



KNOWLEDGE LEVEL OF PADDY GROWERS ABOUT RECOMMENDED TECHNOLOGIES IN PADDY CULTIVATION

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Abstract

Paddy is one of the most important cereals that holds the key towards food security. It feeds more than half of the world's population. It has been cultivated in Asia for several thousand years. About fifty percent of the crop is grown and consumed in Asia. India is the home to paddy and the largest paddy growing and second largest paddy producing and consuming country. Paddy is commonly grown in a traditional way by majority of the farmers in Manipur. So, they were not much aware of the paddy farming technologies. Keeping this point in mind, this research study was undertaken to analyse the knowledge level of paddy growers about recommended technologies in paddy cultivation. The study was conducted in Kakching block of Thoubal District in Manipur State with a sample size of 120 paddy growers were selected through proportionate random sampling from six villages in the Kakching block. This study revealed that more than fifty percent of the paddy growers had medium level knowledge, whereas more than one-fourth of them had low level of knowledge and less than one-fifth of them had high levels of knowledge about the recommended paddy technologies, respectively.

Key words: knowledge level, Recommended paddy technologies and Paddy growers.

Introduction

Paddy is the most widely grown cereal crop in the world and is staple food for more than Sixty percent of world's population. China is the largest producer of rice contributing for over Thirty percent of the world's rice output. India occupies the second position accounting for about Twenty two percent followed by Indonesia with Eight percent, Bangladesh with Seven percent and Vietnam with Six percent of total paddy production in the world (Kasula Sekhara and Devarajulu, 2019). In India, paddy is cultivated in an area of 42.90 million hectares producing 112.76 million tons with a productivity of 3.94 t / ha (World Agricultural Production, 2019).

Manipur State of India characterized by crested hills and widely spaced valleys, has about 10 percent area under cultivation. Rice is the staple food in Manipur. The State has 0.236 million ha under paddy cultivation with a productivity of 2.57 t / ha.

Agriculture is the most important source of livelihood for the people of Thoubal District in Manipur. More than 70 percent of the total population of the district directly

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or indirectly depends on agricultural activities. The economic status and mode of income of majority of the people in the area depends on farming. The valley is fertile and the topography of the district provides good opportunity for irrigation, natural as well as artificial. The economy of Thoubal is agrarian with paddy as the major crop.

Paddy accounts for above 90 percent of the total land area under cultivation in Thoubal District. Although the average land holding is one of the lowest in India, yield per acre is comparatively not very high. With the increasing use of fertilizers and the modern methods of cultivation, there is a great scope of increasing the overall production. Hence, a study was undertaken to assess the knowledge level of paddy growers on recommended technologies in paddy cultivation.

Materials and Methods

The study was conducted in Kakching block of Thoubal District in Manipur State. A sample of 120 paddy farmers was selected through proportionate random sampling from six villages in the Kakching block. Data collection was made from the selected respondents with the help of a well-structured and pre-tested schedule

Table 1: Distribution of respondents according to their overall knowledge level on recommended paddy technologies.

S. No	Category	Number of respondents	Percent
1	Low	32	26.67
2	Medium	65	54.17
3	High	23	19.16
	Total	120	100.00

through personal interview. Percentage analysis, mean and cumulative frequency analysis were used for analysing and interpreting the data and results are tabulated.

Results and Discussion

Knowledge level of farmers refers to the respondent's exposure to the existence of paddy innovations and gaining some understanding of how it functions. This level provides accurate recommendations to the farmers adopting the technologies in the paddy cultivation. Hence, knowledge level of respondents was studied and results are presented in this section.

- Overall knowledge level: Knowledge is the pre-requisite for adoption of paddy cultivation practices. To assess the overall knowledge level possessed by respondents in paddy cultivation technology, necessary data were collected and are furnished in table 1.

The results in the table 1 indicate that majority of the respondents (54.17 percent) had medium level of knowledge about the recommended paddy technologies followed by 26.67 percent and 19.16 percent of the respondents with low and high levels of knowledge respectively. As majority of the respondents possessed medium level of innovativeness, mass media exposure and information seeking behavior, they might have gained only medium level of knowledge on paddy cultivation. This is in agreement with the findings pertaining to the knowledge level of farmers in general as reported by Santhi, (2006).

