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ETHNOMEDICINAL PLANTS IN AND AROUND JAGATPUR WETLAND, BHAGALPUR (BIHAR), INDIA

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Key words : Ethnomedicinal plants, Jagatpur wetland, Bhagalpur

The present study deals with 55 ethnomedicinal plant species collected from a perennial freshwater flood plain wetland and its catchment in Bihar. Local community exploits these plant species as whole or in part for treating various ailments.

INTRODUCTION

Jagatpur wetland is located in the middle Ganga plain in the Eastern part of India near Bhagalpur at 25°22′219″ N and 87°02′623″ E. The wetland occupies an area of 0.4 sq km. The climate of the area is typically tropical. The temperature varies from 8°C to 38°C, the minimum being in January and the maximum in May-June. The average annual rainfall is 88mm.

Jagatpur wetland is very rich in botanical and ethnomedicinal plants. Local rural population, living in villages scattered around the wetland, relies on plants obtained from the wetland or surroundings of the wetland as their primary medicinal source. Ethnobotany has introduced numerous little known or unknown use of plants (Jain, 1981). Perusal of published research revealed that no ethnobotanical studies have been conducted in this area. Therefore, a survey was conducted to document the ethnomedicinal plant species of the wetland and surrounding area used by the local community.

MATERIALS & METHODS

The ethnobotanical survey was conducted from August 2006 to July 2007. Exensive field trips were organized and plant species were collected with the help of local people and local herbal practitioners. Discussions and interviews helped much in plant species collection, their identification and for generating data on local names of plant species and medicianl use of the plants practiced by local people for the treatment of various ailments. The identification of collected plant species was confirmed with the help of Jain and Rao (1976), Varma (1981), Singh *et al.* (1983), Ambasta (1986), Jain (1991), Cook (1996), Majid (2000), Gupta (2001) and Joshi (2002). The herbarium of voucher specimens were prepared and submitted to the herbarium of the Botany Department of T. M. Bhagalpur University.

RESULTS AND DISCUSSION

Altogether 55 species belonging to 48 genera and 29 families were collected in the present survey. Of the 29 families, Lamiaceae was found to be dominant with six species followed by Solanaceae and Euphorbiaceae with five species each. Verbenaceae with four species, Amaranthaceae and Caesalpiniaceae with three species each and Asteraceae, Malvaceae, Fabaceae, Oxalidaceae, Asclepiadaceae and Convolvulaceae with two species each. The remaining 17 families included one species each. Herbs were dominant with 48 species followed by shrubs with 5 species and tree and climber with one species each. The interviews and discussions with the local people and local herbal practitioners revealed that the local community used the whole plants or their parts like leaf, stem, root, fruit or seed for the treatment of various ailments such as piles, cold, cough, dysentery, diarrhoea, asthma, jaundice, leucorrhoea, menstrual disorders, vomiting, cuts and wounds, skin diseases, worm infections, hydrophobia, scorpion sting and anaemia (Table-1).

The recorded medicinal uses of these plant species were in conformity with the uses in the Indian system of medicine, particularly Ayurveda and in ethnomedicine in India. The presence of species like *Oxalis* indicates European influence on the pharmacopoeia of the area. The present study also suggests that traditional medicinal practice using native ethnomedicinal plants is still functional in the study area. This might be attributed to the lack of access to modern medicines and poor socio-economic status of the local people. Moreover, herbal medicines are cost effective also.

On the basis of the present study, it is suggested that the detailed survey of ethnomedicinal plants of Jagatpur wetland area with their medicinal and economic values and sustainable use should be made and for that multidisciplinary approach is required.

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TABLE -1 : Listing of Ethnomedicinai Plants in and around Jagatpur Wetland, Bhagalpur (2006 -07)

