

Extent of adoption of redgram production technologies by the trained and untrained farmers

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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, 41.43 per cent of trained and 37.14 per cent untrained respondents were belonged to medium adoption level category. Cent per cent of trained and untrained respondents had adopted practices like, sowing time and method of sowing. The other practices like summer ploughing (97.01% and 94.29%), spacing (88.57% and 85.71%) and seed rate (74.29% and 68.57%), respectively. Majority of trained and untrained farmers did not adopted the practices like seed treatment (90.00% and 100%), dosage of chemical for seed treatment (90.00% and 100%), nipping (72.86% and 95.71%), micronutrient application (55.71% and 88.57%), application of potash (50.00% and 74.29) and disease control measures (more than 70% in both categories), respectively. Very less per cent of trained (2.86%) and none of untrained respondents adopted the IPM practices.

Key Words : Adoption, Summer ploughing, Nipping, Micronutrients, IPM

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Indian agriculture has started moving from static to scientific agriculture. The important and crucial factor in bridging the gap between creation of innovation at research station and its appropriate adoption by farmers. To fill this gap extension personnel and the farmers are to be kept at least with the dynamic agriculture, hence training of extension personnel and the farmers is of outmost importance.

Training can reduce the gap between the actual performance. It does so by changing the behaviour of individuals by giving them whatever additional specific item of knowledge, skill or attitude they need to perform upto that standard. The tillers of the soil sometimes find it hard to

understand and upon these complex innovations as a result of which they lag behind adoption. To bring out efficient communication and rapid adoption of complex innovations, extension personnel have to think of some concrete device which can do this job without allowing the lapse of time. For this, agencies serving for the cause of agricultural development have found farmers training as an appropriate device. It is well known fact that farmers training were instrumental in the quick spread of high yielding varieties throughout the country since 1966.

DATC was set up in the year 2000 after merging Farmers Training and Extension Centre (FT and EC) and Indo Japanese Agriculture Extension Training Sub-Centre. Current in Karnataka state there are 23 DATCs were working at present. It includes training on important agriculture crops and horticulture crops, soil health, integrated nutrient management, integrated pest management and allied aspects of agriculture.

Red gram is one of the major pulse crop, endowed with several unique characteristics. It finds an important place in the farming system adopted by small holding peasants in a large number of developing countries. The main use is in the

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form of dhal in the Indian diet. Its green seeds are used as vegetable. It has good nutritive value, it contains considerable amount of anti nutritional polyphenolic compounds, which inhibit the digestive enzymes trypsin, chymotrypsin and amylase. Besides the human diet, the green leaves and dry seeds of red gram are used as fodder for animals.

Pulses occupy an important place in Indian agricultural economy as they are rich sources of proteins and constitute 10 to 15 per cent India's food grain diet. Major portion of Indian population belongs to vegetarian group and every person on an average is required to consume 70 to 80 g of pulses per day in order to maintain good health and physique.

Red gram is grown in an area of 4,75,396 ha with production of 2.96 lakh tonnes. It is largely grown in the northern parts of the state especially in Gulbarga, Bidar, Raichur, Gadag, Bijapur and Chitradurga districts. Red gram being a drought tolerant well suited for low rainfall areas like Gulbarga, Bidar and Bijapur districts.

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 study the extent of adoption in improved production technology of red gram by trained and untrained farmers.

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 extent of adoption of the trained farmer's about improved cultivation practices of red gram compared to untrained farmers. Keeping this thing in view, the present study was undertaken to know the extent of adoption of trained and untrained farmer's of Bijapur district.

MATERIAL AND METHODS

The present study was conducted in Bijapur district, the study aims at measuring the extent of adoption of trained and untrained farmers. The DATC Bijapur was selected as there was no impact study 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 under went 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.*, adoption on improved cultivation practices of red gram were the main items of investigation. Adoption is the mental process through which an individual passes from first hearing about an innovation to final use of the innovation (Rogers, 1962). In the present study adoption was operationally defined as the extent to which improved red gram cultivation practices were adopted by the respondents.

