



EDIBLE AND MEDICINAL ASPECTS OF SOME HYDROPHYTES PRESENT IN THE TARAI BELT OF KUMAUN HIMALAYA, UTTARAKHAND

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Abstract –

The Tarai belt of Kumaun Himalaya contains many numbers of freshwater bodies like Ponds, rivers, rice crop fields and sagars. A maximum of these water bodies are covered by aquatic vegetation which by vegetative propagation increases in numbers and becomes useless. A large number of aquatic or semiaquatic plants have the potential for commercialization as food plants and medicinal aspects due to their nutritional and phytochemical value but lack of knowledge hinders exploitation of their potential. The present study is to analyze the economic importance of hydrophytes with special reference to their medicinal and edible aspects in the freshwater bodies of the U.S. Nagar district. The edible and medicinal aspects of such aquatic weeds make people aware of the proper utilization of these aquatic weeds.

Keywords- *Aquatic plants, Edible plants, Medicinal plants, wetland.*

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Introduction-

Aquatic plants are important vegetation for the aquatic ecosystem which is also beneficial for the millions of mankind who live near them (Bhagyaleena. P, R.Gopalan, 2012). Peoples are dependent on various freshwater bodies for irrigation, agriculture, pisciculture and other domestic uses. Wetlands are freshwater bodies that also play a significant role in conserving various aquatic ecosystem species and also store rainwater so we have to conserve them. Aquatic plants of wetlands play a fascinating role in the aquatic ecosystem and the welfare of the human population uses the aquatic plant as food, fodder, medicinal purposes and making various articles like huts and shelters (Swapna M.M. et al., 2011). Vegetation plays a momentous role in human welfare (Manokari et al., 2019). In India however aquatic vegetation are considerably used since the mythological time for diversity purposes and today we are used them for food fodder and other domestic purposes. (Bornette F, Puijalon S, 2011), (Jain et al., 2007). The economic importance of aquatic plants is analyzed by Maya et al 2003 From Kerala. Panda and Misra 2011 also presented their work regarding aquatic plant uses and their ethnomedicinal uses. Many vegetation aquatic origins utilize for medicinal purposes for their valuable phytochemicals component (Dhir. B, et al., 2009). The present work reviews the economic importance of Aquatic vegetation with special reference to their edible and medicinal aspect.

Material and method- Present study has done at Kumaun Himalaya Uttarakhand. Us Nagar district is the main region of the Tarai belt of Kumaun Himalaya. Some sites are selected for surveying the aquatic vegetation like Girital, Drona Sagar, local ponds and various rivers. The annual average rainfall here is 1296.35. The plant work was recorded by year survey on the study site. Systematic exploration of this study was done in the years from 2022 to 2023 from water bodies like rivers, ponds, and pools, etc were explored in every season. In general, 2-4 specimens of each plant were collected for identification after observing its habit and habitat. Location, habit, and local name were recorded in the field notebook. After collecting the plant specimens their useful aspect data were collected from the local people, by experts in the fields and authentic Publications.

Result and discussion- The region of the Tarai belt of Kumar Himalaya has a diversity of aquatic

plants and vegetation. Which are aquatic, semi-aquatic and marshy plants. Various aquatic and semi-aquatic plant species are recorded during the vegetation survey some of them the edible and medicinal plants are given below.

Alternanthera sessile- It belongs to the Amaranthaceae family this is emerged plant also known as Joy weed. In India, it is widely distributed and found near the rivers. Flowers are white small and Sessile. Young shoots and leaves are eaten as a vegetable, In Southeast Asia. (Scher, 2004). It is used to relieve dizziness and headache in Nigeria. It is also considered for the stoppage of blood vomiting and the treatment of snake bites in Taiwan. It is used to prepare medicine for the cure of lung diseases and asthma. Their boiled leaves are used for hypertension. The plant has a remarkable effect against intestinal cramps and diarrhea.

Colocasia esculent- It belongs to the Araceae family. It is also known as Taro. In India, it is widely distributed and found in ditches and wet fields. It is a perennial herb with tuber stems. Stolons are found near running water streams. Their rhizomes are a good source of starch which is widely cultivated and used as food. The leaves of plants have minerals and vitamins hence used as vegetables. Their dry leaves powders are used for the relief of constipation. Petiole outer skin is used to pure cracked feet (Thomas, 2008).

Commelina benghalensis- It belongs to the family Commelinaceae. In India, it is a perennial or annual diffuse herb. The flowers are blue in color. Their fried leaves are used to cure constipation. Their leaves are used to form ear drops to get relief from earache. Their leaves extraction mixed with coconut oil and applied to the skin for inflammations. Warm dried leaves are used to cure rheumatic pain (Panda and Mishra, 2011).

