Research Article

Knowledge level of farmers about improved redgram production technologies

■ KIRAN KUMAR JADHAV AND S.G. ASKI

SUMMARY : The research study was conducted in Bijapur district of Karnataka during the year 2013 with sample size of 140 respondents. The findings revealed that, 37.14 per cent of trained and 21.43 per cent of untrained farmers belonged to high knowledge level category, while 40.00 per cent of trained and 34.29 per cent of untrained respondents belonged to medium knowledge level category, whereas 22.86 per cent of trained and 44.28 per cent of untrained respondents were belonged to low knowledge level category. In case of variety 88.57 per cent of trained and 50.00 per cent of untrained respondents had knowledge about varieties like Maruti, TS-3R, Asha, Pragati and PT-221 these are recommended for their region. Seed rate for sole red gram cultivation 97.14 per cent of trained and 92.86 per cent of untrained respondents had correct knowledge of seeds required for sowing of sole red gram for one acre. Whereas, 95.71 per cent of trained and 92.86 per cent of untrained respondents had knowledge about recommended seed rate for mixed crop of redgram.

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BACKGROUND AND OBJECTIVES

Agriculture is by far the most important industry in India, therefore it occupies a strategic position in Indian economy. Transformation of Indian agriculture from sustainable to a modern scientific system of farming is a must. Indian agriculture has started to move from static to scientific agriculture, this is due to rapid development in agricultural technology and the development in this area is increasing day by day. This constant change in agricultural technology sometime puts extension personal and farmers in confusion because of its complicated nature of technology. The fast changing technology calls for acquisition of skills on the part of farmers and extension workers for efficient exploitation.

Fast changing agricultural technology is very important to keep in pace with the ever increasing demand for food in a developing country like India. Eventually during the last few years, Indian agriculture has undergone tremendous changes by way several technological breakthroughs.

DATC of Bijapur was started in the year 2006, earlier it was in the Aalmel of Sindagi taluka and it was started in the year 2001, then it was shifted to Bijapur. It is imparting the need based training to the farmers of Bijapur district. The important field crops of both *Kharif, Rabi* and summer season *viz.*, red gram, sunflower, groundnut, sorghum and all the crops grown in Bijapur district.

Red gram or pigeonpea (*Cajanus cajana*) is most important pulse crop of tropics and sub-tropical regions of the world. It ranks second important pulse crops next to the Bengal gram.

Training is an important input which will help farmers to practice techniques scientifically. DATC conduct trainings on different aspects to transfer technology. There were no empirical studies in this regard; hence, the present study was designed with the following specific objective. To assess the knowledge of trained and untrained farmers

with respect to improved red gram production technology (Sangram, 1997 and Sophia, 2001).

The findings of the study will be useful for making modifications in the DATC programmes and their activities. The findings of the study would also help to understand the knowledge of the trained farmer's about improved cultivation practices of red gram. Keeping these things in view, the present study was undertaken to know the knowledge level of trained farmer's from DATC Bijapur.

RESOURCES AND METHODS

The present study was conducted in Bijapur district, the study aims at measuring the knowledge of trained and untrained farmers, trained by DATC. The DATC Bijapur was selected as there was no impact studies were conducted since, its inception and particularly related to the effectiveness of the training imparted on improved red gram cultivation practices by the DATC. A list of trained farmers was obtained taluka wise and village wise from DATC Bijapur, who were imparted training on improved red gram cultivation practices. The talukas were arranged in descending order based on number of trainees and the first two talukas were selected for study based on highest number of trained farmers. The same procedure was followed for selection of villages in each taluka. From each taluka first five villages were selected. A list of trained farmers who underwent training on improved red gram cultivation practices by DATC was obtained from DATC, Bijapur. Seven trained and untrained respondents from each village were randomly selected. Seventy trained and 70 untrained farmers were selected, thus, constituting the total sample of 140 respondents for the present study.

