

# Edible Hydrophytic and Wetland Plants of East Singhbhum, District of Jharkhand

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**Abstract:** The values of wetlands have been now realized all over the world. Wetlands are one of the most productive ecosystems and play crucial role in hydrological cycle. As a resource, wetlands support millions of people in providing services like clean water supply, food, fibre and raw materials etc.

The work was done conveniently through extensive field surveys and information was gathered about edibility of these macrophytes, through interviews of local tribals by structured questionnaire. The findings of the present work covered two major aspects, such as Diversity of macrophytes and check the edibility of these macrophytes for East Singhbhum District.

As many as 31 species from 25 families were found to be edible. Thus, all the species recorded in this work are very useful which, if used in sustainable manner, can prove beneficial to the poor people associated directly with wetlands.

**Keywords:** Productive, Ecosystems, Hydrological Cycle, Diversity.

## Introduction

East Singhbhum, district of Jharkhand, lies within the longitudinal extent of 86° 04' to 86° 54' E and latitudinal extent of 22° 0' 12' to 23° 0' 1' N. A total geographical area of the district is 3533 sq. Km., which forms about 2.03 % of the whole state. Primarily inhabited by the tribal people, this district seems to be neglected with regard to its aquatic biodiversity, which not only plays a major role in the sustenance of aquatic fauna but also helps the mankind by providing them a variety of food with high nutritional and medicinal value. Food is a major concern of the local tribes, who are poor and cannot afford to have variety of vegetables. They often depend on hydrophytes which are easily available from nearby wetlands and water bodies. These hydrophytes unknowingly provide them with a number of essential macro and micronutrients in adequate quantities, which otherwise also have medicinal values. A list of 20 plants have been identified which are edible hydrophytes and also instill high medicinal values.

## Methods

The hydrophytes were collected from the various water bodies and wetlands over a duration of one year and identified with the flora book of Bihar and Orissa by H. H. Haines. Then the plants were checked with the local people for its edibility. Most of the plants are edible by the local tribes, but there are also some, which are not known to be edible by them. This research

paper gives a scope to the local tribes, that there are more hydrophytes available in the area which can be used for eating purpose. Thus, they should protect the water bodies from becoming severely polluted by the effluents from the nearby industries and thereby becoming extinct.

## Observation

*Alternanthera sessilis* (L.) R. Br.

FAMILY: Amaranthaceae

ENGLISH NAME: Sessile Joyweed

HINDI NAME: Garundi

LOCAL NAME: Garundi arak

DESCRIPTION: Found in the margins of aquatic and moist areas, a prostrate or decumbent, spreading herb, rooting at lower nodes. Leaves elliptic or linear-lanceolate. Flowers white, arranged in axillary spike. Seeds yellowish or reddish brown.

FLOWERING AND FRUITING: August to May

EDIBLE PART: Young shoots and leaves are eaten as vegetable (Scher, 2004)

*Amaranthus viridis* L.

FAMILY: Amaranthaceae

ENGLISH NAME: Slender amaranth

HINDI NAME: JungliChaulayi

LOCAL NAME: Bhaji Ara

DESCRIPTION: Found scattered in moist open areas, an erect, branched, glabrous herb. Leaves ovate or rhomboid, cuneate at base. Flowers green, unisexual, arranged in axillary clusters or in terminal spikes. Fruit an utricle with brown or black, shiny seed.

FLOWERING AND FRUITING: August to March

EDIBLE PART: Young shoots and leaves are cooked and eaten as vegetable.

*Aponogeton natans* (L.) Engl. & Krause

SYNONYM: *Aponogeton monostachyon* L.

FAMILY: Aponogetonaceae

ENGLISH NAME: Floating lace plant

HINDI NAME: Ghechu

DISTRIBUTION: Found only in shallow monsoonal pools; common after rains DESCRIPTION: An aquatic herb with floating leaves and tuberous rhizome. Leaves 7 to 15 cm long, oblong to linear-oblong. Flowers white, arranged on a dense spike with long peduncle, arising from the base; stamens 6; pistils 3. Fruit comprised of 3 united follicles. FLOWERING AND FRUITING: August to November

EDIBLE PART: Tuberous root

*Asteracantha longifolia* (L.) Nees

SYNONYM: *Hygrophila spinosa* T. Anders

*Hygrophila auriculata* (Schum.) Heine

FAMILY: Acanthaceae

ENGLISH NAME: Marsh barbel

HINDI NAME: Bhankari; Kshura

LOCAL NAME: Gana Jamun Aa; Nadikanta; JherlaJanum; Gokhulakanta;

DISTRIBUTION: Margins of monsoonal ponds.

