

A Case Study

Impact assessment of gram for enhancing production for food nutritional security and livelihood of remote tribal community under pulses

■ P.L. AMBULKAR AND HARISH DIXIT

ARTICLE CHRONICLE :

Received :

21.02.2014;

Accepted :

25.04.2014

KEY WORDS :

Gram, TSP,

Pod borer,

Yield

SUMMARY : The Demonstration of Gram Variety Jaki 9218 and JG 11 on farmers field in 3 different villages in Samnapur Block of district Dindori (M.P.) in Rabi 2011-12. It was observed that the average yield performance of 50 demonstrated under the crop Gram. The data shows on grain yield were found significant in different demonstration of Gram. Average maximum yield (1650 kg/ha) was recorded under the variety of Jaki 9218 which was significantly superior to farmers practice (700 kg/ha). The percentage changes of yield in the variety of Gram Jaki 9218 were recorded 85.71 per cent. The average maximum yield (1550 kg/ha) was recorded under the variety of JG11 which was significantly superior to farmers practice (700 kg/ha). The percentage changes of yield in the variety of Gram JG 11 were recorded 90.71 per cent. The net return of Gram variety Jaki 92 18 and JG 11 was found per hectare Rs. 25500.00 and 26550.00, respectively under the demonstration as which was significantly superior to farmers practice (Rs. 11000.00 /ha). The average return of both the variety of Gram was Rs. 26025.00/ha. The data presented in the Table 3 showed that there was significant difference on the larval population due to the use of Profenophos 1.5 liter /ha. However, the mean larval population (3 larvae/meter row length) under the recommended practice as compared to farmers practice (5 larvae /meter row length) and decreased larval population (66.6%) The data depicted in the Table 3 showed that there was significant effect of different on pod damage due to the use of profenophos 1.5 lit. /ha. The average per cent pod damage was 5.25 per cent under the recommended practice (5.25%) as compared to farmers practice (8.50%) and decrease pod damage (61.9%).

How to cite this article : Ambulkar, P.L. and Dixit, Harish (2014). Impact assessment of gram for enhancing production for food nutritional security and livelihood of remote tribal community under pulses. *Agric. Update*, 9(2): 252-255.

BACKGROUND AND OBJECTIVES

Gram is generally known as Bengal gram or chickpea and botanically called *Cicer arietinum* Linn. It is the oldest and most important pulse crop, mostly grown under dry land condition with heavy clayey soil. It has an important place in the diet of Indian people because it gives comparatively more protein than any other food grains. Other than dry grains, its green pods are also consumed as such, after roasting, while the green grain and its green twigs are used as vegetable by many of the people in their daily meals. Gram contains 21.5 per cent

protein, 61.5 per cent carbohydrates and 4.5 per cent fat (Ahlawat and Omprakash, 1996). In Indian agriculture, gram crop ranks fifth in area and fourth in production among the food grain crop. The largest acreage falls in credit of Madhya Pradesh, Rajasthan, Haryana, Maharashtra and the Punjab. In Madhya Pradesh gram occupies the largest area among the pulses covering about 2.57 million ha. with production of 2.79 million tones (AICRP, 2009) with a productivity of 989 kg/ha. In India, the yield potential of gram is quite low. The poor crop management, low doses of fertilizers, disease and the serious damage by insect pests are the main constrains for

Author for correspondence :

P.L. AMBULKAR

Krishi Vigyan Kendra,
DINDORI (M.P.) INDIA
Email: plambulkar_2007@rediffmail.com

See end of the article for authors' affiliations

Table A: Selected villages and distance from district head quarter KVK Dindori (M.P.)

Sr. No.	Name of village	Block	Gram Panchyat	Distance from district head quarter (KVK Dindori)	Remarks
1.	Dhaba	Samnapur	Kanhari	73 km	3 kms difficult approach
2.	Gaura	Samnapur	Kanhari	70 km	2 kms difficult approach
3.	Rajni Sarai	Samnapur	Ajgar	73 km	-

successful cultivation of the crop.

Rainfed Agriculture is a common practice; hence, the Pulse production programme was taken with variety Jaki 9218, JG 11 under the rainfed condition. The programme will prove to be a landmark in the crop production scenario of the Baiga chunk of this district and in overall development of the Tribal community.

Objectives of the project:

The main objective of this project was enhancing production for food nutritional security and livelihood of tribal community.

RESOURCES AND METHODS

The present project on enhancing production for food nutritional security and livelihood of tribal community residing at remote places of the district farming in survival oriented system for livelihood was undertaken.

