

## **Impact of improved technologies for enhancing brinjal production at farmers field in district Agra**

GOPI CHAND SINGH, RAJENDRA SINGH CHAUHAN AND KAPTAN SINGH NARWAR  
*Krishi Vigyan Kendra, Raja Balwant Singh College, Bichpuri, Agra (U.P.)*

### **Abstract**

*Brinjal is one of the important vegetable crops in India and Agra district of U.P. Uttar Pradesh is the leading state in its area and production in the country but the poor productivity is a major causes of concern. Wide technological gaps in adoption of improved production technologies and other socio-economic factors led to low Brinjal productivity in India. The demonstrations were conducted on improved cultivation practices of Brinjal crop in scientific manner at farmers field during 2011 and 2012. The farmers were selected from different adopted villages of KVK, Bichpuri, Agra. The Brinjal yield can be increased by adopting improved agro-technologies, the demonstration resulted in increasing adoption of the improved Brinjal cultivation technology in the region. The yield of Brinjal increased 22.5% (2010-11) and 27.6% (2011-12) respectively over local variety. Economics of Brinjal cultivation also improved due to intervention of improved variety. BC ratio was 5.44:1 in improved practices and nearly 5:1 in farmers' practices. The improved technology of Brinjal cultivation at farmers' field resulted in increased farmers income and total crop-production.*

**Keywords:** improved variety, Brinjal, recommended practices, BC ratio, income

### **Introduction**

Brinjal or eggplant is one of the most common vegetable crops grown in India. It is one of the principal vegetable available practically throughout the year. Presently, in India it is cultivated in approximately 7.22 lakh hectare area with the annual production of 12.63 mt with productivity of 18 t/ha. In terms of area, West Bengal ranks first and maximum production has been reported from West Bengal followed by Orissa, Andhra Pradesh, Bihar and Uttar Pradesh in the country. Besides India, it is also commonly grown in Bangladesh, Pakistan, Iran, China, United State of America and Mexico. The Brinjal fruits are full of protective elements, vitamins, carbohydrates protein, fat and minerals for the growth and development of human body. The unripe fruits are primarily used as cooked vegetable for the preparation of various dishes in different regions of the world. It has got much potential as raw material in pickle making and dehydration industries.

The front line demonstration was conducted under the supervision of KVK, Bichpuri, Agra. The main objective of FLD is to demonstrate newly released crop production and protective technologies and its management practices in farmers' field. The present study was conducted during the year 2010-11 and 2011-12 and was used to evaluate the impact on Brinjal cultivation in selected village.

### **Materials and Methods**

The front line demonstration was conducted at farmers' field during rabi seasons of 2010-11 and 2011-

12 at adopted village of KVK as per guide lines of FLD set up by ZPD, Zone IV, according the Brinjal crop were led out at two adopted village of Kukthala and Chhapokar in Achenera block (27°25' N, 77°9' E and at altitude of 163.4 meter mean sea level) Agra district (U.P). The soil was sandy loam in texture and slightly alkaline in reaction (pH 8.10), low in organic carbon (3.5 gkg<sup>-1</sup>), available nitrogen (157 kg ha<sup>-1</sup>), phosphorus (9.8kg ha<sup>-1</sup>) and potassium (110 kg ha<sup>-1</sup>). The knowledge of the farmers in these villages was also estimated by taking random sample of 8 farmers from each village. The sample includes 16 farmers in the study. The farmers were asked questions about the improved agro techniques including high yielding Brinjal variety PUSA hybrid 9 and balanced fertilizers on the basis of soil testing 300 Q FYM, 100:50:50 NPK and 30 kg ZnSO<sub>4</sub> ha<sup>-1</sup> was applied as per standard scientific practices for their efficient use compared with farmers practices which consist of local check PUSA Uttam and balanced use of fertilizers and poor weed and pest management practices. The yield and economic data were collected from control (local check) and demonstration plot, the cost of cultivation, net return and benefit cost ratio (BCR) were computed on the basis of prevailing market price of inputs and output.

