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Constraints in adoption of improved technology of mustard cultivation

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SUMMARY : A study was conducted to determine the constraints being faced by farmers in adoption of improved technology of mustard cultivation. The major bottlenecks in adoption of new technology were scarcity of money followed by unavailability of inputs in near by markets, high cost of inputs, their unavailability in time and lack of moisture in the soil among both the trained and untrained farmers.The lack of knowledge and skill were prominent barricades in adoption in case of untrained farmers.Therefore, it is recommended that necessary steps must be taken by Government to make availability of inputs in all the areas that too well in time as well as make some subsidy arrangements to enable the farmers to purchase the inputs.

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BACKGROUND AND OBJECTIVES

Farmer is the most important part of Indian agriculture.The scientific research in agriculture is moving on a fast pace and after every short span, new practices, new seeds, new equipments and new perils to crop are coming to light. Therefore,it is essential that farmers are kept abreast with improved and latest technologies in field of agriculture.This should be brought about on mass scale by educating maximum number of farmers so that they can reap the benefits of improved practices (Bheemappa *et al.*, 2002).

This challenging task can be accomplished only through suitable training programmes and laying out of frontline demonstrations so that their skills can be enhanced for rational usage of local resources and adoption of improved practices for boosting up the agricultural production.It is well known fact that training of the farmers is an essential step in modernizing agriculture. However, even after imparting training to the farmers, one finds several constraints which check the adoption of improved practices (Sohi and Katoch, 1999). The present study aims at determining the constraints being faced by the farmers in adoption of improved technology of mustard cultivation.

RESOURCES AND METHODS

The present study was conducted in villages namely Shampa, Tringla, Kanouta, Assar and kundi in Ramban district of J&K state.The frontline demonstrations were laid by KVK Doda in these villages and trainings were conducted on mustard cultivation. The respondents selected included trained and untrained farmers.Trained farmers were those who had gone training regarding improved practices during two years 2008 and 2009.The second group of farmers was of those who were not covered under training,that was considered controlled group of respondents.The size of sample of trained respondents was 60 which were selected randomly from all the villages.The same sized sample of untrained farmers was also selected randomly from all the villages.To measure the constraints responsible for hindering the adoption of improved technology of mustard cultivation, suitable schedule was

developed by way of enlisting all the possible constraints which may come in the way of adoption by the farmers under different areas. Eight broad areas of constraints in mustard cultivation were included for the purpose.Each of the constraint was further divided into sub areas.To measure the intensity of constraints in the adoption of improved technology,four point continuum scale was used.These four points were very much,much, very less and not at all, with scores as 3,2,1 and 0, respectively.

Mean per cent scores (MPS) were obtained by multiplying total obtained score of the respondents by hundred and dividing by maximum obtainable score under each practice.

$$\text{M.P.S} = \frac{\text{Total obtained score of respondent}}{\text{Maximum obtainable score}} \text{ x100}$$

OBSERVATIONS AND ANALYSIS

The results of the present study as well as relevant discussion have been summarized under following heads:

Constraints related to soil treatment:

Through the close examination of Table 1, it is a clear that among both the categories of trained and untrained farmers the scarcity of money was major constraint with their MPS as 78.44 and 82.33, respectively. The IInd major constraint among untrained farmers was no belief in soil treatment. It was an important factor for them and they ranked it II with MPS 82.33 whereas IInd major constraint among trained farmers was high cost of chemicals. The trained farmers gave rank IV to the non-belief in soil treatment as they have become aware of the fact that soil treatment is necessary for control of so many soil borne diseases. Futher, it was found that serial no. I constraint was influencing adoption level in both categories of farmers equally with the rank order of III and IV, respectively.

Constraints related to improved seeds:

In categories of both trained and untrained farmers, the unavailability of improved seeds in near by markets, scarcity of money, high cost of improved seeds and more requirement of fertilizers were main constraints and ranked as I, II, III, respectively.

Constraints related to seed treatment:

The 'C' part of table revealed that unavailability of equipments, high cost of chemicals in seed treatment were equally important constraints in adoption of improved technology as they ranked I and II in both categories of farmers. However, lack of skill in seed treatment is least ranking constraint in trained farmers whereas unavailability of chemicals in nearby area ranked lowest in untrained farmers.