DESCRIPTION: A stout, erect, hispid herb. Leaves sessile, lanceolate, usually 6 at each node with the outer two larger in size. A whorl of 6 yellow spines present at each node. Flowers bright blue or purple, in sessile, axillary whorls. Fruit a linear oblong capsule with 4 to 6 seeds.

FLOWERING AND FRUITING: September to March

EDIBLE PART: Leaves consumed as vegetable

*Bacopa monnieri* (L.) Pennell

FAMILY: Scrophulariaceae

ENGLISH NAME: Waterhyssop

HINDI NAME: Brahmi

LOCAL NAME: Brahmi buti

DISTRIBUTION: Common in moist places throughout India

DESCRIPTION: A glabrous, punctate herb, rather succulent. Leaves sessile, obovate or spatulate, entire. Flowers solitary, axillary, white; peduncles usually longer than the leaves; bracteoles linear. Fruits ovoid, acute capsules included in persistent calyx.

**FLOWERING AND FRUITING:** Flowers and fruits almost throughout the year but chiefly during February-April.

**EDIBLE PART:** Leaves and flowers.

*Cassia tora* L.

**SYNONYM:** *Cassia obtusifolia*

**FAMILY:** Leguminosae (Fabaceae)

**ENGLISH NAME:** Sickle senna

**HINDI NAME:** Charota; Chakvat

**LOCAL NAME:** Kanyur Aa; Chakor sag

**DISTRIBUTION:** Commonly found along roadsides in moist, open areas. **DESCRIPTION:** An erect annual herb, up to 1m high. Leaves pinnately compound with 3 pairs of leaflets. Rachis with a gland located between the lowest pair of leaflets. Flowers yellow usually in axillary pairs. Fruit a pod, 20 to 25 cm long. Seeds 30 to 35.

**FLOWERING AND FRUITING:** August to December.

**EDIBLE PART:** Seeds and leaves

*Centella asiatica* (L.) Urban

**FAMILY:** Apiaceae

**SYNONYM:** *Hydrocotyleasiatica*L.

**ENGLISH NAME:** Indian pennywort

**HINDI NAME:** Brahmamanduki, Brahmi; Bheki

**LOCAL NAME:** Choke Dapa Ara

**DESCRIPTION:** Common throughout India, found in waste places, gardens and shady localities. A prostrate herb, rooting at the nodes. Leaves usually glabrous, orbicular-reniform, entire, crenate or lobulate. Bracts small, ovate. Flowers white, borne in 3-6 flowered umbels. Fruits and seeds laterally compressed. **FLOWERING AND FRUITING:** Flowers and fruits from April-June.

**EDIBLE PART:** It is commonly used as porridge for feeding preschool children in combating nutritional deficiencies (Coixet al., 1993). Fresh plant is dissolved in dry vegetable preparation to enhance memory.

*Cleome viscosa*L.

**SYNONYM:** *Cleome icosandra*L.

**FAMILY:** Capparidaceae

**ENGLISH NAME:** Yellow spider flower

**HINDI NAME:** Bagra

**LOCAL NAME:**MarangCharmani

**DISTRIBUTION:** Frequently seen along roadside during rainy season. **DESCRIPTION:** A glandular, hairy herb, branching from the basal nodes. Leaves pamentely 3 to 5 lobed; petioles long, glandular- hairy, grooved. Flowers yellow, in lax racemes; pedicel 2 cm long; ovary not elevated on an androgynophore. Fruit a cylindrical, glandular capsule with a long, persistent style.

**FLOWERING AND FRUITING:** July to September.

**EDIBLE PART:** Seeds, leaves and young shoots

*Coix lacryma-jobi*L.

**FAMILY:** Poaceae (Gramineae)

**ENGLISH NAME:** Job's tears

HINDI NAME: Samkru

LOCAL NAME: Sankru

DESCRIPTION: Found at the margins of monsoonal pools. A tall, erect, annual, often rooting at lower nodes. Leaves glabrous, basal sheath bristly. Spikelets arranged in axillary or terminal racemes. Flowers unisexual with male and female flowers occurring on same peduncle. Female flowers at the base of peduncle enclosed by a globose involucre which become bony and whitish with age.

