Study on Knowledge and Adoption Behaviour of Green Gram Beneficiaries Through FLD Under ATMA Project. in Dewas District of M.P. India

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Abstract

Green gram is an important pulse crop in our country after chickpea and pigeon pea, cultivated in three different seasons' viz., kharif, rabi and summer. India is the largest producer of green gram that accounts for 54% of the world production and covers 65% of the world acreage and it is grown on about 3.70 million hectares with annual production of 1.57 million tonnes. Green gram is grown in the Dewas distric (M.P.). the study was conducted in Dewas district, where FLD was conducted by ATMA Dewas M.P. during 2015-16, six villages and 120 green gram growers had benefited by this programme. All the beneficiaries were selected purposively for the study. The knowledge and adoption level of farmers as the regular feedback is a necessary component of these demonstrations. In relation to adoption behaviour of green gram production technology among FLDs beneficiaries, it was found that majority of the beneficiaries possessed medium level of adoption behaviour followed by high level of adoption behaviour and low level of adoption behaviour.

Keywords

Adoption- adoption of green gram recommended production technology refers to the extent of adoption of recommended and improved green gram production techniques

Front line demonstrations (FLDs) is the new concept of field demonstration involved by Indian council of agriculture research (ICAR) with the inception of the technology mission on oil seed crops(TMOs) during mid-eighties.

I. INTRODUCTION

India is the world's largest pulses producer, it is importing 3-4 million tons (MT) of pulses every year to meet its domestic demand. However, during the last decade, growth in pulses production has increased significantly. India achieved a record more than 18.00 MT pulses production in 2012-13. Pulses are grown across the country with the highest share coming from Madhya Pradesh (24%), Uttar Pradesh (16%) and Gujarat (23%). This data shows the importance of pulse growing in India as well as in Madhya Pradesh.

Among pulse crops, Green gram or moonbean (*Vigna radiata*) is an important pulse crop in our country after chickpea and pigeonpea, cultivated in three different seasons, viz., kharif, rabi and summer in different parts of the country, as sole or intercrop for grain and green manure. The major portion is utilized in making dal, curries, soup, sweets and snacks. India is the largest producer of green gram that accounts for 54% of the world production and covers 65% of the world acreage and it is grown on about 3.70 million hectares with annual production of 1.57 million tonnes. Green gram is grown in the Dewas district (M.P.). The district occupies 4000 hectares area under green gram and the total production was 2200 tonnes with average productivity of 5.5 quintal per hectare.

The Front Line Demonstration (FLD) 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 situation. The objective of Front Line Demonstrations is to demonstrate newly released crop production and protection technologies and its management practices on the farmer's field to study the constraints of production, factors contributing for higher production and thereby to generate production data and feedback information. The front line demonstration is different from the normal demonstration conducted by the extension functionaries. FLDs are conduct under the close supervision of the scientist.

II. OBJECTIVE

The present investigation was under taken with the following objective To study knowledge and adoption behaviour of green gram beneficiaries through FLD under ATMA project.

III. REVIEW OF LITERATURE

Kangli (2012) reported in his study impact of frontline demonstration of chickpea in Sehore District of Madhya Pradesh that majority of the farmers (45.00%) possessed partial knowledge of

total chickpea production technology considered in the study followed by (37.50%) farmers had full knowledge and (17.50%) farmers had low knowledge about chickpea production technology respectively.

Kangali (2012) revealed that in case of adopter of frontline demonstration of chickpea growers, majority of the farmers (50.00%) possessed partial adoption of total chickpea production technology considered in the study followed by (40.00%) farmers had full adoption and (10.00%) farmers had low adoption of chickpea production technology respectively.

Kumari (2015) studied on impact of front line demonstration on area and productivity of wheat growers in Jabalpur district (M.P.), reported that the majority of FLD beneficiaries (76.00%) were having high knowledge of wheat production technology. Whereas majority of non- FLD beneficiaries (44.00%) were having medium knowledge of wheat production technology.

