



Frontline Demonstration Technologies Under Gram At Farmers Field In Bhind District (M.P.)

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Abstract

The present study was carried out to know the gap between improved package of practices in Gram crop. Frontline demonstration on Gram varieties J.G.16, JAKI 9218 & J.G. 130 were conducted at farmers field in the adopted village of Krishi Vigyan Kendra, Lahar Bhind (M.P.) during the years 2010 to 2016. The average yield of J.G. 16 variety was 16.61 q/ha.. J.G. 16 has given 20.4 q/ha. highest yield during the year under frontline demonstration while local variety gave 18.5 q/ha highest yield during the year. The variety JAKI -9218 was demonstrated during 2011-12 and gave average yield at the farmers field 17.32 q/ha. While variety conducted farmers practice gave average yield 13.62 q/ha. The variety was given 18.50 q/ha. highest yield under FLD, while farmers practice given highest yield 13.90 q/ha. During 2012-13 the gram variety JAKI 92-18 was demonstrated in the farmers field and gave average yield 15.89 q/ha. The variety conducted under front line demonstrated was gave 18.26% higher yield than farmers practices. The B.C. ratio of demonstrated technology was 1:1.78. J.G. 130 variety of Gram tested at farmers field during 2012-13 and gave average yield 17.56 q/ha. While it was 13.1q/ha. in farmers practice .34.04 percent increased yield was recorded over farmer's practices. Overall average yield was 14.23 q/ha. found in demonstrated technology ,while it was 12,08 q / ha. I farmers practice.19.6 % increased yield as well as 215.75 kg yield gap have been found over farmers practices. It could be said the yield performance of variety under improved package of practices not only in favour of increased yield but also economic condition of the farmers of the district

Keyword: Frontline demonstration, gram, varietal performance, economic analysis and farmers practices.

Introduction

The Bhind district has about 19903 ha area of Gram , while it has average productivity just 12.31 q/ha .The productivity of gram could be increased upto near 14.23.0 q/ha. The productivity of gram could be increased by adoption of small interventions such as balance dose of nutrient , seed treatment and application of recommended insecticides at pod formation . The study was conducted during 2010-11 to 2015-16 at farmer's field along with improved varieties and improved package of practices. In addition to improved varieties the extension activities have been incorporated in organizing the Front line demonstration and On farm trials

at farmers fields. The extension activities had motivated the farmers for increasing the adoption of improved varieties by adjoining farmers in the village as well as near the village. each demonstration has been furnished with two training programmes i.e. at sowing and integrated nutrient management and plant protection measures along with one field day at maturity stage. The demonstration has been proved very effective tool for demonstration of major characteristics of the technology before the farmers so the technology could be adopted by the large nos. of farmers in the district. The gram is rich source of protein and



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has many uses in daily life not only farmers but also all the categories of people such as Pakodi, Namkeen, Besan, Besan laddoo etc. Gram is one of the important crop of pulses not only in Madhya Pradesh but also India. It provided numbers of farmers / persons employment in the village as well as adjoining areas of cities where gram based industries located. The gram crop would be more remunerative in limited irrigation than the cereals crops if few small interventions could be adopted.

Materials And Methods

Krishi Vigyan Kendra, Lahar (Bhind) has conducted 154 On Farm Trials and Front Line Demonstration during 2010-11 to 2015-16 in the adopted villages of Bhind district. The villages namely Chiruli, Baspura, Dewarikala, Hirapura, Gohad, Gorai, Birkhidi in Lahar, Raun and Gohad blocks of district. The area under each Front Line demonstration was 0.4 ha, while it was 0.2 ha in case of On Farm trials. Total 154 adopted farmers were selected who have been earlier selected and had actually undertaken the demonstration on their fields and data were collected with the help of personal contact and observations. Yield data was also recorded at the time of threshing. The yield of each demonstration was recorded during a systematic manner and the yield of farmers' practices was also recorded at the same time. The data regarding yield and other parameters were collected personally from farmers after every crop harvest through structured interview schedule. The grain yield of demonstration crop was recorded and analyzed. Different parameters as suggested by Yadav *et al.* (2004) was used for calculating the yield gap analysis, cost and return.

Results And Discussion

In demonstrated technology use of quality seeds of improved varieties, line sowing, balance dose of fertilizers (using micronutrient Zink) were emphasized and comparisons have been made with the existing practices (Table 1&2). The necessary steps for selection of site, farmers and layout of demonstration etc were

followed as suggested by Choudhary (1999). The traditional practices were maintained in case of local checks area and productivity of gram in Bhind district.

