IMPLEMENTATION OF IPM TECHNOLOGIES BY THE PIGEON PEA GROWERS

G. Netravathi[1], N.B Chauhan[2] and R. D. Dhandhukia[3]

1&3 Assistant professor, Department of Agricultural Extension, College of agriculture, NAU, Bharuch - 392001
2 Professor & Head, Department of Agricultural Extension, BACA, AAU Anand- 388110
Email: g.nethravathi@gmail.com

ABSTRACT

The study was conducted by collecting primary data from 72 pigeon pea growing farmers of Bharuch and Vaghra taluka's of Bharuch district. The data was collected through interview schedule using random sampling methods and analyzed with help of statistical tools. Majority of Pigeon pea growers had medium level of cropping insensitivity and belongs to medium level of income with medium level of extension contact by the means they were utilizing medium level of information sources. Predominantly they were had medium level of scientific orientation, economic motivation and with medium level of implementation towards recommended Pigeon Pea technologies.

Keywords: *pigeon pea, implementation and integrated pest management*

INTRODUCTION

Pigeon pea is abundant in protein, in combination with cereals, pigeon peas make a well-balanced human food. It becomes an important ingredient in cooking due to its high nutritive value and specific taste. Most of the farmers give low priority to pulses in cultivation because they are assigned to rainfed and relatively less productive portions of their fields. However, recent escalation in prices of pulses has brought about some changes in the mind set of some farmers and they are taking the cultivation of pulses more seriously than before. Saxena and et al. (2010) reported that among legumes, pigeonpea [Cajanus cajan (L.) Millspaugh] occupies an important place in rainfed agriculture. Globally, it is cultivated on 4.67 million ha, out of which, 3.30 million ha is confined to India alone. Maharashtra is the largest producer of red gram accounting for nearly 33.49 percent of the total production followed by Uttar Pradesh (19.73 percent), Madhya Pradesh (12.18 percent), Andhra Pradesh (8.17 percent), Gujarat (8.13 percent) and Karnataka (6.34 percent). These six major states together contribute about 88 percent of the total production and about 88 percent of the total area in the country (MOA, 2010).

Even, the rate of production per unit area is quite low in Gujarat as compared to other pigeon pea producing states. Besides adverse climate condition, the recurrent attack by a large number of insect pests and disease is one of the most important causes of low yield. In India the annual loss by insect pests was estimated to the tune of 20% percent amounting to ₹1200 crores. The damage due to insect pests alone in the absence of proper plant protection measures was assumed to 40.18 percent with regards to pulses. On an average 20 to 40 % crop is annually lost due to damage caused by pod borers (Anonymous, 2005). In light of this, it is evident that the yield of pigeon pea can be increased significantly by implementing recommended production technologies by the farmers.

The Integrated Pest Management strategy involves integration of various techniques of pest control such as cultural, mechanical, physical, biological, chemical and regulatory methods. In other words, Integrated Pest Management is a broad ecological approach of pest control employing all methods and techniques in a compatible manner to keep pest population below economic threshold level. One way in which extension scientists can contribute to this task is to find out better ways and means of promotion of plant protection measure among the group of clientele. Since change in knowledge and attitude precede implementation of an innovation, it is therefore, always important to find out to most effective and economical techniques of changing farmer's knowledge and attitude towards agricultural innovation in general and Integrated Pest Management strategy in particular.

OBJECTIVE

To know the implementation of ipm technologies by the pigeon pea growers

METHODOLOGY

For the investigation, primary data will be collected from the 72 pigeon pea growing farmers of Bharuch and Vaghra taluka's of Bharuch district. For the present investigation stratified random sampling techniques was employed to collect the data from the farmer's in each taluka's three villages are selecting and from each village data collecting from three farmers with the sample size of 72. The data collected through interview schedule. They were coded, processed, tabulated, classified and analyzed with the help of suitable statistical techniques.

RESULTS AND DISCUSSION

Personal characteristics of respondents

Table 1 : **Distribution of respondents according to their personal characteristics n=72**

Sr. No.	Personal Characteristics	No.	Percent
1	**Age**		
	Young age (up to 35 years)	17	23.61
	Middle age (36 to 50 years)	35	48.61
	Old age (above 51 years)	20	27.78
2	**Level of Education**		
	Illiterate	2	2.78
	Primary (1st to 7th std.)	8	11.11
	Secondary (8th to10th std.)	20	27.78
	H.S.C. (11th to 12th std.)	27	37.50
	College (Above 12th std.)	15	20.83
3	**Land Holdings**		
	Marginal (Up to 1.00 ha)	10	13.89
	Small (1.01 to 2.00 ha)	34	47.22
	Medium (2.01 to 3.00 ha)	15	20.83
	Large (above 3.00 ha)	13	18.06
4	**Cropping intensity**		
	Up to 125 %	25	34.72
	126 to 150 %	31	43.06
	More than 151 %	16	22.22
5	**Annual income**		
	Up to Rs.1,00000	24	33.33
	Rs.1,00001 to 2,00000	34	47.22
	>Rs. 2,00000	14	19.44
6	**Extension contact (score)**		
	Low (< 10.24)	15	20.83
	Medium (10.24 to 14.78)	42	58.33
	High (> 14.78)	15	20.83
7	**Sources of information utilized (score)**		
	Low (Below 18.56)	14	19.44
	Medium (18.56 to 25.05)	48	66.67
	High (Above 25.05)	10	13.89
8	**Scientific orientation (score)**		
	Low (Below 17.90)	11	15.28
	Medium (17.90 to 24.74)	37	51.39
	High (Above 24.74)	24	33.33
9	**Economic motivation (score)**		
	Low (Below 17.14)	11	15.28
	Medium (17.14 to 24.10)	40	55.56
	High (Above 24.10)	21	29.17
10	**Level of implementation (score)**		
	Low (below 39.61)	17	23.61
	Medium (39.61 to 63.59)	40	55.55
	High (Above 63.59)	14	19.44

(1) Age

The data presented in Table 1 show that slightly less than half of the pigeon pea growers (48. 61 per cent) belonged to middle age group followed by 27.78 per cent with old age group and 23.61 per cent were from young age group.

(2) Education

The data presented in Table 1 reveal that less than two-fifth of the pigeon pea growers (37.50 per cent) were educated up to higher secondary level followed by 27.78 per cent of them who were educated up to secondary level, 20.83 per cent of them had completed college level of education, 11.11 per cent were educated up to primary level and only 02.78 per cent were illiterate.

(3) Land holdings

A look into Table 1 shows that less than half of the Pigeon pea growers (47.22 per cent) were found to have small size of farm followed by 20.83 per cent and 18.06 per cent of the pigeon pea growers who had medium and large size of land holding, respectively and rest of the farmers (13.89 per cent) were found in the group of marginal farmers.

(4) Cropping intensity

Data presented in Table 1 indicate that more than two-fifth (43.06 per cent) of the pigeon pea growers had cropping intensity ranging from 126 to 150 per cent followed by 34.72 per cent and 22.22 per cent of the pigeon pea grower who had cropping intensity up to 125 per cent and more than 151 per cent respectively.

(5) Annual income

Table 1 portrays that less than half (47.22 per cent)

of the Pigeon pea growers belonged to medium level of income followed by low and high with 33.33 per cent and 19.44 per cent respectively.

(6) Extension contact

The result of the study reported in Table 1 reveal that less than three-fifth (58.33 per cent) of the Pigeon pea growers had medium extension contact, whereas slightly more than one fifth (20.83 per cent and 20.83 per cent) of the pigeon pea growers had low and high extension contact, respectively.

(7) Sources of information

A perusal of data presented in Table 1 indicates that about two-third (66.67 per cent) of the pigeon pea growers had medium utilization of information sources followed by low and high utilization of information sources with 19.44 per cent and 13.89 per cent of the pigeon pea growers, respectively.

(8) Scientific orientation

The results in Table 1 indicate that slightly more than half of the pigeon pea growers (51.39 per cent) had medium scientific orientation. About 33.33 per cent of the pigeon pea growers had high scientific orientation and rest 15.28 per cent had low scientific orientation.

(9) Economic motivation

Table 1 reveals that more than half (55.56 per cent) of the pigeon pea growers fell under medium economic motivation category whereas 29.17 and 15.28 per cent of the pigeon pea growers had high and low economic motivation, respectively.

(10) Implementation level

A perusal of Table 1 reveals that more than half (55.55 per cent) of the pigeon pea growers had medium level of implementation followed by low and high level of implementation with 23.61 and 19.44 per cent of the pigeon pea growers, respectively.

Association between personal profile of the pigeon pea growers and there level of Knowledge

Table 2 : Association between personal profile of the pigeon pea growers and there level of Implementation n=72

Sr. No.	Independent Variables	Coefficient of Correlation ('r' value)
X_1	Age	0.0130
X_2	Education	0.4440**
X_3	Land holding	0.0700
X_4	Cropping intensity	0. 0460
X_5	Annual income	0.1200
X_6	Extension contact	0.1510**
X_7	Sources of information utilized	0.0030
X_8	Scientific orientation	0. 4540*
X_9	Economic motivation	0.3600**

** Significant at 0.01 & * Significant at 0.05 level of probability

(1) Age and implementation

The data presented in the Table B_2 shows the calculated value of correlation coefficient (r=0.0130) was found positive and non-significant. It means there was no association between age and their level of implementation by the pigeon pea growers.

(2) Education and implementation

The data presented in Table B_2 reflect that implementation level of the pigeon pea growers regarding recommended production technologies had positive and significant (r=0.4440) correlation with their level of education, which indicates that education is an important variable which influences the implementation level of pigeon pea growers by the pigeon pea growers.

(3) Land holding and implementation

The data presented in Table B_2 clearly indicate that size of land holding of the Pigeon pea growers had positive and non-significant association (r=0.0700) with their implementation level of recommended production technologies in pigeon pea by the pigeon pea growers.

(4) Cropping intensity and implementation

It can be observed from the data presented in Table B_2 that, there was no relationship (r=0.0460) between cropping intensity and level of implementation regarding recommended production technologies in pigeon pea by the pigeon pea growers.

(5) Annual income and implementation

It is apparent from the data presented in the Table B_2 that annual income of the pigeon pea growers had positive and no-significant correlation (r=0.1200) with their extent of implementation of recommended production technologies in pigeon pea by the pigeon pea growers.

(6) Extension contact and implementation

The perusal of data in Table B_2 high-lighted that extension contact of the pigeon pea growers had positive and significant correlation (r=0.1510) with implementation level of recommended production technologies in pigeon pea by the pigeon pea growers.

The Pigeon Pea cultivation farmers are having medium level of extension contact, education, annual income, land holdings, age and also showing medium level of cropping intensity (Sarkar et al., 2002).

(7) Sources of information utilized and implementation

It can be observed from the data presented in Table B_2 that there was positive and non-significant relationship (r=0.0030) between information sources utilized by the pigeon pea growers and their extent of implementation of recommended production technologies in pigeon pea by the pigeon pea growers.

(8) Scientific orientation and implementation

It is apparent from the data presented in Table B_2 that, scientific orientation of the pigeon pea growers had positive and significant correlation (r=0.4540) with the implementation of recommended production technologies in pigeon pea by the pigeon pea growers.

(9) Economic motivation and implementation

The data presented in Table B_2 reflect that level of implementation of recommended pigeon pea cultivation technology had positive and significant correlation (r=0.3600) with the economic motivation.

Education, extension contact, scientific orientation and economic motivation are the important factors that are contributing positively for the implementation of the IPM technologies. It is understood that the increase in the education level helps to increase the level of implementation of IPM technologies across the farmers. In the same way increase in the extension contact, scientific orientation and economic motivation increase the level of implementation among the farmers (Rabari, 2006).

CONCLUSION

From the above results it is concluded that majority of the respondents were in middle age group with higher secondary level of education and had small size of land holdings. Majority of Pigeon pea growers had medium of cropping insensitivity and belongs to medium level of income with medium level of extension contact by the means they were utilizing medium level of information sources. Predominantly they were had medium level of scientific orientation, economic motivation and with medium level of implementation. The farmer's education, extension contact, scientific orientation and economic motivation are the major factors that are contributing positively for the implementation of recommended IPM technologies for cultivation of Pigeon Pea. To increase the implementation of recommended IPM technologies among the farmers, extension workers have to try to increase the scientific orientation through extension activities. That leads to automatically increase implementation level of IPM technologies among the farmers.

REFERENCES

Anonymous (2005). Office of the Dy. Director of Agriculture, Vadodara

Rabari, S.N. (2006) A study on implementation of tomato recommended technology by tomato growers in Anand district of Gujarat state M.Sc. (Agri.) Thesis, AAU, Anand

Sarkar,J.D., Sangode, P.K. & Shrivastava, K.K. (2002). Variables influencing tribal leaders' knowledge and adoption gap for improved paddy cultivation technologies. *Gujarat Journal of Extension Education,* 12(13), 35-38.

Ministry of Agriculture (2005), GOI, Post-Harvest profile red gram in India.

Saxena, K.B., Kumar, R.V & Gowda, C.L.L. (2010) Vegetable pigeonpea – a review, *Journal of Food Legumes* 23(2): 91-98.

Received : October 2017 : Accepted : December 2017