In the present study, adoption referred to the acceptance and practice of some or all the recommended cultivation practices of red gram. The questions covering full range of cultivation practices of the crop were framed. The actual practice followed by the respondents for the year 2012-13 was noted down. If the answer was correct, the score of two was given and for wrong answers score of zero was assigned. For some of the practices especially dosage of fertilizer and pesticides applied etc., the answer was related with the recommended dose and if the practice adopted was fairly close to the recommendation, it was viewed as partially adopted. In such cases, score of one was assigned. The adoption test in all had 17 questions and the maximum possible scores were 34 and the minimum possible score were zero. 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.

RESULTS AND DISCUSSION

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

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

The data presented in the Table 1 revealed that, 41.43 per cent of trained and 37.14 per cent of untrained respondents belonged to medium adoption level category, while 35.71 per cent of trained and 22.86 per cent of untrained respondents belonged to high adoption level category, whereas 22.86 per cent of the trained and 40.00 per cent of untrained respondents belonged to the low adoption category.

The possible reason for the above findings was that,

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

Category	Trained (n ₁ =70)		Untrained (n ₂ =70)	
	F	%	F	%
Low	16	22.86	28	40.00
Medium	29	41.43	26	37.14
High	25	35.71	16	22.86
Mean	28.76		21.39	
S.D.	2.36		2.14	
F = Frequency			% = Percentage	

these practices were easy to adopt and required less skill were adopted by more number of respondents. While those practices, which required more knowledge and skills were adopted by less number of respondents. The above results were in accordance with the finding of Kharatmol (2006).

Extent of adoption of improved individual cultivation practices of red gram crop by the respondents :

Table 2 highlighted that adoption pattern of the trained and untrained respondents regarding individual improved red gram cultivation practices.

Summer ploughing :

In case of summer ploughing 97.14 per cent of trained and 94.29 per cent of untrained respondents adopted the summer ploughing practice, whereas 2.86 per cent of trained and 5.71 per cent of untrained respondents partially adopted the summer ploughing.

Soil type :

In case of soil type 57.14 per cent of trained and 44.29 per cent of untrained respondents sown in shallow to medium black soil, whereas 42.86 per cent of trained and 55.71 per cent of untrained respondents are not sown in shallow to medium soil.

Variety sown :

About 21.43 per cent of trained and 2.86 per cent of untrained respondents adopted the recommended variety, whereas 78.57 per cent of trained and 97.14 per cent of untrained respondents were sown the other than recommended variety.

Quantity and time of FYM application :

With respect to quantity and time of FYM application 28.57 per cent of trained and 15.71 per cent of untrained respondents applied recommended quantity and timely applied FYM, while 52.86 per cent of trained and 45.71 per cent of untrained respondents partially adopted, whereas 18.57 per cent of trained and 38.58 per cent of untrained respondents not applied the FYM.

Chemicals used for seed treatment :

A least number of trained (10.00%) and none of untrained respondents adopted recommended chemicals and dosage of chemical for seed treatment.

Sowing time :

It interestingly revealed that cent per cent of both trained and untrained respondents fully adopted the practices like time of sowing and method of sowing.

Seed rate :

Regarding seed rate 74.29 per cent of trained and 68.57 per cent of untrained respondents adopted the recommended seed rate, whereas 25.71 per cent of trained and 31.43 per cent of untrained respondents partially adopted.

Spacing :

Nearly equal percentage of trained and untrained respondents (88.57% and 85.71%), respectively adopted the recommended spacing. Whereas, 11.43 per cent of trained and 14.29 per cent of untrained respondents partially adopted the practice.

Sr. No.	Practices	Trained (n ₁ =70)						Untrained (n ₂ =70)					
		FA		PA		NA		FA		PA		NA	
		F	%	F	%	F	%	F	%	F	%	F	%
1.	Summer ploughing	68	97.14	2	2.86	0	0.00	66	94.29	4	5.71	0	0.00
2.	Soil type (Shallow to medium black soil)	40	57.14	30	42.86	0	0.00	31	44.29	39	55.71	0	0.00
3.	Variety sown	15	21.43	55	78.57	0	0.00	2	2.86	68	97.14	0	0.00
4.	Quantity and time of FYM application	20	28.57	37	52.86	13	18.57	11	15.71	32	45.71	27	38.58
5.	Seed treatment	7	10.00	0	0.00	63	90.00	0	0.00	0	0.00	70	100.00
6.	Dose of chemical used	7	10.00	0	0.00	63	90.00	0	0.00	0	0.00	70	100.00
7.	Sowing time	70	100.00	0	0.00	0	0.00	70	100.00	0	0.00	0	0.00
8.	Method of sowing	70	100.00	0	0.00	0	0.00	70	100.00	0	0.00	0	0.00
9.	Seed rate/acre	52	74.29	18	25.71	0	0.00	48	68.57	22	31.43	0	0.00
10.	Spacing adopted	62	88.57	8	11.43	0	0.00	60	85.71	10	14.29	0	0.00
11.	Nipping	19	27.14	0	0.00	51	72.86	3	4.29	0	0.00	67	95.71
12.	Weeding												
	Hand weeding	22	31.43	48	68.57	0	0.00	19	27.14	51	72.86	0	0
	Weedicide	0	0.00	0	0.00	70	100	0	0.00	0	0.00	70	100

