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## Impact of front line demonstration on practice wise knowledge level of pulse production technology

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### Abstract

The study was conducted during the year 2016-17 in Jurisdiction of RVSKVV, Gwalior (M.P.). Two KVKs from Malwa and two KVKs from Gird agro climatic zones were selected randomly. Thus the total numbers of four KVKs were selected for the study. During investigation that nearly equal number of the beneficiary farmers (69.17%) and non-beneficiary farmers (65.83%) had medium level of knowledge about pulse production technology. On the other hand 24.16 per cent and 7.5 per cent of beneficiary farmers and non-beneficiary farmers respectively had high level of knowledge about pulse production technology.

**Keywords:** Beneficiaries, non-beneficiaries pulse growers and knowledge level

### Introduction

The front line demonstration on pulses has been started in the 1991. A considerable time has been elapsed after the initiation of front line demonstration program. Therefore, the question arises to what extent the program has benefited the farmers of the state.

Front-Line Demonstration is the new concept of field demonstration evolved by the Indian Council of Agricultural Research with the inception of the Technology Mission on Oilseed Crops during mid-eighties. The field demonstrations conducted under the close supervision of scientists of the National Agriculture Research System is called front-line demonstrations because the technologies are demonstrated for the first time by the scientists themselves before being fed into the main extension system of the State Department of Agriculture. The main objective of Front-Line Demonstrations is to demonstrate newly released crop production and protection technologies and its management practices in the farmers' field under different agro-climatic regions and farming situations. While demonstrating the technologies in the farmers' field, the scientist are required to study the factors contributing higher crop production, field constrains of production and thereby generate production data and feedback information. Front-Line Demonstrations are conducted in a block of two or four hectares land in order to have better impact of the demonstrated technologies on the farmers and field level extension functionaries. The knowledge farmers possessed and the adoption they attain has a bearing on the future progress of front line demonstration. Understanding of these behavioral aspects may help to predict the success and failure of this innovative program aimed at agricultural development in particular and strategy for transfer of technology in general. The constraints faced by the farmers in adoption of improved pulse production technology and their suggestions to overcome the same may help in developing appropriate extension and research strategy. Further, all the technologies demonstrated on farmers' field might have not been continued by the farmers. Some technologies might have been rejected by them. Therefore, it is necessary to know technologies rejected by them and the reasons for their rejection. This will help in understanding the lacunae in technology. Such lacunae can be communicated to the researcher for technology modification.

Keeping in view the low productivity of pulses, it was considered worthwhile to find out how much this program had helped the pulses growers to bring about changes in terms of knowledge and adoption of improved pulse production technology and thereby increasing farm productivity the following objective was undertaken. To study the impact of Frontline demonstration on practice wise knowledge level of pulse production technology.

### Methodology

The study was conducted in Jurisdiction of RVSKVV, Gwalior (M.P.). RVSKVV Jurisdiction comprises of 24 KVKs of which 9 KVKs are in Malwa, 7 KVKs in Gird and remaining 4,2,1,1

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KVKs in Nimad valley, Vindhaynchal plateau, Jhabua, Bundelkhand agro Climatic Zones respectively. FLD on chickpea is conducted in all the 24 KVKs. For the purpose of study, Malwa and Gird Agro-climatic zones were selected purposively because more than half of KVKs (16) are situated in both the Agro-climatic zones. The KVKs conducted a number of FLDs on pulse production technology. For judging the impact of FLDs on Pulse Growing Farmers, the chickpea crop was selected because it is one of the important pulse crops grown in all the agro-climatic zones of RVSKVV. Among the 9 KVKs in Malwa and 7 KVKs in Gird agro climatic zones, 2 KVKs from each zone were selected randomly. KVKs wise separate list of beneficiaries' farmers was prepared from the two selected agro-climatic zones. KVKs wise two separate lists of beneficiaries and non-beneficiary farmers were prepared from the two selected agro-climatic zones. Thirty beneficiary and thirty non-beneficiary farmers were selected randomly from each KVK with the help simple random sampling. Thus, a total of 120 beneficiary and 120 non beneficiary farmers were selected from four selected KVKs.

## Results and Discussion

### Practices wise knowledge level of beneficiary according to their pulse production technology:

As observed improved variety majority of the respondents (71.67%) had partial knowledge, whereas 19.17 per cent had complete knowledge and 9.16 per cent of the respondents had no knowledge about improved variety.

In crate of seed treatment, 63.33 per cent of the respondents had partial knowledge, while 24.17 per cent respondents had complete knowledge and 12.5 per cent had no knowledge about seed treatment.

