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Research Article

ETHNOMEDICINAL STUDIES ON WETLAND PLANT DIVERSITY OF DISTRICT BUXAR (BIHAR, INDIA)

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ABSTRACT

Buxar district (Bihar, India) is one of the less floristically studied regions of central Gangetic plain. The district lacks dense forests and its medicinal flora exclusively consists of dicot angiosperms. This paper deals with the wetland medicinal plant diversity of Buxar district, Bihar and their traditional medicinal uses. Various wetlands and small perennial and seasonal water bodies are found in this district. Field observation and other literature studies indicated that district Buxar has 26 wetland or aquatic medicinally important plant species belonging to 23 genera and 18 families of angiosperms. Botanical names, local name, family, and medicinal uses of species are provided in this paper.

Keywords: Wetland, Skin problems, Gastro-intestinal, Medicinal plant remedies, Rural community

INTRODUCTION

The area the Buxar district is an administrative district of Bihar. The district has its headquarters at Buxar. The river Ganges and Karmnasa divide it from Uttar Pradesh. The total area occupied by the district is 1624sq. km. Buxar has geocoordinate N-E 25°44'33"/ 83°46'45" and S-W 25°15'47"/84°23'. It has an average elevation of 56 meters (186 feet) above the sea level. The rivers flowing through the district are Ganga and Karamnasha. River Ganges (Ganga) forms the border in north and in the west river Karmanasa.

The entire strip of land between the river Ganges and stretches in south beyond main line of the Eastern Railways. The land form is low lying alluvial plane of river Ganges and her tributaries- Thora and Karmanasa. The river Karmansa joins the Ganges near Chousa. The region is considered to be the best wheat growing area in the State and India. The present district of Buxar consists of areas under Buxar sadar and Dumraon Subdivision of the old Bhojpur district and came in existence in the year 1991. Buxar district is bounded on the north by Ballia district of Uttar Pradesh, on the south by Rohtas district, on the west by Ghazipur and Ballia districts, and on the east by Bhojpur district.

The area has many natural water resources including river Ganga, Karamnasa, Thora, Kaon along with many small water bodies like tal, ponds, swamps, marshes and water logging areas. These wetlands are sources of important aquatic and semi aquatic medicinal plants. Very few works have been reported on ethno medicinal uses of wetland plant species found in this area. This paper is an attempt to document the ethno medicinal wetland plants and the indigenous knowledge prior to their extinction.

METHODOLOGY

Wetland medicinal plants were collected through survey based field observations. To collect the plant samples several field trips to different part of the district Buxar were conducted from March 2011 to March 2012. Traditional medicine practitioners and locales were interviewed to know the medicinal importance of these plants. The data collected is based on first hand information. The collected plants were processed, dried and herbarium specimens were prepared which later on identified with the help of floras, herbaria as well as in consultation with experts.

RESULTS AND DISCUSSION

Present studies revealed the occurrence of total 26 species under 23 genera and 18 families which are medicinally important. The enumeration embodies alphabetically arranged list of plant species priding correct botanical name of species

followed by local name(s), part use and uses. Plant part uses in different problems like skin problems including wounds, eczema, stomach problems gastro-intestinal, diarrhea, dysentery, bone fracture, blood dysentery, and use as a tonic in different forms such as juice, extract, paste, etc. On the other hand, water is the prime requisite for the vegetation of the wetland and any alteration in the availability of water affects their presence as well as distribution. However due to anthropogenic activities, these wetlands are disappearing at an alarming rate and most of the area of the wetland has been converted to agriculture fields and residential colonies. Therefore, there is an urgent need of the time to conduct a detailed survey of the wetlands of this region.

CONCLUSION

From this minor study, 26 species of wetland plants belonging to 18 families were recorded to be used by the traditional medicine practitioners and locales of the district Buxar of Bihar. These medicinal plant remedies comparatively have certain advantages as these are easily accessible and affordable to the rural community. The data reported in this survey could assist in identifying plant species which could be considered for the developing drugs and formulations for many diseases and medicinal complications like dysentery, stomachic, fever, cardiac and nerve problems, skin disease, bone fracture, wound etc. for the people living in remote and backward areas.

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REFERENCES

1. Biswas K, Calder CC. Hand-book of common water and marsh plants of India and Burma. Govt. Press, Delhi, 1937; 2:102-104.
2. Cook CDK. Aquatic and wetland plants of India. Oxford University Press London, 1996; 1: 88-89.
3. Fassett NC. A manual of Aquatic Plants. Agro bios (India), Jodhpur, 2000; 14-16.
4. Sahai R, Sinha AB. A suppl. to the aquatic and swampy, 1968; 1: 122-126.
5. Vegetation of Gorakhpur. Indian Forester, 1994; 53: 819-821.
6. Saini DC, Singh SK, Kamlesh R. Biodiversity of Aquatic and Semi-Aquatic Plants of Uttar Pradesh. Uttar Pradesh State Biodiversity Board, 2010; 03-05.
7. Sen DN. Ecological studies on aquatic & swampy vegetation of Gorakhpur, Agra Univ. J. Res. (Sci), 1959; 8: 1-14.
8. Singh Arvind, Singh Kumar, Manavendra and Singh Ritesh. Traditional Medicinal Flora Of District Buxar (Bihar, India) , Journal Of Pharmacgonsy nad Phytochemistry, 2013; 2(2): 46-48.
9. Singh KK, Maheshwari JK. Traditional phototherapy amongst the tribals of Varanasi District, Uttar Pradesh. J Econ TaxonBot, 1983; 4: 829-837.
10. Srivastava AK, Dixit SN, Singh SK. Aquatic Angiosperms of Gorakhpur, Ind. J. Forestry. 1987; 10: 46-51.
11. Subramanyam K. Aquatic Angiosperms CSIR, New Delhi, a systematic account of common Indian Aquatic angiosperms. Botanical Monograph, 1962; 3: 1-190.

