

Role of Frontline Demonstration in Boosting the Pulse Production

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ABSTRACT

Pulses have been traditionally recognized as an indispensable constituent of Indian diet. The great good that pulses have done to the people of this country is by their ideally supplementing the cereal rich diet of predominantly vegetarian masses by virtue of their being rich in protein and several essential amino-acids. The ease with which they fit into the crop rotation and crop mixtures, their long recognized property of restoration of soil fertility. Productivity of pulses at farmers' field is very low as compare to research plots. It may be due to several biotic and abiotic factors. But the main reason behind this is that, technological gaps in adoptions of pulse production technologies and other factors also. In such situation FLDs can play a vital role in boosting of pulse production because FLDs conducted at farmers field under the close supervision of kvk scientist. Keeping in view the importance of FLDs, the kvk Burhanpur conducted front line demonstrations on newly released varieties of Urd and Gram at farmers' fields with full package of practices. Results revealed that higher yield was obtained in each year in both Urd and Gram crop and higher B: C ratio supported that demonstrated technology is for better than the farmers practice.

In our country, the agriculture during the pre-independence period was characterized by stagnation in food grains production. The Agricultural development strategies and programme developed during the post independence period have failed to achieve any significant increase in pulses production. Pulse production has not been increased up to desired level because pulses are growing on marginal and most neglected condition with least inputs. In spite of the importance of pulses in our daily diet and agricultural production, the production of pulses has no yet increased proportionately as to the increase in cereal production. Over the past three decades the area, production and productivity of pulses have been swinging between 22-25 million hectares, 10-16 million tones and 544-648 kg/ha. respectively. On the other hand India has 25% production with 32% area of the world. In India, the importance of pulses as a source of dietary protein can hardly be over emphasized. The common man's food implies to dal and roti. Total requirement of pulses is 17.65 million tones while the 2.46 million tones shortfall to meet out the demand of pulses of Indian population.

Lower pulse production due to several biotic and abiotic stresses besides unavailability of quality seeds of improved varieties in time and poor crop management due to unawareness and non adoption of recommended production and plant protection technologies. Seed is the nucleus of any production programme. The efficiency of applied inputs as well as natural environment is decided by genetic potentiality of seeds. But seed replacement of pulses is below 5% against desired level of 15-25 percent. Keeping in view the importance of pulses it is very necessary to demonstrate the high yielding varieties and other pulse production technologies that can accelerate the pulse production. Keeping the role of FLDs, the kvk Burhanpur conducted demonstrations on urd & gram pulse crops at farmers' fields under irrigated situations in Kharif and Rabi seasons during the year 2008-09, 2009-10 and 2010-11 with following objectives.

- i) To establish the production potential of high yielding varieties of urd & gram at farmers fields.
- ii) To compare the yield level of FLDs plots and local check (Farmers field).

- iii) To collect the feedback information for further strengthening of research and extension programmes.

METHODOLOGY

Farmers of operational area of kvk Burhanpur were selected as per the annual action plan and allotment of funds from Zonal Project Directorate (Zone VII). As per the action plan. FLDs on Gram and Urd crops were laid out in the villages viz Biroda, Dhoolkot, Ichhapur and Phopnar of Burhanpur District. Before conducting FLD's farmers field surveyed and soil sample collected by kvk technical person. Training on package and practices of Gram and Urd has been provided to the selected farmers by the scientist of the kvk. Besides these regular visits were done to demonstration fields by the kvk scientist in order to ensure day by day guidance to the farmers at each crop growth stages. These visits were also utilized to collect the data and gathered feedback information of technology for further refinement and improvement in research and extension programmes. During crop growth period group meeting and at crop maturity stage field days were also organized at technology demonstrated plot to share the experiences and to provide opportunities to other farmers to observe the benefits of demonstrated technologies. Critical inputs related to technology provided by kvk to the farmers. Data were collected from FLD plots as well as from farmers fields and analysed with the suitable statistical tools to compare the parameters of farmers fields and FLD plots.

RESULTS AND DISCUSSION

(A) Front line Demonstration on Kharif Pulses:

Performance of Demonstrated high yielding variety of Urd: The progress of FLD on pulses during Kharif 2008, 2009 & 2010 shows the performance of demonstrated high yielding variety i.e. JU-86 of Urd (table 1)

Data presented in table 1 revealed that in Kharif 2008, 13 demonstrations of Urd covering 5.2 ha. area in 2 villages with variety JU-86 and local (T-9) were sown. An average yield of 5.89 q/ha of demonstrated variety was obtained as compared to 4.44 q/ha of local check. B: C ratio was also found more than the local check under demonstrated variety where percent increase was recorded at 32.55. During the Kharif 2009, 13 demonstration of Urd covering 5.2 ha area in three villages with variety JU-86 and local check (T-9) were planted. An average yield of 6.10 q/ha. of demonstrated variety was obtained as compared to 4.72 q/ha. of local check. B: C ratio was found 2.20 under demonstrated technology while it was only 1.93 in case of local check. Where percent increase was accounted at 33.78. During the Kharif 2010, 13 demonstration of Urd covering 5.2 ha. area in two villages with same variety and local check as sown in previous years. An average yield of 6.23 q/ha of demonstrated variety was obtained as compared to 4.63 q/ha. of local check. Similar trend was found in case of B: C ratio and percent yield increase.

