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Knowledge level of farmers regarding agronomic practices of direct seeded rice in Punjab

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ABSTRACT

A survey was undertaken to study the knowledge of farmers regarding agronomic practices of direct seeded rice (DSR) in Punjab covering five districts viz Moga, Mukatsar Sahib, Faridkot, Sangrur and Patiala. From each district one village and from each village 15 farmers were selected by using random sampling technique. Data were collected by using personal interview method. A knowledge test was developed with items related to different agronomic practices. It was measured with the scores obtained by the DSR growers in the test. One score was given to correct answer and zero score was assigned to incorrect answer. Majority of the farmers (59%) had medium level of knowledge. More awareness programmes should be organized to increase knowledge level of farmers regarding direct seeded rice which will help to make a change in present traditional rice cultivation practices.

Keywords: Knowledge; agronomic practices; direct seeded rice

INTRODUCTION

Rice, *Oryza sativa* L is a leading cereal of the world (Ashraf et al 2006) and more than half of the human race depends on rice for its daily sustenance (Chauhan and Johnson 2011). Direct seeding of rice refers to the process of establishing the crop from seeds sown in the field rather than by transplanting seedlings from the nursery (Farooq et al 2011). Direct seeding avoids three basic operations namely puddling, transplanting and maintaining standing water. Direct seeding of rice has the potential to provide several benefits to farmers and the environment over conventional practices of puddling and transplanting. Direct seeding helps to reduce water consumption as it eliminates raising of seedlings in a nursery, puddling, transplanting under puddled soil and maintaining 4-5 inches of water at the base of the transplanted seedlings. Direct seeding on the other hand avoids nursery raising, seedling uprooting, puddling and transplanting and thus reduces the labour requirement (http://www.indiawaterportal.org/post/6754). In addition to labour savings the demand for labour is spread out over a longer period in direct seeded rice (DSR) than in transplanted rice (Kumar

and Ladha 2011). Conventional tillage requires intensive labour in the critical operation of transplanting which often results in a shortage of labour requirement. Hence DSR helps in making full use of family labour and having less dependence on hired labour.

An attempt has been made in this paper to assess the knowledge level of the farmers about scientific rice cultivation practices so that necessary steps could be taken to enhance direct seeded rice productivity in Punjab.

MATERIAL and METHODS

Five districts of Punjab viz Moga, Mukatsar Sahib, Faridkot, Sangrur and Patiala were purposively selected based on their crop productivity. From each district one village and from each village 15 farmers were selected by using random sampling technique thereby constituting a sample of 75 farmers. Data were collected by using personal interview method during 2014. The head of the family of the selected households constituted the respondent. A knowledge test was developed with items related to different agronomic practices such as soil type, suitable variety, weed control, laser levelling and irrigation etc. Knowledge test consisted of items such as multiple choice questions, one word answers and fill in the blanks. It was measured with the scores obtained by the direct seeded rice (DSR) growers in the test. One score was given to each correct answer to the DSR growers by the way of recall of items in knowledge test constructed for study. Zero score was assigned to incorrect answer.

RESULTS and DISCUSSION

Knowledge about agronomic practices of direct seeded rice

The data given in Table 1 reveal that maximum number of farmers (97.33%) had complete knowledge of irrigation interval followed by critical period for irrigation and common weeds of DSR (93.33%), diseases of rice (90.67%), approved varieties of rice (89.33%) and seed rate of rice (88.00%). The no knowledge of the respondents was maximum in case of preparation of field (46.67%) followed by cut-off date for last irrigation (45.33%), chemical for seed treatment (40.00%) and row to row distance (28.00%).

Knowledge of respondents about use of fertilizers

Table 2 depicts that 29.33 per cent of the respondents had complete and 69.33 per cent had incomplete knowledge of the recommended time of application of fertilizers. Whereas 22.67 per cent of the respondents had complete and 57.33 per cent had incomplete knowledge regarding the recommended doses of fertilizers.

Weeds are the major problem in DSR and to control weeds herbicides are

Table 1. Distribution of respondents according to their knowledge about agronomic practices of direct seeded rice (n= 75)

Agronomic practice	Frequency		
	Complete knowledge	Partial knowledge	No knowledge
Approved varieties of rice	67 (89.33)	8 (10.67)	-
Sowing time for DSR	58 (77.33)	-	17 (22.67)
Chemical for seed treatment	17 (22.67)	28 (37.33)	30 (40.00)
Irrigation interval	73 (97.33)	2 (2.67)	-
Critical period for irrigation	70 (93.33)	-	5 (6.67)
Seed rate of DSR	66 (88.00)	-	9 (12.00)
Depth of sowing of seed	63 (84.00)	-	12 (16.00)
Preparation of field	40 (53.33)	-	35 (46.67)
Row to row spacing	54 (72.00)	-	21 (28.00)
Cut-off date for last irrigation	41 (54.67)	-	34 (45.33)
Harmful insects of rice	62 (82.67)	-	13 (17.33)
Diseases of rice	68 (90.67)	-	7 (9.33)
Common weeds of DSR	70(93.33)	-	5(6.67)

Per cent values in parentheses

Table 2. Distribution of respondents according to their knowledge about the use of fertilizers and herbicides in direct seeded rice (n= 75)

Use of fertilizers and herbicides	Frequency		
	Complete knowledge	Partial knowledge	No knowledge
Recommended dose of fertilizers	17 (22.67)	43 (57.33)	15 (20.00)
Recommended time of application of fertilizers	22 (29.33)	52 (69.33)	1 (1.33)
Herbicides used in DSR	60 (80.00)	14 (18.67)	1 (1.33)
Nozzle used to spray in DSR	30 (40.00)	8 (10.67)	37 (49.33)

Per cent values in parentheses

Table 3. Distribution of respondents according to over all knowledge level of direct seeded rice growers (n= 75)

Category	Range (score)	Frequency	Percentage
Low	15-20	16	21.33
Medium	20-25	44	58.67
High	25-30	15	20.00

used. From the data it is concluded that 80 per cent of respondents had complete and 18.67 per cent had incomplete knowledge regarding herbicides used in DSR. Interestingly only 40 per cent of the respondents had complete and 10.67 per cent had incomplete knowledge regarding nozzle used to spray herbicides and 49.33 had no knowledge of it.

Over all knowledge level of DSR growers

The knowledge test described in research methodology had 21 items. A differential weightage was given to different test items. On the basis of observed scores three categories were devised by using range method. Majority of the respondents (58.67%) had medium, 21.33 per cent had low whereas 20 per cent of the respondents had high knowledge level (Table 3).

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