Constraints related to seed rate and time of sowing:

The 'D ' part of table expressed that lack of moisture in the soil was the main constraint in adoption among both categories of trained and untrained farmers. The lack of knowledge about optimum seed rate is the second main constraint in adoption among untrained farmers as it ranked II whereas it ranked lowest in case of trained farmers.

Constraints related to use of fertilisers:

As evident from 'E' part of table the unavailability of fertilizers in time and the lack of soil moisture were ranked I and II in trained and untrained farmers with regard to constraints in use of fertilizers.High cost of fertilizers and lack of knowledge about optimum dose ranked III and IV among trained farmers whereas it was *vice-versa* among the untrained farmers.

Constraints related to chemical weed control:

First and foremost constraint in adoption of chemical weed control was high cost of fertilizers in case of trained farmers whereas among untrained farmers lack of knowledge about chemical weed control ranked I with MPS 86.66. The constraints like easiness of physical weed control, difficulty in chemical weed control and adverse effect on main crops ranked III, IV and V in both categories of farmers.

Constraints related to plant protection:

It is clear from "G"part of table that high cost of chemicals and unavailability of chemicals in nearby markets were number I and II constraints in adoption of improved technology among both trained and untrained farmers.Lack of knowledge and skill was the constraint ranked III among untrained farmers whereas harmfulness to animals and human beings was ranked III by trained farmers. Unavailability of implements was given rank IV by both categories of farmers.The last constraint by trained farmers was lack of knowledge whereas untrained farmers ranked harmfulness to animals and human beings as the lowest.

Constraints due to natural calamities:

As evident from "H" part of table the occurrence of snow, frost, insect-pest infestation and more rains during maturity were ranked I, II and III by trained and untrained farmers.

Table 1 : Constraints perceived by trained and untrained farmers

Constraints		Trained (mean per cent score)	Rank	Untrained (mean per cent score)	Rank
Constraints related to soil treatment					
1.	Lack of technical know –how	46.33	III	66.33	IV
2.	High cost of chemical	69.33	II	71.44	III
3.	Scarcity of money	78.44	I	82.43	I
4.	No belief in soil treatment	43.33	IV	82.33	II
Constraints in use of improved seeds					
1.	Unavailability of improved seeds in near by area	82.33	I	78.44	I
2.	High cost of improved seeds	71.33	III	76.22	III
3.	Scarcity of money	75.22	II	78.33	II
4.	More requirement of fertilizers	41.44	IV	58.66	IV
Constraints related to seed treatment					
1.	Lack of skill in seed treatment	32.11	IV	68.66	III
2.	Unavailability of equipments	77.77	I	80.22	I
3.	Unavailability of chemicals in near by area	54.66	III	66.66	IV
4.	High cost of chemicals	71.66	II	76.33	II
Constraints related to recommended seed rate and time of sowing					
1.	Lack of knowledge about optimum seed rate	18.88	II	46.44	II
2.	Lack of moisture in the soil	76.44	I	88.33	I
3.	Lack of belief in recommendations	12.44	III	36.33	III
Constraints related to use of fertilizers					
1.	Lack of knowledge about optimum dose	36.33	IV	66.33	III
2.	High cost of fertilizers	56.66	III	64.33	IV
3.	Unavailability of fertilizers in time	73.44	I	76.44	I
4.	Adverse effect of fertilizers on soil	18.11	V	36.22	V
5.	Lack of soil moisture	66.77	II	76.33	II
Constraints related to chemical weed control					
1.	Lack of knowledge about chemical weed control	54.33	II	86.66	I
2.	High cost of chemicals	64.22	I	72.11	II
3.	Control through chemicals is difficult	26.44	IV	56.31	IV
4.	Physical weed control is easier	28.33	III	66.33	III
5.	Adverse effect on main crops	22.22	V	44.77	V
Constraints related to plant protection					
1.	Lack of knowledge and skill	44.33	V	78.11	III
2.	Harmful to animals and human beings	74.33	III	70.22	V
3.	Unavailability of chemicals in nearby markets	76.33	II	82.11	II
4.	High cost of chemicals	79.33	I	84.44	I
5.	Unavailability of implements	72.66	IV	74.22	IV
Constraints due to natural calamities					
1.	Occurrence of snow and frost	84.33	I	86.44	I
2.	Insect –Pest infestation	74.22	II	78.33	II
3.	Occurrence of rains during maturity	72.33	III	76.44	III

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