TRENDS IN AGRICULTURE SCIENCE
Popular Article
Vol.4 Issue 03 March 2025, Page: 3113-3117

Aquatic Vegetables

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DOI;.5281/TrendsinAgri.15034678

Abstract

Aquatic vegetables, thriving in water-rich environments such as ponds, lakes, and wetlands, play a crucial role in sustainable agriculture and nutrition. Predominantly found in South-East Asian regions with high rainfall, these vegetables include a diverse range of leafy greens and carbohydrate-rich rhizomes. They are naturally resilient, requiring minimal chemical intervention while providing significant health benefits due to their rich content of essential vitamins, minerals, dietary fiber, and antioxidants. Beyond nutrition, aquatic vegetables contribute to food security, aquaponic farming, and climate resilience. Their cultural and medicinal significance further enhances their value. Despite their potential, these nutrient-dense vegetables remain underutilized. Integrating them into mainstream diets and agricultural practices can improve food security, economic opportunities, and environmental sustainability.

Introduction

Aquatic vegetables flourish in regions with abundant water bodies like ponds, lakes, lagoons and marshy wetlands, which serve as their natural habitat. South-East Asian countries known for their heavy rainfall and distinctive topography are particularly well-suited for the year-round growth of these plants. These vegetables, including leafy greens and carbohydrate-rich rhizomes, are highly eco-friendly, requiring minimal care and rarely affected by pests or diseases without the need for chemicals. Packed with essential nutrients, dietary fiber, antioxidants and phyto-chemicals, they play a vital role in combating malnutrition, particularly micronutrient deficiencies. Beyond their nutritional and medicinal benefits, aquatic vegetables significantly support the sustainability of wetland ecosystems.

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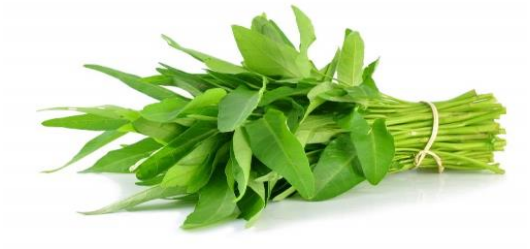
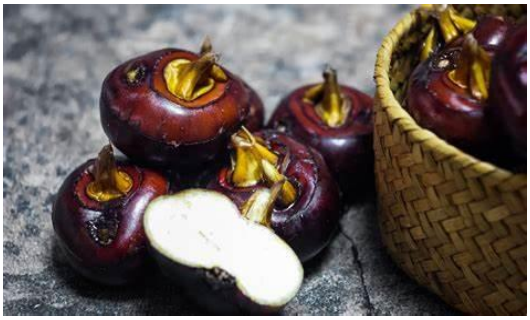
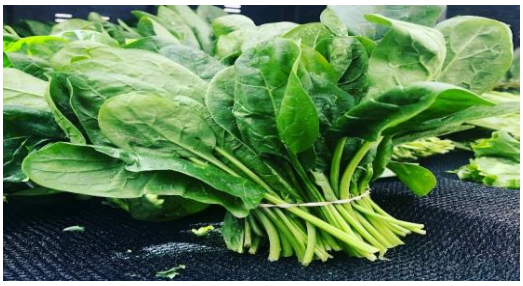
Published: 16 March 2025
ISSN: 2583-7850

Aquatic Vegetables Their Scientific Name and Family

Common Name	Botanical Name	Family	Image
Water spinach	*Ipomoea aquatica*	Convolvulaceae	
Lotus	*Nelumbo nucifera*	Nelumbonaceae	
Water chest nut	*Eleocharis* spp	Trapaceae	
Buffalo spinach	*Enydra fluctuans*	Asteraceae	
Gorgon nut	*Euryale ferox*	Nymphaeaceae	

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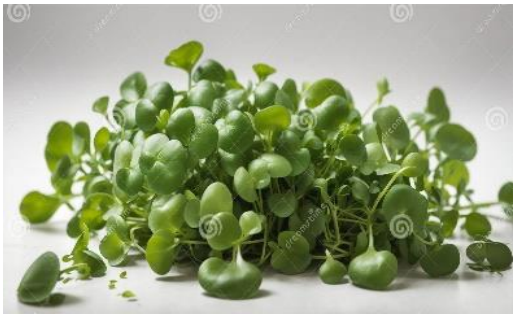
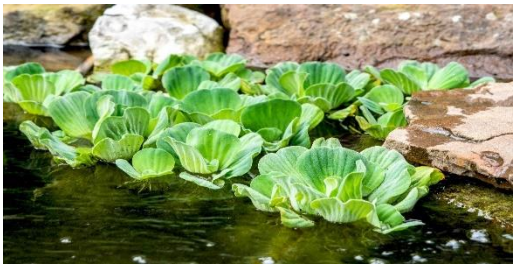
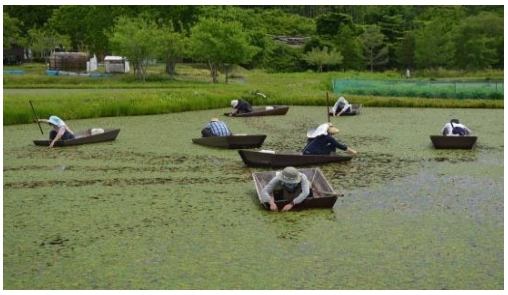
Water cress	*Rorippa nasturtium-aquaticum*	Cruciferae	
Water lettuce	*Pistia stratiotes* L.	Araceae	
Water shield	*Brasenia schreberi*	Cabombaceae	
Paracress	*Spilanthes acmella*	Asteraceae	

