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CONSTRAINTS EXPERIENCED BY THE PADDY FARMERS IN THE ADOPTION OF INTEGRATED NUTRIENT MANAGEMENT TECHNOLOGIES.

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ABSTRACT:

India is an important centre of paddy. The paddy is cultivated on the largest areas in India. Historians believe that while the Indica variety of paddy was first domesticated in the area covering the foothills of the Eastern Himalayas (i.e., north-eastern India), stretching through Bunna, Thailand, Laos, Vietnam and Southern China, the japonica variety was domesticated from wild paddy in southern China which was introduced to India. 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, Kesingan, Attur, Kadalangudi were selected for the study. Sample size of 120 respondents was selected by using proportionate random sampling technique. Most of the respondents expressed labour scarcity (80.83 per cent) as the major physical constraint followed by (78.33 per cent) expressed weak extension service as a major communication constraint, lack of knowledge to identify the bio-agents (90.00 per cent) was the foremost personal constraint and Lack of credit facilities (93.33 per cent) was the major socio-economic constraint in the adoption of INM technologies in paddy cultivation.

Keywords : Paddy, INM, Constraints, Adoption

INTRODUCTION:

Paddy has shaped the culture, diets and economics of thousands of million people. For more than half of the humanity "paddy is life". *Oryza sativa*, it is believed, is associated with wet, humid climate, though it is not a tropical plant. It is probably a descendent of wild grass that was most likely cultivated in the foothills of the far Eastern Himalayas. Another school of thought believes that the rice plant may have originated in southern India, then spread to the north of the country and then onwards to China. It then arrived in Korea, the Philippines (about

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2000 B.C.) and then Japan and Indonesia (about 1000 B.C.). When Alexander the Great invaded India in 327 B.C., it is believed that he took rice back to Greece. Arab travellers took it to Egypt, Morocco and Spain and that is how it travelled all across Europe. Portugal and Netherlands took rice to their colonies in West Africa and then it travelled to America through the 'Columbian Exchange' of natural resources. But as it is traditionally known, rice is a slow starter and this is also true to the fact that it took close to two centuries after the voyages of Columbus for rice to take root in the Americas. Thereafter, the journey of rice continues with the Moors taking it to Spain in 700 A. D. and then the Spanish brought rice to South America at the beginning of 17th century. (Natarajan, 2016)

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. Tamil Nadu one of the leading paddy growing states in India, has been cultivating paddy from time immemorial as this State is endowed with all the favourable climatic conditions suitable for paddy growing. (Rajasekaran,2015)

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.

Intensive rice cropping with short-duration high-yielding varieties along with increased use of mineral fertilizers and improved irrigation facilities have resulted in spectacular increases in crop productivity.

RESEARCH METHODOLOGY:

The major and foremost aim of this study was focussed on the constraints faced by the paddy growers in adopting 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.

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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 and ranked based on percentage analysis.

FINDINGS AND DISCUSSION:

The findings on the constraints experienced by the respondents in adopting INM technologies are presented below. The constraints were ranked according to their number of respondents who mentioned the constraints and the salient findings are given in Table 1.

Table 1. Constraints experienced by the respondents in the adoption of INM technologies.

(n=120)

S.No	Constraints	Number of respondents	Per cent	Rank
I. Physical constraints				
1	Labour scarcity	97	80.83	I
2	Non-availability of inputs	91	75.83	II
3	Poor quality of inputs	81	67.50	III
4	Lack of advanced planning about the purchase and application	90	75.00	IV
II. Communication constraints				
1	Weak extension service	94	78.33	I
2	Details given by change agents could not be understood.	89	74.17	II
3	Inability to attend training programmes.	83	69.17	III
III. Personal constraints				

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1	Lack of knowledge to identity Bio-agents	108	90.00	I
2	Not convinced with the practice	96	80.00	II
3	Lack of knowledge to identify pest & diseases	100	83.33	III
4	Difficulty in using organic manure	80	66.66	IV
IV. Socio-economic constraints				
1	Lack of credit facilities	112	93.33	I
2	High rate of interest	105	87.50	II
3	High cost of labour	92	76.66	III
4	High cost of input	80	66.67	IV

I. Physical constraints

Most of the respondents expressed labour scarcity (80.83 per cent) as the major physical constraint followed by non-availability of inputs (75.83 per cent) poor quality of inputs (67.50 per cent) and planning about the purchase and application of inputs (75.00 per cent).

