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Brinjal hybrid Pusa Unnat – A hope for higher income for the farmers of Terai region of West Bengal

BRINJAL is one of the major vegetables grown in West Bengal. It can be cultivated throughout the year but its productivity depends on the variety and season. The major drawback is the non-availability of quality seeds of high yielding varieties and/or hybrids. In the Cooch Behar district of West Bengal, long black purple fruited varieties are mostly preferred both by farmers and consumers. Purba Bakla is a small village in Cooch Behar district of West Bengal under the Terai region and is very much suitable for growing brinjal crop.

ICAR-IARI developed a hybrid 'Pusa Unnat' which starts fruiting in about 50-55 days after transplanting. Fruits are long, shiny dark purple, weighing 120-125 g with non-spiny green calyx. It contains higher flavonols (6.98 mg/100 g) and ODH phenol (7.89 mg/100 g).

The seeds (50 g) of hybrid Pusa Unnat were given to farmer Mr. Dipak Saha, a resident of Vill. Purba Bakla. In 2020, he cultivated Pusa Unnat in his farm in an area of 0.33 acre land (i.e. 33 decimal land). All the technical guidance was provided by KVK, Cooch Behar, West Bengal and other scientists. Seeds were sown during 1st week of June in well prepared raised bed. The seeds were treated with fungicide (Carboxin + Thiram) and Streptomycin sulphate + Tetracyclin. The nursery beds were treated with biological nematicide *Paecilomyces lilacinus*. Seedlings were transplanted during 2nd week of July at a distance of 90 cm × 90 cm. Only manures were applied during land preparation and fertilizers were applied in the pits where seedlings were transplanted. The details are Compost: 3.5 tonnes, DAP: 50 kg, MoP: 30 kg, Sulphur Bentonite: 2 kg, Mustard cake: 100 kg, high quality sea weed extract granule: 2 kg, Magnesium Sulphate: 1 kg, Zinc Sulphate Heptahydrate: 2 kg, Borax (10.5% Boron): 1 kg, Triacontanol Granule: 1 kg. All the fertilizers were given as top dressing and a total of 5 top dressings were given at equal halves. At 15 DAP (days after transplanting), NPK 20:20:20 was applied (@ 3 g per litre of water). Neem oil @ 3 ml per litre water plus Clothianidin @ 2 g per 15 litres water were applied at seedling stage and next at 20 days. Tebuconazole 50% + Trifloxystrobin 25% w/w WG (75 WG) @ 7.5 g per 15 litres was applied during fruiting stage to check the Phomopsis

Fruits of Pusa Unnat

Performance evaluation of Pusa Unnat at farmer's field

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Field view of Pusa Unnat

blight. Acephate 35% plus Buprofezin 15% @ 2 g per litre water was applied to check the sucking pests. Spinosad 45 SC was applied at 15 days after transplanting and then at fruiting stage to control fruit and shoot borer. Furrow irrigation system was adopted for irrigation.

Shri Dipak Saha harvested the fruits eleven times and got an average yield of 6.18 kg per plant with total marketable yield of 9897 kg. He spent ₹ 25,630 (including input cost except family labour). He sold his produce at selling price of ₹ 7 per kg fruit and total sale value was ₹ 69,279 and earned a net profit of ₹ 43,649 from only 0.33 acre land. Impressed by the performance of this hybrid, he decided to disseminate the technology to the farmers in his vicinity.

Pusa Unnat at harvesting stage

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SUSTAINABLE DEVELOPMENT GOALS RELATED TO FRUITS AND VEGETABLES

SDGs 2 3

Health benefits of fruit and vegetables

Harness the goodness

Fruit and vegetables have multiple health benefits. They strengthen the immune system, combat malnutrition and help prevent non-communicable diseases.

SDGs 2 3

Diversified diet and a healthy lifestyle

Live by it, a diverse diet

Adequate amounts of fruit and vegetables should be consumed daily as part of a diversified and healthy diet.

SDGs 2 8 12 13 14 15

Food loss and waste

Respect food from farm to table

Fruit and vegetables are worth more than their price. Maintaining their quality and assuring their safety across the supply chain, from production to consumption, reduces losses and waste and increases their availability for consumption.

Innovate, cultivate, reduce food loss and waste

Innovation, improved technologies and infrastructure are critical to increase the efficiency and productivity within fruit and vegetable supply chains to reduce loss and waste.

SDGs 1 2 12 15

Sustainable value chains

Foster sustainability

Sustainable and inclusive value chains can help increase production, and help to enhance the availability, safety, affordability and equitable access to fruit and vegetables to foster economic, social, and environmental sustainability.

SDGs 1 2 3 4 5 8 11 12 15

Highlighting the role of family farmers

Growing prosperity

Cultivating fruit and vegetables contributes to a better quality of life for family farmers and their communities. It generates income, creates livelihoods, improves food security and nutrition, and enhances resilience through sustainably managed local resources and increased agrobiodiversity.

Source: *Fruit and vegetables – your dietary essentials, FAO background paper, FAO, Rome*