Table 01 :Name and Medicinal Uses of Wetland Plants

S.N.	Botanical Name	Local Name	Parts Used	Uses
01.	*Alternanthera sessilis* L. (Amaranthaceae)	Garundi, Guroo	Shoot, Leaf	Tender shoot and leaf boiled or roasted and given in dysentery, used as stomachic and as a digestive.
02.	*Acorus calamus* L. (Acoraceae)	Bach	Dried Rhizome	Leaf and shoot used as antiseptic on cuts and wounds and healing to check bleeding.
03.	*Alisma plantago* L. (Alismataceae)		Rhizome, Tuber	Used as stomachic and as a digestive.
04.	*Alocasia macrorrhiza* L. *G.Don* L G. Don syn. (Araceae)	Arve	Rhizome	Paste of rhizome is applied on abscesses to expel pus.
05.	*Ammannia accifera* L. *(*Lythraceae)	Dadmari	Leaves	Leaves used in fever.
06.	*Bacopa monnieri* L. Pennell. (Scrophulariaceae)	Brahmi	Whole plant	Used as cardiac and nerve tonic.
07.	*Centella asiatica* L. (Apiaceae*)*	Brahrni-buti	Whole plant	Used in chronic dysentery, poultice is applied on carbuncle, cuts, as antiseptic in wounds.
08.	*Ceratophyllum demersum* L. (Ceratophyllaceae)	Sivara	Leaf, Shoots	Leaf juice is used to stop vomiting, as cooling agent.
09.	*Commelina benghalensis* L. (Commelinaceae)	Kanchara	Leaf, Shoot	Paste is made from stem and leaves and used in bone fracture.

10.	*Cyperus aromaticus* Ridl. Mattf. & Kük. (Cyperaceae)	Galmotha	Rhizomes	Tubers are medically used in skin disease.
11.	*Cyperus rotundus* L. (Cyperaceae)	Motha	Rhizomes	Tubers paste is used as appetizer.
12.	*Eclipta postrata* L. (Asteraceae)	Bangraiya	Leaf, Shoot	Leaf juice mixed with coconut oil is applied to cure white spots due to burning. It is good for blackening and strengthening of the hair and for strengthening.
13.	*Grangea moderaspatana* L. Poir. (Asteraceae)	Mustaru	Leaves	Used in spleen diseases.
14.	*Heliotropium indicim* L. (Boraginaceae)	Hathi sunda	Leaves	Useful in skin infection, insect-bites and rheumatic pains.
15.	*Imperata cylindrica* L. P. Beauv. (Poaceae)	Dabh, Siru	Roots	Use as emollient, haemostatic and ant febrile.
16.	*Ipomoea aquatica* Forsk. (Convolvulaceae)	Karmi	Leaf, whole plant, root	About 30 to 50 ml of leaf extract is orally taken to control bleeding during child birth.
17.	*Lindernia crustae* L. F. Muell. (Scrophulariaceae)	Kasidoria	Whole plant	Used in dysentery and ringworm.
18.	*Lindernia Cordifolia* Colsm. Merr. (Scrophulariaceae)		Leaves	Used for gonorrhea.
19.	*Nelumbo nucifera* Gaertn. (Nelumbonaceae)	Kamal	Seeds, Fruits, Leaf	Seeds are used as raw, flowers and leaves are used in religious aspect and in rituals. Flowers are eaten raw especially by the children. Fruits are used for cardiac treatment.
20.	*Nelumbo nouchali.* Burm. syn. *N. lotus* L. (Nymphyaceae)	Baga Bhet Red water lily	Fruits, Seeds	Ripe fruits are eaten raw (seeds) especially by the young boys and girls, flowers are eaten fried.
21.	*Pistia stratiotes* L. (Araceae)	Bor puni	Whole plant	Juice is used in treatment of asthma and cough.
22.	*Polygonum glabrum* Willd. (Polygonaceae)	Pani-mirch	Root, leaf	Crushed leaves are taken in pneumonia.
23.	*Rumex nepalansis* Spreng. (Polygonaceae)	Tar Bowra	Leaf, Root	Leaf juice is used in hopping cough and Roots in wounds and muscle swelling.
24.	*Trapa natans* L. syn. Roxb. (Trapaceae)	Singhra	Fruits	Raw fruits are used raw in the treatment of diarrhea and dyspepsia.
25.	*Xanthium strumarium* L. (Asteraceae)	Chota Dhatura	Seeds, Fruits	Oil from seeds is used to cure pain.
26.	*Vetiveria zizanoides* L. Nash. (Poaceae)	Khas	Root	Root uses as diaphoretic, refrigerant, febrifuge.

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