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Impact of Front-Line Demonstration (FLD's) on Adoption Behaviour of Pigeon Pea Growers in Barwani District of M.P.

Akansha Sisodiya
M.Sc. Extension Education Final Year Student 2018

Dr.Sandhya Choudhary
Associate Professor& Head, Extension Education, College of Agriculture, Indore

Dr. Deepak Kumar Verma
Assistant Professor (Contractual) Extension Education, College of Agriculture, Indore

Dr. K.S.Kumar
Professor& Head, Agriculture Statistics, College of Agriculture, Indore

Abstract:- Pigeon pea (cajanus cajan) is the second most important pulse crop in India after chickpea. The KVK of Barwani district (M.P.) was entrusted with the responsibility of conducting FLD in Barwani district of M.P. The main emphasis was to maximize production per unit area by using high yielding variety of production in conjunction with the package and practices. The calculated 't' value 6.094 at 1 per cent level was higher than the table value of 't' 2.093. This was declared to be significant. Therefore, it may be concluded that the data provides enough evidence of higher level of adoption of pigeon pea production technology by FLD pigeon pea growers over non beneficiaries' pigeon pea growers. This clearly shows that as regard the effect of FLD on adoption behaviour of pigeon pea production technology there was a significant difference between FLD beneficiaries and non beneficiaries.

Keywords:- *Pigeon pea- pulse crop, Front-Line Demonstration-Unique approach to provide an direct Interfresh (Researcher and Farmers) through scientist, Adoption Behaviour-actual practising of improved technology.*

I. INTRODUCTION

Pigeon pea (cajanus cajan) is the second most important pulse crop in India after chickpea. It has multiple uses and occupies an important place in the prevailing farming systems in the country. It also plays an important role in sustainable agriculture by enhancing the soil through biological nitrogen fixation along with deep root system of this crop which makes it is more suitable for its cultivation under rain fed conditions. The KVK of Barwani district (M.P.) was entrusted with the responsibility of conducting FLD in Barwani district of M.P. The main emphasis was to maximize production per unit area by using high yielding variety of production in conjunction with the package and practices. While a large number of studies have been made to discuss the yield potentialities and procedures for conducting these demonstration limited studied have been conducted to assess the impact of FLD on adoption behaviour of farmers Thus, the present study is an attempt to evaluate the impact of FLD adoption behaviour of Pigeon pea growers in the Barwani district with the following objective.

- *Objective*

Adoption level of pigeon pea production technology of FLD beneficiaries and non-beneficiaries.

II. REVIEW OF LITERATURE

Dour et al (2015) found that majority of the respondents (beneficiaries of FLD programme and non beneficiaries) possessed medium level of adoption level. Thus, it can be stated that, there is an impact of FLD programme on the adoption behaviour of the wheat growers.

Simtowe et al (2015) found that the sample adoption rate of improved pigeon pea is 36% while potential rate is estimated at 48%. The adoption gap resulting from the incomplete exposure to the improve pigeon pea is 12%. Adoption is prominent among farmers that close to the agriculture offices, and among younger and wealthier farmer. The suggestion that there is scope for increasing pigeon pea adoption once the farmer are exposed to the new technologies.

Singh et al (2015) conducted the study in which it was found that there was no significant association between age, family, size and economic motivation. The result was that the status of extension participation, mass media contumacy, extent of knowledge etc. had significant effect in respect of adoption of pulses production technology.

Teggelli et al (2015) organized the Front-line demonstration on farmer's field to demonstrate the impact of integrated crop management technology on pigeon pea productivity over four years. The result revealed that due to front-line demonstration on pigeon pea an average yield was recorded 11.9 q/ha under yield demonstrated plots as compared farmers practice 10.1 q/ha.

Singh et al (2016) carried out the study on the technology suitable for enhancing the productivity of pigeon pea crop and conducting of such demonstration under transfer of technology programme by KVK other TOT centers.

