

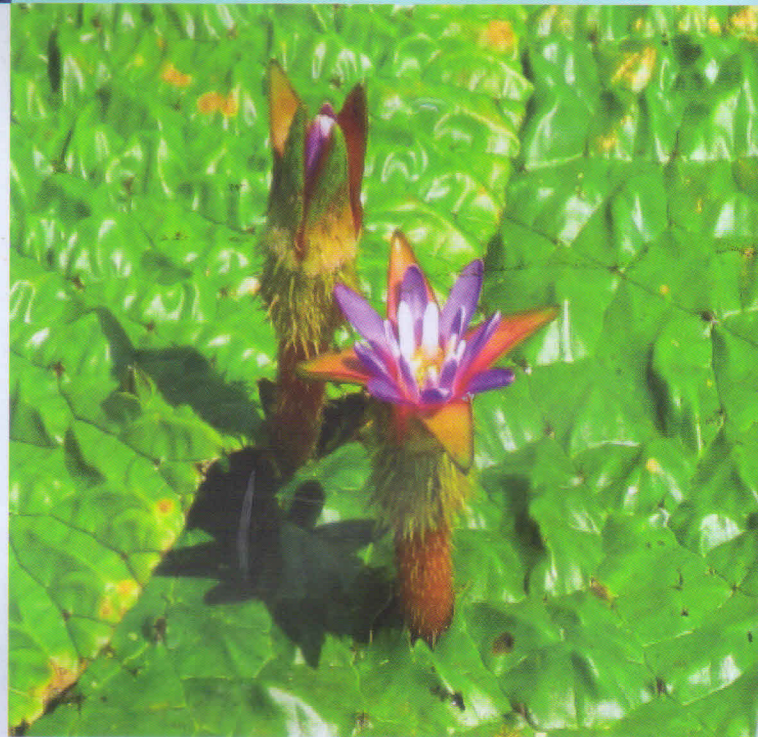
# Fox Nut A Promising Aquatic Superfood with Immense Nutritional and Economic Potential

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**A**LTHOUGH traditional crops such as rice and wheat remain the mainstays of global agriculture, an extraordinary aquatic plant is gaining recognition for its impressive nutritional value and economic potential — *Euryale ferox*, commonly known as fox nut, makhana, or gorgon nut. Originating from the freshwater wetlands of Asia, particularly in regions like India and China, fox nuts have a long history of cultivation that spans centuries. Recently, these foods have garnered significant attention as superfoods, capturing global interest due to their remarkable health benefits and potential for commercial success. In India, the cultivation of fox nuts is intricately intertwined with the agricultural heritage of various states, including Bihar, West Bengal, Assam, Jharkhand, Odisha, and Manipur. Bihar leads the nation's production landscape, accounting for over 80% of the total makhana output in India (Das *et al.*, 2006). In Manipur, fox nuts, referred to locally as *Thangjing*, hold considerable cultural and economic significance, serving as a vital part of traditional diets. Despite the considerable effort involved, cultivating fox nuts is highly lucrative, driven by the growing interest in health-oriented products across global markets.

## The Unique Biology of Fox Nut

Fox nut is a monotypic genus with only one species from the Nymphaeaceae family, thriving in tranquil environments such as ponds and lakes where the water is either stagnant or moving slowly. The impressive, spiky foliage of this plant can reach diameters of up to two metres, providing a formidable defence against herbivorous threats. The vibrant purple blossoms that emerge above the water's surface enhance its aesthetic appeal. The true value of fox nuts lies in their seeds. After harvesting, the seeds are processed to remove their tough outer shells, revealing the airy, puffed kernels that are enjoyed as makhana. These delightful, crunchy kernels with



a subtly nutty flavour have seamlessly integrated into both traditional dishes and modern health-conscious foods.

## Nutritional Profile and Health Benefits of Fox Nuts

According to a study in 2022 by Liaqua *et al.*, fox nuts stand out as a remarkable plant-based protein source, containing up to 14.57% protein content in the roasted form, which makes them particularly valuable for vegetarians, vegans, and those seeking alternative protein sources. Furthermore, research reported a Glycemic Index (GI) of 37 in roasted fox nuts, which ensures a slow and steady release of glucose into the