Nipping

In case of nipping 27.14 per cent of trained and 4.29 per cent of untrained respondents were practiced the nipping.

Weeding :

Less than half of the trained and untrained respondents (31.43% and 27.14%) fully adopted hand weeding, whereas 68.57 per cent of trained and 72.86 per cent of untrained respondents adopted partially hand weeding. It is interesting to note that none of trained and untrained respondents adopted recommended chemical method of weed control.

Fertilizer applied :

Regarding quantity of NPK applied, about 71.43 per cent of trained and 37.14 per cent of untrained respondents had adopted recommended nitrogen application, whereas 28.57 per cent of trained and 62.86 per cent of untrained respondents had partially adopted. In case of phosphorous 92.86 per cent of trained and 88.57 per cent of untrained respondents adopted the recommended dosage. With respect to potash very less per cent of trained (18.57%) and (10.00%) of untrained respondents adopted the recommended dosage, while 31.43 per cent of trained and 15.71 per cent of untrained respondents partially adopted. About 50.00 per cent of trained and 74.29 per cent of untrained respondents not applied.

Micronutrient application :

With respect to micronutrient 32.86 per cent of trained and 7.14 per cent of untrained respondents are applied the recommended micronutrients.

Pest control :

In case of pest control 64.29 per cent of trained and 51.43 per cent of untrained respondents adopted the recommended chemicals, whereas (35.71% and 48.57%) trained and untrained respondents partially adopted respectively. With respect to dosage 55.71 per cent of trained and 34.28 per cent of untrained respondents adopted recommended dosage, while 44.29 per cent of trained and 65.72 per cent of untrained respondents are partially adopted.

Diseases control :

Very less number of trained and untrained (10.00% and 7.14%) respondents adopted the recommended chemicals, whereas 17.14 per cent of trained and 10.00 per cent of untrained respondents partially adopted, in case of dosage, only 8.57 per cent of trained and 4.29 per cent of untrained respondents adopted recommended dosage.

IPM :

Very less per cent of trained (2.86%) and none of untrained

respondents adopted the IPM practices.

Cent per cent of trained and untrained respondents had adopted practices like, sowing time and method of sowing. The other practices like summer ploughing (97.01% and 94.29%), spacing (88.57% and 85.71%) and seed rate (74.29% and 68.57%), respectively.

The possible reason for higher adoption of these practices might be simplicity and necessity of the practices, which can be practiced by making use of their own knowledge and resources without reliance on any external agency. Further, farmers as a result of their farming experience have themselves found the usefulness of these practices. This might be another factor for adoption of these practices by large number of respondents in both the categories of farmers.

The majority of the trained and untrained respondents partially adopted the practices like, soil type, variety sown, quantity and time of FYM application, chemicals used for seed treatment, nipping, hand weeding, micronutrient application, pest and disease control measures. The possible reasons for this trend might be that, the trained respondents might have exposed properly and convinced about the profitability and practicability of these practices.

Similarly majority of trained and untrained farmers did not adopt the practices like seed treatment (90.00% and 100%), dosage of chemical for seed treatment (90.00% and 100%), nipping (72.86% and 95.71%), micronutrient application (55.71% and 88.57%), application of potash (50.00% and 74.29) and disease control measures (more than 70% in both categories), respectively.

Probable reason for non - adoption of these practices might be complexity, non availability of chemicals in time and lack of proper knowledge regarding use of chemicals. So it is very essential to educate farmers regarding these practices in order to motivate them to adopt, as these practices are very important from the yield point of view. The above results were in accordance with the findings of Manjunath (2011).

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