

Aquatic Weeds: Nutritional Supplement with High Therapeutic Value

¹Hem Kant Jha, ²Prasanjit Mukherjee, ³Jyoti Kumar

¹Mahila Sandhya College, Jamtara (Jharkhand), ²KKM College, Pakur (Jharkhand),

³University Department of Botany, Ranchi University, Ranchi

ABSTRACT

The present paper deals with positive aspects of aquatic weeds, which in general, have been regarded as undesirable, troublesome and unwanted vegetation in limnetic habitat, interfering navigation, causing loss of aesthetic value of water bodies etc. and have been regarded as economic drain. But in other hand they are elixir of life and boon to mankind due to high nutritional and therapeutic value. The present work includes compilation and documentation of 29 aquatic weeds used as vegetables and for medicinal purposes belonging to 29 genera and 25 families found in Jamtara district of Jharkhand state.

Keywords: Nutritional, Therapeutic, Vegetables, Jamtara.

***Corresponding author:**hemkantjha71@gmail.com

INTRODUCTION

In general, Aquatic weeds have been regarded as challenging and troublesome threat to limnetic habitat causing loss of aesthetic value of ponds, interfere navigation, obstruct water flow and affect growth of other flora and fauna. Infestation of aquatic weeds is a serious problem worldwide and they have been regarded as the economic drain. Despite of many more negative roles, they seem to be boon to human civilization due to high nutritional and therapeutic value in addition to pollution control, use as compost and biofertilizer, fish production etc.

Some of the aquatic plants like, *Marsilea minuta* L., *Bacopa monnieri* L., *Centella asiatica* L., *Ipomoea aquatica* Forsk., and species of *Alternanthera* are rich in vitamins and minerals and used as leafy vegetables as well as medicine due to their pharmacognostic properties. These leafy vegetables are sold in the local market as "Saag". These plants can also be grown as pot herbs in our home. Some of the other weedy flora like, *Nymphaea nauchali* Burm. f., *Nelumbo nucifera* Geartn., *Nymphoides indicum* L.,

Pistia stratiotes L. etc. have high medicinal value.

MATERIALS & METHODS

Jamtara district lies between 23°10' – 24°05' north latitudes and 86°30' – 87°15' east longitude, lying at the lower altitude of Chhotanagpur plateau. It is fabulous treasure of aquatic vegetation being dominated by tribal communities. Being enriched with herbal knowledge, they manage their bread and butter by utilizing aquatic plants growing in their vicinity for various purposes. The present work includes regular visit of the sampling sites for collection and identification of plants. Samples were collected from eight ponds of Jamtara, i.e., Rajabandh pond, Sarkarbandh pond, Taalpokhar, Sarkheldihtalab, Kishoritalab, duladih pond, Chhathtalab, Sahna and fish pond. Some of the local residents like, Mahadeoghiwar, Mahendra Soren, Sadhan da, Shirshashish and Lobeshwar Hansda were also consulted to know local names of the collected samples and their local uses.

The samples were collected and identified as per BSI

guidelines and their taxonomic study was done. Taxonomic study includes citation of botanical names, local names, families and important vegetative and floral characters along with their local and therapeutic use.

RESULTS & DISCUSSION

A total of 29 plants belonging to 25 families were studied which are rich in nutrients with high medicinal value. Out of 29 plants, 28 are from angiosperms and 1 from Pteridophytes.

Aquatic plants uses as food supplements due to their nutritional value are mainly *Trapa bispinosa* L. (Trapaceae), *Colocassia esculenta* L. (Araceae), leafy vegetables like, brahmisaag, susnisaag, thankuni and kalmisaag. Despite of having most pernicious nature, the leaves of *Eichhornia crassipes* (Mart.) Solms.

contain very high amount of proteins and may be used as supplement in human diets.

Water chestnut (*Trapa bispinosa*), popularly known as Pani Phal singhara has very high nutritional value due to presence of high percentage of proteins and minerals. The flour of dry fruit is highly nutritious containing starch, protein, manganese, calcium, iron and phosphorous. The fruits of *Ottelia alismoides* L. (Hydrocharitaceae) are also cooked as vegetable by the poor fish farmers. The bulbils of *Aponogeton natans* L. (Apogonaceae) are used as vegetables. The fresh tender leaves and shoots of *Commelina benghalensis* L. are also used as supplementary leafy vegetables.