Sharma *et al.* (2013) conducted the study on Impact of FLD on adoption of improved technologies of green gram in KVK, Tabiji, Ajmer, Rajasthan and the study highlighted that there was a significant difference in the extent of adoption of improved technologies of green gram cultivation between FLD and non-FLD farmers. This might be due to the reason that the FLD program was effective in changing attitude, knowledge and adoption of improved technologies of green.

Verma (2013) the data reveals that of the total, 44 per cent medium, 48 per cent were having high adoption, and 8 per cent low adoption of pulse production technologies.

IV. MATERIAL & METHODS

For this study purposive sampling technique was adopted, where FLD was conducted by ATMA Dewas (M.P.) during 2015-16. Out of 6 blocks of the district one block Kannod had been taken by the ATMA project for green gram FLD. All 120 green gram growers of six villages selected by the ATMA project for the FLD programme were taken for this study. The list of FLDs beneficiaries was provided by ATMA. The data were collected using survey method through a pre-tested interview schedule and responses were recorded.

V. ASSESSMENT OF KNOWLEDGE & ADOPTION

To measure the level of knowledge, index of knowledge was developed which consisted of 14 practices followed for utilization of recommended green gram production technology under FLDs. The level of knowledge was considered full, partial and least knowledge. The scoring was done in the order of 3, 2 and 1 respectively. The total number of questions in the knowledge & adoption test was 20; the maximum obtainable knowledge/adoption score was 60. The raw knowledge score obtained by individual green gram growers was converted into knowledge index as below:

$$\text{Knowledge index} = \frac{\text{Sum of knowledge score actually obtained by the farmers}}{\text{Maximum possible obtainable knowledge score}} \times 100$$

A. *Knowledge of the Beneficiaries of the Improved Practices of Green Gram Cultivation:*

Knowledge is a body of understood information possessed by individual green gram beneficiaries. Knowledge is defined as the things known to an individual and represented cognitive domain. The knowledge level of beneficiaries was assessed related to improved practices of green gram cultivation and presented in Table given-

Distribution of Beneficiaries According to their Level of Knowledge about Green Gram Production Technology:

S.No	Component of package of practices	Level of knowledge			Level of Adoption		
		Least	Partial	Full	Least	Partial	Full
1.	Field preparation	26 (21.67)	54 (45.00)	40 (33.33)	25 (20.84)	54 (45.00)	41 (34.17)
a)	Time and number of ploughing	26 (21.67)	45 (37.50)	40 (33.33)	58 (48.33)	42 (35.00)	20 (16.67)
b)	Soil treatment through chlorpyriphos	51 (42.50)	55 (45.83)	24 (20.00)	26 (21.66)	56 (46.67)	38 (31.67)
2.	Improved green gram variety (PDM-139 & TJM-3)	30 (25.00)	49 (40.83)	35 (29.17)	21 (17.50)	50 (41.67)	49 (40.83)
3.	Seed rate-25 kg/ha	21 (17.50)	57 (47.50)	50 (41.67)	29 (24.17)	57 (47.50)	34 (28.33)
4.	Seed treatment- Carbendazim+captan@ 3 gm/kg seed	29 (24.17)	53 (44.16)	34 (28.33)	15 (12.50)	51 (42.50)	54 (45.00)
5.	Time of sowing:- 15 June- 15 July(in kharif) & 1 March-15 March(in summer)	26 (21.67)	50 (41.66)	41 (34.17)	17 (14.17)	61 (50.83)	44 (36.67)

