

## MAKHANA: CROP OF GREAT POTENTIAL

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*Makhana* is a Hindi word also known as Fox Nut and Gorgon Nut in English. Biological named as *Euryale Ferox* of family *Nymphaeaceae*. *Makhana* is also known as “Black Diamond”. It is an high nutrition aquatic crop. India grows about 70-80 per cent of global produce of *Makhana* crop. It is a high nutrition crop, mainly cultivated in Bihar and certain eastern states like Assam and some parts of Bengal. Bihar contributes around 80 per cent of the *Makhana* production of the country. Its market cost is around 200-500 / kg depending upon the quality, availability and season, etc.

### **Nutritional Content:**

- Protein: 9.7 gm
- Fats: 0.1 gm
- Carbohydrates: 76.9 gm
- Fiber: 14.5 gm
- Total lipids (fats): 0.1 gm
- Calcium: 60 mg
- Iron: 1.4 gm

### **Suitable climate and place:**

For successful *Makhana* production tropical and subtropical climate is conducive. Suitable temperature for proper growth and development of crop ranges from 20-35 degree Celsius. Crop needs the relative humidity from 50-90 per cent. For proper growth and development it needs annual rainfall of 100- 250 cm. It can be grown successfully in stagnant perennial water bodies/ponds. Water depth of 4-6 feet or 1-2 feet deep shallow agricultural fields is suitable for cultivation of *Makhana* crop.

### **Physiology and nature of plant:**

Leaves of gorgon nut are orbicular, floating and glabrous, green and corrugated above and deep purple beneath, having porous and prickly ribs. Size of leaves is 1-2 meter with 3-5 feet long petioles. Popped expanded kernel of gorgon nut is monotypic genus, having hard seed coat or shell round in shape and black in color. It is an aquatic and prickly water plant which is floating in nature. It has thick rhizomatous stem. Gorgon nut has deep root system and is present in cluster from in the water bodies.

#### **Steps for Cultivation:**

1. Clear the pond or other water body.
2. Broadcast the seed.
3. Thinning and filling of gaps.
4. Plant protection steps.
5. Harvesting the crop.
6. Finally collecting the seeds.
7. After collection of seeds, they are thrashed to remove the membranous cover.
8. Yields 2-3 tonnes/ hectare of water body.

#### **Health benefits of Gorgon nut**

- It aids weight loss as it is low in calories.
- It is great for healthy heart.
- Consumption of *Makhana* regulates blood sugar level.
- Improves Digestion
- It helps in curing of insomnia.
- It aids in building the muscle mass.
- It helps in improvement of bone health.

#### **Challenges ahead**

- Proper weed management techniques in water bodies.
- Improved variety development
- Upgradation of technologies for sowing, plant protection measures and harvesting.
- Lack of better subsidies by the government.