; 3-12.
19. Samanta AK, Panda S. Diversity in angiospermic climbers in Midnapore districts, West Bengal. *J.Econ. Taxon. Bot.* 35 (4):715-726.
20. Sasmal B, Biswas KK, Mondal. Aquatic angiospermic plants of Purba Medinipur District, West Bengal with reference to their sustainable uses. *Environment and Ecology*. 2009; 27(2A): 733-737.

### HOW TO CITE THIS ARTICLE

Ghosh S, Das H, Bandopadhyaya S. Ethnobotanical uses of plants and constrains in Pathra and its adjoining areas, Paschim Medinipur District, West Bengals. *J Phytopharmacol* 2022; 11(1):12-16. doi: 10.31254/phyto.2022.11103

### Creative Commons (CC) License-

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY 4.0) license. This license permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. (<http://creativecommons.org/licenses/by/4.0/>).