6.	Sowing spacing- 20-22.5 cm. (in kharif) & 30- 45 cm.(in summer)	27 (22.50)	52 (43.33)	43 (35.83)	29 (24.17)	51 (42.50)	40 (33.33)
7.	Method of sowing (By Seed-Drill & acc. to the availability of machinery)	27 (22.50)	55 (45.83)	41 (34.16)	38 (31.66)	57 (47.50)	25 (20.83)
8.	FYM/Bio fertilizer application (5-10 Tonne/ha. & Rhizobium culture 2-2.5gm/kg seed)	28 (23.33)	52 (43.33)	25 (20.83)	32 (26.67)	55 (45.83)	33 (27.50)
9.	Fertilizers- N:P:K:S:Zn (20:40:20:25:20 kg/ha)	28 (23.33)	53 (44.17)	40 (33.33)	25 (20.83)	53 (44.17)	42 (35.00)
10.	Irrigation and drainage	25 (20.83)	53 (44.17)	42 (35.00)	25 (20.83)	53 (44.17)	42 (35.00)
11.	Weed management						
a)	By Weeding	28 (23.33)	51 (42.50)	41 (34.17)	20 (16.67)	54 (45.00)	46 (38.33)
b)	By weedicides	29 (24.67)	55 (45.83)	36 (30.00)	29 (24.17)	57 (47.50)	34 (28.33)
12.	Plant protection measures						
a)	Identification of diseases and pest	27 (22.50)	50 (41.66)	41 (34.17)	27 (22.50)	53 (44.17)	40 (33.33)
b)	Control measures of diseases and pest	30 (44.17)	53 (44.17)	40 (33.33)	32 (26.66)	50 (41.66)	38 (31.67)
13.	Method of harvesting (Picking of pods and whole plant cutting)	20 (16.67)	42 (35.00)	47 (39.17)	22 (18.33)	52 (43.33)	46 (38.33)
14.	Post harvest technology						
a)	Threshing	22 (18.33)	42 (35.00)	56 (46.67)	35 (29.17)	46 (38.33)	39 (32.50)
b)	Drying	13 (10.83)	39 (32.50)	68 (56.67)	15 (12.50)	60 (50.00)	45 (37.50)
c)	Storing	15 (12.50)	55 (45.83)	50 (41.67)	24 (20.00)	57 (47.50)	39 (32.50)
d)	Making Dal	57 (47.50)	41 (34.17)	22 (18.33)	75 (62.50)	30 (25.00)	15 (12.50)

The above table describes the distribution of beneficiaries as per their obtained mean score of knowledge & adoption in the sub components of the programme.

Regarding adoption of field preparation, higher percentage of the beneficiaries had partial level of adoption about time and number of ploughing under field preparation and higher percentage of beneficiaries had least level of adoption about soil treatment through chlorpyriphos. This result revealed that more beneficiaries adopted the practice of time and number of ploughing than the practice of soil treatment; this might have been due to increase cost of cultivation involved in soil treatment.

Regarding adoption of improved green gram varieties (PDM-139 & TJM-3) higher percentage of beneficiaries pertained partial and full level of adoption. The result revealed that the improved varieties of green gram which were recommended by the ATMA under FLD programme gave more yield than local variety of green gram.

Regarding adoption of seed rate (25 kg/ha), higher percentage of beneficiaries pertained to partial and full level of adoption. This result had came as FLD programme beneficiaries adopted this practice.

Regarding adoption of seed treatment (Carbendazim + captan @ 3 gm/kg seed), higher percentage of beneficiaries had partial level of adoption. This might be because seed treatment increased the cost of production and that is why many small and marginal farmers did not adopting this practice.

Regarding adoption of time of sowing- 15 June-15 July (in kharif) & 1 march-15 march (in summer), higher percentage of beneficiaries had full level of adoption. Due to the long farming experience in farming, maximum beneficiaries adopted this practice.

Regarding adoption of Spacing- 20-22.5cm. (in kharif) & 30-45 cm. (in summer), higher percentage of beneficiaries had partial and full level of adoption. Spacing is an important practice which affects the yield of crop production and other factors like application of fertilizer, pesticide, irrigation and quality of seeds so that maximum farmers adopted proper spacing practices which was recommended by ATMA through FLD programme.