The list of aquatic weeds having ethnomedicinal values have been shown in Table I.

Table 1: Aquatic weeds of medicinal value

Sl. No.	Name of Plant	Local Name	Family	Parts Used	Uses
1.	<i>Ranunculus scleratus</i> L.	Polika	Ranunculaceae	Leaves	Rheumatism, asthma, skin & kidney diseases
2.	<i>Nelumbo nucifera</i> Geartn.	Kamal	Nelumbonaceae	Flowers, roots, seeds	Liver & skin diseases, piles, diarrhea, dysentery
3.	<i>Nymphaea nauchali</i> Burm. f.	Neel kamal	Nymphaeaceae	leaves	Dysentery, dyspepsia, skin problems
4.	<i>Oxalis corniculata</i> L.	Amrul	Oxiladaceae	leaves	Dyspepsia, piles, anaemia.
5.	<i>Ammannia baccifera</i> L.	Dadmari	Lythraceae	leaves	Rheumatism, fever etc.
6.	<i>Ludwigia adscendens</i> L.	Labangi	Onagraceae	Root	Delivery fever, headache, earache.
7.	<i>Centella asiatica</i> L.	Thankuni, Gotukola	Apiaceae	leaves	Anti-carcinogenic, skin & blood related diseases, dysentery, brain tonic etc.
8.	<i>Oldenlandia diffusa</i> L.	Khetpapa	Rubiaceae	leaves	Anti-carcinogenic
9.	<i>Bacopa monnieri</i> L.	Brahmi	Scrophulariaceae	leaves	Anti-carcinogenic, brain tonic.
10.	<i>Hygrophila auriculata</i> Schum.	Kulikhara	Acanthaceae	leaves	Anti-carcinogenic, kidney problems
11.	<i>Enhydra fluctuans</i> Lour.	Hingcha	Asteraceae	leaves	Use as laxative
12.	<i>Eclipta prostrata</i> L.	Kesul	Asteraceae	leaves	Liver diseases

13.	<i>Nymphoides indicum</i> L.	Kumudni	Menyanthaceae	leaves	Fever & Jaundice
14.	<i>Hydrolea zeylanica</i> L.	Kassachara	Hydrophyllaceae	leaves	Antiseptic
15.	<i>Ipomoea aquatica</i> Forssk.	Kalmisaag	Convolvulaceae	leaves	females debility
16.	<i>Limnophila indica</i> L.	Karpur	Scrophulariaceae	leaves	Antiseptic
17.	<i>Alternanthera sessilis</i> L.	Gurundi	Amaranthaceae	Stem, leaves	Hair tonic, snake bite, eye troubles.
18.	<i>Rumex dentatus</i> L.	Janglipalak	Polygonaceae	leaves	Skin diseases
19.	<i>Hydrilla verticillata</i> (L.f.) Royle	Jhangi	Hydrocharitaceae	leaves	Skin diseases, gastrointestinal problems, blood circulation.
20.	<i>Pistia stratiotes</i> L.	Topapana	Araceae	Leaves roots	Anti-inflammatory
21.	<i>Ceratophyllum demersum</i> L.	Jhanjhi	Ceratophyllaceae	leaves	Insect bite
22.	<i>Lemna purpusilla</i> Torrey.	Pancha	Lemnaceae	leaves	Cold, urinary & skin diseases
23.	<i>Eichhornia crassipes</i>	Jalkumbhi	Pontederiaceae	Leaves petioles	Skin diseases
24.	<i>Commelina benghalensis</i> L.	Kanchira	Commelinaceae	leaves	Refrigerant, laxative, leprosy etc.
25.	<i>Marsilea minuta</i> L.	Susnisaag	Marsileaceae	leaves	Hypertension, migraine, insomnia.

Aquatic plants are important part of natural ecosystem with potent nutritional and other values. Most of them are treated as weeds due to their gregarious growth and become nuisance and obnoxious. But there is need to promote cultivation and proper market management of such economically important flora to uplift socio-economic status of tribals and poor mass of people. It will be very useful both for mankind and for limnetic habitat. It will provide employment to some needy people and will be helpful to conserve aquatic biodiversity.

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