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III. METHODOLOGY

For fulfilment of these objectives, the study was conducted in Barwani district, where FLD was conducted by KVK Barwani M.P. during 2016-17. Ten villages and 70 FLD beneficiaries and 70 Non-beneficiaries pigeon pea growers had benefited by this programme. All the beneficiaries were selected purposively for the study. The list of FLDs beneficiaries was provided by KVK. The data were collected using survey method through a pre-tested interview schedule and responses were recorded. Collected data were then tabulated and analyzed using appropriate statistical methods.

IV. ADOPTION BEHAVIOUR

The extent of adoption of pigeon pea production technology of pigeon pea refers to the extent of adoption of recommended and pigeon pea production techniques and practices by pigeon pea growers on their farm. To measure the level of adoption, index of adoption developed by Shiyani (2001) was adopted. It consists of 13 (total 18) practices the whole pigeon pea production package of practices. The level of adoption was considered beneficiaries and non beneficiaries. The weight age of 1 for low, 2 for medium and 1 for high of each practice was assigned. The total score obtained by the pigeon pea growers from all 14 practices was the adoption score of individual pigeon pea growers.

The raw adoption score obtained by individual pigeon pea growers was converted into adoption index as below:

$$\text{Adoption Index} = \frac{\text{Sum of the adoption scores obtained by respondents}}{\text{Maximum possible obtainable adoption scored by the responds.}} \times 100$$

On the basis of range of scores, three categories were made as –

S. No.	Categories	Score
1.	Low (1 to 20)	1
2.	Medium (20 to 40)	2
3.	High (40 to 60)	3

- *Method of data collection*

An interview schedule was designed for collecting the relevant information of selected variables. The data were collected personally with the help of pre tested interview schedule. The researcher personally contacted the respondents. They were assured that the information given by them would be kept confidential and it would only be used for academic purposes.

V. RESULT & DISCUSSION

A. Adoption level of pigeon pea production technology of FLD beneficiaries

Adoption in this study refers to use of improved practices of pigeon pea as demonstrated to the farmers in front line demonstrations. The adoption behaviour of selected beneficiaries was assessed related to improved practices of pigeon pea cultivation and presented in Table below-

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N=70

S.No.	Package of practices	Level of adoption		
		Low	Medium	High
1	Field preparation			
a)	Time and number of ploughing	15 (21.43)	25 (35.71)	30 (42.86)
2	Improved Pigeon pea variety (JKM-189)	14 (20.00)	23 (32.86)	33 (47.14)
3	Seed rate-20-25 kg/ha	13 (18.57)	27 (38.57)	30 (42.86)
4	Seed treatment -Carbendazim + thayar @ 3 gram/kgseed	16 (22.86)	25 (35.71)	29 (41.43)
5	Time of sowing:- 15 June- 15 July	11 (15.71)	29 (41.43)	30 (42.86)
6	Sowing spacing- 60-20cm	10 (14.29)	34 (48.57)	26 (37.14)
7	Method of sowing (By Ridge planter)	16 (22.86)	24 (34.29)	30 (42.86)
9	Fertilizers- N:P:K:S:Zn (20:60:25:25:20 kg/ha)	17 (24.29)	24 (34.29)	29 (41.43)
10	Irrigation and drainage	20 (28.57)	20 (28.57)	30 (42.86)
11	Weed management by weedicides	17 (24.29)	23 (32.86)	30 (42.86)
12	Plant protection measures			
a)	Identification of Major Diseases and pest	14 (20.00)	25 (35.71)	31 (44.29)
b)	Control measures of diseases and pest	16 (22.86)	25 (35.71)	29 (41.43)
13	Method of harvesting (Picking of pods and whole plant cutting	17 (24.29)	22 (31.43)	31 (44.29)
14	Post-harvest technology			
a)	Threshing	16 (22.86)	25 (35.71)	29 (41.43)
b)	Drying	20 (28.57)	19 (27.14)	31 (44.29)
c)	Storing	20 (28.57)	20 (28.57)	30 (42.86)
d)	Making Dal	19 (27.14)	23 (32.86)	28 (40.00)

Table 1. Distribution of beneficiaries according to their level of adoption about pigeon pea production technology

Note:- Figures in parentheses indicate percentages.