### **Results and Discussion**

Results revealed that there was distinct improvement in the Brinjal productivity under improved variety and balance use of fertilizers compared to farmer practices Table 2. Thus need was felt to

Table 1: Area, Production and productivity of Brinjal from 2010-13

Year	Area 000 (ha)	Production	Productivity tones/ha
2010-11	680	11896	17
2011-12	692	12634	18
2012-13	722	13444	19

Depicting area and production trend over the years (Hand book on Horticulture Statistics 2014, Government of India Ministry of Agriculture Development and cooperation, New Delhi)

in both years (Table 3). Economics analysis of the field performance revealed the BCR of demonstration plot significantly higher than control/local check.

The BCR of Brinjal crop demonstration and local check was 5.44:1 and 5.35:1 in comparison to local check (5:1 and 4.72:1) respectively. The smaller number of farmers had the knowledge of improved cultivation practices of Brinjal in Agra region. The farmers need to be sensitized about improved package of practices include high yielding variety, nutrient management and plant protection of Brinjal and this will help in their large seed adoption.

Table 2: Impact of improved technologies for enhancing Brinjal production at farmers' field in Agra.

Crop	Thematic Area	Technology demonstrated	No. of Farmers	Area (ha)	Productivity q/ha			% Increase in yield
					High	Low	Average	
Brinjal2010-11	Varietal	PUSA Hybrid -9	8	2.00	500	480	490	22.5
		PUSA Uttam	8	2.00	-	400		
Brinjal2011-12	Varietal	PUSA Hybrid -9	8	2.00	520	450	485	27.6
		PUSA Uttam	8	2.00	-	380		

Table 3: Economics of FLD of Brinjal compared to local practices

S. No.	Particulars	GrossCost (Rs./ha)		GrossReturn (Rs./ha)		Net Return (Rs./ha)		Benefit Cost Ratio	
		2010-11	2011-12	2010-11	2011-12	2010-11	2011-12	2010-11	2011-12
1	Improved Practices	45000	45000	245000	242500	200000	197500	5.44:1	5.33:1
	Local Check	40000	40000	200000	190000	160000	150000	5:1	472:1

introduce latest varieties and management in FLD programme in the village, FLD is good extension tool to demonstrate impact of new agro- techniques to farmers front line demonstration on Brinjal performance of recommended high yielding varieties of Brinjal, the progress of FLD on Brinjal during rabi season 2010-11 and 2011-12 on the improved variety of Brinjal PUSA Hybrid -9 was found better in term of Brinjal production against local check (PUSA Uttam) at Kukthala and Chhapokhar villages. The yield enhancement of Brinjal 22.5% and 27.6% over farmers' practices in both the years, improved variety enhance crop productivity to maximum extent possible. Sagar et al. 2004 and Singh & Sharma 2005 have also reported the positive impact in terms of yield enhancement due to demonstration (FLD) of improved production technologies on distinct crop. The economics indicator such as cost of cultivation gross return and benefit cost ratio of FLD on Brinjal crop were estimated. The data clearly revealed that the net return from FLD is substantially higher than local check during 2010-11 and 2011-12 net return from Brinjal FLD were Rs 2,00,000-1,96,000 per ha in comparison to local check

## References

- Gyan P. Mishra, Narendra Singh, Hitesh Kumar, Shashi Bala Singh (2010). Protected cultivation for food and nutritional security at Ladakh (Review Paper). *Defense Science Journal*, 60 (2) pp 219-225
- Maheshwari R., Ashok K.R., Prahadeeswaran M. (2008). Precision farming Technology, Adoption decisions and productivity of vegetables in recourse-poor environments. *Agricultural Economics Research Review*. : 21, 415-424
- Santanu Kumar Dubey, R.R. Burman, K. Vijaya Ragavan, J. P.Sharma, Ishwary Singh, V. Sangeetha and H.S. Gupta. (2012) Linking research institute with post offices for dissemination of agricultural technologies: an action research. *Indian Journal of Agricultural Sciences* 82 (12): 1059-67, Dec 2012
- Sant Kumar, P. A. Lakshmi Prasanna and Shwetal Wankhade (2011). Potential benefits of Bt Brinjal in India & An economic assessment. *Agricultural Economics Research Review* Vol. 24 January-June 2011 pp 83-90.