Table 2: Distribution of respondents according to their practice wise knowledge on recommended paddy technologies.

S. No.	Technologies	Number of Respondents	Percent
I	Season		
1.	Recommended season	120	100.00
II	Variety		
1.	Recommended varieties of paddy	110	91.67
III	Seed rate		
1.	Recommended seed rate	86	71.67
IV	Seed treatment		
1.	Recommended fungicides	72	60.00
2.	Recommended quantity of fungicides	59	49.16
3.	Bio-fertilizers recommended for seed treatment	67	55.83
4.	Quantity of bio-fertilizer/ha. for seed treatment	53	44.16
	Mean percentage		52.29

Table 2 Continue...

- Practice wise knowledge level of the respondents on recommended paddy technologies: In order to have an in-depth idea about knowledge level of the respondents, a practice-wise knowledge level of the respondents was worked out. The practice-wise knowledge level of the respondents on selected technologies on paddy cultivation and the results are given in table 2.

Season

From the results in table 2 it could be seen that the knowledge level for season was found to be cent percent (100.00 percent). It could be inferred that all the paddy farmers had knowledge on the recommended season for cultivation of paddy crop. This finding is in line with the findings of Santhi, (2006).

Varieties

The knowledge level for the recommended varieties is found to be high (91.67 percent). This signifies that above ninety percent of the respondents had the knowledge of the recommended varieties for paddy cultivation. This finding is in line with the findings of Renjini, (2000).

Seed rate

It could be observed from table 2 that the knowledge level for seed rate is high (71.67 percent). It could be concluded that more than seventy percent of the farmers had knowledge on the recommended seed rate required for one hectare. This finding is in line with the findings of Selvakumar, (2011).

Seed treatment

The mean knowledge level of seed treatment was found to be (52.29 percent). The knowledge level for the recommended fungicides (60.00 percent) and Bio-fertilizers recommended for seed treatment (55.83 percent) was found to be more than fifty percent. The

Continue Table 2

V	Plant population		
1.	Size of the nursery area required per hectare	95	79.17
2.	Number of hills per metric square	64	53.33
3.	Recommended seedlings planted per hill	68	56.67
	Mean percentage		63.06
VI	Spacing		
1.	Recommended spacing	84	70.00
VII	Fertilizer management for nursery		
1.	Recommended quantity of FYM / ha	63	52.50
2.	Recommended quantity of N,P,K for nursery area	52	43.33
	Mean percentage		47.92
VIII	Main field preparation		
1.	Method of land preparation	99	82.50
2.	Recommended number of ploughing/ha	96	80.00
3.	Recommended quantity of FYM/ ha	62	51.67
	Mean percentage		71.39
IX	Irrigation management		
1.	Recommended maintenance of water level from transplantation to tillering stage	66	55.00
2.	Recommended time of irrigation	78	65.00
3.	Recommended water level after panicle initiation till maturity	43	35.83
	Mean percentage		51.94
X	Fertilizer management for main field		
1.	Stages of application of fertilizers	62	51.67
2.	Recommended doses of N, P,K / ha for basal application	59	49.16
3.	Recommended doses of N,K/ha for top dressing	47	39.16
	Mean percentage		46.66
XI	Weed management		
1.	Recommended time for first weeding	69	57.50
2.	Recommended time for second weeding	64	53.33
3.	Recommended herbicides	56	46.67
4.	Quantity of recommended herbicides	53	44.16
	Mean percentage		50.42
XII	Pest management		
1.	Recommended pesticide for the management of BPH	37	30.83
2.	Recommended quantity of pesticide for controlling of BPH	34	28.33
3.	Recommended pesticide for the management of stem borer	59	49.16
4.	Recommended quantity of pesticide for controlling of stem borer	45	37.50
5.	Recommended number of light traps per ha	72	60.00
6.	Recommended pesticide for the management of gall midge	59	49.16
	Mean percentage		42.50
XIII	Disease management		
1.	Recommended fungicide for controlling of Leaf Blast	57	47.50
2.	Recommended quantity of fungicide for controlling of Leaf Blast	55	45.83
	Mean percentage		46.66
XIV	Harvesting		
1.	Recommended time of harvesting	115	95.83

recommended quantity of fungicide has the lowest (49.16 percent) knowledge level. This finding is in line with the findings of Manikandan, (2010).