- *Table- Adoption level of pigeon pea production technology by FLD non beneficiaries pigeon pea growers.*

Adoption in this study refers to use of improved practices of pigeon pea as demonstrated to the farmers in front line demonstrations. The adoption behaviour of selected beneficiaries was assessed related to improved practices of pigeon pea cultivation and presented in Table given below:

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N=70

S.No.	Component of package of practices	Level of adoption		
		Low	Medium	High
1	Field preparation			
a)	Time and number of ploughing	18 (25.71)	30 (42.86)	22 (31.43)
2	Improved pigeon pea variety (JKM-189)	17 (24.29)	27 (38.57)	26 (37.14)
3	Seed rate-20-25 kg/ha	17 (24.29)	28 (40.00)	25 (35.71)
4	Seed treatment-Carbendazim + captan @3 gram/kg seed	18 (25.71)	30 (42.86)	22 (31.43)
5	Time of sowing:- 15 June- 15 July	16 (22.86)	28 (40.00)	26 (37.14)
6	Sowing spacing- 60-20cm	18 (25.71)	28 (40.00)	24 (34.29)
7	Method of sowing (By Ridge planter)	18 (25.71)	29 (41.43)	23 (32.86)
8	Fertilizers- N:P:K:S:Zn (20:60:25:25:20 kg/ha)	19 (27.14)	29 (41.43)	22 (31.43)
9	Irrigation and drainage	20 (28.57)	28 (40.00)	22 (31.43)
10	Weed management by weedicides	18 (25.71)	29 (41.43)	23 (32.86)
11	Plant protection measures			
a)	Identification of Major Diseases and pest	17 (24.29)	28 (40.00)	25 (35.71)
b)	Control measures of diseases and pest	18 (25.71)	28 (40.00)	24 (34.29)
12	Method of harvesting (Picking of pods and whole plant cutting	20 (28.57)	26 (37.14)	24 (34.29)
13	Post-harvest technology			
a)	Threshing	18 (25.71)	28 (40.00)	24 (34.29)
b)	Drying	20 (28.57)	25 (35.71)	25 (35.71)
c)	Storing	18 (25.71)	30 (42.86)	22 (31.43)
d)	Making Dal	20 (28.57)	28 (40.00)	22 (31.43)

Table 2. Distribution of non-beneficiaries according to their level of adoption about pigeon pea production technology

Note:- Figures in parentheses indicate percentages.

B. Adoption level of pigeon pea production technology by FLD beneficiaries and non beneficiaries

Study concluded that in case of FLD beneficiary's farmers, majority of the respondent were in high level of adoption followed by medium and low category respectively regarding adoption of pigeon pea production technology. The main aim of frontline demonstration is to demonstrate newly released crop production and protection technologies and its management practices in the farmers' field.

The technologies are demonstrated for the first time by the scientists themselves before being fed into the main extension system. That is reason the farmers are fully convinced regarding technology demonstrated on their farm and they followed incomplete adoption of pigeon pea production technology at their farm. This finding is in

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conformity with the findings as reported by Patel et al (2006).

C. Effect of FLD on adoption behaviour of pigeon pea production technology:

It is pertinent to have an idea regarding adoption score by FLD and non FLD pigeon pea growers for assessment the improvement in adoption of FLD beneficiaries of pigeon pea production technology over non beneficiaries. The distribution of FLD and non-beneficiaries pigeon pea growers according to adoption score of pigeon pea production technology has been presented in following table.

Adoption score	FLD beneficiaries	FLD Non beneficiaries
Low	20 (28.57)	30 (42.85)
Medium	24 (34.28)	25 (35.71)
High	26 (37.14)	15 (21.42)
Total	70	70
Mean	34.83	27.63
S.D.	6.53	7.42
Value of t	6.094	
Table value of t	2.093	

Table 3. Effect of FLD on adoption behaviour of pigeon pea production technology.

