

Grain Characteristics

Parameter	Value
Variety	Sabour Makhana-1
Species	Euryale ferox
Date of release	29 August 2016
Leaf characteristics	Large and spherical
Flower colour	Dark purple
Fruit size	Medium-sized
Seed shape	Small and oval
Seed coat thickness	0.29 mm
Yield potential	32–35 q/ha
Makhana pop (Lawa) recovery	55–60%
Germination percentage	90–95%
Plant growth	Vigorous
Disease/pest response	Moderately field-resistant to important insect pests and diseases
Field water depth	0.3–0.5 m
Pond water depth	1.2–1.5 m or more
Flowering period	First week of May to June
Harvesting percentage	65–70%
Major quality attribute	High yield potential and high-quality Makhana pop recovery
Energy – Raw seed	328 kcal
Energy – Puffed Makhana	362 kcal
Moisture	12.8%
Protein	9.7%
Fat	0.1%
Carbohydrate	76.9%
Mineral content	0.5%
Iron	1.45%
Other constituents	Sugar, phenols and ascorbic acid

Nutritional Information per 100 grams

Source of Products: Makhana collected from adopted village of different KVKs.



Role of KVKs in Promotion and Conservation of Sabour Makhana 1:

Makhana cultivation in Bihar covers 10-12 district of Bihar, contribute in 85 – 90 % of the total production and export. Cultivated in 27997 ha area, production 57615 MT and average productivity of 20.09 q/ha. Krishi Vigyan Kendras (KVKs) under Bihar Agricultural University, Sabour, have played an important role in the promotion, dissemination and regional expansion of Sabour Makhana-1, an improved Makhana variety developed for enhanced productivity and processing performance. The variety has demonstrated higher yield, improved Lawa recovery and better economic returns compared with local varieties. The KVK network has acted as an effective link between improved varietal technology and Makhana growers through training, demonstrations, on-farm evaluation and extension support. Mithila Makhana has received Geographical Indication (GI) registration (GI No. 696), providing formal recognition to its distinctive geographical identity. The intervention programme and technology dissemination covered the major Makhana-growing districts of Katihar,

Purnea, Araria, Kishanganj, Madhepura, Saharsa and Supaul, contributing to wider regional adoption and strengthening the Makhana production system of Bihar.

Promotion and conservation

KVKs under Bihar Agricultural University, Sabour, support Makhana farmers through training, technology dissemination and field-level promotion of improved Makhana production practices, particularly the improved variety Sabour Makhana-1. The KVK network has played an important role in promoting the variety and supporting its conservation through systematic farmer capacity building, demonstrations, on-farm trials, extension activities and technical guidance. KVKs also facilitates linkages between farmers, Farmer Producer Organisations (FPOs), self-help groups, processors, traders and institutional buyers, thereby helping farmers obtain better returns. These interventions enable farmers to evaluate the performance of the improved variety under field conditions and encourage wider adoption of scientific Makhana cultivation practices. These activities have created an integrated pathway linking improved technology, farmer learning, field validation and regional scaling. The promotion and conservation of Sabour Makhana-1, together with scientific cultivation, improved processing and institutional support, help strengthen productivity, product quality and the long-term development of the Mithila Makhana value chain.

Awareness about GI Protection

Mithila Makhana has been granted GI registration (GI No. 696), which provides formal recognition to its geographical identity and helps protect the authenticity and reputation associated with the registered product. Awareness about GI protection is an important component of the overall development strategy for the Makhana sector. Farmers, producer groups and other value-chain stakeholders are being encouraged to understand the importance of product identity, authenticity, traceability and responsible use of the GI-linked name. Appropriate documentation relating to production, cultivation area, planting material and processing can support improved traceability within the value chain. Such efforts can help strengthen consumer confidence, protect the reputation of genuine Mithila Makhana and contribute to its organized marketing, branding and value addition.

