



Impact of Soybean Production Technology Dissemination through Front Line Demonstrations in Malwa Region of M P

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ABSTRACT

The study was undertaken to investigate the impact of front line demonstrations on scientific temperament of the soybean growers. A total of 90 respondents (45 farmers from KVK adopted and 45 farmer non adopted villages) were selected. It was found that the scientific temperament of the farmers from the adopted village was higher than the non- adopted village. It indicated that there was an impact of FLD programme among the soybean growers. The study also revealed that the selected profile characteristics *viz*; education, social participation, extension participation and mass media exposure were apt and contributed to about 77 per cent of the variation in the scientific temperament of the soybean growers. Therefore, it is suggested that these factors may be taken into considered while selecting farmers for conducting a technology dissemination programme.

Key Words: Age, Education, Production, Technology, Soybean.

INTRODUCTION

Soybean (*Glycine max* L.) belonging to family Leguminosae has recognized as beneficial source of protein, edible oil and functional food on world level. It is unique in the sense that large numbers of diverse end-products such as fortified soya flour, soya milk, tofu, biscuit, bread, products are made from it. The population is increasing in a geometric progression leading to an increased demand of oilseed crops but there is no possibility of further increase in area in Madhya Pradesh and also elsewhere due to growing urbanization, diversification, dwindling water resources, micro-nutrient deficiencies and soil health deterioration. Therefore, the need to produce more soybeans has to be met out with fewer resources in a sustainable and cost effective manner. Shaktawat *et al* (2016) reported that majority of the marginal, small and large farmers belonged to low adoption category for seed treatment by fungicides and application of fertilizers, medium adoption for application of herbicide and plant protection measures of soybean production technology. Likewise, Singh *et al* (2014)

concluded that training programmes backed by the field demonstrations proved to be the most effective tool for speedy dissemination of knowledge and technical skills to the farmers. Kaur *et al* (2014) indicated that Front line demonstration program was effective in changing attitude of farmers towards pulse cultivation.

KVKs are grass root level organizations meant for application of technology through assessment, refinement and demonstration of proven technologies under different 'micro farming' situations in a district (Das, 2007). Front line demonstration (FLD) is a long term educational activity conducted in a systematic manner at farmers' fields to prove the worth of a new practice/technology. The main objective of front-line demonstrations (FLD) is to demonstrate newly released crop production and protection technologies and its management practices at the farmers' field under different agro-climatic regions and farming situations. Front-Line Demonstrations were conducted in a 0.4 ha land in order to have better impact of the demonstrated technologies on

the farmers and field level extension functionaries. While a large number of studies have been made to discuss the yield potentialities and procedures for conducting these demonstrations, limited studies have been conducted to assess the impact of FLD on scientific temperament of farmers. Thus, the present study was an attempt to evaluate the impact of FLD on scientific temperament of soybean growers in adopted and non-adopted villages under FLD programme.

MATERIALS AND METHODS

The study was conducted in Ujjain district where FLDs were conducted by the Krishi Vigyan Kendra during 2012-13 to 2016-17. Forty five soybean growers each were selected from KVK's adopted and non-adopted villages randomly, thus, 90 respondents constitute the sample of the study. In this study the scientific temperament of the farmers was assessed as farmers' mental disposition related to items pertaining to four areas of human behaviour vis-à-vis scientific knowledge, attitude, habit and utilization of scientific method. Scientific temperament was measured with the help of scale developed by De (2004).

Student's 't' test was used for testing the significant difference of mean score of two categories of the respondents in relation to their scientific temperament and the correlation and regressions analysis were worked out to measure the strength of association between selected variables

and scientific temperament of the soybean growers.

RESULTS AND DISCUSSION

Impact of Front Line Demonstrations on Scientific temperament of the soybean growers

The scientific temperament of FLD adopted and non adopted village farmers presented in Table 1 revealed that majority (53.33%) of the respondents possessed medium level of scientific temperament, while about one fourth (23.33%) of the respondents possessed high and 21.11 per cent possessed low level. Similar findings were reported by De (2004) in case of potato. The data also indicated that mean value of scientific temperament of FLD adopted village was higher (76.35) than the mean score (62.2) of scientific temperament of non-adopted village. Thus, it can be stated that there was an impact of FLD programme on scientific temperament of the soybean growers.

Factors affecting scientific temperament

Scientific temperament of the soybean growers was found to be significantly correlated with education, social participation, extension participation, farm mechanization, information source utilization, cosmopolitanness and mass media exposure at 0.01 level of significance. (Table 2). It indicates that as education, social participation, extension participation, farm mechanization, information source utilization, cosmopolitanness and mass media increased, scientific temperament also increased.

