Knowledge Level of Farmers about Chickpea Production Technology in Nagaur District of Rajasthan

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ABSTRACT

Chickpea is the most important pulse crop in the state occupying 10.82 lakh ha with production of 4.79 lakh tones and average productivity 443 kg/ha.. Therefore, a study was undertaken to assess the knowledge level of farmers regarding chickpea production technology in Nagaur district of Rajasthan. A total of 120 farmers were selected as respondents and a knowledge index consisting of 10 dimensions was prepared to measure the knowledge level of farmers. The study revealed that the farmers had poor knowledge about soil treatment, high yielding varieties and bio-fertilizer, while majority of them had knowledge about critical stage of irrigation. The majority of the respondents had awareness regarding recommended doses of manures and fertilizer, bio-fertilizer, seed rate, improved varieties, spacing and method of sowing. The socio-economic, communication and psychological factors had significant positive relationship with knowledge level of farmers except age, land holding, and farm mechanization. Cosmopoliteness, attitude towards chickpea production technology, scientific orientation, extension participation, economic motivation, mass media exposure and information source utilization were the important factors which had direct and indirect effect on knowledge of farmers.

Key Words : Chickpea; Sustainable production, Training ,Knowledge, Package of Practices.

INTRODUCTION

India is the largest producer, importer and consumer of pulses in the world, accounting for 25 percent of global production, 15 percent trade and 27 percent consumption. In India more than a dozen of pulse crops including chickpea (40%) pigeonpea (18%), urdbean (11%), mungbean (9%), lentil (8%), field pea (5%) and others are grown on 22 - 24 M.ha. producing 13 - 15 Mt. of grain with an average productivity of 600 - 650 kg/ha. As compared to cereals, most of the pulses still wait for significant breakthrough in terms of production and productivity. This group of crops is capable of restoring soil fertility and therefore, remains an integral part of subsistence and sustainable production systems. Among pulses, chickpea is the most important pulse crop in the country grown in more than 6.93 M.ha. area which contributes 62 per cent of the global production (5.6 Mt.) and about 37 per cent of total pulse production in the country. Chickpea is the most important pulse crop in the

state occupying 12.35 lakh ha with production of 7.50 lakh tones and average productivity 607 kg/ha.. It is also one of the important pulse crop of Nagaur district of Rajasthan grown in 0.80 lakh hectares of land annually producing 0.10 lakh tones with the average productivity of 10.04 q/ha. Knowledge has been found to be an important factor contributing to adoption of recommended technology by the farmers. Keeping this in view, a study was undertaken to assess the knowledge level of farmers regarding chickpea production technology.

MATERIALS AND METHODS

The study was conducted in Nagaur district of Rajasthan. Two blocks viz. Kuchaman and Nawa and five villages from each block were selected randomly. From each selected village, twelve farmers were selected randomly thus, a total of 120 farmers were selected as respondents for this study. The data were collected with the help of a

Table 1. Practice-wise knowledge of the respondents about chickpea production technology.

Sr. No.	Practice	No. Knowledge	Awareness	Complete Knowledge
1.	High yielding varieties	6 (5.00)	109(90.83)	05 (4.16)
2.	Soil treatment	54 (45.00)	66 (55.00)	0 (0)
3.	Seed rate	0 (0)	110 (91.67)	10 (8.33)
4.	Seed treatment	0 (0)	105 (87.50)	15 (12.50)
5.	Bio-fertilizers	5 (4.16)	112 (93.33)	03 (2.5)
6.	Manure and fertilizer	0 (0)	116 (96.66)	04 (3.33)
7.	Method of seed sowing	0 (0)	78 (65.00)	42 (35.00)
8.	Recommended spacing	0 (0)	80 (66.67)	40 (33.33)
9.	Critical stage of irrigation	0 (0)	38 (31.67)	82 (68.33)
10.	PP Measures	0 (0)	103 (85.83)	17 (14.16)

Figures in parenthesis are percentage of the total

pre-tested interview schedule through personal interview. To measure the knowledge level of farmers, a knowledge index was prepared taking the 10 dimensions namely; knowledge of high yielding varieties, soil treatment, seed rate per acre for different varieties, seed treatment, bio-fertilizer and its applications, method of seed sowing, recommended spacing, critical stage of irrigation, manure and fertilizer and insect-pest disease and control. These dimensions were identified after thorough review of literature and discussions held with scientists and other experts in the field. For each of the knowledge dimensions, except method of sowing, a maximum score of 2 was given for the farmer who had complete knowledge of the recommended practice pertaining to those dimensions. A score of 1 was assigned when the farmer expressed awareness but did not know the details and a score of zero was assigned when the farmer expressed total ignorance. The knowledge level categories were formulated as low, medium and high on the basis of mean ± SD. The correlation analysis was carried out to find out the relationship between socio–economic, communication and psychological variables with knowledge.