In relation to sowing of time more than half of the respondents (57.50%) had partial knowledge whereas, 41.67 per cent of the respondents had complete knowledge and few percentage of the respondent had no knowledge about sowing of time in pulse production technology.

Regarding recommended dose of fertilizers, majority of the respondents (68.33%) had partial knowledge followed by complete (21.67%) and no (10%) respectively.

In case of irrigation, 58.33 per cent of the respondents had partial knowledge, while 33.33 per cent respondents had complete knowledge and 8.33 per cent had no knowledge about irrigation.

In subsequently of kin to weed control one sided majority of the respondents (81.67%) had partial knowledge and 15 per cent of the respondent had complete and 3.33 per cent had no knowledge about weed control in pulse production technology.

In relation to plant protection majority of the respondents (76.67%) had partial knowledge whereas, 18.33 per cent of the respondents had complete knowledge and only 5 per cent of the respondent had no knowledge about plant protection in pulse production technology.

As regards harvesting and storage, majority of the respondents (75.83%) had partial knowledge, whereas 20 per cent had complete knowledge and 4.17 per cent of the respondents had no knowledge about harvesting and storage.

### Practices wise knowledge level of non-beneficiary according to their pulse production technology:

As sensible improved variety majority of the respondents (67.50%) had partial knowledge, whereas 27.5 per cent had

no knowledge and 5 per cent of the respondents had complete knowledge about improved variety.

In case of rate of seed treatment, 60 per cent of the respondents had partial knowledge, while 33.33 per cent respondents had no knowledge and 6.67 per cent had complete knowledge about seed treatment.

In relation to sowing of time more than half of the respondents (53.33%) had partial knowledge whereas, 33.33 per cent of the respondents had no knowledge and 13.33 per cent of the respondent had complete knowledge about sowing of time in pulse production technology.

Regarding recommended dose of fertilizers, majority of the respondents (64.17%) had partial knowledge followed by no (29.17%) and complete (6.67%) respectively.

In case of irrigation, 55 per cent of the respondents had partial knowledge, while 34.17 per cent respondents had no knowledge and 10.83 per cent had complete level of knowledge about irrigation.

In subsequently of kin to weed control one sided majority of the respondents (78.33%) had partial knowledge and 16.67 per cent of the respondent had no and 5 per cent had complete knowledge about weed control in pulse production technology.

In relation to plant protection majority of the respondents (73.33%) had partial knowledge whereas, 20.83 per cent of the respondents had no knowledge and only 5.83 per cent of the respondent had complete knowledge about plant protection in pulse production technology.

As regards harvesting and storage, majority of the respondents (75%) had partial knowledge, whereas 18.33 per cent had no knowledge and 6.67 per cent of the respondents had complete knowledge about harvesting and storage.

### Impact of frontline demonstrations of the respondents according to their pulse production technology:

With a view to find out impact of front line demonstrations of various practice wise Knowledge level were compared with the beneficiaries and non-beneficiary farmers.

For comparison of practice-wise knowledge of improved pulse production technology, "Standard Normal Deviate Test" (Z test) was applied and results are presented in Table 1.

The data presented in Table 1 reveal that the 'Z' values were comparing improved variety (4.79), seed treatment (5.07), sowing time (8.02), fertilizer application (4.77), irrigation (6.09), weed control (4.17), plant protection (4.56) and harvesting and storage (4.46) indicating significant difference in between beneficiary and non-beneficiary farmers.

### Overall practices wise distribution of the knowledge level of farmers according to their pulse production technology

As regards improved variety majority of the respondents (69.58%) had partial knowledge, whereas 18.33 per cent had no knowledge and 12.08 per cent of the respondents had complete level of knowledge about improved variety.

In case of seed treatment, 69.58 per cent of the respondents had partial knowledge, while 22.91 per cent respondents had no knowledge and 15.41 per cent had complete level of knowledge about seed treatment.

In relation to sowing of time more than half of the respondents (56.25%) had partial knowledge whereas, 27.5 per cent of the respondents had complete knowledge and 17.08 per cent of the respondent had no knowledge about sowing of time in pulse production technology.

Regarding recommended dose of fertilizers, majority of the respondents (66.25%) had partial knowledge followed by no

knowledge (19.58%) and complete knowledge (14.16%) respectively.

In case of irrigation, 56.66 per cent of the respondents had partial knowledge, while 22.08 per cent respondents had complete knowledge and 21.12 per cent had no knowledge about irrigation.

In relation to weed control one sided majority of the respondents (80%) had partial knowledge and 10 per cent of the respondent had no and complete level of knowledge about weed control in pulse production technology.