Table 1. Distribution of the respondents according to their scientific temperament.

Scientific temperament	Adopted	Non-adopted	Total
Low(<60.04)	2 (4.44)	17 (37.77)	19 (21.11)
Medium(60.04-78.36)	24 (53.33)	26 (57.77)	50 (55.55)
High(>78.36)	19 (42.22)	2 (4.44)	21 (23.33)
Total	45	45	90
Mean	76.35	62.2	69.2
SD	4.71	6.71	9.16
't' = 11.69**			

(Figures in parenthesis indicate percentage)

**Significant at 0.01 level of probability

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Table 2. Correlation coefficient between scientific temperament of soybean growers and their characteristics.

Sr. No.	Characteristic	Correlation coefficient "r"
1	Age	-0.04
2	Education	0.425**
3	Farm size	0.046
4	Irrigation potential	0.079
5	Social participation	0.503**
6	Extension participation	0.792**
7	Farm mechanization	0.353**
8	Information source utilization	0.593**
9	Cosmopolitaness	0.426**
10	Mass media exposure	0.479**

**Significant at 1% level of significant

In order to determine the combined effect of all the selected independent variables in explaining

the variation in scientific temperament, multiple linear regression analysis was carried out. The computed co-efficient of determination (R^2) value and partial regression co-efficient (b) values with their corresponding 't' values are given in Table 3. The R^2 and 'b' values were tested significantly for their significance. The R^2 value of 0.78 indicated that all the selected 10 independent variables put together explained about 78 per cent variation in scientific temperament of the soybean growers.

The partial regression co-efficient (Table 3) indicated that independent variables viz, education, social participation, extension participation and mass media exposure were positively significant as evident from their significant 't' values. This implied that education, social participation, extension participation and mass media exposure positively and significantly contributed to most of the variation (77%) in scientific temperament of the farmers (Table 4).

Table 3. Regression coefficient of selected characteristics of soybean growers with their scientific temperament.

Sr.No.	Characteristic	Regression coefficient	Standard error	t value
1	Age	0.061567	0.053261	1.155935
2	Education	1.796272	0.542072	3.313714**
3	Farm size	0.064258	0.353356	0.181851
4	Irrigation potentiality	0.033078	0.044535	0.74275
5	Social participation	0.033078	0.519402	3.119735**
6	Extension participation	0.033078	0.02722	8.313592**
7	Farm mechanization	-0.00915	0.036467	-0.25095
8	Information source utilization	0.32535	0.427763	0.760586
9	Cosmopolitaness	0.21935	0.314069	0.698416
10	Mass media exposure	1.395104	0.606863	2.298876*
$R^2=0.78$ Multiple correlation $R=0.88$ $F_{10,79}$ value 28.00433**				

**Significant at 1% level of significant *Significant at 5% level of significant

Table 4. Adoption of soybean production technology by soybean growers. (N=90).

Sr. No	Recommended Technology	Adopted Village		Non adopted Village	
		Complete adoption	Partial adoption	Complete adoption	Partial adoption
1	Use of recommended varieties	27(60.00)	18(40.00)	16(35.55)	29(64.44)
2	Seed treatment	29(64.44)	16(35.55)	15(33.33)	30(66.66)
3	Seed rate	26(57.77)	19(42.22)	16(35.55)	29(64.44)
4	Recommended dose of fertilizer	24(53.33)	21(46.66)	17(37.77)	28(62.22)
5	Integrated weed management	31(68.88)	14(31.11)	13(28.88)	32(71.11)
6	Insect pest management	30(66.66)	15(33.33)	12(26.66)	33(73.33)
7	Integrated disease management	23(51.11)	22(48.88)	14(31.11)	31(68.88)

(The figures in parentheses are percentage of the total)

The data (Table 4) revealed that majority (68.88%) of the respondents had complete adoption in case of integrated weed management practices followed by integrated pest management (66.66%), seed treatment (64.44%) in KVK adopted Village. On the other hand, majority (73.33%) of the respondents had partial adoption in case of integrated pest management practices followed by integrated weed management (71.11%), integrated disease management (68.88%) in KVK Non adopted Village. The results also revealed that adoption pattern in KVK adopted village was higher compared to KVK non adopted village.

CONCLUSION

The mean value of scientific temperament of adopted village farmers of FLD was higher than the mean score of scientific temperament of non-adopted village farmers. Thus, it can be concluded that, there is an impact of FLD programme on scientific temperament of the soybean growers. The selected profile characteristics for the study were apt and contributed to about 77 per cent of the variation in the scientific temperament of the soybean growers. Therefore, it is suggested

that these factors may be taken for considered to increase the scientific temperament of the farmers.

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