Agriculture labourers being seasonal, there is a shortage of labour during peak season. The migration of the labour from agriculture to other occupations and to other sectors has also contributed the labour problem. Hence, majority of the respondents have ranked it as the most serious constraints. This finding derives support from the findings of Guna (2016).

II. Communication constraints

From the Table 23, it could be observed that most of the respondents (78.33 per cent) expressed weak extension service as a major communication constraint in the adoption of INM technologies in paddy cultivation. Details given by the change agents could not be understood (74.17 per cent) and inability to attend training programmes (69.17 per cent) was assigned ranks 1 and 3.

Lack of information from change agent was another most important communication constraint. Majority of the respondents expressed that they did not come across any extension

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worker from the government development department. Some of the respondents had occasions to meet the extension personnel of agricultural department their office rarely.

Lack of a liquate staff and their occasional visits to the villages would have made the respondents to report this as one of the major constraints. This finding derives support from the findings of Poovarasan (2018).

III. Personal constraints

Lack of knowledge to identify the bio-agents (90.00 per cent) was the foremost personal constraint expressed by majority of the farmers followed lack of knowledge to identify the pest and diseases by (80.33 per cent), not convinced with the practices (83.00 per cent) and difficulty in using organic manure (66.66 per cent).

Majority of the respondents had lack of knowledge on the bio-control agents and no proper orientations by way of training have been given for their benefit. Organic Farming mainly depends on the locally available resources, raw material and inputs. Organic farming approaches took greater gestation periods and with hidden benefits. So, majority of the yield of cereals, pulses, vegetables may reduce and given a great economic loss to the farmers. So, they are not convinced about the organic farming practices. This might be the reason for lack of conviction about the organic farming practices.

Organic farming agriculture inputs like organic manure, green manure, green leaf manures are required in large quantities, when compared to chemical fertilizer create the problem of difficulty in using organic manure by the farmers. This finding derives support from the findings of Tamil selvan (2019).

IV. Socio-economic constraints

Lack of credit facilities (93.33 per cent) was the major socio-economic constraint followed by high rate of interest (87.50 per cent), high cost of labour (76.66 per cent) and high cost of inputs (66.67 per cent) were felt as the other socio-economic constraints by the respondents.

Most of the tribal farmers who are in need of money for cereals, pulses, vegetables cultivation. They obtained the money from moneylenders and from big farmers only. Absence of adequate institutions like agricultural banks, co-operative society etc., and rigid rules and regulations might be the reason why farmers could not get money when they need.

Labour scarcity was a very serious constraint in the locale particularly during agricultural operation like transplanting and harvesting. The farmers therefore have to hire labourers at any

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cost demanded by them, which often matched those wages provided in the secondary and tertiary sectors. This may be the reason for the high cost of labour being felt as the major socio-economic constraint. This finding derives support from the findings of Sanjith kumar (2019).

SUMMARY AND CONCLUSION:

Most of the respondents expressed labour scarcity (80.83 per cent) as the major physical constraint followed by non-availability of inputs (75.83 per cent) poor quality of inputs (67.50 per cent) and planning about the purchase and application of inputs (75.00 per cent). Majority of the respondents (78.33 per cent) expressed weak extension service as a major communication constraint in the adoption of INM technologies in paddy cultivation. Details given by the change agents could not be understood (74.17 per cent) and inability to attend training programmes (69.17 per cent).Lack of knowledge to identify the bio-agents (90.00 per cent) was the foremost personal constraint expressed by majority of the farmers followed lack of knowledge to identify the pest and diseases by (80.33 per cent), not convinced with the practices (83.00 per cent) and difficulty in using organic manure (66.66 per cent).

Lack of credit facilities (93.33 per cent) was the major socio-economic constraint followed by high rate of interest (87.50 per cent), high cost of labour (76.66 per cent) and high cost of inputs (66.67 per cent) were felt as the other socio-economic constraints by the respondents.

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