The primary reports of survey indicated that seed and nutritional security through pulses was the most required material keeping this in mind. The project was launched so as to create awareness about seed, production of quality seed through pulses for continuous availability in years. The Krishi Vigyan Kendra Dindori (M.P.) took up this exploratory programme with gram variety JG 11 and Jaki 9218 on 50 farmers field. Each farmer 0.4 ha. Demonstration in three villages namely Gaura, Dhaba and Rajni Sarai under the block

of Samnapur in *Rabi* 2011-12 was given. Details are given in Table A.

OBSERVATIONS AND ANALYSIS

The results of the present study as well as relevant discussions have been presented under following sub heads:

On the basis of grain yield :

The data shows on Table 1 grain yield were found significant in different demonstration of Gram. Average maximum yield (1650 kg/ha) was recorded under the variety of Jaki 9218 which was significantly superior to farmers practice (700 kg/ha). The percentage changes of yield in the variety of Gram Jaki 9218 were recorded 85.71 per cent. The average maximum yield (1550 kg/ha) was recorded under the variety of JG11 which was significantly superior to farmers practice (700 kg/ha). The percentage changes of yield in the variety of gram JG 11 were recorded 90.71 per cent (Table 1) The net return of gram variety Jaki 92 18 and JG 11 was found per hectare Rs. 25500.00 and 26550.00, respectively. Under the demonstration which was significantly superior to farmers practice (Rs. 11000.00 / ha.). The average return of both the variety of Gram was Rs. 26025.00/ha (Table 1).

The data shows on table grain yield were found significant in different demonstration of Lentil under recommended practice. Average maximum yield (700 kg/ha)

Table 1: Performance of demonstration

Sr. No.	Number of farmers	Area (ha)	Crop	Variety (s)	Highest yield (kg/ha)	Lowest yield (kg/ha)	Average yield (kg/ha)	Farmer control plot yield (kg/ha)	% increase
1.	33	13.2	Gram	Jaki 9218	1650	1150	1300	700	85.71
2.	17	6.8	Gram	JG 11	1550	1200	1335	700	90.71
Total	50	20.0		Average	1600	1175	1317.5	700	88.21

Table 2: Economics of demonstrations

Sr. No.	Village	No. of farmers	Area (ha)	Cost of Cultivation (Rs./ha.)		Total Gross Return (Rs./ha.)		Net Return (Rs./ha.)		B:C ratio	
				*RP	**FP	RP	FP	RP	FP	RP	FP
1.	Dhaba , Guara Kanhari	33	13.2	13500	12500	39000	21000	25500	11000	2.88	2.04
2.	Rajni Sarai	17	6.8	13500	12500	40050	21000	26550	11000	2.96	2.04
	Average	50	20.0	13500	12500	39525	21000	26025	11000	2.92	2.04

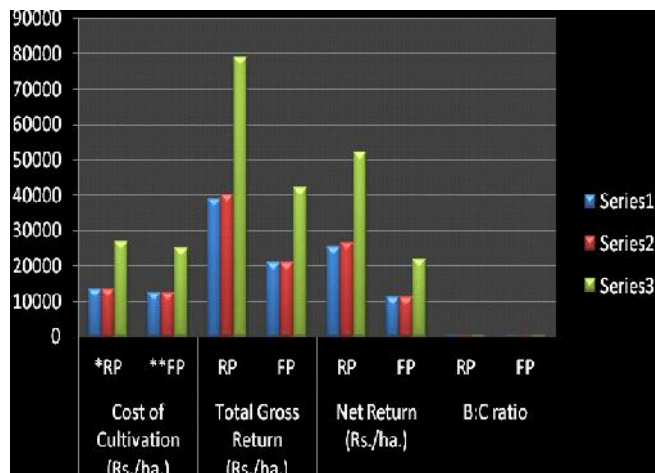
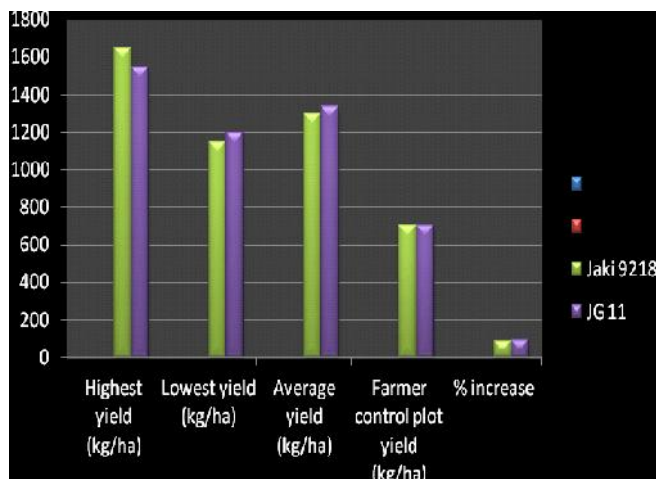


