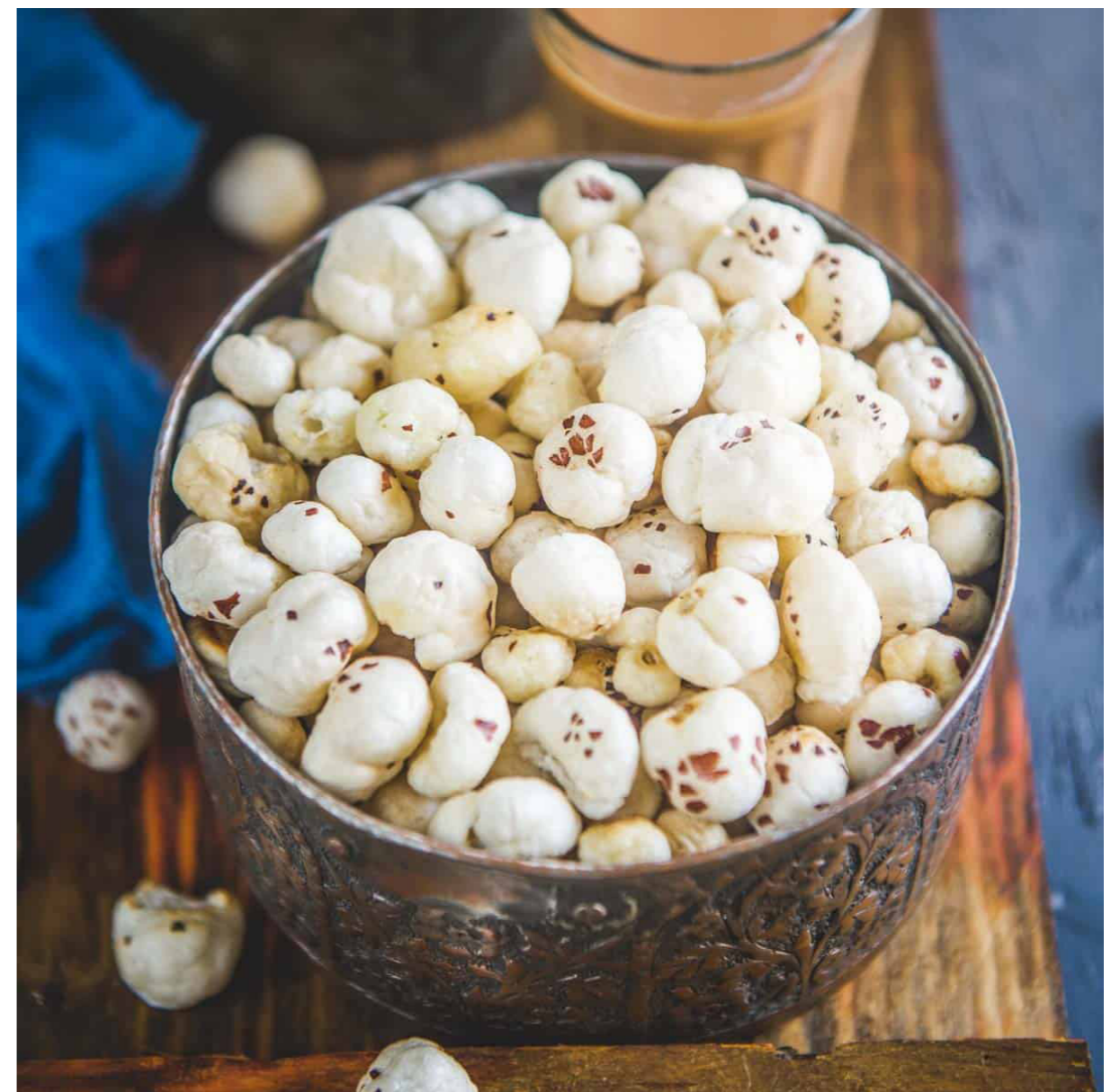


MAKHANA CULTIVATION: ANXIOUS JOB IN BIHAR

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Makhana (*Euryale ferox* Salisb) is an aquatic herb cultivated for its nutritional and edible seeds. The seeds are black and rounded and characterized by their hard seed coats (shells). For its seeds, this plant is specifically grown in north Bihar, West Bengal, Manipur, and M.P. 90% of India's and the world's makhana are produced in Bihar, with 80% of that production taking place in the state's north-eastern area. While growing of makhana farmers face a lot of constraint like ownership problem, labor intensive problems, lack of credit facility, scientific cultivation, lack of processing facilities, lack of scientific knowledge, disease and pest problems. To enhance the economic condition of makhana grower, labors need necessary steps should be taken to overcome the difficulties. With increasing demand in India and abroad, the harnessing of this valuable resource to the optimum is extremely desired in boosting the economy of country.



Makhana, also known as fox nuts, is a popular snack in India and other parts of Asia. It is obtained from the seeds of the lotus plant, which is native to India and other parts of Asia. Makhana has been used in traditional Ayurvedic medicine for centuries and is known for its high nutritional value and health benefits. In recent years, Makhana has gained popularity as a health food due to its low calorie and fat content, high fibre content, and various other nutritional benefits. It is also grown in some other parts of Asia, including China, Japan, and Korea. The global Makhana market size will grow by USD 72.5 million, and a CAGR of almost 7% during 2019–2023.

Makhana has been considered superior to those dry fruits such as almonds, walnuts, coconut, and cashew nuts in terms of sugar, protein, ascorbic acid, and phenol content.

Bihar is the main producer of Makhana in the country and produces more than 80% of the country's total production. According to the ICAR National Research Centre for Makhana Research in Darbhanga, the total area under Makhana cultivation in India is around 15,000 hectares, with an average production of 1.5 t ha⁻¹. The total production of Makhana seeds is around 1,20,000 MT, which after processing becomes 40,000 MT of Makhana pop. Makhana production is projected to be worth Rs. 250 crores at the farmer level, however, it earns Rs. 550 crores at the trader's level.

Constraint Faced by Makhana Growers

In cultivation of Makhana, major constraints faced by farmer divided into four groups as

