

KNOWLEDGE LEVEL OF FARMERS ABOUT CLUSTERBEAN PRODUCTION TECHNOLOGY IN WESTERN ZONE OF RAJASTHAN

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ABSTRACT

The present investigation was carried out during the Kharif 2008 in western zone (Hyper Arid Partially Irrigated Western Plain) of Rajasthan with sample size of 316 respondents. The investigation revealed that majority of respondents had medium level of knowledge about clusterbean protection technology. Further, the cultivators possessed high knowledge about clusterbean production practices viz, irrigation management, sowing time, seed rate and method of sowing and use of improved seed practices. The farmers possessed medium knowledge about plant protection measures, field preparation, soil testing, crop rotation and nutrient management practices. The study further revealed that the clusterbean growers possessed very little knowledge about application of culture, seed treatment, spacing and weed management practices in respect to clusterbean production technology with knowledge gap was 84.49, 82.03, 68.04 and 61.71 per cent, respectively.

INTRODUCTION

Rajasthan has largest area under cultivation of guar (82.1%) followed by Haryana (8.5%), Gujarat (8.3%) and Punjab (1%) which in turn producing 64, 22.12 and 2 per cent of guar seeds. The average productivity of the crop kg per hectare was 272 in Rajasthan, 881 in Haryana, 522 in Gujarat and 748 in Punjab respectively, whereas on all India basis it was 350 kg per hectare (Souvenir, 2008). Whereas the potentiality of production is more than 15 quintal/hectare. This wide gap is actual and potential yield of guar may be attributed to low knowledge of scientific production technology. The per unit production of clusterbean mainly depends upon the technical know-how and extent of its use by the clusterbean growers. Therefore, it was thought opportune to probe into the level of knowledge of the clusterbean growers about the recommended clusterbean production technology.

Guar grown well under wide range of soil conditions, guar fits well into crop rotation. It is a deep tap rooted legumes and is an excellent soil improving crop. It works well in rotation with pearl millet a major staple cereals in its growing areas.

Increased yield can be expected from crops following guar because of increased soil fertility. When harvested from seed, guar returns considerable dry organic matter to the soil surface. Largest area under cultivation of guar (82.1%) followed by Haryana (8.5%), Gujarat (8.3%) and Punjab (1%) which in turn producing 64, 22.12 and 2 per cent of guar seeds. The average productivity of the crop kg per hectare was 272 in Rajasthan, 881 in Haryana, 522 in Gujarat and 748 in Punjab respectively, whereas on all India basis it was 350 kg per hectare (Souvenir, 2008). Whereas the potentiality of production is more than 15 quintal/hectare. This wide gap is actual and partial yield of guar may be attributed to low knowledge of scientific production technology. The per unit production of clusterbean mainly depends upon the technical know-how and extent of its use by the clusterbean growers. Therefore, it was thought opportune to probe into the level of knowledge of the clusterbean growers about the recommended clusterbean production technology.

This zone is endowed with harsh adverse climatic conditions with very limited irrigated water, erratic rains, fragile eco-system etc. under these

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situations farming is a challenging task. The present study was conducted with following specific objective:-

1. To find out the knowledge level of the farmers about the recommended production technology of cluster bean.

RESEARCH METHODOLOGY

Rajasthan state comprises ten agro-climatic zones and the Zone-Ic was selected purposely for the study. As this zone is comprised of three district, out of these, Bikaner and Churu districts were selected randomly. Fifty per cent panchayat samities were selected randomly from the selected districts (total number of four panchayat samities were selected from eight panchayat samities). Ten per cent gram panchayats were selected from selected panachayat samities and hence, 19 gram panchayats were also selected randomly. One village was randomly selected from each gram panchayat. A list of all the farmers who were growing cluster bean crop for last 5 years was prepared from each selected village. From this list 40 per cent respondents were selected from the total cultivators of the selected villages on the basis of random sampling method. Thus, total sample of 316 respondents were selected for the study purpose. The knowledge for the present study refers to the amount of information and understanding of the respondents about improved farming practices. The data were collected by personal interview technique with the help of knowledge test specially prepared for this purpose during kharif 2008. The statistical tools like, frequency distribution, percentage, mean, standard deviation and rank order were use to analyze the data and interpreting accordingly.

RESULTS AND DISCUSSION

In this part of the investigation, knowledge level of the cultivators about recommended production technologies of clusterbean cultivation was measured. The knowledge score was calculated as sum of the total score obtained on correct response and converted into percentage. The respondents were categorized into three categories with the help of mean and standard deviation.

Knowledge level of the cluster bean growers

about their recommended production technologies.

The collected data on farmer's knowledge regarding recommended production technologies of cluster bean cultivation are presented in table 1.

