



A study on knowledge level of respondents about the integrated nutrient management technologies in Nagapattinam District of Tamil Nadu

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Abstract

Paddy (*Oryza sativa*) is the staple food for 65% of the population in India. Among the food grains paddy is the largest consumed calorie source which meets 31% of the total calorie requirement of the population. With a per capita availability of 73.8 kg. India is the second largest producer of rice in the world next to China. In India paddy occupies the first place both in area and production. Nagapattinam district in Tamilnadu was purposively selected because of majority of the farmers, farm women and agricultural labourers are directly or indirectly involved in rice crop cultivation which forms the basis for the agrarian economy of Nagapattinam district. Nagapattinam district has eight taluks. Paddy is being grown in all eight taluks. The Eight taluks are Sirkali, Nagapattinam, Mayiladuthurai, Vedaranyam, Tharangambadi, Kilvelur, Kuthalam, Thirukkuvalai. Mayiladuthurai taluk was randomly selected for the study. Six villages namely Kiloy, Manalmedu, Mudigandanallur, Kesian, Attur, Kadalangudi were selected for the study. Sample size of 120 respondents was selected by using proportionate random sampling technique. Nearly half of the respondents (46.67 per cent) possessed high level of knowledge followed by 43.33 per cent of the respondents with medium level of knowledge and only 10.00 per cent of the respondents had low knowledge on nutrient management technologies in paddy crop.

Keywords: knowledge, integrated nutrient management, practise wise knowledge

Introduction

Paddy (*Oryza sativa*) is the staple food for 65% of the population in India. Among the food grains paddy is the largest consumed calorie source which meets 31% of the total calorie requirement of the population. With a per capita availability of 73.8 kg. India is the second largest producer of rice in the world next to China. In India paddy occupies the first place both in area and production. An Integrated approach of plant nutrient management has gained momentum and importance in recent years. The integrated nutrient management concept has to be applied through different approaches by the best blending of the trio-modes based on their availability and suitability for different crops and soils, Incorporation of organic- compost, night soils, farm yard manure, coir pith, green manure/ green leaf manures fortification enrichment of these organics with bio-inoculants/ chemicals are some of the common approaches followed in this concept for enhancing nutrient use efficiency of chemical fertilizers, higher yields of crops and for sustaining soil fertility.

The Gross Cropped Area in Tamil Nadu is around 58.43 lakh hectares of which the Gross irrigated Area is 33.09 lakh hectares which is 5700 and the balance 4300 of the area are under rainfed cultivation. Major efforts are required to increase the productivity of rainfed crops by overcoming the various challenges such as; erratic monsoon rains, soil with low nutrient and organic contents / poor water holding capacity, soil and water erosion, etc. The labour scarcity especially during the peak cropping season is also causing difficulty to the farmers to take-up timely field operations. In respect of agricultural crops, the crop cultivation is taken

up in two to three seasons annually. In Nagapattinam district, paddy is the main cereal crop. During few centuries back, paddy crop was given top most priority but the extent of cultivation was limited as there was no reservoir to store up water. However, strong stone masonry anicuts have been constructed with great skill across the rivers to impound and divert the water to feed the blocks of wetland on either bank of the rivers. Naturally paddy crop gets top priority and importance and therefore, the wetlands were highly priced. Almost half of the wetlands were owned by temples and the temple authorities. Under certain terms and conditions these wetlands were distributed by the authorities to the local farmers for cultivation. In India paddy occupies the first place both in area and production. Nagapattinam district in Tamilnadu was purposively selected because of majority of the farmers, farm women and agricultural labourers are directly or indirectly involved in rice crop cultivation which forms the basis for the agrarian economy of Nagapattinam district.

Research Methodology

Primary objective of this study was centered on the Knowledge level of respondents about the Integrated Nutrient Management technologies in Nagapattinam district. Nagapattinam district has been administratively divided into seven taluks and fifteen blocks. Nagapattinam district has eight taluks. Paddy is being grown in all eight taluks. The eight taluks are Sirkali, Nagapattinam, Mayiladuthurai, Vedaranyam, Tharangambadi, Kilvelur, Kuthalam and Thirukkuvalai. Mayiladuthurai taluk was randomly selected for the study. Mayiladuthurai block was selected as the

researcher is familiar with the culture and dialects of this block. Out of 61 villages, six villages were selected from the block on the maximum number of farmers engaged in agriculture. Thus, a total of six villages were identified for the study. The list of farmers from each selected village was obtained from the gram panchayat office. For the selection of the respondents based on the proportionate random sampling technique was followed to select a sample size of 300 respondents. A well prepared, pre-tested interview

schedule is used to collect data from the respondents. Scores were allotted for each question and the scores obtained by the respondents were summed up for the respondent. The respondents were categorized into low, medium and high by using cumulative frequency. Further, the percentage analysis was worked out for the relationship between profile characteristics and knowledge level of paddy growers.