VSN	Local Name	Botanical Name	Family	Status	Parts of the plants used	Ethnomedicinal use
JW-I	Chirchiri	*Achyranthes aspera* L.	Amaranthaceae	Marginal	Whole plant	Piles, skin disease, dysentery.
JW-2	Kateya sag	*Amaranthus spinous* L.	Amaranthaceae	Marginal	Roots and Leaves	Cough, diarrhoea, prevent vomiting.
JW-3	Mahakaua	*Ageratum conyzoides* L.	Asteraceae	Marginal	Roots and Leaves	Used in leprosy.
JW-4	Pila Kantaila	*Argemonemexicana* L.	Papaveraceae	Marginal	Whole plant	Seed oil applied on itches,Leaves used in cough, skin disease, yellow latex used in Jaundice.
JW-5	Dadlmari	*Ammania baccifera* L.	Lythraceae	Wet places	Leaves	Used in ring worm.
JW-6	Kanghi	*Abutilon indicum* L.	Malvaceae	Marginal	Whole plant	Dysentery, Leucorrhoea, Piles.
JW-7	Kuppi	*Acalypha indica* L.	Euphorbiaceae	Marginal	Leaves	Plants of leaves applied to burn.
JW-8	Suruchi	*Alternanthera sessilis* (L.)	Amaranthaceae	Wet places	Whole plant	Skin diseses and night blindness.
JW-9	Gokhala	*Anisomeles indica* (L.) O.	Lamiaceae	Marginal	Leaves	Used in itches
JW-I0	Babul	*Acacia nilotica* L.Wild ex.	Fabaceae	Marginal	Stem, leaves flowers	Bark used in asthma, bronchitis, diabetes; Leaves useful for urinary problem; flowers useful as tonic.
JW-11	Lal Punarnava	*Boerhaavia diffusa* L.	Nyctaginaceae	Marginal	Whole plant	Asthma, Anaemia, Jaundice.
JW-12	Laksmana	*Biophytum sensitivum* DC.	Oxalidaceae	Moist place	Leaves	Used in Asthma.
JW-I3	Aak	*Calotropis procera* (L.) R.	Asclepiadaceae	Marginal	Root, leaves, flowers and latex	Eczema, ulcer, piles, dried and yellow leaves useful in cough and asthma.
JW-I4	Aak	*Calotropis gigantea* (L.) BR.	Asclepiadaceae	Marginal	Root	Powdered root bark used in diarrhoea and dysentery.
JW-15	Haranpadi	*Convolvulus arvenisis* L.	Convolvulaceae	Marginal	Root	Cathartic properties.
JW-16	Kasondi	*Cassia occidentalis* L.	Caesalpiniaceae	Marginal	Whole plant	Asthma, hysteria, dysentery.
JW-17	Chaka vat	*Cassia tora* L.	Caesalpiniaceae	Marginal	Whole plant	Used in ring worm, eczema.
JW-18	Kanphuti	*Cardiospermum halicacabum* L.	Sapindaceae	Wet places	Roots	Used in asthma and nervous diseases
JW-19	Kachalu	*Colocasia esculenta* L. Schott.	Araceae	Wet places	Petiole and corm	Petiole uses an astringent and corm used in internal hemorrhages.
JW-20	Mirchaniya	*Croton bonplandianum* Baill.	Euphorbiaceae	Marginal	Leaves	Leaves and root used externally for skin diseases.
JW-21	TitBhant'	*Clerodendron viscosum* vent.	Verbenaceae	Marginal	Leaves and roots	Leaves and root used externally for skin diseases.
JW-22	Bhang	*Cannabis sativa* L.	Cannabinaceae	Marginal	Leaves	Menstrual disorders and during labour pain.
JW-23	Dub grass	*Cynodon dactylon* (L.)	Poaceae	Marginal	Whole plant	Wound healing, blood purifier.
JW-24	Motha	*Cyperus rotundus* L.	Cyperaceae	Wet places	Tubers	Tubers used in indigestion, diahorrea and dysentery.
JW-25	Pila hurhur	*Cleome viscosa* L.	Cleomaceae	Marginal	Leaves	Leaves used for wounds and ulcers.
JW-26	Katkaranj	*Caesalpina bonducela* Flem.	Caesalpiniaceae	Marginal	Leaves and seeds	In diahorrea, asthma.
JW-27	Dhatura	*Datura metel* L.	Solanaceae	Marginal	Whole plant	Useful in bronchial asthma.
JW-28	Tinpatiya	*Desmodium triflorum* (L.) DC	Fabaceae	Marginal	Leaves	Fresh leaves used in wounds and abscesses.
JW-29	Bhangrya	*Eclipta prostrata* L.	Asteraceae	Marginal	Roots and leaves	Plant juice effective in blackening and strengthening of hair.
JW-30	Dudhi	*Euphorbia hirta* L.	Euphorbiaceae	Marginal	Whole plant	Used in bronchitis, removing worm in children roots of the plant stop vomiting.