Table 1 clearly showed that average yield of improved varieties at farmers field was 16.66 q/ha, while it was only 12.08 q/ha in case of farmers practice. 19.60 percent increased yield has been recorded in demonstrated technology as compared to farmers practice. The yield gap in both the technologies was 215.75 kg/ha. It could be concluded that production of district would be increased by adoption of improved varieties of gram. Table 1 also clearly showed that the highest yield in demonstration was 25 q/ha in the year 2010-11 of the variety JAKI 92-18 followed by JG. 16 (20.4 q/ha) in the year 2010-2011. The lowest yield was recorded 2015-16 (2.53 q/ha) in demonstrated technology and farmers practice (2.50 q/ha) it was due to more numbers rainy days during flowering to maturity. The improved variety of gram JG.130 performed better as compared to farmers practices due to bold seed, use of proper seed rate (@75 kg/ha) rather than small seeded variety with 100 kg seed/ha in case of farmers practice.

The average yield was fluctuated from 25.0 q/ha to 2.53 q/ha during the years (2010-2016), while it was 21.5 to 2.50 q/ha in case of farmers practice. The findings are in agreement with those of Kumar *et al.* (2010) who has found on overall basis increased yield 13.0 percent (pearl millet) and Singh *et al.* (2013) found 25.33 percent (soybean) increased yield. The incremental in yield might be due to varietal performance in the demonstrated plots along with other factors i.e. improved seed of crop, seed inoculation with carbendazim, Thiram, Rhizobium culture and timely management of pod borer through recommended insecticides. It could be said that the adoption of improved varieties with small but important interventions not only increase the production but also improve the social status of farmers by more economic return. The extension activities have played vital role in the dissemination of technology not only village but also adjoining villages through diffusion effect.

Economic analysis of different variables like ploughing, seed fertilizers biofertilizers and pesticides were considered as cost of cultivation for the demonstration as well as in farmers practice. On an overall average additional cost Rs1450.30 / ha. was made under demonstrated technology. The net returns were Rs 20362 and 15244.3 /ha from demonstrated technology and farmers practice, respectively.

It could be concluded from the above findings that all the three improved varieties i.e. JG. 16, JAKI 92-18 and JG 130 had been preferred by the district farmers. The need to popularize these varieties in the district so whole district should be covered by these improved varieties. The adoption on large scale could be ensured by the motivating the whole district farmers through mass campaign , kisan mela, and farmers sangosthi along with large scale demonstration should be conducted in whole district.

Conclusion

Table-1.Performance of Improved Varieties at farmer's field under Front Line demonstration and On Farm Trials

Years	No.of Demo.	Variety	Area (ha)	Yield Demo.		Check Av. yield	% Increased	Yield gap kg / ha
				Max	Ave.			
2010-11	13	JG-16	5.2	20.4	23.50	21.5	9.30	200
2010-11	10	JAKI-92-18	2.0	25.00	19.48	17.88	8.94	160
2011-12	12	JAKI 92-18	5.0	18.50	17.32	13.62	27.16	370
2012-13	13	JAKI 92-18	5.2	17.50	15.99	13.52	18.25	247
2012-13	05	JG 130	2.0	18.00	17.56	13.10	34.04	446
2013-14	13	JG130	5.2	6.50	6.13	3.93	46.56	220
2014-15	13	JG 130	5.2	3.0	2.53	2.50	1.2	3
2015-16	75	JG 130	30	12.50	11.40	10.60	11.50	80
Total/Av.	154		59.8	15.17	14.23	12.08	19.60	215.75

Table-2.Comparision between demonstrated technology and existing farmers practice in Gram

Particulars	Demonstrated Practices	Farmers Practice
Farming Situation	Semi- Irrigated and light black to black soils	Semi- Irrigated and light black to black soils
Varieties	Improved Varieties- JG 16, JG 130 and JAKI 92-18	Local old seeded varieties
Time of sowing	15-25 October	15-25 October
Method of Sowing	Line Sowing	Line Sowing
Seed rate	75 kg / ha	80-100 kg / ha
fertilizers	20:60:20-NPK kg/ ha +5 kg Zn/ha	50-100 kg DAP/ha
Plant protection	Seed treatment with Trichoderma Viridae@ 5 g/kg seed Spray of recommended pesticides for control of pod borer	No seed treatment No pod borer control measures adopted

Table- 3 Economic Analysis of demonstrated technology and farmers practices

years	Cost of cultivation		Additional cost demo (Rs/ha)	Net return (Rs/ha)		Additional Net Return Demo (Rs/ha)
	Demo.	Check		Demo.	Check	
2010-11	21200	20000	1200	28150	25150	3000
2010-11	22000	20000	2000	18908	16748	2160
2011-12	16000	14000	2000	41156	30946	10210

2012-13	23996	22973	1023	24373	17924	6449
2012-13	24760	21880	2880	29508	18700	10808
2013-14	24000	22500	1500	2704	-1103	3807
2014-15	20000	19000	1000	-11904	-11410	-494
2015-16	28000	28000	-	30000	25000	5000
	22494.50	21044	1450.3	20362	15244.3	51175

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