In relation to plant protection majority of the respondents (75%) had partial knowledge whereas, 12.91 per cent of the respondents had no knowledge and 12.08 per cent of the respondent had complete knowledge about plant protection in pulse production technology.

As regards harvesting and storage, majority of the respondents (75.41%) had partial knowledge, whereas 13.33 per cent had complete knowledge and 11.25 per cent of the respondents had no knowledge about harvesting and storage.

#### Extent of level of knowledge

It is clear from Table 3 that nearly equal number of the beneficiary farmers (69.17%) and non-beneficiary farmers (65.83%) had medium level of knowledge about pulse production technology. On the other hand 24.16 per cent and 7.5 per cent of beneficiary farmers and non-beneficiary farmers respectively had high level of knowledge about pulse production technology.

Remaining 6.67 per cent beneficiary farmers and 26.67 per cent non-beneficiary farmers were found having low level of knowledge about pulse production technology.

**Table 1:** Practices wise knowledge level of beneficiaries and non-beneficiaries according to their pulse production technology

S. No.	Practices	Beneficiaries level of knowledge						MN	S.D.	Non-beneficiaries level of knowledge						MN	S.D.	'Z' Value
		Complete		Partial		No				Complete		Partial		No				
		F	%	F	%	F	%			F	%	F	%	F	%			
1.	Improved variety	23	19.17	86	71.67	11	9.16	2.10	0.53	6	5.00	81	67.50	33	27.50	1.76	0.53	4.79**
2.	Seed treatment	29	24.17	76	63.33	15	12.50	2.12	0.59	8	6.67	72	60.00	40	33.33	1.73	0.57	5.07**
3.	Sowing of time	50	41.67	69	57.50	01	0.83	2.41	0.51	16	13.33	64	53.33	40	33.33	1.80	0.66	8.02**
4.	Fertilizer	26	21.67	82	68.33	12	10.00	2.12	0.55	8	6.67	77	64.17	35	29.17	1.78	0.56	4.77**
5.	Irrigation	40	33.33	70	58.33	10	8.33	2.25	0.59	13	10.83	66	55.00	41	34.17	1.77	0.63	6.09**
6.	Weed control	18	15.00	98	81.67	04	3.33	2.12	0.41	6	5.00	94	78.33	20	16.67	1.88	0.45	4.17**
7.	Plant protection	22	18.33	92	76.67	06	5.00	2.13	0.46	7	5.83	88	73.33	25	20.83	1.85	0.49	4.56**
8.	Harvesting and storage	24	20.00	91	75.83	05	4.17	2.16	0.47	8	6.67	90	75.00	22	18.33	1.88	0.49	4.46**

F= Frequency MN= Mean S.D.= Standard Deviation \*\*Significant at 0.01 level of probability

**Table 2:** Overall practices wise knowledge level of farmers according to their pulse production technology

S. No.	Practices	Level of knowledge						Total Score	Mean	Rank
		Complete		Partial		No				
		f	%	f	%	f	%			
1.	Improved variety	29	12.08	167	69.58	44	18.33	465	1.94	VI
2.	Seed treatment	37	15.42	148	61.67	55	22.91	462	1.93	VII
3.	Sowing of time	66	27.50	133	55.42	41	17.08	505	2.10	I
4.	Fertilizer	34	14.17	159	66.25	47	19.58	467	1.95	V
5.	Irrigation	53	22.08	136	56.67	51	21.25	482	2.01	III
6.	Weed control	24	10.00	192	80.00	24	10.00	480	2.00	VIII
7.	Plant protection	29	12.08	180	75.00	31	12.92	478	1.99	IV
8.	Harvesting and storage	32	13.33	181	75.42	27	11.25	485	2.02	II

**Table 3:** Distribution of the farmers according to their extent of level of knowledge regarding pulse production technology

Level of knowledge	Beneficiaries (n=120)	Non-beneficiaries (n=120)	Total (n=240)
Low (<32.08 score)	08 (6.67)	32 (26.67)	40 (16.67)
Medium (32.08 - 68.54 score)	83 (69.17)	79 (65.83)	162 (67.50)
High (>68.54 score)	29 (24.16)	09 (7.50)	38 (15.83)

(Figures in parenthesis indicate percentage)

#### Conclusion

The findings of the study pointed out that the reveal that the 'Z' values were comparing improved variety (4.79), seed treatment (5.07), sowing time (8.02), fertilizer application (4.77), irrigation (6.09), weed control (4.17), plant protection (4.56) and harvesting and storage (4.46). In the case of knowledge level reported that the nearly equal number of the beneficiary farmers (69.17%) and non-beneficiary farmers (65.83%) had medium level of knowledge about pulse production technology.

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