JW-31	Chotidudhi	*Euphorbia thymifolia* L.	Euphorbiaceae	Marginal	Leaves and seeds	Given to children in bowel complaints.
JW-32	Makhana	*Euryale ferox* Salisb.	Nymphaeaceae	Floating	Fruits	Roasted seed useful for women in debility after delivery.
JW-33	Bondargali	*Glinus lotoides* L.	Molluginaceae	Marginal	Whole plant	Paste applied on boils of the face.
JW-34	Hathisurh	*Heliotropium indicum* L.	Boraginaceae	Marginal	Whole plant	Useful in hydrophobia, scorpion sting.
JW-35	Talim khana	*Hygrophila auriculata* (Schum). Heine	Acanthaceae	Wet places	Whole plant	Useful in jaundice and urinogenital diseases.
JW-36	Vilayati tulsi	*Hyptis suaveolens* (L.) Poit	Lamiaceae	Marginal	Leaves	Leaves used for healing wounds and affection of uterus.
JW-37	Gumma	*Leucas aspera* (Wild) Link.	Lamiaceae	Marginal	Leaves	Juices of the leaves used as external application for skin eruptions.
JW-38	Dhrub	*Leucas cephalotes* (Roth) Spreng.	Lamiaceae	Marginal	Flower	Flower used in cough and cold.
JW-39	Lantana	*Lantana camara* L.	Verbenaceae	Marginal	Whole plant	In itches and as antiseptic for wounds.
JW-40	Susiniya	*Marsilea quadrifolia* L.	Marsiliaceae	Wet places	Whole plant	Used in diahorrea, cough, bronchitis and skin diseases.
JW-41	Musakani	*Merremia gangetica* (L.) Cuf.	Convolvulaceae	Wet places	Whole plant	Used in cardiac diseases.
JW-42	Kamal	*Nelumbo nucifera* Gaertn	Nelumbonaceae	Floating	Flower	Flower used for worm infestation.
JW-43	Shyama tulsi	*Ocimum sanctum* L.	Lamiaceae	Marginal	Whole Plant	Antibacterial, bronchitis, asthma.
JW-44	Ban tulsi	*Ocimum americanum* L.	Lamiaceae	Marginal	Whole Plant	Malarial fever, tuberclosis.
JW-45	Amrul sak	*Oxalis corniculata* L.	Oxalidaceae	Wet places	Leaves	Fresh juice of plant used in piles, anaemia.
JW-46	Bhui amla	*Phyllanthus fraternus* Webster	Euphorbiaceae	Moist place	Whole Plant	Jaundice, urinary disease, diarrhoea.
JW-47	Jalpipal	*Phyla nodiflora* (L.) Greene	Verenaceae	Wet places	Whole Plant	Gives to the children in indigestion and diarrhoea.
JW-48	Rainful	*Polygonum plebejum* K. Br.	Polygonaceae	Wet places	Leaves and stem	Leaves and stems used in gastric disorders.
JW-49	Ban phutka	*Physalia minima* L.	Solanaceae	Wet places	Whole Plant	Useful in burning sensation, cough, bronchitis.
JW-50	Til	*Sesamum indicum* L.	Pedaliaceae	Marginal	Seeds	Seeds oil helpful in bleeding, piles, hair growth, wound healing.
JW-51	Jangali baigan	*Solanum indicum* L.	Solanaceae	Marginal	Fruits	Asthma, dry cough, toothache.
JW-52	Makoi	*Solanum nigrum* L.	Solanaceae	Marginal	Fruits	Fruits used as a tonic.
JW-53	Kantaila	*Solanum xanthocarpum* Schrad	Solanaceae	Marginal	Whole Plant	Used in chronic bronchitis, asthma.
JW-54	Bala	*Sida cordfolia* L.	Malvaceae	Marginal	Whole Plant	Bleeding piles, leucorrhoea.
JW-55	Sambhalu	*Vitex negundo* L.	Verbenaceae	Marginal	Leaves	Leaves applied to rheumatic swelling of Joint.

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