Table 1. Distribution of farmers according their knowledge level about recommended production technologies of cluster bean cultivation

Knowledge level	Number of respondents	Percentage
Low (score below 25.03)	52	16.45
Medium (score from 25.03 to 41.53)	202	63.92
High (score above 41.53)	62	19.63
Total	316	100.00

Mean 33.12, SD 8.23

The data in table 1 reveal that 63.92 per cent respondents possessed medium knowledge level regarding recommended production technology of cluster bean. Besides that 16.45 per cent and 19.63 per cent respondents possessed low and high knowledge level, respectively. It may be concluded that majority of the respondents had medium knowledge level regarding recommended production technology of cluster bean cultivation. This might be because of continued cultivation experience and exposure to mass media. The findings of the study are in line with the findings of Shinde (2002), Geengar (2006), Goyal & Sharma(2007), Sharma and Sharma (2008) and Singh et al (2012).

Technology-wise knowledge level of the farmers about recommended production technologies of clusterbean cultivation:

There were altogether 13 technologies, identified for the analysis of knowledge level and the knowledge gap was also determined.

Table 2 indicates that farmers possessed highest knowledge about "Irrigation management" with 90.19 per cent and 9.81 per cent knowledge gap was observed. This was followed by "sowing time", "seed rate", and "method of sowing" and

"use of improved seed, they were 86.08, 79.75, 68.42 per cent knowledge and 13.92, 20.25 and 31.58 per cent knowledge gap was observed, respectively. It is also evident from table 2 that highest knowledge gap was observed in "application of culture" (84.49 per cent). This was followed by "seed treatment", "spacing" and "weed management", with 82.03, 68.04 and 61.71 per cent, respectively. Whereas "harvesting and storage measures", plant protection measures" and "field preparation" and "soil testing" had knowledge level with 63.89, 58.99 and 58.47 per cent. In case of crop rotation and nutrient management farmers had knowledge 52.95

and 52.29 per cent and knowledge gap 47.05 & 47.71 per cent was observed respectively. Thus, from the above results, it can be concluded that in all the improved clusterbean technology, the knowledge gap existed from 9.81 to 84.49 per cent. As far as knowledge level regarding "weed management" and "spacing" in clusterbean cultivation was concerned only 38.29 and 31.96 per cent farmers with rank tenth, eleventh. While only 17.97 per cent farmers were followed "seed treatment" and stood ranked twelfth further only 15.51 per cent farmers have least knowledge about "application of culture" and awarded last rank.

Table 2. Knowledge level of the farmers about recommended production technologies of cluster bean cultivation

S. No.	Recommended production technologies	Maximum Score	Mean score	Knowledge score (percentage)	Rank	Knowledge gap (Percentage)	Rank
1.	Field preparation & soil testing	5	2.92	58.47	VII	41.53	VII
2.	Use of improved seed	5	3.42	68.42	IV	31.58	X
3.	Seed rate and method of sowing	3	2.39	79.75	III	20.25	XI
4.	Sowing time	3	2.58	86.08	II	13.92	XII
5.	Spacing	2	0.64	31.96	XI	68.04	III
6.	Seed treatment	4	0.70	17.97	XII	82.03	II
7.	Application of culture	4	0.62	15.51	XIII	84.49	I
8.	Nutrient management	8	4.18	52.29	IX	47.71	V
9.	Weed management	6	2.29	38.29	X	61.71	IV
10.	Irrigation management	4	3.60	90.19	I	9.81	XIII
11.	Plant protection measures	5	2.94	58.99	VI	41.01	VIII
12.	Harvesting and storage measures	9	5.75	63.89	V	36.11	IX
13.	Crop rotation	3	1.58	52.95	VIII	47.05	VI

From the above findings of table 2 it could be concluded that majority of the farmers have substantial amount of knowledge about the irrigation management, recommended sowing time & seed rate and method of sowing, while farmers had poor knowledge about application of culture, seed treatment, spacing and weed management. It is further concluded that farmers had also good knowledge about use of improved seed, harvesting and storage measures, plant protection measures,

field preparation and soil testing with regards to recommended production technology of clusterbean cultivation. Farmers had average knowledge about crop rotation and nutrient management in clusterbean cultivation. The poor knowledge about application of culture (Rhizobium/PSB), Seed treatment and spacing in clusterbean crop may be attributed to low interface level and little participation in extension programmes. Application of culture (Rhizobium and PSB), seed

treatment, spacing and weed management as used of herbicide were not in the frame of reference of the farmers.

These findings are in confirmation of Deshmukh *et al.* (1995), Choudhary (1999), Shinde (2002), Geenger (2006), Goyal & Sharma (2007), Sanchita *et al.* (2009) and Verma *et al.* (2010).

CONCLUSION

It can be concluded that the majority of the cultivators had medium knowledge level about recommended production technology of cluster bean cultivation. It was also found that cultivators possessed technology wise high knowledge regarding irrigation management, sowing time, recommended seed rate and method of sowing. Whereas, they possessed less knowledge about application of (PSB + Rhizobium) culture, seed treatment and spacing.

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