Table-01 Performance of Demonstrated high yielding variety of Urd (JU-86)

Crop Season	Village	Variety Demonstrated	No. of Demonstration	Area (ha)	Yield q/ha.		B:C Ratio		% Increase in Yield
					JU-86	Local Check (T9/Desi)	Demonstration	Local Check	
Kharif 2008	Biroda	JU-86	05	2.0	5.96	4.36	2.15	1.83	36.63
	Ichhapur	JU-86	08	3.2	5.85	4.50	2.11	1.89	30.00
	Weighted mean	-	-	-	5.89	4.44	2.12	1.86	32.55
Kharif 2009	Sandas	JU-86	05	2.0	6.20	4.98	2.24	1.97	36.00
	Biroda	JU-86	06	2.4	6.00	4.60	2.16	1.91	30.43
	Dhoolkot	JU-86	02	0.8	6.21	4.49	2.24	1.90	38.30
	Weighted mean	-	-	-	6.10	4.72	2.20	1.93	33.78
Kharif 2010	Dhoolkot	JU-86	07	2.8	6.33	4.69	2.28	1.91	34.00
	Biroda	JU-86	06	2.4	6.12	4.56	2.21	1.89	34.21
	Weighted mean	-	-	-	6.23	4.63	2.24	1.90	34.09

(B) Front line Demonstration on Rabi Pulses:

Performance of Demonstrated high yielding variety of Gram: The progress of FLD on pulses during Rabi, 2008-09, 2009-10 & 2010-11 shows the performance of demonstrated high yielding variety i.e. JG-130 of Gram (table 2).

Data presented in table 2 revealed that, during Rabi (2008-2009) 13 demonstrations of Gram covering 5.2 ha of land in 3 villages resulted in 17.24 and 13.0 q/ha. yield in demonstrated variety (JG-130) and local check (Ujjain-21), respectively. This accounted for 32.65% average increase in the yield. Hence cultivation of demonstrated variety is economically beneficial as reflected from B:C ratio and it was found higher (2.36)

than the local check (1.90). In Rabi (2009-10), 13 demonstration of gram covering 5.2 ha of land in 3 villages resulted in 17.83 and 13.48 q/ha yield in demonstrated variety JG-130 and local check (Ujjain-21) respectively. In case of B:C ratio 2.44 was found under demonstration while it was 1.96 in local check (Ujjain – 21). This accounted for 32.33% average increase in the yield. In Rabi (2010-2011) 25 demonstrations of gram covering 10 ha. of land in 2 villages resulted in 17.77 q/ha and 13.31 q/ha yield in demonstrated variety JG-130 and local check (Ujjain-21) respectively. In case of B:C ratio similar trend was observed as occurred in previous years. This accounted for 33.59% average increase in the yield. The results of this study are in the close conformity of the study carried out by Singh, Atar et.al and Singh, Lakhan et.al (2005).

Table – 02 Performance of Demonstrated high yielding variety of Gram (JG-130)

Crop	Village	Variety	No. of	Area	Yield q/ha.		B:C Ratio		% Increase in Yield
					JG-130	Local Check (Ujjain-21)	Demonstration	Local Check	
Season		Demonstrated	Demonstration	(ha.)					
Rabi 2008-	Biroda	JG-130	05	2.0	17.07	12.70	2.34	1.86	34.41
	Ichhapur	JG-130	04	1.6	17.58	13.46	2.41	1.96	30.61
2009	Phopnar	JG-130	04	1.6	17.12	12.92	2.35	1.92	32.51
	Weighted mean	-	-	-	17.24	13.00	2.36	1.90	32.65
Rabi 2009-	Biroda	JG-130	06	2.4	17.50	13.08	2.40	1.93	33.80
	Dhoolkot	JG-130	04	1.6	18.19	13.93	2.50	2.00	30.59
2010	Sandas	JG-130	03	1.2	18.01	13.72	2.47	2.00	31.72
	Weighted mean	-	-	-	17.83	13.48	2.44	1.96	32.33
Rabi 2010-	Dhoolkot	JG-130	19	7.6	17.73	13.30	2.43	1.95	33.30
	Sandas	JG-130	06	2.4	17.93	13.33	2.46	1.95	34.51
2011	Weighted mean	-	-	-	17.77	13.31	2.44	1.95	33.59

CONCLUSION

On the basis of results of study it may be concluded that

- The yield under demonstration plots was higher than the local check plots.
- Farmers can get more income from the cultivation of demonstrated variety instead of local check.
- Disease and insect management studies for the urd and gram need to be done for the standardization of control measures.
- Location specific nutrient recommendation for pulses should be generate from research organizations.
- Encourage the farmers towards use of biological control measures of diseases and insects.

REFERENCES

- Singh, Atar; Singh, Lakhan and Prasad, R. (2005). Pulse production under technology assessment, refinement and dissemination through KVKs in U.P. Paper presented in 3rd National Ext. Edu. Congress 2005 held at N.D.R.I. Karnal from April 27-29, 2005.
- Singh, Lakhan; Singh, Atar and Prasad, R. (2005). Reponse of demonstration on pulses yield at KVKs in Uttar Pradesh. Paper presented in 3rd National Ext. Edu. Congress 2005 held at N.D.R.I. Karnal from April 27-29, 2005.