RESULTS AND DISCUSSION

Practice-wise knowledge of the respondents about chickpea production technology

The data reveal that majority of farmers (68.33%) had complete knowledge about critical stage of irrigation followed by recommended method of sowing (35%), recommended spacing (33.33%), plant protection measures (14.16%) and seed treatment (12.50%).Farmers have higher Knowledge about line sowing and irrigation at critical stage, because it increase yield of chickpea directly. However, very few respondents had complete knowledge about seed rate (8.33%), high yielding varieties (4.16%), manure and fertilizer (3.33%) and bio-fertilizer (2.50%). An overwhelming majority (96.66%) of the respondents had awareness about recommended doses of manure and fertilizers, followed by bio-fertilizer (93.33%), seed rate (91.67%), high yielding varieties (90.83%), seed treatment (87.5%), PP Measures (85.83%), recommended spacing (66.67%), method of sowing (65.0%), soil treatment (55.0%) and critical stage of irrigation (31.67%). Similar findings were also reported by Shakya *et al* (2008), Devi *et al* (2013) and Chauhan (2012). It also apparent from the data

Table 2. Knowledge level of farmers about chickpea production technology

Category	Frequency	Per cent	Mean	S.D.
Low (<10score)	02	1.67	12.87	1.61
Medium (10-13 score)	96	80.00		
High (>13 score)	22	18.33		

that 45 per cent respondents had no knowledge about soil treatment. Knowledge about soil treatment, high yielding varieties and biofertilizer was poor amongst farmers, it might be due to lack of knowledge, lack of technical guidance and results are not seen directly to the grower about soil treatment and biofertilizers.

Distribution of respondents according to their knowledge level

The respondents were categorized into three groups low (score<10), medium (10-13) and high (>13) level of knowledge (Table 2). The data reveal that large majority (80%) of the respondents possessed medium level of knowledge about chickpea production technology while, about 18 % possessed high level of knowledge.

Correlation of knowledge about chickpea production technology

The total scores of knowledge about improved chickpea production technology for each respondent were put to correlation analysis with socioeconomic, communication and psychological attributes of the respondents. Among the 13 variables studied (Table 3), ten variables *viz.,* education, social participation, total annual income, information source utilization, extension participation, mass media exposure, cosmo-politeness, economic motivation, attitude towards chickpea production technology and scientific orientation were positively and significantly related with knowledge about chickpea production technology (significant at 0.01 level of probability). Similar findings were also reported by Shakya *et al* (2008), Kumar *et*

Table 3.Correlation of socio-economic, communication and psychological factors with knowledge level of farmers.

Sr. No.	Factor	Correlation Coefficient 'r'
1.	Age	0.078
2.	Attitude towards Chickpea	0.784**
3.	Cosmopoliteness	0.867**
4.	Economic motivation	0.223**
5.	Education	0.627**
6.	Extension participation	0.234**
7.	Farm mechanization	0.136
8.	Information source utilization	0.862**
9.	Mass media exposure	0.341**
10.	Operational land holding	0.084
11.	Scientific orientation	0.625**
12.	Social participation	0.364**
13.	Total annual income	0.315**

al (2016) in case of education and mass media exposure. Whereas the remaining three variables namely- Age, Operational Land Holding and Farm Mechanization are not significantly related with knowledge about chickpea production technology.

CONCLUSION

The study revealed that the farmers had poor knowledge about soil-treatment, high yielding varieties, and bio-fertilizer, while majority of them had knowledge about critical stage of irrigation. Majority of the respondents had awareness regarding recommended doses of manures and fertilizer, bio-fertilizer, seed rate, improved varieties, spacing and method of sowing. Correlation analysis indicated that all the socio-economic, communication and psychological factors had significant positive relationship with knowledge level of farmers except age, land holding, and farm mechanization. The study pointed out that cosmopoliteness, attitude towards chickpea production technology, scientific orientation, extension participation; economic motivation, mass media exposure and information source utilization were the important factors which had direct and indirect effect on knowledge of farmers. The study also pointed out that four variables *viz.,* information source utilization, cosmopoliteness, attitude towards chickpea

production technology and scientific orientation have high predictive value as these account for 93 percent of total variation in the knowledge level of farmers regarding chickpea production technology. Thus, it may be recommended that the variables viz., information source utilization, cosmopoliteness, attitude towards chickpea production technology and scientific orientation need to be improved amongst the farmers of the study area to enhance their knowledge level regarding chickpea production technology

REFERENCES

Chauhan Nikulsinh M (2012). Knowledge level of farmers regarding package of practices for Gram crop. *J Krishi Vigyan* : **1**(1) : 46-48.

Devi Ganga M, Kumar Ch. Anil and Srinivas Kumar D (2017). Impact analysis of trainings and front line demonstrations in Black Gram (*Vigna mungo*) cultivation. *J Krishi Vigyan* **6**(1) : 97-100

Kumar P V, Khan M A and Sharma M L(2016). The Knowledge of tribal farmers about the recommended Black gram cultivation practices and its determinants. *Int J Agri Sci* **8**(9): 1107-1109.

Shakya M S, Patel M M and Singh V B (2008). Knowledge level of chickpea growers about chickpea production technology. *Indian Res J Ext Edu* **8** (2&3):65-68