



MEDICINAL PLANTS DOCUMENTATION OF AQUATIC MACROPHYTES WETLANDS OF LAOKHOWA WILDLIFE SANCTUARY, NAGAON, ASSAM

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ABSTRACT :

Wetlands are treasure house of several medicinal plants. The commercial value of these plants still need special attention of local people to utilize these plants for curative purposes. These plants are very sensitive to save the normal Physico-chemical parameter of wetland. Slight alteration of the normal physico-chemical parameter of wetland may results in partial or complete disappearance of these plants. The loss of these medicinal plants will also result in the traditional knowledge of their medicinal properties as well as economic loss. Thus in this study, an attempt has been made to document the medicinal plants of aquatic macrophytes wetlands of Laokhowa wildlife sanctuary, Nagaon, Assam.

KEYWORDS : Wetland's plants, Medicine, Laokhowa wildlife sanctuary and Aquatic macrophytes.

INTRODUCTION:

Wetland is a part of aquatic ecosystem that plays a major role on the biogeochemical cycle of the earth affecting the atmosphere, climate and hydrological cycle of a particular area (Jain, 1965, 2000; Cook, 1996). The aquatic macrophytes of the wetlands are known for its commercial value; these plants are widely used by the local people as a medicine (Kapoor & Mitra, 1979; Ahuja, 1986). This is considered to be the most suitable biological

ecosystem that exists on earth's surface. Wetland is very important in terms of socio-economy, biology, ecology and aesthetic point of view (Maheshwari & Singh, 1979; Kareiva, 1994). This is the transitional or 'Ecotonal' zones between permanently aquatic and dry terrestrial ecosystems. Wetland is defined as, "Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water, static or flowing, fresh, brackish or salty areas of marine water". The dependence of man on the wetland is an important aspect and his association with aquatic plants for curing various ailments has been practiced from long time (Chopra, *et al.*, 1968). Laokhowa wildlife sanctuary is situated in the Nagaon district of Assam and located between

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26° 30' N to 26° 32' E latitudes and 92° 40' N to 92° 47' E longitudes. The sanctuary is about 25km away from Nagaon district headquarters and it contains six major wetlands. The valuable aquatic plants of Laokhowa wildlife sanctuary wetland are disappeared mainly due to biotic disturbances like seasonal clearings of vegetation cover, fishing activities, grazing, extensive fodder collection *etc.*, (Asolkar, 1992; Chamberlian, *et al.*, 1998). Therefore, appropriate measures should be adopted to conserve and save these important macrophyte species of the wetlands of Laokhowa wildlife sanctuary. The wetland of Laokhowa wildlife sanctuary has high plant resource, which are being used by the local people of Nagaon district of Assam for treatment against various common diseases (Maliya & Singh, 2003; Maliya, 2004).

The present investigation has been conducted for documentation of medicinal plant species of aquatic macrophytes of wetlands of Laokhowa wildlife sanctuary, Nagaon, Assam.

METHODOLOGY:

Laokhowa Wildlife Sanctuary is one of the oldest protected areas in Assam. So for scientific and systematic work on vegetation has been carried out barring a preliminary work done by Choudhary, 1997. To study the flora of the Laokhowa Wildlife Sanctuary adequate field tours were undertaken to record precisely and to study the medicinal properties the plant species of the sanctuary. The collected specimens were pressed and dried. After proper

chemical treatment and were identified by consulting comparing herbarium sheets at Gauhati University Herbarium and Regional Herbarium of the Botanical Survey of India, Eastern Circle at Shillong. To find out the traditional knowledge regarding herbal medicine as used by the people living in and around the study area, the inhabitants were interviewed to have the required information. Sufficient numbers of people from different communities were interviewed for the purpose.

RESULTS AND DISCUSSION:

During this study, it has been found that most of the inhabitants living the surrounding area of study site are economically poor. Tribes of Laokhowa wildlife sanctuary use these medicinal plants in different diseases as discussed may not be a mere coincidence but may be an indication of some useful properties of these aquatic macrophytes. There may be a direct relationship between these aquatic macrophytes, medicine and diseases as mentioned in (Table - 1). There is a need for investigations on these ethnomedicinal plants. Efforts for their conservation and their cultivation should be encouraged through which their extinction can be prevented and people may also get an inexpensive remedy.