FLOWERING AND FRUITING: December to May

EDIBLE PART: Roots are edible

10. *Colocasia esculenta* (L.) Schott.

SYNONYM: *Colocasia antiquorum* Schott.

*Arum esculentum* L.

FAMILY: Araceae

ENGLISH NAME: Taro

HINDI NAME: Arvi

LOCAL NAME: Pechki; Kochuara

DESCRIPTION: Found commonly in damp places. Stems (Rhizomes) are of variable shapes and sizes. Leaves are dark green, stoutly petioled, triangular ovate, sub rounded at apex. Spathe is glabrous, light orange-yellow. Flowers borne in spadix. Female flowers are at the base, neutar ones are in the middle and male flowers above the neutar ones. Synandrium lobed

FLOWERING AND FRUITING: July to October

EDIBLE PART: Leaves and corm are edible

11. *Commelina benghalensis* L.

FAMILY: Commelinaceae

ENGLISH NAME: Bengal dayflower

HINDI NAME: Kana

LOCAL NAME: Khapra Ara

DISTRIBUTION: Found in moist soil.

DESCRIPTION: A decumbent or ascending herb, branching and rooting from the base. Leaves sessile or with a short petiole, ovate to oblong, 3 to 10 cm long, sheathing at base. Flowers blue, in a cyme subtended by 1 to 3 funnel shaped, spathe-like bracts. Underground cleistogamous flowers also present. Fruit a 3-valved capsule with pitted seeds.

FLOWERING AND FRUITING: August to November

EDIBLE PART: Leaves

12. *Eclipta prostrata* (L.) L.

FAMILY: Asteraceae

ENGLISH NAME: False daisy

HINDI NAME: Bhringaraj

LOCAL NAME: Bhringaraj

DESCRIPTION: Found in open areas with wet soil and also commonly seen along the margins of the wet areas. An erect to prostrate herb, minutely hairy throughout. Leaves 1 to 6cm long, opposite, variable in size and shape, usually distantly toothed at margin. Flower head white, solitary or in pairs. Achenes without pappus. FLOWERING AND FRUITING: Almost throughout the year.

EDIBLE PART: The leaves are used as vegetable

13. *Eichhornia crassipes* (Mart.) Solms.

FAMILY: Pontederiaceae

ENGLISH NAME: Water hyacinth

HINDI NAME: Jal kumbhi

LOCAL NAME: Dakumbhi

DISTRIBUTION: Found throughout the aquatic area forming large patches.

DESCRIPTION: A free floating aquatic herb with a dense mass of submerged roots which keep the buoyancy of the plant. Leaves spathulate; petiole long, swollen and spongy. Flowers violet-blue, showy, many on a peduncle. FLOWERING AND FRUITING: Almost throughout the year

EDIBLE PART: Young leaves and petioles

14. *Enhydra fluctuans* Lour

FAMILY: Asteraceae

ENGLISH NAME: Water cress

HINDI NAME: Harkuch

LOCAL NAME: Hirancha

DESCRIPTION: Commonly found in ponds, jheels, tanks, and ditches. An annual glabrous, marsh-herb, profusely branched. Leaves opposite, sessile, linear oblong. Flowers borne in terminal or axillary heads, involucre bracts 4, pale yellowish-green. Ray florets female, many-seriate, fertile; disk floret bisexual, fertile. Achenes oblong, black.

FLOWERING AND FRUITING: Flowers and fruits during December to March.

EDIBLE PART: Leaves and young shoots are cooked as vegetable.

15. *Ipomoea aquatica* Forsk.

SYNONYM: *Ipomoea reptans*(L.) Poir.

FAMILY: Convolvulaceae

ENGLISH NAME: Swamp morning glory

HINDI NAME: Kalmi sag

LOCAL NAME: Korom Aa

DESCRIPTION: Abundantly found throughout the aquatic area. An aquatic, perennial, herbcreeping in mud or floating on water surface. Stems hollow, commonly rooting at the nodes. Leaves alternate, usually ovate lanceolate. Flowers rosy-pink, 1 to 6 on a common, long, axillary peduncle. Fruit a 4 seeded, globose capsule.

FLOWERING AND FRUITING: April to May and October to November.

EDIBLE PART: The young terminal shoots and leaves are used as vegetable and in salad. The stems are sometimes pickled.