Impact of Mithila Makhana

Mithila Makhana has significant economic, agricultural, social and cultural impacts across the Mithila region of Bihar. Its improved production technologies and cultivation of improved varieties, particularly *Sabour Makhana-1*, have enhanced productivity, improved Lawa recovery and strengthened the economic returns from makhana cultivation. The technology-led interventions have created opportunities for farmers to obtain higher income through improved production, processing efficiency and better-quality output. The expansion of improved makhana cultivation and technology dissemination has strengthened regional adoption and technology reach, while the involvement of Krishi Vigyan Kendra has supported farmers through demonstrations, training and extension interventions. GI protection and geographical identity have also strengthened the recognition and market identity of Mithila Makhana. Processing, value addition and development of makhana-based products contribute to employment and income opportunities for farming households, processors and other stakeholders in the value chain. At the same time, Mithila Makhana contributes to the conservation of the region's traditional wetland-based production systems and indigenous knowledge. Increased scientific cultivation, improved processing technologies, quality improvement, value addition and market promotion have strengthened the overall marketability and value-chain development of Mithila Makhana.

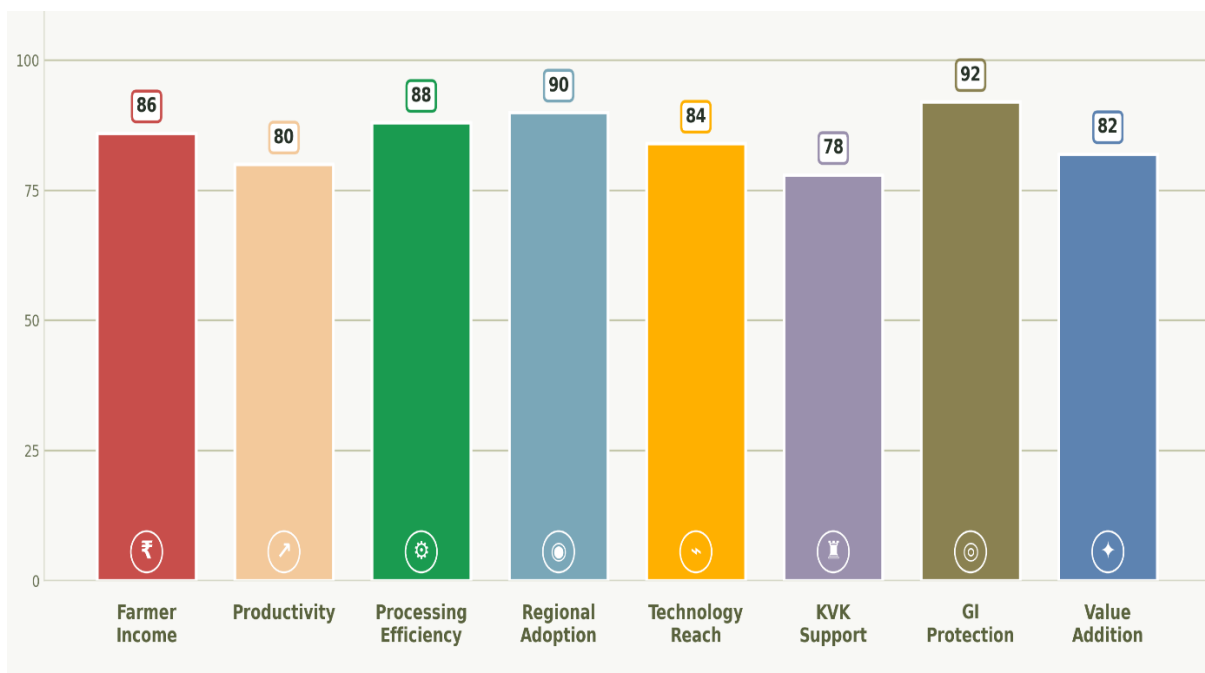


Figure: Impact of different aesthetic parameters of Sabour makhana-1 production, its value addition and marketing on farming community



Figure. Makhana based food products