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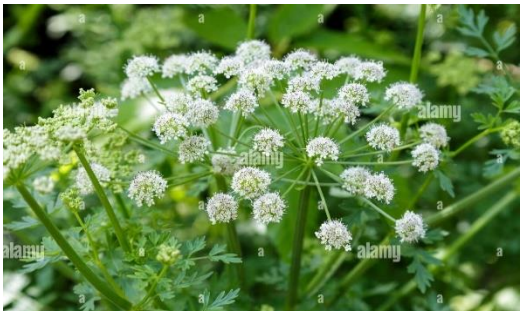
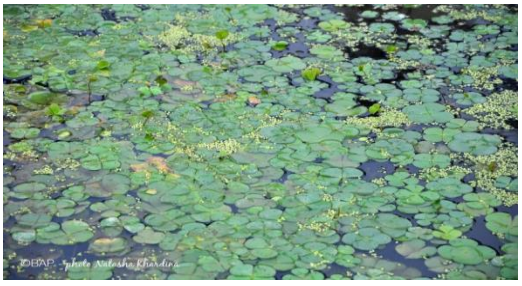
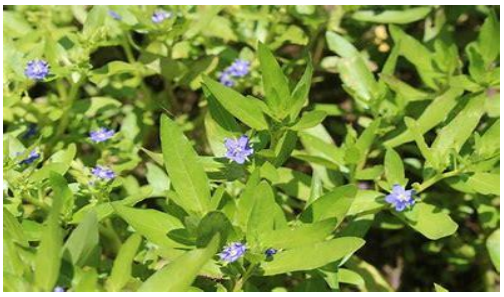
Water dropwort	*Oenanthe stolonifera*	Apiaceae	
Marsilea	*Marsilea minuta*	Marsileaceae	
Hydrolea	*Hydrolea zeylanica* (L.) Vahl	Hydroleaceae	
Chinese Arrowhead	*Sagitaria trifolia*	Alismataceae	

Advantages of aquatic vegetables

1) **Nutritional benefits:** Aquatic vegetables, such as water spinach, lotus root, and watercress, are rich in essential nutrients. They provide vitamins (A, C, and K), minerals (iron, calcium), and antioxidants, contributing to a balanced diet and overall health.
2) **Food security:** These plants can serve as a reliable food source, especially in regions with limited arable land. They offer an alternative source of nutrition, helping to alleviate hunger and malnutrition.

Published: 16 March 2025
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3) **Year-round production:** Many aquatic vegetables thrive in wet environments and can be grown throughout the year, ensuring a consistent supply of food in both wet and dry seasons.
4) **Aquaponics:** Aquatic vegetables integrate well with aquaponic systems, where plants and fish are cultivated together. This method enhances productivity, conserves water, and reduces environmental impact.
5) **Cultural and culinary value:** Certain aquatic vegetables hold significant cultural importance in various cuisines. For example, lotus root is widely used in Asian dishes, adding both flavour and texture to traditional meals.
6) **Medicinal properties:** Many aquatic plants have medicinal uses. Watercress is known for its anti-inflammatory and antioxidant properties, while lotus root is used to treat digestive issues and improve blood circulation.
7) **Economic opportunities:** The cultivation and sale of aquatic vegetables create income opportunities for local farmers and communities, particularly in areas where land-based farming is not viable.
8) **Resilient to climate change:** Aquatic vegetables are more adaptable to changing environmental conditions, including floods and droughts. Their ability to grow in waterlogged areas makes them a sustainable option in the face of climate change.

Conclusion

Underutilized aquatic vegetables offer an excellent opportunity to diversify food sources while enhancing efficient agricultural practices. These plants often overlooked are rich in nutrients like vitamins, minerals and antioxidants, can adapt to various climates and water environments. Incorporating aquatic vegetables into diets can improve food security and ease the burden on conventional agriculture.

Reference

PANDEY, A. K., DUBEY, R. K. AND SINGH, V., 2014, Aquatic vegetables- as source of underutilized vegetables. Aquatic vegetables. *Agrotech Publishing Academy*., pp. 45-59.

Published: 16 March 2025
ISSN: 2583-7850