16. *Jussiaea repens*L.

FAMILY: Onagraceae

ENGLISH NAME: Water primrose

HINDI NAME: Kessara

LOCAL NAME: Dhabni

DESCRIPTION: Commonly found in tanks, ditches, ponds and river banks. Aquatic or semiaquatic, creeping herbs; the stems spreading on water and sustaining themselves on the surface by white vesicles. Leaves variable in size obovate or oblanceolate. Flowers white, axillary, solitary. Capsules woody. Seeds quadrate, with a white, corky testa.



FLOWERING AND FRUITING: June - August

EDIBLE PART: Leaves are consumed as vegetable by the local tribes

17. *Lemna perpusilla* Torrey

FAMILY: Lemnaceae

ENGLISH NAME: Duckweeds

DISTRIBUTION: In ponds and ditches

DESCRIPTION: Small floating, aquatic herbs. Fronds 1.2-4mm long, obovate, scale like, asymmetric, flat on both surfaces. Roots solitary, with winged root sheath. Flowers minute monoecious, consist of 2 naked stamens in the male and naked 1 celled ovary in the female. Fruit bottle shaped utricle

FLOWERING AND FRUITING: June to October

EDIBLE PART: Leaves

18. *Limnophyton obtusifolium* (L.) Miq

FAMILY: Alismataceae

ENGLISH NAME: Blunt arrowhead

DESCRIPTION: Commonly found in shallow open water, along the margin of aquatic area and in monsoonal pools. An emergent aquatic herb, up to 90 cm high. Leaves from the base, sagittate, rounded at apex; petioles long, can be up to 90 cm. Flowers white, arranged in whorls on a peduncle arising from the base of the plant; lower flowers bisexual, larger than upper male flowers. Fruit an achene with fleshy epicarp, numerous.

FLOWERING AND FRUITING: September to May

EDIBLE PART: Leaves are edible.

19. *Marsilea quadrifolia* L.

FAMILY: Marsileaceae

ENGLISH NAME: Four leaf clover

HINDI NAME: Sunsuniya

LOCAL NAME: Chatom Ara; Susni Ara

DISTRIBUTION: Found in moist and wet soil

DESCRIPTION: It is a deciduous aquatic fern producing clumps of leaves along a long, creeping, much branched rhizome. Thin green stalks arise from the rhizome to the water surface, each stalk bearing a single shamrock-like leaf with four wedge shaped leaflets. The plant forms dense stands.

EDIBLE PART: PARTS USED: Whole plant

20. *Monochoria hastata* (Linn)

FAMILY: Pontederiaceae

ENGLISH NAME: Arrow leaf pondweed

HINDI NAME: Launkia

DESCRIPTION: Commonly found in shallow water bodies growing as emergent aquatic herbs with stems 0.9m long. Leaves are arrow shaped. The inflorescence of 30-40 flowers is found in dense long spike. The flowers are 15cm long and purple in colour.

EDIBLE PART: Tender stalks and leaves are eaten as vegetable. Root stock is used as feed for cattle and pigs.

21. *Nelumbo nucifera* Gaertn.

SYNONYM: *Nelumbium speciosum* Willd.

FAMILY: Nymphaeaceae

ENGLISH NAME: Sacred lotus

HINDI NAME: Kamal

LOCAL NAME: Kamal

DESCRIPTION: Mostly found growing in jheels, ponds and tanks. Cultivated often for its sweet smelling flowers. An attractive aquatic herb with stout creeping underground rhizome. Leave orbicular, glaucous, floating, peltate, 60-90 cm in diam; petioles very long, smooth and prickly. Flowers solitary, bisexual, regular, large, rosy, white or rarely blue, 10.2-25.4 cm diam. Petals many. Carpels irregularly scattered; ovules 1-2. Fruits-torus spongy, top-shaped, 5-10 diam. Seeds slightly elongated, spherical, smooth, black exalbuminous.

FLOWERING AND FRUITING: Flowers from summer to autumn and fruits in winter. EDIBLE PART: Rhizomes are eaten as vegetable. The seed kernels are eaten dry. The peduncle and petioles are cut, dried and fried in oil and used as delicious food item.

22. *Nymphaea nouchali* Burm. f.