In the light of the objectives set for the study, the variables *viz.*, knowledge on improved cultivation practices of red gram were the main items of investigation. Knowledge was operationally defined as the technical information possessed by the respondents about improved red gram cultivation practices recommended for crops and enterprises taught to them during various training programmes organised by DATC Bijapur. A teacher made test as suggested by Anastasi (1961) was employed to measure the knowledge level of the respondents about the red gram cultivation practices. A list of

knowledge items was prepared by discussing with experts from Agronomy, Agricultural Extension, KVK staff, Extension Education Unit staff and by referring to the package of practices book published by the University Agricultural Sciences, Dharwad. Each practice was framed in a question form to obtain the response from the respondents. For each question alternative answers were given. The answers to the question were quantified by giving one score to correct answer and zero score to incorrect answer. The test constituted 22 knowledge questions. The questions covered full range of cultivation practices beginning from variety selection till the crop yield . Thus, the maximum possible score was 22 and the minimum was zero. The summation of scores of the correct answers for a particular respondent indicates his knowledge level about improved cultivation practices of red gram. A pre-tested interview schedule was used to collect the data through personal interview method. The data collected were tabulated and analyzed by using suitable statistical measures (Panse and Sukhatme, 1967).

OBSERVATIONS AND ANALYSIS

The experimental findings obtained from the present study have been discussed in following heads:

Overall knowledge level of trained and untrained farmers about improved cultivation practices of red gram :

It was observed from the Table 1 that, 37.14 per cent of trained and 21.43 per cent of untrained farmers belonged to high knowledge level category, while 40.00 per cent of trained and 34.29 per cent of untrained respondents belonged to medium knowledge level category, whereas 22.86 per cent of trained and 44.28 per cent of untrained respondents were belonged to low knowledge level category.

The trained farmers had more knowledge compared to untrained, because trained farmers participated in training programme organized by DATC Bijapur about improved red gram cultivation practices and Agriculture department staff. This might be the reason that, trained farmers had more knowledge compared to untrained farmers. The above findings were in accordance with the findings of Gogai *et al.* (2000) and Binkadakatti (2008).

Table 1: Overall knowledge level of the trained and untrained farmers about improved cultivation practices of red gram   (n=140)

Category	Trained (n₁=70)		Untrained (n₂=70)	
	F	%	F	%
Low	16	22.86	31	44.28
Medium	28	40.00	24	34.29
High	26	37.14	15	21.43
Mean	15.76		8.59	
S.D.	2.41		2.14	

F = Frequency   % = Percentage

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Knowledge level of respondents about individual improved red gram cultivation practices :

Table 2 highlighted that knowledge level of the trained and untrained respondents regarding individual statements of red gram cultivation practices.

Soil type :

It could be seen from the table that, more than half of the trained (72.86%) respondents and 57.14 per cent of untrained respondents known that shallow to medium black soil is best suited for red gram cultivation practices.

Variety :

In case of variety 88.57 per cent of trained and 50.00 per cent of untrained respondents had knowledge about varieties

like Maruti, TS-3R, Asha, Pragati and PT-221 these are recommended for their region.

Seed rate :

With respect to seed rate for sole red gram cultivation 97.14 per cent of trained and 92.86 per cent of untrained respondents had correct knowledge of seeds required for sowing of sole red gram for one acre. Whereas, 95.71 per cent of trained and 92.86 per cent of untrained respondents had knowledge about recommended seed rate for mixed crop of red gram.

Seed treatment :

In case of seed treatment 50.00 per cent of trained and 21.43 per cent of untrained respondents have knowledge about

Table 2: Knowledge level of the respondents about individual improved red gram cultivation practices (n=140)