Note:- Figures in parentheses indicate percentages.

➢ *Significant at 1% level of significance*

Effect of pigeon pea production technology under frontline demonstration was considered to examine the adoption level by FLD beneficiaries and FLD non beneficiaries. In present segment of study, the detail of these 14(total 20) practice of technology along with overall level of adoption were compared to find out difference in the adoption level among FLD beneficiaries and non FLD beneficiaries pigeon pea growers.

The total mean score values of the perceived by beneficiaries FLD pigeon pea growers were found to be 34.83 On the other hand, the total mean score values of the perceived by non beneficiaries FLD pigeon pea growers were found to be 27.63.

The calculated‘t’ value 6.094 at 1 per cent level was higher than the Table value of‘t’ 2.093. This was declared to be significant. Therefore, it may be concluded that the data provides enough evidence of higher level of adoption of pigeon pea production technology by FLD beneficiaries over non beneficiaries. This clearly shows that as regard the level of adoption of pigeon pea production technology there was a significant difference between FLD beneficiaries and non- beneficiaries.

Effect of FLD on adoption behaviour of pigeon pea production technology was considered to examine the adoption level by FLD beneficiaries and FLD non beneficiaries’ pigeon pea growers. In present segment of study, the detail of these 14(total 20) practice of technology along with overall level of adoption were compared to find out difference in the adoption level among FLD beneficiaries and non beneficiaries pigeon pea growers.

Therefore, it may be concluded that the data provides enough evidence of higher level of adoption of pigeon pea production technology by FLD beneficiaries pigeon pea growers over non beneficiaries pigeon pea growers. This clearly shows that as regard the level of adoption of pigeon pea production technology there was a significant difference between FLD beneficiaries and non beneficiaries. This finding is in conformity with the findings as reported by Meena et al. (2016).

VI. CONCLUSION

Front Line Demonstration (FLD) is to demonstrate released crop production and protection technologies and its management practices on the farmers` field to study the constraints of production, factors contributing for higher production and thereby to generate production data and feedback information. The calculated‘t’ value 6.094 at 1 per cent level was higher than the table value of‘t’ 2.093. This was declared to be significant. Therefore, it may be concluded that the data provides enough evidence of higher level of adoption of pigeon pea production technology by FLD pigeon pea growers over non beneficiaries pigeon pea growers. This clearly shows that as regard the effect of FLD on adoption behaviour of pigeon pea production technology there was a significant difference between FLD beneficiaries and non- beneficiaries.

REFERENCES

1. Dour D, Choudhary S, Swarnakar VK. 2015. Impact of frontline demonstration on adoption behavior of soybean growers. Journal of Agriculture and Veterinary Science (8): 40-43.
2. Meena KC. (2011). An impact assessment of frontline demonstration (FLDs) on soybean growers. J. Extn. Edu. (19): 133-135.
3. Patel, A. C. (2006). Adoption dynamics of pigeon pea growers in relation to integrated pest management technology of Vadodara district of Gujarat state. AAU, Anand.
4. Simtowe Franklin; Muange, Elijah, Munyua, Bernard. and Diagne, Aliou. (2012).Technology Awareness and Adoption: the case of improved Pigeon pea varieties in kenya. International association of Agricultural Economists (IAAE):18-24.
5. Singh,Beena; Singh, Y.K.: Tripathi, Swapna. And Binjhade,Charan. Lal.(2015).Adoption of improved pulse technology by pulse growers. Indian Res. J. Ext. Edu.15(4).
6. Singh, R.K.; Singh, Dhanajai. And Singh, Richa.(2016).Enhance the productivity of Pigeon pea

through improved technology.International Journal of agriculture, Environment and Bioresearch.1(01).

7. Teggeli, Raju, G.; patil, D.H., Naik, Ananda, Zaheer, Ahamed, B. and Patil, M.C. (2015). Impact of demonstration on the yield and economics of Pigeon pea. International Journal of Science and Nature 6(2):224-227. Todasam.