Cyperus iria- It belongs to the family Cyperaceae. In India, it is an annual or perennial herb commonly called flat sedge. It is an emerging herb having compound inflorescence of yellow spikelet. The seeds of the plants are used to feed for chicks. The roots of the plant are aromatic and used in local medicines (cook, 1996) and also used for complaints related to the stomach (Usher, G., 1984)

Eclipta prostate- It belongs to the family Asteraceae, Commonly called wild Daisy. It is a marshy herb with small white flowers. The full

plant is remarkably used to treat various skin diseases, jaundice, anemia, dental diseases, inflammation and disease of the ear, eye, liver and spleen. Leaf juice is also used in hair fall by applying directly on the scalp. Leaf juice shows a beneficial effect on the cough and is also prescribed to cure mental disorders; poured into the nostril to get relief from headaches.

Ipomea aquatic- It belongs to the Convolvulaceae family. It is an emerging weed, commonly known as water spinach. These perennial herbs have purple color and beautiful flowers. The fresh leaves of the plant are used in salad. Their leaves and stems are said cooling agents for the body. The fresh bud of plants is used in fungal infection i.e. ringworms. The leaf juice is also used in blood purification and the cure of gonorrhoea.

Marsilea minuta- It belongs to the Marsileaceae family and it is an aquatic or semi-aquatic pteridophyta. In India near the running water and in the rice crop field marsilea are very common. Live juice along with honey and Ginger juice are good for increasing sperm count in males. Route pests applied around the world plant is also used in cough, the fresh leaves and sprout are used in a healthy diet to increase the strength of leg muscles.

Nelumbo nucifera -It belongs to the Nelumbonaceae family commonly known as Lotus or Kamal in India. The leaves are large and rounded and the flowers have pink or white large petals. It is a free-floating plant found in Ponds and also cultivated in India for its adverse effect. Petioles and rhizomes are used as vegetables and

pickles also known as kamal kakadi which is crunchy, and slightly sweet in taste. In India, they are also used as soups, salads and snack foods. The rhizome paste is applied to the ringworm. The juice of leaves and flowers shows the effect against gram-positive and Gram Negative bacteria (wealth of India Volume 8). In fever, the paste of fresh young flower bud is prescribed. Their dry seed powder along with cow milk is used for headaches and it is also used externally for skin allergies. In piles, their root paste with lemon juice shows a relief agent.

Trapa natans- It is also known as water chestnut and belongs to the family Trapaceae. It is a fixed floating flowering herb found in staying water like tanks, lakes, ponds and slow-running water streams. Plants possess small white or lilac solitary flowers. Plants are cultivated in India for their edible fruits known as Singhara. Singhara is a nutrient-dense food that contains fiber, copper, vitamin, protein and carbohydrate. It is eaten raw as well as boiled or cooked. They are also used in the preparation of chips, snacks and flour. It acts as a coolant agent and also has antioxidant properties.

Vallisneria spiralis- It belongs to the Hydrocharitaceae family. It is an emerging herb found in ponds and the Bank of Rivers. The leaves are ribbon or tape-like long and spongy so commonly called tape grass or Eel grass due to the appearance of tape light Green leaves. They are very common in India. In Japan, the young leaves are eaten as a salad. The leaves have a rich amount of calcium, Phosphorus and iron so a beneficial effect on leucorrhoea and stomach aches.



Eclipta prostrata



Ipomea aquatic



Trapa natans



Alternanthera sessile



Commelina benghalensis-



Nelumbo nucifera



Colocasia esculna



Marsilea minuta



Vallisneria spiralis

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Conclusion-

Every plant's vegetation is helpful for us in many ways when we are going to utilize the plant we are looking at only terrestrial plants we are giving them preference but on the other hand we ignore aquatic weeds because of lack of awareness and knowledge. The present work describes the useful aspects of aquatic plants and many parts of the world now get some good knowledge about their medicinal effect. India has various wetlands which have a rich diversity of aquatic vegetation and in the present study, we take a knowledge regarding their medicinal effect and edible aspects. Although plant which originated from water has a lot of beneficial effect for various organism. The people who live near the wetlands are used them for their food, fodder, making shelter, forming various craft work articles and for their medicinal purpose, So we have to conserve those aquatic weeds which have their various benign importance. Aquatic plant's wealth which in turn may from other criteria to conserve the delicate ecosystem considering the services they provide to mankind.

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