Synonym: *Nymphaea stellata*

FAMILY: Nymphaeaceae

ENGLISH NAME: Star lotus; blue water lily

HINDI NAME: Neelkamal

LOCAL NAME: Saluk

DESCRIPTION: Open water area, in association with Nymphoides, Najas, etc. Common during monsoon season. An aquatic herb with floating leaves and rounded rhizome. Leaves orbicular or elliptic, cleft at the base, purple beneath. Flowers solitary on long peduncle, showy, white or blue, scented; sepals fleshy, tapering to apex; anthers with long appendages. Fruit a globose berry enclosed by petals and sepals.

FLOWERING AND FRUITING: August to November.

EDIBLE PART: All the parts of plant are eaten

23. *Nymphaea pubescens* Willd.

Synonym: *Nymphaea lotus*

FAMILY: Nymphaeaceae

ENGLISH NAME: White water lily

HINDI NAME: Kokaa

LOCAL NAME: Kora; Koi

DESCRIPTION: Commonly found in open water area during rainy season. An aquatic herb with floating leaves. Leaves large, sharply toothed on the margins, pubescent on lower surfaces. Flowers solitary, large, showy, white or rose; stamens numerous; stigmatic rays with appendages. Fruit a globose, fleshy berry, developing under water. Seeds with white transparent aris.

FLOWERING AND FRUITING: August to October.

EDIBLE PART: Tender stem and leaves are cooked as vegetable

24. *Nymphoides hydrophylla*

SYNONYM: *Menyanthes hydrophyllum*

FAMILY: Gentianaceae

ENGLISH NAME: Crested floatingheart

HINDI NAME: Kumudini

DESCRIPTION: Commonly found in ponds, tanks and jheels. A floating herb; rooting at the nodes. Stems long. Leaves orbicular, deeply cordate, pedicles densely fascicled at the nodes. Corolla white, yellow towards the base within; lobes 5-6, entire with a longitudinal fold down the middle; tube with a ring of white hairs round the throat. Fruits subglobose capsules, 10-20-seeded.

Seeds circular, very thick, lenticular, scabrous.

FLOWERING AND FRUITING: During rainy season.

EDIBLE PART: Stem, leaves and fruits are eaten

25. *Oxalis corniculata* L.

FAMILY: Oxalidaceae

ENGLISH NAME: Creeping wood sorrel

HINDI NAME: Amrul

LOCAL NAME: Pi Jojo Aa; Chatom Ara

DISTRIBUTION: Common in moist, shady areas.

DESCRIPTION: A suberect creeping herb, rooting at nodes. Leaves 3- foliate, long petiolate; leaflets broader than long axillary peduncle. Fruit a long beaked capsule. Seeds numerous.

FLOWERING AND FRUITING: February to May.

EDIBLE PART: Flowers and leaves

*Panicum punctatum* Burm. f

SYNONYM: *Paspalidium punctatum* (Burm.) A. Camus

FAMILY: Poaceae

ENGLISH NAME: Angola grass

DISTRIBUTION: Common in marshy areas and shallow to deep water. DESCRIPTION: A perennial aquatic grass with erect stem, branching from base upto 120cm high. Leaves long, upto 1.2 cm wide with glabrous surface and scabrous margin. Ligule a rim of short hairs. Inflorescence comprised of 3 to 8 spike like, upto 3 cm long racemes, arranged alternately. Spikelets in 2 rows.

FLOWERING AND FRUITING: August to December

EDIBLE PART: Seeds

27. *Pistia stratiotes* L.

FAMILY: Araceae

ENGLISH NAME: Water cabbage; water lettuce

HINDI NAME: Jalkumbhi

LOCAL NAME: Takapana

DESCRIPTION: Found mostly in ponds and streams. A floating, aquatic, stoloniferous herb. Leaves sessile, surrounded at its base by membranous sheath, ovate to obovate-cuneate, densely pubescent; spathe tubular at its base, free and spreading above. Flowers minute, sessile on a spadix. Fruits ovoid to ellipsoid, green, crowned by persistent style. Seeds few to many, oblong or ovoid with a broad top. FLOWERING AND FRUITING: May-June and July-August.

EDIBLE PART: Young leaves are cooked and eaten especially in times of famine.

28. *Polygonum barbatum* L.

