

Brinjal / Egg plant (*Solanum melongena*)

Brinjal is the most common, popular and principal vegetable crop grown widely in India for its varied shape, size and colour of fruits. High productivity, wide adaptation and ease in availability make the crop to find its place as poor man's crop. Its fruits are fairly good source of calcium, phosphorus, iron and vitamins particularly - B group. Brinjal has cholesterol reducing properties due to the presence of higher amount of poly-unsaturated fatty acids in pulp and seeds.

Climate

It is a warm season crop and requires a relatively long growing season with plenty of sunshine and moderate day temperature of 21^o-27^o C. Extreme temperature (below 10^o C and above 30^oC) adversely affects fruit setting. Warm and humid climate favours luxurious growth and cool climate restricts the growth.

Soil

It can be grown in all types of soils, but well drained fertile, rich in organic matter silt or clay loam soils are ideal.. The optimum pH is between 5.5-6.6, although it can tolerate a little soil acidity. Sandy loam soil is best for early crop and clay loam soil for higher yield.

Varieties

Long fruited

Pusa Purple Cluster: Purple pigmentation on stem and leaves, Fruits are 10-12 cm. long, borne in clusters of 4-9. This variety possesses field resistance to bacterial wilt. First picking starts in 60-65 days after transplanting. Average yield is 250 q/ha.

Pant Samrat : It is a long fruited variety which produces dark purple medium to longfruits in clusters. Plants are tall (80-100 cm) . Young leaves are purplish green. This variety possesses field resistance to bacterial wilt and phomopsis blight. First picking starts in 70 days after transplanting. Average yield is 300 q/ha.

PH-4 : Plants are bushy, fruits are medium long and thin, deep purple in colour, flesh is light green. Average yield is 250-300 q/ha.

Round fruited

Pant Rituraj : It is a round fruited variety which produces purple coloured fruits slightly tapering towards the bottom. Young leaves are purplish green. It is suitable for planting both in winter and summer season. First picking starts in 60 days after transplanting. Average yield is 300 q/ha.

BR-112 : Plants are bushy, fruits are round, bright purple in colour and fleshy. Average yield is 250 q/ha.

Hisar Shyamal : Fruits are round, bright and dark purple in colour. Average yield is 300-325 q/ha.

Seed rate	500 g/ha	
Planting time		
Zone	Seed sowing	Transplanting
Sub-tropical I st Crop	January	February
II nd Crop	February - March	March– April
III rd Crop	May	June
Intermediate (Low)	March – April	April – May
Intermediate (High)	March – April	April - May.

Land preparation

Prepare the land in well advance with repeated ploughings (At least 4-5 ploughings) to a fine tilth. Remove all the stubbles and weeds from the land. Add well rotten FYM or compost @ 20-25t/ha during land preparation and level the land properly.

Spacing

- ✓ Round fruited cultivars : 90 x 90 cm
- ✓ Long fruited cultivars : 60 x 45 cm

Manures and fertilizers

FYM (t/ha)	N (Urea)	P₂O₅(DAP)	K₂O(MOP)	kg/ha
25	100(206.0)	60(132.0)	30(51.0)	

Apply 1/3 N along with other fertilizers as basal application and the remaining N should be top dressed in two split doses after taking two pickings.

Integrated nutrient management

- ✓ Two foliar sprays of 0.5% ZnSO₄ and single spray of 0.15% CuSO₄ increase yield and quality of fruits.
- ✓ Apply vermicompost @ 4-6 t/ha as broadcasting during final land preparation.
- ✓ Apply *Azotobactor* or Phosphate Solublizing Bacteria @ 800g/ha as seedling root dip. Prepare a suspension of bacterial inoculants in sufficient water. Dip the seedlings in bacterial suspension in shade for 2-3 hours and transplant immediately.

Irrigation

Brinjal being a shallow rooted crop needs irrigation at frequent interval.. During summer, apply irrigation at 4-5 days interval and during winter at 10-15 days interval. About 100-110 cm. total water is needed for successful brinjal crop and in total 14-16 irrigations are needed. Furrow method of irrigation is the most common method.