Plant population

The mean knowledge level for plant population was

found to be (63.06 percent). It could be inferred that above sixty percent of the respondents had knowledge on the recommended size of the nursery area (79.16 percent) followed by number of hills per metric square (53.33 percent) and 56.67 percent had knowledge on

recommended seedlings planted per hill. This finding is in line with the findings of Manikandan, (2010).

Spacing

From the table 2 it could be concluded that majority of the respondents had knowledge on the recommended spacing (70.00 percent) for the cultivation of paddy by paddy growers. This finding is in line with the findings of Selvakumar, (2011).

Fertilizer management for nursery

The mean knowledge level of fertilizer management for nursery was found to be 47.92 percent. More than fifty percent of the respondents had knowledge on recommended quantity of FYM/ha followed by recommended quantity of N, P, K for nursery area (43.33 percent). This finding is in line with the findings of Vijayalan, (2001).

Main field preparation

The mean knowledge level of main field preparation was found to be high (71.39 percent). The knowledge level on method of land preparation was found to be 82.50 percent followed by recommended number of ploughing per ha (80.00 percent) and recommended quantity of FYM/ ha (51.67 percent) in paddy cultivation by paddy farmers. This finding is in line with the findings of Selvakumar, (2011).

Irrigation management

The mean knowledge level for irrigation management was found to be (51.94 percent). Majority of the respondents had knowledge on irrigation practices *viz.*, recommended time of irrigation (65.00 percent) and recommended maintenance of water level from transplantation to tillering stage (55.00 percent) and one-third of the respondents had knowledge on recommended water level after panicle initiation till maturity (35.83 percent). This finding is in line with the findings of Kavitha, (2001).

Fertilizer management for main field

The mean knowledge level of fertilizer management was found to be 46.66 percent. More than fifty percent knowledge level was observed for stages of application of fertilizers (51.67 percent). Medium knowledge level was observed for recommended doses of N, P, K per ha for basal application (49.16 percent) and 39.16 percent knowledge level was observed on recommended doses of N, K per ha for top dressing. This finding is in line with the findings of Vijayalan, (2001).

Weed management

The mean knowledge level on weed management was found to be 50.42 percent. Most of the respondents

had knowledge on practices *viz.*, recommended time for first weeding (57.50 percent) and recommended time for second weeding (53.33 percent). Only 46.67 percent had the knowledge level on the recommended herbicide followed by recommended quantity of herbicides (44.16 percent). The medium level of extension agency contact of the respondents would have enabled them to seek information on weed management. This finding is in line with the findings of Renjini, (2000).

Pest management

The mean knowledge level on pest management was found to be 42.50 percent sixty percent of the respondents had the knowledge on recommended number of light traps per ha. Less than fifty percent of the respondents had the knowledge on the recommended practices *viz.*, pesticides recommended for the management of stem borer (49.16 percent), recommended pesticides for the management of gall midge (49.16 percent), recommended quantity of pesticide for controlling of stem borer (37.50 percent), pesticide recommended for the management of BPH (30.83 percent), recommended quantity of pesticide for controlling of BPH (28.33 percent). The low level of knowledge on the recommended practices on pest management might be due to the lack of complete information from the officials of the State Department of Agriculture about paddy technologies on pest management. This finding is in line with the findings of Renjini, (2000).

Disease management

The mean knowledge level on disease management was found to be 46.66 percent. The knowledge level on the recommended practices *viz.*, recommended fungicide for controlling Leaf blast (47.50 percent) and recommended quantity of fungicide for controlling Leaf blast (45.83 percent) are found to be low. Lack of complete information on disease management might be the probable reason for their medium knowledge about disease management. This finding is in line with the findings of Vijayalan, (2001).

Harvesting

Most of the respondents possessed high level of knowledge (95.83 percent) on recommended time of harvesting. The high knowledge level might be due to their experience in paddy cultivation for several years.

Conclusion

This study revealed that more than fifty percent of the paddy growers had medium level knowledge, whereas more than one-fourth of them had low level of knowledge and less than one-fifth of them had high levels of

knowledge about the recommended paddy technologies, respectively.

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