- a) Production Constraints
- b) Economic Constraints
- c) Technology Constraints
- d) Policy Related Constraint



Production Constraints

Most of farmers have lack of scientific management knowledge so, face troublesome while cultivating makhana crops. Beside this variability in climatic condition, distance of pond from home difficulties in controlling weeds.

Economic Constraints

Makhana production requires high initial cost as perceived by growers so main constraint faced by growers are high input cost including labour and fertilizer while others are low availability of capital, low



selling price, rate fluctuation and also money lenders charge high rate of interest.

Technology Constraints

Makhana production requires adequate skill and experience which it is full of difficulties and including high level of drudgery. In absence of suitable post harvested growers felt more difficulties. Beside this lack of suitable variety, lack of disease management practices and training needs these lists of technological constraints.

Policy related constraints

Absence of government policy for makhana growers, Unproductive ponds, lack of extension support system, irregularity in pond allotment faced constraint in makhana growers.

Suggested strategies for enhancing makhana production

The makhana cultivation process is full of drudgery specially the post-harvest processing. For increasing acreage under makhana production there is need to develop post-harvest technology for processing of makhana seeds. Developed

appropriate diseases management practices, scientific method of disease control, new improved variety suitable to climatic condition of Bihar etc. would definitely increase the production of this black diamond.

The crop should be covered under M.S.P. so that the growers could get real value for their labor and the Government should develop and create appropriate marketing facility at the doorstep of the growers.

Conclusion

Concerning the many production, economic, technological, and policy development issues was observing by Bihar's makhana growers. Based on the perceived constraints confronted by them strategies were suggested for obtaining better yield of makhana so that profitability may be enhanced which will ultimately improve the socioeconomic condition of makhana growers. In fact, presently there is a need to create more awareness and interest among the growers in order to eliminate the constraints as confronted by them and motivate them to establish a makhana production firm as their primary line of work in order to increase their farm's income by double.