Weeding and hoeing

Practice shallow inters - cultivation particularly a few days after every irrigation to remove the weeds and to conserve the moisture. 3-4 hoeings are normally needed to check the weeds growth. Earthing up after second top dressing of nitrogen is quite beneficial.. Regarding chemical weed control, a pre plant application of pendimethalin (Stomp 30 EC) @1.0 kg a.i / ha is effective.

Harvesting and storage

Harvest the fruits when they develop good colour, marketable size but still glossy, immature and tender. Generally 15-19 days fruits are optimally matured for harvest. The good marketable quality fruits are bright, glossy appearance having freshness and optimum size without any fading or change in original colour. The fruits are harvested with stalk at joint.

Under ordinary conditions, the normal storage life of brinjal fruits is 1-2 days in the winter months. However, 2-3 weeks storage life can be achieved when fruits are stored in cold storage at 8⁰-10⁰C temperature and 85-90% relative humidity. For long distance transport, fruits should be harvested towards the evening hours and thereafter cooled them with sprinkling of water. Store the fruits in perforated polythene bags or PVC stretch film.

Brinjalseed production

An isolation distance of 200 m. must be maintained between different varieties or from same variety that does not confirm to varietal purity standards. To ensure the production of pure seed, off type plants, early or late in flowering and those not confirming the genetic purity should be rouged out before flowering, at flowering and when fruits are at edible stage. The fruits of the individual plants should be carefully observed for their shape, size, colour and other characters.

Seed extraction

Brinjal fruits are ready for seed extraction when at least one third of the fruit part turns yellow in colour starting from the stem end. The mature fruits are cut or crushed into small pieces. The seed along with fruit flesh is extracted with fingers and the seed is washed free of food material by washing in water filled tub. The fruit flesh floats over the surface of water. Water and the floating pulp are removed by hand. The clean seed can be obtained by repeated washing in water. Seed should be dried immediately after washing. It is very essential that the seed extraction and its washing should be completed during morning hours so that seed gets sufficient drying during the day and to avoid sprouting of the seed during the night.

Hybrid Brinjal Cultivation

Pusa Hybrid-5: Plants are vigorous, non spiny with semi erect branches. Fruits are long, glossy, attractive, dark purple with partially pigmented peduncle, each fruit weighing 100 g. It takes 80-85 days from sowing to first picking and further pickings continue up to December. Average yield is 520-540 q/ha.

Pusa Hybrid-6: Plants are vigorous, non spiny with semi erect branches. Fruits are round, glossy, attractive, violet purple with partially pigmented peduncle, each fruit weighing 200-250g. It takes 85-90 days from sowing to first picking and further pickings continue up to December. Average yield is 450-470 q/ha.

Arka Navneet : High yielding F₁ hybrid with large (450g) purple oblong fruits .Average yield is 650-750 q/ha.

Kashi Komal: Plant height is 90-100cm with green stem and leaves. Fruits are light purple, long, soft textured, avg. length is 13 cm, diameter is 30 cm. The picking starts in 65-70 days after transplanting. Average yield is 800 q/ha

Kashi Sandesh (VRBHR-1): Plant with green stem and purplish green leaves. Fruits are purple, medium round, soft textured, average length is 12.4 cm, diameter is 10.2 cm. The picking starts in 76 days after transplanting. Average yield is 780 q/ha.

MHB-10 (Kalpataru)

MHB-10 has been developed by Mahyco Vegetable Seeds Ltd., Jalna. Plants are erect, bushy, compact and spiny. Fruits are round to slight oval, shining reddish purple with white

streaks (bicolour), green spiny calyx; weight of 60-70 g; first picking starts on 70-75 days after transplanting; gives yield of 400-500 q/ha.

Manju

This hybrid has been developed by Syngenta India Ltd., Pune. Plants are strong, bushy with medium height, dense green foliage and sparingly leaves. Fruits are small, oval-round, light purple with white stripes, less seed and less spiny on large calyx; average weight of 80-100 g.

Spacing 90 x 90cm
Seed rate 200-250g/ha

Manures and Fertilizers

FYM (t/ha)	N(Urea)	P₂O₅(DAP)	K₂O(MOP) (kg/ha)
25	200(420.0)	100(220.0)	80(136.0)

Apply 1/4 N along with other fertilizers as basal application and the remaining N should be top dressed in three split doses at 30 days interval after transplanting.

Yield 600-800 q/ha