Sr. No.	Practices	Trained (n₁=70)		Untrained (n₂=70)	
		F	%	F	%
1.	Soil type				
	Shallow to medium Black soil	51	72.86	40	57.14
2.	Variety recommended (Maruti, TS-3R, PT-221, Asha and Pragati)	62	88.57	35	50.00
3.	Seed rate for sole crop (4-5 kg/acre)	68	97.14	65	92.86
4.	Seed rate for mixed red gram cultivation (2.5-3.2 kg /acre)	67	95.71	65	92.86
5.	Seed treatment	35	50.00	15	21.43
6.	Bio -fertilizer for seed treatment	15	21.43	7	10.00
7.	Dose of bio- fertilizers for seed treatment	10	14.29	2	2.86
8.	Seed treatment Chemical	18	25.71	9	12.86
9.	Time of sowing (June-July)	70	100.00	70	100.00
10.	Method of sowing (Seed drill)	68	97.14	64	91.43
11.	Spacing (90x30cm)	67	95.71	64	91.43
12.	Quantity of FYM (2.5 ton/acre)	44	62.86	21	30.00
13.	Time of application of FYM (2-3 Weeks before sowing)	56	80.00	45	64.29
14.	Fertilizer dosage (10:20:08) NPK	43	61.43	28	40.00
15.	Weedicides (Pendimethalin and Alachlore)	7	10.00	1	1.43
16.	Major pests (Pod borer and Pod fly)	68	97.14	65	92.86
17.	Chemical to control pests (Profenophs, Monocrotophas and Carbaryl)	52	74.29	40	57.14
18.	Major diseases				
	Wilt	66	94.29	55	78.57
	Sterility mosaic				
	Leaf spot				
19.	Chemical to control diseases				
	Carbendazim 50% WP	42	60.00	30	42.85
	Mancozeb 805 WP				
20.	Inter crop (pearl millet and green gram/ground nut)	68	97.14	66	94.29
21.	Nipping	42	60.00	27	38.57
22.	IPM	7	10.00	2	2.86

F = Frequency   % = Percentage

the seed treatment, while 21.43 per cent of trained and 10.00 per cent of untrained respondents had knowledge about the bio fertilizers required for seed treatment, whereas 25.71 per cent of trained and 12.86 per cent of untrained respondents have the knowledge about the chemical required for the seed treatment. They had the knowledge about dosage of bio-fertilizers, 14.29 per cent of trained farmers had the knowledge of the proper dose of bio-fertilizer whereas, 2.86 of the meagre percentage of untrained respondents had very low knowledge .

Sowing :

It interestingly showed that cent per cent of both trained and untrained respondents had knowledge about the sowing time of the crop, whereas 97.14 per cent of trained and 91.43 per cent of untrained respondents had knowledge about method of sowing.

Spacing :

With respect to spacing 95.71 per cent of trained and 91.43 per cent of untrained respondents had knowledge about recommended spacing.

FYM application :

In case FYM application 62.86 per cent of trained and 30.00 per cent of untrained respondents had knowledge about the quantity of FYM, whereas, 80.00 per cent of trained and 64.29 per cent of untrained respondents had knowledge about the time of application of FYM.

Fertilizer dosage :

Regarding fertilizer dosage 61.43 per cent of trained and 40.00 per cent of untrained respondents had the knowledge about the dosage of fertilizers.

Weedicides :

In the case of weedicides 10.00 per cent of trained and 1.43 per cent of untrained respondents had knowledge.

Pests :

With respect to pests 97.14 per cent of trained and 92.86 per cent of untrained respondents had knowledge about the major pests in the red gram, while 74.29 per cent of trained and 57.14 per cent of untrained respondents had knowledge about chemicals to control pests.

Diseases :

Regarding diseases almost cent per cent (94.29) of trained and 78.57 per cent of untrained respondents had knowledge about the major diseases in red gram, whereas, 60.00 per cent of trained and 42.85 per cent of untrained respondents were known about the chemicals to control diseases.

Intercropping :

97.14 per cent of trained and 94.29 per cent of untrained respondents had knowledge that pearl millet and green gram are the suitable inter crop in red gram.

Nipping :

With respect to nipping 60.00 per cent of trained and 38.57 per cent of untrained respondents are knew about nipping practice in red gram cultivation.

IPM :

Regarding IPM 10.00 per cent of trained and 2.86 per cent of untrained respondents had knowledge about the IPM.

The majority of trained respondents had more knowledge about soil type, variety, seed rate, quantity of FYM application, time of application of FYM and recommended fertilizer dosage compare to untrained farmers (Thippeswamy, 2007 and Vedamurthy, 2002).

From these result it is clearly observed that, training given by DATC has created a positive impact on the knowledge of trained farmers in making them highly knowledgeable about practices of red gram cultivation. The results are in conformity with the findings of Gogoi *et al.* (2000), Kharatmol (2006); Aski (2007); Devalatha (2005); Karpagam (2000) and Maraddi (2006).

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