Table 3: Yield attributing data of crop

Sr. No.	Crop/variety	Yield attributing character					
		No of pods/plant		No of branches /plant		Test weight in g (1000 grain wt.)	
		RP	FP	RP	FP	RP	FP
1.	Gram/Jaki 9218	65	35	15	08	250.5	170.0
2.	Gram/JG 11	68	35	16	07	260.5	170.0

* RP = Recommended practice , ** Farmers practice

Table 4: Average larval population and pod damage by pod borer

No of larvae/m row length	% change	Pod damage by pod borer		% change
		RP	FP	
3	66.6	5.25	8.50	61.9

was recorded under the variety of JL 3 which was significantly superior to farmers practice (300 kg/ha.). The average grain yield of lentil(582 kg/ha.) was found in demonstration. The percentage changes of yield were recorded 94.0 per cent. The average net return of lentil variety JL was found Rs. 15280.00. under the demonstration as which was significantly superior to garmers practice (Rs. 6000.00 /ha.). The average return of both the variety of gram was Rs. 26025.00/ha (Table 2).

On the basis of average larval population and pod damage by pod borer:

The data presented in the Table 4 showed that there was significant difference on the larval population due to the use of Profenophos 1.5 lit./ha. However, the mean larval population (3 larvae/meter row length) under the recommended practice as compared to farmers practice (5 larvae /meter row length) and decreased larval population (66.6%).

The data depicted in the Table 4 showed that there was significant effect of different on pod damage due to the use of profenophos 1.5 lit. /ha. The average per cent pod damage

was 5.25 per cent under the recommended practice (5.25%) as compared to farmers practice (8.50%) and decrease pod damage (61.9%).

Conclusion:

It was concluded that the gram major pulse crop for the tribal areas of Dindori district for their food materials under the nutritional security purpose. Improved variety of gram JG 11, Jaki 9218 recommended dose of fertilizers, micronutrients, culture and chemical for pulse demonstration, achieved higher yield of pulse crop as compare local technology in Tribal areas for nutritional security.

Authors' affiliations :

HARISH DIXIT, Krishi Vigyan Kendra, DINDORI (M.P.) INDIA

REFERENCES

Borah, P.K. (1998). Influence of sowing dates on the infestation of *Helicoverpa armigera* and grain yield of chickpea (*Cicer arietinum*) in the hill zone of Assam. *Indian J. Ent.*, **60**(4): 416-417.

Garg, D.K. and Verma, P.V. (1995). Early sowing helps minimize yield losses due to *Helicoverpa armigera* in chickpea in the mid-hills of Uttar-Pradesh, India. *ICPN.*, **2**: 37-38.

Gupta, M.P., Thakur, B.S., Parsai, S.K. and Gupta, D.P. (1992). Effect of date of sowing and varieties on the incidence of *Helicoverpa armigera* (Hubner) and grain yield in chickpea. *Indian J. Pulse-Res.*, **5**(2): 170-173.

Jadav, R.S. and Suryawashi, D.S. (1998). Population dynamics of *Helicoverpa armigera* (Hub.) on chickpea. *J. Maharashtra Agric. Univ.*, **23**(1): 82-83.

Prasad, C.S. and Singh, V.P. (1997). Impact of variety, sowing date and control measures on incidence of pod borer, *Helicoverpa armigera*

(Hubn.) and grain yield of chickpea. *Ann. Plant Protec. Sci.*, **5**(1): 28.

Saha, Arun Kumar (2002). Uptake and impact of the promotion of chickpea following rainfed rice in the barind area of Bangladesh. *Agricultural Research and Rural Development "Ranjigandha"*, 15/1 Dhaka, Bangladesh Page No. 125-140 2002.

Shiyani, R.L., Joshi, P.K. and Bantilan, M.C.S. (2001). Impact of chickpea research in Gujarat. *International Crops Research Institute for the Semi-arid Tropics*. Published 2001.

Verma, V. and Patel, S. (2013). Production enhancement, nutritional security and value added products of millets of bastar region of Chhattisgarh. *Internat. J. Res. Chem. Environ.*, **3** (2):102-106.

★ ★ ★ ★ ★ of Excellence ★ ★ ★ ★ ★
9th
Year