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Knowledge level of farmers on rice drum seeder technology in Khammam district of Telangana state

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Abstract

Rice is the most important staple food crop for more than half of the world's population. The possibility of expanding the area under rice in the near future is limited. Therefore, the extra rice production needed has to come from a productivity gain. The present study was conceived to know the status of Rice drum seeder technology in terms of knowledge in the selected villages and mandals of Khammam district. Ex-post facto research design was followed for the study. Khammam district of Telangana state was purposively selected as it has the highest cultivated area under rice drum seeder cultivation. From this district 3 mandals were selected, from each mandal 4 villages were selected randomly and from each village ten rice drum seeder farmers were selected randomly to make a sample of 120 respondents. The results on level of knowledge on rice drum seeder technology indicated that majority of respondents (54.17%) falling under medium knowledge category.

Keywords: rice drum seeder technology, knowledge, ex-post facto research design

Introduction

Rice is one of the most important crops of India and occupies 23.3 percent of gross cropped area of the country. Rice contributes 43 percent of total food grain production and 46 percent of total cereal production. India has largest area under rice crop and is about 45 million hectares. To meet the demands of the growing population rate, rice production should rise to 120 million tonnes by 2020. Telangana is endowed with variety of soil conditions ranging from less fertile lands to highly productive fertile alluvial soils. Rice is more suited to high rainfall regions because it requires abundant moisture either through rainfall or irrigation to keep the soil under saturation throughout its life period. Water is the most critical input in order to assure the crop production.

The total rice growing area in Telangana state is about 19.28 lakh hectares. The area under cultivation of paddy in Kharif is 11.68 lakh ha and in Rabi it is 7.60 lakh ha. Productivity of the crop is about 3.54 tonnes/ ha in both the seasons during 2015-16. Paddy is the staple food crop of Telangana state, where in more than 75 percent of paddy production is recorded from Nalagonda, Karimnagar, Nizamabad, Warangal and Khammam districts. To achieve target rice production for ever growing population with available land and water resources, direct seeding with drum seeder is needed.

Although the drum seeding method has advantages and disadvantages, its rapid spread in various parts of Asia indicates that the net economic benefit has been positive. Despite a lower average yield, drum seeded rice has a higher net profit, with the savings in labour cost. This has occurred especially in areas where labour cost has risen rapidly in relation to the rice price. In addition, total farm income has increased because drum seeding facilitated double cropping of rice in areas where only one crop of transplanted rice is grown.

Material and Methods

An *Ex-post-facto* research design was adopted for the study, as the variables chosen for the study had already occurred. Khammam district of Telangana state was purposively selected as it is one of the leading rice producing districts of Telangana state and has highest cultivated area under drum seeder technology. Three mandals were selected purposively based on the area under rice drum seeder technology. From all the selected mandals, a list of villages practicing rice drum seeder technology was obtained from Department of Agriculture, Khammam district (Telangana) and 4 villages from each mandal were selected at random. Thus a total of 12 villages were selected for the study. From each village, 10 farmers engaged in Rice drum seeder technology were selected randomly, thus making a total sample of 120 respondents for the study. Data is collected with well-structured schedule and obtained data was coded, classified and tabulated.

Finally statistical tools such as class interval used for classification of respondents as given below.

S. No.	Category	Class Interval
1	Low	28-30
2	Medium	31-33
3	High	34-36

Results and Discussion

From table 1 given below it was observed that, majority of the respondents (54.17%) had medium level of knowledge followed by low (26.67%) and high (19.16%). The reasons for this kind of result might be due to low educational status, medium extension contact, medium source of information

utilization and medium mass media exposure. Due to low educational status majority of them were unable to read magazines and information bulletin related to rice drum seeder technology. The results were in conformation with Banumathy (2003), Raja (2004) and Thiyagarajan (2011) [11].