Regarding adoption of Method of sowing (By Seed-Drill & acc. to the availability of machinery) showed, majority of beneficiaries had partial and full level of adoption. This result came since adopting better methods of sowing were increased the seed germination efficiency.

Regarding adoption of FYM/Bio fertilizer application (5-10 tonne/ha. & Rhizobium culture 2-2.5 gm/kg seed), higher percentage of beneficiaries had partial level of adoption. FYM/ fertilizer application increased the cost for beneficiaries and

hence small and marginal farmers did not adopted this practice.

Regarding adoption of Fertilizers (N:P:K:S:Zn) (20:40:20:25:20 kg/hact), higher percentage of beneficiaries had partial level of adoption. The reason of this was lack of timely availability of fertilizer.

Regarding adoption of irrigation and drainage, majority of beneficiaries had partial and full level of adoption. Most of the beneficiaries knew about the importance of irrigation and drainage so they adopted this practice as recommended by ATMA through FLD programme.

Regarding adoption of weed management, higher percentage of beneficiaries had partial level of adoption about weed management by weeding and higher percentage of beneficiaries had partial level of adoption about weed management by weedicide. This might be that because weed management by weedicide was easier and less laborious and time saving practice than weeding.

Regarding adoption of Plant Protection Measures, higher percentage of beneficiaries had partial level of adoption about identification of diseases and pest and higher percentage of beneficiaries had partial level of adoption about control measures of diseases and pest. Due to the high farming experience of beneficiaries and continuous contact with scientists and extension workers under FLD programme beneficiaries were aware about identification of diseases and pest of green gram; it led to adoption of this practice.

Regarding adoption of method of harvesting (Picking of pods and whole plant cutting), higher percentage of beneficiaries had partial level of adoption. Harvesting affected the quality of seed and hence beneficiaries adopted this practice.

Regarding adoption of post harvest technology, higher percentage of beneficiaries had partial level of adoption about threshing; this may be due to high expenses incurred. Higher percentage of beneficiaries had partial level of adoption about drying; this may be due to low post harvest losses. Higher percentage of beneficiaries had partial level of adoption about storing; this may be due to aware about retaining the quality of produce. Higher percentage of beneficiaries had least level of adoption about making dal. Making dal consumes more time so most farmers were not adopting this. The result revealed that green gram does not required high maintenance so, most of the beneficiaries adopted most of post harvest practices.

REFERENCE

[1] Kangali, Sarita (2012). A study on adoption behaviour of pigeanpea technology among the farmers of Simour block of Rewa district of M.P. (Ag.) Thesis Submitted to the R.V.S.K.V.V. Gwalior.

[2] Kirar, B.S., Nashine, R., Gupta, A.K. and Mukherjee, S.C. (2006). Demonstration, an effective tool for increasing the productivity of urd, Krishi Vigyan Kendra (IGAU), Jagdalpur, Bastar, (C.G.). Indian Res.J of Ext. Edu. **6**(3): 1-3.

[3] Kumari K. (2015) A study on impact of front line demonstration on area and productivity of wheat growers in Jabalpur district (M.P.). Thesis J.N.K.V.V., Jabalpur.

[4] Sharma, R., Porwal, R. and Mathur, G. N.(2013). Impact of FLD on adoption of improved technologies of green gram in K.V.K., Tabiji, Ajmer, Rajasthan. Indian J. of Environment and Ecology, **31**(6): 730-734.

[5] Swamy, C.N. and G. Eswarappa (2000), Knowledge level of front line demonstrations in Bangalore Rural district of Karnataka. Karnataka J.Agril. Sci. **13** (1): 79-82.

[6] Verma, Deependra Prakash (2013). A study on impact of Front Line Demonstrations on pulses by Krishi Vigyan Kendra, Panna M.P. M.Sc.(Ag.) Thesis Submitted to Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur.