Knowledge and Adoption of Gram Production Technology

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ABSTRACT

The study was conducted in Shahpura block of Jabalpur district (M.P.) to investigate the xtent of knowledge and adoption of gram production technology. There are thirteen blocks in Jabalpur district but Shahpura block has been selected purposively for the study because it covers largest area under gram cultivation as compared to other blocks. Ten villages were selected by using. SRSWOR (Simple Random sampling without replacement) for the study. Twelve gram growers from each village were randomly selected thus 120 gram growers were selected for the investigation purpose. The data were collected by using personal interview method. The collected data were tabulated, analyzed and interpreted with the help of appropriated statistical tools. The knowledge and adoption level of the gram growers were found moderate and low adoption level of recommended gram production technology respectively and there is significant association between knowledge level of gram growers and their adoption behavior.

India shares 35.2 percent area and 27.65 percent of the global production in pulse crops. In a country like India where large population is vegetarian, the cheap and better source of protein are still pulses Chickpea being as leguminous pulse Crop has a unique position in dry land/rained cropping system by virtue of being a restorer of soil fertility and soil health. The root nodules of the crop fix about 103 kg of nitrogen fixation from atmosphere. Its deep root system helps in opening up the soil, thereby ensuring better aeration. Thus the crop of chickpea plays a vital role in improving soil health thereby ensuring environmental security. In spite of these beneficial aspects chickpea production in the country is declining.

Chickpea commonly known as gram or Bengal gram is the most important pulse crops which contain mainly 21.1 per cent protein, 61.1 per cent carbohydrate and 4.5 per cent fat. In India, gram is mainly used as human food in form of dall, chhole, and vegetables. Gram flour is used in preparation of various types of sweets. Being a leguminous crop it not only requires less input in terms of nitrogenous fertilizer but adds atmospheric nitrogen to the soil.

Hence it is more profitable crop than other food grain. The production and productivity of Bengal gram has shown an increasing trend in Madhya Pradesh. The average productivity of Bengal gram in the state is 855 Kg/ha which is highest in the country. Madhya Pradesh is the first state in India in respect of area and production. The incomplete knowledge may be one of the significant reasons for low adoption. The numbers of transfer of technology programmes were undertaken in the past. Jaiswal (1985). The input of which programme are quite visible but adoption of the improved technology of the Bengal gram production is still below the expectation.

Knowledge has been found to be an important factor contributing to the adoption of innovations by farmers. Chickpea growing farmers were studies to investigate the level of knowledge of improved chickpea production technology. A knowledge index consisting of fifteen dimensions was developed after consultation of experts to measure the level of knowledge and adoption of Gram growers. Keeping in this view an attempt was made to ascertain knowledge and adoption of Chick pea (Bengal gram) production technology in Shahpura block of Jabalpur district (M.P.).

METHODOLOGY

The present investigation was carried out in ten villages selected by using SRSWOR (Simple Random

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Sampling without Replacement) for the study. A comprehensive list of Gram growers of each selected villages was prepared and twelve gram growers from each selected villages was randomly selected. Thus one hundred twenty (120) gram growers were selected for the investigation purpose. The index was developed to measure the knowledge and adoption behavior of gram growers on basis of recommended package of practices of gram production technology recommended by scientist of Jawaharlal Nehru Krishi Vishwa vidyalaya Jabalpur.

RESULTS AND DISCUSSION

Table-1. Knowledge level of gram growers regarding recommended practices of gram cultivation

N=120

S.No.	Categories	Frequency	Percentage
1	Low (23.00-34.33)	29	24.17
2	Medium (34.34-45.66)	57	47.50
3	High (45.67 & above)	34	28.33
	Total	**120**	**100.00**

It is clear from the table 1 that of the gram growers 47.50 per cent had medium, 28.33 per cent high and 24.17 per cent low level of knowledge. Thus, the higher percentage of gram growers had medium level of knowledge about gram production technology. The possession of moderate level of knowledge of gram production technology might due to their low sources of information, low contact of extension personnel, moderate economic motivation and scientific orientation. The work of Pachori and Tripathi (1983), Waman et al. (1996) was in conformity with the present research finding.

Table 2 Adoption behavior of gram growers regarding recommended gram production technology

N=120

S. No.	Categories	Frequency	Percentage
1	Low (18-28)	55	45.83
2	Medium (29-38)	41	34.17
3	High (above 38)	24	20.00
	Total	**120**	**100.00**

Table 2 revealed that of total gram growers, 45.83 per cent had low, 34.17 per cent medium and 20.00 per cent high level of adoption behaviour. Thus it is concluded that the highest percentage of gram growers belonged to low adoption behaviour category.

The low adoption of improved Gram production technology is mainly due to incidence of Gram pod bores and cut worms followed by untimely rainfall, high cost of pesticides, lack of credit facilities and lack of knowledge regarding improved gram production technology.

Table-3. Adoption of gram growing practices by the gram growers

N=120

S. No	Practices	Frequency	Percentage
1.	Land preparation	45	37.50
2.	Improved Varieties	100	83.33
3.	Recommended seed rate	11	9.16
4.	Seed treatment	70	58.33
5.	Use of rhizobium culture	80	66.66
6.	Timely Sowing	114	95.00
7.	Method of sowing	101	84.16
8.	Depth of sowing	10	8.33
9.	Row to Row spacing	75	62.50
10.	Proper dose of fertilizer application	85	70.83
11.	Irrigation	104	86.66
12.	Irrigation interval	45	37.50
13.	Nipping	71	59.16
14.	Insect control measure	100	83.33
15.	Disease control measure	37	30.83

Table 3 indicates different practices along with number and percentage of respondents following them. The highest adoption (95.00 %) was found to be of timely sowing followed by irrigation (86.66 %), method of sowing (84.16%), improved varieties and insect control measure (83.33%), proper dose of fertilizer application (70.83%), use of rhizobium culture (66.66 %), row to row spacing (62.50%), nipping (59.16%), and seed treatment (58.33%), other less commonly adopted practices were land preparation and irrigation interval each (37.50 %) disease control measures (30.83 %), recommended seed rate (9.16 %) and depth of sowing (8.33%).

Table 4 Association of knowledge level with adoption behaviour regarding recommended gram production technology.

N=120

Knowledge Level	Adoption behaviour			Total
	Low	**Medium**	**High**	
Low	18(62.07)	6(20.69)	5(17.24)	29
Medium	28(49.12)	23(40.35)	6(10.53)	57
High	9(26.47)	12(35.29)	13(38.24)	34
Total	**55**	**41**	**24**	**120**

(Figures in parenthesis indicate percentage)
$X2 = 15.09$ significant at 0.05 level of probability with 4 d.f.

The data presented in the table 4 indicate that of the total 29 gram growers, 62.07 per cent had low, 20.69 per cent medium and 17.24 per cent high adoption behaviour, whereas of the total 57 gram growers of medium knowledge level, 49.12 per cent had low, 40.35 per cent medium, 10.53 per cent high adoption behaviour. In case of high knowledge level, out of 34 gram growers, 38.24 per cent had high, 35.29 per cent medium and 26.47 per cent low adoption behaviour respectively.

The table further indicates significant X2 value at 0.05 level of probability, Hence by rejecting the null hypothesis, the conclusion can be drawn that there is significant association between knowledge level of gram growers and their adoption behaviour. Therefore, the conclusion may be drawn that majority of low and medium knowledge level gram growers had low adoption where as high knowledge level gram growers had high adoption behaviour regarding gram production technology. This finding is supported with work of Shivrain and Dalal (1994) and Vijayraghawan and Somasendram(1979).

CONCLUSION

The findings of the study revealed that the highest percentage (47.50 %) of the gram growers has moderate knowledge level and low adoption level (45.83 %) regarding recommended gram production technology. There is also significant association between knowledge level of the gram growers and their adoption behaviour.

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