Table 1: Knowledge level of farmer on Rice Drum Seeder Technology

S. No.	Level of knowledge	Frequency	Percentage
1	Low	32	26.67
2	Medium	65	54.17
3	High	23	19.16
	Total	120	100

Table 2: Item analysis of knowledge of farmers on rice drums seeder technology

S. No.	Statement	Correct		Incorrect	
		N	%	N	%
1	The recommended seed rate in paddy	105	87.5	15	12.5
2	The chemical used for seed treatment during rice drum seed technology	95	79.17	25	20.83
3	The recommended spacing in rice drum seeder technique?	75	62.5	45	37.50
4	Diameter of the seed metering hole providing along the circumference of drum is	78	65.00	42	35.00
5	Time for first cono weeding	86	71.67	34	28.33
6	Cono weeder is run in which direction	98	81.67	22	18.33
7	The chemical used to control broad leaved weeds	112	93.33	8	6.7
8	Number of weeding's recommended for paddy crop sown with drum seeder method	108	90.00	12	10.00
9	Capacity of the drum seeder per day	95	79.17	25	20.83
10	Weeding is not necessary to be done with cono weeder	89	74.17	31	25.83
11	Cono weeder usage is advantageous for soil aeration	110	91.67	10	8.33
12	Rice drum seeder is suited for all types of soils	108	90.00	12	10.00
13	Duration of crop period is reduced in Rice drum seeder method of sowing	105	87.50	15	12.50
14	Is crop rotation required for rice crop?	98	81.67	22	18.33
15	The weeds incorporated into soil by cono weeder adds nutrients to the soil	115	95.83	5	4.17
16	Application of finely powdered FYM/ Vermicompost is recommended before	96	80.00	24	20.00
17	The price of rice drum seeder	92	76.67	28	23.33
18	Number of plants/hill.....in rice drum seed technology	96	80.00	24	20.00
19	Number of seed metering holes along the circumference of drum.	78	65.00	42	35.00
20	Labour required for sowing per hectare per day	95	79.17	25	20.87

From the table 2 it was observed that 95.83 per cent of the respondents had knowledge on incorporation of weeds in to soil by cono weeder adds nutrients to the soil. 93.33 per cent of the respondents had knowledge on item that chemical used to control broad leaved weeds. Majority of the respondents know 2, 4 D was used to control broad leaved weeds. The Department of Agriculture and Private agencies conducting more number of trainings and demonstrations on chemical method of weed control. Hence they had knowledge on this item.

About 91.67 per cent of the respondents had knowledge on item that cono weeder usage is advantageous for soil aeration. Weeding with cono weeder pulverizes the soil that results in good aeration. Even though majority of the respondents adopting chemical method of weed control, they had knowledge on this item. 90.00 per cent of the respondents had knowledge on item that number of weeding's recommended for paddy crop sown with rice drum seeder and rice drum seeder is suitable for all types of soils. Farmers in study area were practicing rice drum seeder technology in all types of soils. Hence respondents had knowledge on this item.

About 87.50 per cent of respondents had knowledge on item that recommended seed rate in drum seeder cultivation and duration of crop is reduced in rice drum seeder method of sowing. 10-15 kg/ac. seed rate is enough for drum seeding and in drum seeding method crop duration is reduced to 7-10 days compared to transplanting method. Respondents got this

knowledge through trainings, demonstrations, lecture, radio talks and TV programs on rice drum seeder technology. 81.67 per cent of the respondents had knowledge on item that direction of cono weeder running and crop rotation for rice crop. Department of Agriculture and Extension agents providing knowledge through trainings and demonstrations. 80.00 per cent of the respondents had knowledge on application of finely powdered FYM/Vermicompost and number of plants per hill.

About 79.17 per cent of respondents had knowledge on chemicals used for weed control, capacity of drum seeder per day and labour required for per hectare per day. Farmers knew this information through information sources, radio talks, TV programs, trainings and demonstrations. 76.67 per cent of respondents had knowledge on item that price of the rice drum seeder technology. Actual price of rice drum seeder is Rs.5000 but government providing drum seeder at RS.2500 on subsidy to farmers. Hence they had knowledge on this item.74.17 per cent of respondents had knowledge on item that weeding is not necessary to be done with cono weeder. About 71.67 per cent respondents had knowledge regarding time of cono weeding. 65.00 per cent respondents had knowledge on diameter of the seed metering hole providing along the circumference of drum and number of seed metering holes along the circumference of drum. Due to good practical experience in rice drum seeder cultivation they had knowledge on above items. 62.50 per cent of the respondents

had knowledge on recommended spacing in rice drum seeder technique. The recommended spacing in drum seeding is 20x8-10 cm but majority of respondents following 20x5 cm spacing by adjusting seed metering holes along the circumference of drum.

Summary and Conclusion

The results on level of knowledge on rice drum seeder technology indicated that majority of respondents (54.17%) fell under medium knowledge category. In the item analysis, it was revealed that majority of them were found to give correct responses for statement of incorporation of weed into soil by cono weeder adds nutrients to soil. While majority of them give incorrect response for the item of recommended spacing in rice drum seeder technology.

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