Due to high plant resources in the wetland, people of its vicinity often visited to collect their traditional medicinal plants.

Table 1: Laokhowa wildlife sanctuary wetland Medicinal aquatic macrophytes of Nagaon district, Assam.

Plant Name	Family	Characteristics of plants	Medicinal use
<i>Acorus calamus</i> L. (Boss)	Araceae	Perennial herb with aromatic rhizome leaves linear, long, spadix sessile, cylindrical, dense flowered, fruit reddish and few seeded berries.	Rhizome is used in diarrhea, inflammation, fever, bronchitis, and epilepsy of children
<i>Alternanthera sessilis</i> (L) DC. (Mati kanduri)	Amaranthaceae	A perennial, amphibious, prostrate herb of wet places. Leaves lanceolate, linear-oblong and opposite. Small white flowers are borne in axillary clusters. Fruits are broad.	Twigs are used in jaundice and liver problem.
<i>Commelina benghalensis</i> L. (Kona simolu)	Commelinaceae	Perennial, branched, creeping herb of marshes, leaves ovate-oblong, acute, base rounded, flower blue, cleistogamous, fruit a capsule.	Stem juice applied to stop bleeding of cuts and eyelid sore.
<i>E. clipta prostrata</i> (L) L. (Keheraj)	Asteraceae	Aquatic, annual, erect, rooted emergent herbs of marshy areas. Flower white and axillary. Fruit achene.	Fresh leaves are given to elephantiasis; trouble of liver and in jaundice.
<i>Ipomoea aquatica</i> Forsk. (Kolmou)	Convolvulaceae	Perennial, aquatic prostrate herb. Rooted with floating shoot. Leaves alternate, long stalked, elliptic pointed. Stem hollow creeping, jointed, floating. Flower regular, pink in colour. Fruit berry.	Twigs are consumed as vegetable and juice of the leaf is given for blood purification.
<i>Monocharia hastata</i> (L) Solm. (Kar meteka)	Pontederiaceae	Perennial, anchored emergent, erect robust herb with creeping rootstock, rooting in mud. Leaf triangular, ovate with hastate base, mostly with a narrowed apex. Flower pale blue in raceme. Fruit a membranous capsule.	Leaf juice is used for curing boils.
<i>Nelumbo nucifera</i> Gaertn. (Podum)	Nymphaeaceae	Giant, perennial, aquatic herb with stout, creeping, underground rhizome. Leaves floating, large, alternate, orbicular, margin upturned prominently veined from the centre. Flower large, Pinkish red or white.	Roots are given in small pox and dysentery.
<i>Pistia stratiotes</i> L. (Bor puni)	Araceae	Annual, floating, stoloniferous aquatic herbs with a short stem bearing a rosette of sessile leaves. Root adventitious. Vegetative propagation by offsets. Leaves ovate. Inflorescence spadix. Fruit green, ovoid.	Leaf juice boiled in coconut oil and use in chronic skin diseases.
<i>Polygonum hydropiper</i> L. (Pothorua bihlongoni)	Polygonaceae	Annual, anchored emergent, erect herb. Stem glabrous, node below swollen. Leaf lanceolate, acute. Flower pink. Fruit nut, trigonous.	Leaf juice is used in skin diseases and in uterine disorder.
<i>Vallisneria natans</i> (Lour) Hara. (Pata ghah)	Hydrocharitaceae	A submerged rooted, perennial, tufted, stem less, stoloniferous herb. Root fibrous. Leaves linear, entire, narrow, ribbon shaped, apex obtuse. Flower white, fruit oblong.	It is used as a stomachic and for leucorrhoea.

CONCLUSION:

Useful information of 10 important species is collected from Laokhowa wildlife sanctuary of Assam which is used to treat some common disease. There is need for further investigations of ethanopharmacological study of these plants. These plants should be screened scientifically and verified to determine the therapeutics properties. It can be further utilized in health care as well as economical improvement.

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