Results and Discussion

Table 1: Distribution of respondents according to their overall knowledge level on Integrated Nutrient Management technologies (n=120)

S. No	Categories	Number	Percent
1.	Low	12	10.00
2.	Medium	52	43.33
3.	High	56	46.67
Total		120	100.00

From the data in Table 1, it could be observed that nearly half of the respondents (46.67 per cent) possessed high level of knowledge followed by 43.33 per cent of the respondents with medium level of knowledge and only 10.00 per cent of the respondents had low knowledge on nutrient management

technologies in paddy crop. This may be due to the fact that most of the respondents belonged to medium level of mass media exposure, information seeking behaviour, scientific orientation and high level of innovativeness. This finding is in agreement with the findings of Janaki Rani (2004) [1].

Table 2: Distribution of respondents according to their Practice-wise knowledge level of the respondent on Integrated Nutrient Management technologies (n=120)

S. No	Category	Number	Per cent
I Nursery			
1	Recommended variety for samba season	120	100.00
2	Recommended quantity of seed	61	50.83
3	Recommended time for seed treatment	89	74.17
4	Chemical used for seed treatment	87	72.50
5	Bio-fertilizer used for seed treatment	94	78.33
Mean percentage		75.17	
II Main field			
1	Recommended quantity of FYM per acre	73	60.83
2	Recommended quantity of DAP	46	38.33
3	Recommended duration of seedlings (in days) for planting	91	75.83
4	Name of green manure crop	63	52.50
5	Time of incorporation of green manure	57	47.50
6	Ratio of N, P and K recommended for samba season	108	90.00
7	Recommended quantity of N used for basal application per acre	107	89.17
8	Amount of phosphate fertilizer used per acre	94	78.33
9	Recommended composition of green manure + Znso4	67	55.83
10	Foliar application of urea	69	57.50
11	Recommended ratio of urea and gypsum	57	47.50
12	Recommended quantity of gypsum used per acre	62	51.67
13	Recommended quantity of neem cake required per acre	13	10.83
14	Recommended bio-fertilizer used for nitrogen fixation per acre	86	71.67
15	Brown rusty appearance in lower leaves	107	89.17
Mean percentage		61.11	
Overall mean percentage		68.14	

Nursery technologies

It could be observed from the Table 2, that out of five nursery technologies, all the respondents (100.00 per cent) possessed knowledge on recommended variety for samba season. Nearly three-fourth of the respondents possessed knowledge on recommended bio-fertilizer for seed treatment (78.33 per cent), time for seed treatment (74.17 per cent) and chemical used for seed treatment (72.50 per cent).

Only 50.83 per cent of the respondents had knowledge on recommended quantity of seed for seed treatment. Most of the respondents were aware of the practice of seed treatment and hence they might have gained knowledge on this

method. This finding is in agreement with the findings of Natarajan (2016).

Main field technologies

Among the fifteen technologies, most of the respondents had knowledge on the recommended ratio of N, P and K for recommended samba season (90.00 per cent), recommended quantity of N used for basal application per acre and brown rusty appearance in lower leaves as the symptom of zinc Deficiency (89.17 per cent under each), recommended amount of Phosphatic fertilizer per acre (78.33 per cent) and recommended duration of seedlings for planting (75.83 per cent). This may be due to the respondents' awareness on

these items. This finding is in line with the findings of Siddharthan (2011).

Majority of the respondents possessed knowledge on the recommended bio-fertilizer used for nitrogen fixation (71.67 per cent), quantity of FYM (60.83 per cent), foliar application of urea (57.50 per cent), recommended composition of green manure+Zns04 (55.83 per cent) and green manure crop (52.50 per cent). This finding is in agreement with the findings of Rajasekaran (2004) [15].

Less than fifty per cent of the respondents possessed knowledge on recommended time of incorporation of green manure (47.50 per cent), recommended quantity of gypsum (51.67 per cent), recommended ratio of urea + gypsum (47.50 per cent) and recommended quantity of DAP (38.33 per cent) respectively. This might be due to their lack of awareness about these technologies. Hence, majority of the respondents would have gained medium level of knowledge on these technologies. This finding is in agreement with the findings of Poovarasana (2018) [3].

Only 10.83 per cent of the respondents had knowledge on quantity of neem cake required per acre. Most of the respondents were not aware of the advantage of applying neem cake. This might be the reason for poor knowledge on this technology. This finding is in agreement with the findings of Santhi (2006) [5].

The mean percentage of the respondents Knowledge level on INM in nursery technologies was found to be 75.17, while it was found to be 89.17 under main field technologies. The overall mean percentage of knowledge on INM technologies among the respondents was found to be 68.14. This finding is in agreement with the findings of Santhi (2017) [17].

Conclusion

According to the knowledge level on INM technologies, nearly half of the respondents (46.67 per cent) possessed high level of knowledge followed by 43.33 per cent of the respondents with medium level of knowledge and only 10.00 per cent of the respondents had low knowledge on nutrient management technologies in paddy crop.

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