FAMILY: Polygonaceae

ENGLISH NAME: Jointweed; Knotgrass

HINDI NAME: Jal bahar

LOCAL NAME: Garaara; Nadi sag

DESCRIPTION: Found mostly in moist shaded areas or shallow water along the margin of aquatic areas. An erect glabrous herb, rooting at the lower nodes. Leaves elliptic-oblong, acute at apex. Stipules (ochrea) strigose with long cilia at mouth. Flowers white, in terminal spicate racemes. Nutletstrigose, polished.

FLOWERING AND FRUITING: September to April.



EDIBLE PART: Young leaves and shoots are cooked as vegetable

29. *Portulaca quadrifida* L.

FAMILY: Portulacaceae

ENGLISH NAME: Garden purslane

HINDI NAME: Khursa; khulfa; badilona

LOCAL NAME: Dailara; Gholgola sag

DISTRIBUTION: Found in shallow ditches and dried depressions.

DESCRIPTION: A prostrate or ascending herb, rooting from the nodes. A ring of silky hairs are present on each node of the stem. Leaves 1.0 to 1.3 cm long, sessile, opposite, fleshy, ovate-lanceolate. Flowers yellow, solitary; stamens 8 to 12. Fruit a capsule with several black seeds.

FLOWERING AND FRUITING: September to January.

EDIBLE PART: Stem, leaves, flowers and buds

30. *Trianthema portulacastrum* L.

SYNONYM: *Trianthemamonogyna*

FAMILY: Aizoaceae

ENGLISH NAME: Desert horse purslane

HINDI NAME: Sabuni; salsabuni

LOCAL NAME: Svet-sabuni

DESCRIPTION: Common in moist areas after the monsoon. A prostrate, succulent herb, usually with pink shaded stems. Leaves round, in opposite pairs, unequal in size, sheathed at base. Flowers pinkish or white, solitary in pouch formed by leaf sheath. Fruit a capsule, breaking into an upper lid and a lower embedded cup. Seeds concentrically wrinkled, blackish.

FLOWERING AND FRUITING: July to November

EDIBLE PART: Eaten as leafy vegetable

31. *Typha angustata* Bory and Chaub.

SYNONYM: *Typha angustifolia* auct, non L.

FAMILY: Typhaceae

ENGLISH NAME: Elephant grass

HINDI NAME: Patera

LOCAL NAME: Patera

DESCRIPTION: Scattered mostly in shallow water areas forming large patches. A tall, perennial, aquatic with creeping rhizome, up to 3.5m high. Leaves long, flat but semi-cylindric above the sheath, exceeding the flowering stem. Inflorescence cylindrical, 15 to 25cm long spike with male female flowers separated by a distinct gap; perianth reduced to many capillary hairs. Seeds very small, dispersed through wind due to the presence of capillary hairs.

FLOWERING AND FRUITING: May to November

EDIBLE PART: Sprouts on roots, bases of leaves and stem are edible

I. No	Scientific name	Family	Local	Time of	Edible
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			Name	Availability	part used
1	<i>Alternanthera sessilis</i> (L.) R. Br.	Amaranthaceae	Garundi arak	August to May	Young shoots and leaves are eaten as vegetable (Scher,2004)
2.	<i>Amaranthus viridis</i> L.	Amaranthaceae	Bhaji Ara	August to March	Young shoots and leaves are cooked and eaten as vegetable.
3	<i>Aponogeton natans</i> (L) Engl. Krause & K.	Aponogetonaceae	Ghechu	August to November	Tuberous rootstock are edible
4	<i>Asteracantha longifolia</i> Nees	Acanthaceae	Gokhulak anta	September to March	Leaves are consumed as vegetable
5	<i>Bacopa monneiri</i> (L) Pennell	Scrophulariaceae	Brahmi buti	February to April	Leaves are eaten raw in salads, cooked as vegetable, flowers are eaten during scarcity of food
6	<i>Cassia tora</i> L	Fabaceae	Chakor sag	August to December	Leaves and seeds are edible
7	<i>Centella asiatica</i> (L.) Urban	Apiaceae	Choke Dapa Ara	April-June.	It is commonly used as porridge for feeding preschool children in combating nutritional deficiencies (Cox <i>et al.</i> , 1993).
8	<i>Cleome viscosa</i> L	Capparidaceae	MarangCharmani	July to September	Leaves and young shoots are cooked as vegetable. Oil obtained from the seeds is used for cooking
9	<i>Coix lacryma-jobi</i> L.	Poaceae (Gramineae)	Sankru	December to May	Roots are edible
10	<i>Colocasia esculenta</i> (L.) Schott.	Araceae	Pechki; Kochuara	July to October	Leaves and corm are edible
11	<i>Commelina benghalensis</i> L	Commelinaceae	Khapra Ara	August to November	Leaves are edible
12	<i>Eclipta prostrata</i> (L.) L.	Asteraceae	Bhringaraj	Almost throughout the year	The leaves are used as vegetable
13	<i>Eichhornia crassipes</i> (Mart.) Solms	Pontederiaceae	Dakumbhi	Throughout the year	Young leaves and petioles are cooked and eaten
14	<i>Enhydra fluctuans</i> Lour	Asteraceae	Hirancha	December to March	Leaves and young shoots are cooked as vegetable.
15	<i>Ipomoea aquatica</i> Forsk.	Convolvulaceae	Korom Aa	April to May and	The young terminal shoots and leaves are used as vegetable and in

				October to November	salad. The stems are sometimes pickled.
16	<i>Jussiaea repens</i> L.	Onagraceae	Dhabni	June – August	Leaves are consumed as vegetable by the local tribes
17	<i>Lemna purpusilla</i> Torrey	Lemnaceae		May to August	Leaves
18	<i>Limnophyton obtusifolium</i> (L.) Miq	Alismataceae		September to May	Leaves are edible
19	<i>Marsilea quadrifolia</i> L.	Marsileaceae	Chatom Ara; Susni Ara		Young stems and leaves
20	<i>Monochoria hastata</i> (Linn)	Pontederiaceae	Launkia	August to March	Tender stalks and leaves are eaten as vegetable. Root stock is used as feed for cattle and pigs.
21	<i>Nelumbo nucifera</i> Gaertn.	Nymphaeaceae	Kamal	Flowers from summer to autumn and fruits in winter.	Rhizomes are eaten as vegetable. The seed kernels are eaten dry. The peduncle and petioles are cut, dried and fried in oil and used as delicious food item
22	<i>Nymphaea nouchali</i> Burm. f.	Nymphaeaceae	Saluk	August to November	All the parts of plant are eaten
23	<i>Nymphaea pubescens</i> Willd	Nymphaeaceae	Kora; Koi	August to October	Tender stem, leaves and peduncles are cooked as vegetable
24	<i>Nymphoides hydrophylla</i> Kuntze O.	Gentianaceae	Kumudini	During rainy season	Slim stem is used as vegetable in Taiwan
25	<i>Oxalis corniculata</i> L.	Geraniaceae	Chatom Ara	February to May	Flowers and leaves
26	<i>Panicum punctatum</i> Burm.f.	Poaceae	Sawa	August to December	Seeds powdered and used for preparing bread
27	<i>Pistia stratiotes</i> L.	Araceae	Takapana		Leaves cooked and eaten specially during famine
28	<i>Polygonum barbatum</i> L.	Polygonaceae	Gara ara; Nadi sag	September to April	Tender young leaves and shoots cooked as vegetable
29	<i>Portulaca oleracea</i> L.	Portulacaceae	Dail ara; Gholgola	September to January	Stem, leaves and flower buds are edible
30	<i>Trianthemum</i>	Aizoaceae	Svet-	July to	Young shoots and leaves

	<i>portulacastrum</i> L		sabuni	November	
31	<i>Typha angustata</i> Bory and Chaub	Typhaceae	Patera	May to November	Young shoots, stalk and root which contains starch

### DISCUSSION:

Every plant in the world is useful to us in some way or the other. Cook (1996) in his aquatic and wetland plants of India gave notes on the utility of the plants. The 31 edible hydrophytic and wetland plants discussed above, possess varied medicinal uses. Some plants are not known by the locals for their edibility. Few species, which are consumed by the various tribes of Jharkhand has been reported 2,3,4. The present findings can prove to be a great help for the people who can benefit from it. These plants can not only be used as vegetables for eating purpose, but can also prove to be a major source of micro and macro nutrients. This fact can otherwise be used to cure a number of diseases, thereby depicting its medicinal value.

### CONCLUSION

Today when nutritious food is a major concern of tribal people especially in this area, edible hydrophytes can be a better alternative. Also, the water bodies which are at the verge of extinction mainly because of the encroachment and pollution by the various industrial effluents, special care should be taken by the natives in restoring their natural form so that the hydrophytic flora and fauna could be preserved. This would also help in maintaining a balance in the ecosystem.

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