

ADOPTION OF RECOMMENDED ECO-FRIENDLY TECHNOLOGIES FOR PADDY FARMING

Dr. B. GUNA, Assistant Professor
Department of Agricultural Extension
Imayam Institute of Agricultural College
Karur - 621 313, Tamil Nadu

Dr.D.VENGATESAN, Assistant Professor
Department of Agricultural Extension
Annamalai University
Annamalainagar - 608 002, Tamil Nadu

Abstract

The world population of 7.56 billion in 2016 is expected to increase over 10 billion by 2050. Such a growth in population has created and will create unprecedented pressures on the limited natural resources base to produce additional food, fiber, fuel and raw materials. In the past, these increased requirements were met through technological innovations, institutional and infrastructural development and policy initiatives that promoted growth in agricultural productivity. The present study was undertaken to study the extent of adoption of recommended eco-friendly technologies for paddy cultivation. The study was conducted in Nagapattinam district of Tamilnadu. A sample size of 300 small farm women was selected from 20 villages from three blocks viz. Sirkazhi, Kollidam and Nagapattinam by using proportionate random sampling technique. From the findings, it was noticed that most of the eco-friendly farm technologies for paddy were perceived as medium to high level of adoption by small farm women. Low cost women oriented eco-friendly technologies should be developed to put them into immediate use in the rural farm setting.

Key words: Eco-friendly farming, environmental sustainability, small farm women, low cost farming.

1. Introduction

An eco-friendly technology may be defined as the use of knowledge and resources in a systematic way to produce desired output without harming the environment. The world population of 7.56 billion in 2016 is expected to increase over 10 billion by 2050. Such a growth in population has created and will create unprecedented pressures on the limited natural resources base to produce additional food, fiber, fuel and raw materials. In the past, these increased requirements were met through technological innovations, institutional and infrastructural development and policy initiatives that promoted growth in agricultural productivity. Agriculture in developing countries like India is promoted mainly by the government organization. The development and the transfer of eco-friendly technologies require government extension agencies. Hence, it becomes necessary to study the efforts of the major promoters of agriculture in promoting eco-friendly technologies. Considerable attention is being paid to the eco-friendly technologies in different parts of the world. As the onus for promoting agricultural technologies is with the extension agencies, they must adapt themselves to the new environmental imperatives. In this point of view, agricultural extension is the educational process of advising and assisting farm women in getting the best use of agricultural land and other natural resources in their care

in the context of prevailing economical, technical, social and institutional conditions. The present study was undertaken to study the extent of adoption of recommended eco-friendly technologies for paddy cultivation.

2. Methodology

The study was conducted in Nagapattinam district of Tamilnadu. A sample size of 300 small farm women was selected from 20 villages from three blocks viz. Sirkazhi, Kollidam and Nagapattinam by using proportionate random sampling technique. Totally 53 major eco-friendly technologies for paddy were selected to study the extent of adoption. In present study, the maximum possible score for farm women for the adoption of eco-friendly technologies for paddy 106. Based on the adoption index, respondents were categorized into low, medium and high extent of adoption based on cumulative frequency method. The percentage analysis was worked out to study the practice wise adoption.

3. Results and discussion

3.1. Overall adoption of recommended eco-friendly technologies

The information on the extent of adoption of recommended eco-friendly technologies for paddy cultivation was gathered and the results are given in Tables 1 and 2. Results of distribution of farm women according to their overall adoption of eco-friendly technologies for paddy are presented in Table 1.

TABLE 1

Distribution of Farm Women according to their Overall Adoption of Recommended Eco-friendly Technologies for Paddy

S. No.	Category	Number of Respondents	Per cent
1	Low	110	36.67
2	Medium	130	43.33
3	High	60	20.00
	Total	300	100.00

Table 1 showed that majority of the farm women (43.33 per cent) had medium level of adoption, followed by little more than one-third of the farm women (36.67 per cent) had low level of adoption in eco-friendly technologies, whereas one-fifth of the farm women (20 per cent) had high level of adoption. This finding is in line with the findings of Jayalakshmi (2008).

3.2. Practice wise adoption of recommended eco-friendly technologies

Adoption is making full use of eco-friendly technologies as the best course of action available. Awareness and accurate knowledge finally lead to the adoption of eco-friendly technologies in their farms. The information on the practice wise adoption of eco-friendly technologies as perceived by farm women in paddy cultivation was gathered and the results are given in Table 2.

TABLE 2

Practice wise Adoption of Recommended Eco-friendly Technologies for Paddy

S. No.	Eco-friendly technologies	Number of Respondents	Per cent
1	Ploughing the field 4-6 times	300	100.00
2	Trimming the field bunds	300	100.00
3	Crop rotation	250	83.33
4	Farm yard manure (FYM)	294	98.00
5	Enriched FYM	240	80.00
6	Spraying of extracted FYM solution	150	50.00
7	Compost	220	78.33
8	Vermicompost	200	66.67
9	Presmud	106	35.33
10	Pig manure	98	67.00
	Bio-fertilizers		
	11. Azospirillum mixed with seed treatment	266	88.67
	12. Azospirillum applied in soil	230	76.67
	13. Seedlings can be dipped in azospirillum	212	70.67
	14. Blue green algae (BGA)	160	53.33
	15. Azolla	98	32.67
16	Neem seed kernals	185	61.67
17	Neem oil	190	63.33
18	Neem cake	200	66.67
19	Pungam oil	166	55.33
	Leaves of		
	20. Kattamanakku	192	64.00
	21. Nochi	182	60.67
	22. Erukku	190	63.33
	23. Pungam	240	80.00
	24. Pungam + Sangupoo	140	46.67
	25. Subabul	185	61.67
	26. Poovarasu	198	66.00
	27. Nuna	188	62.67
	28. Neem	245	81.67
	Green manures		
	29. Sunhemp	200	66.67
	30. Daincha	209	69.66

	31.Wildindigo	152	50.67
32	Spraying tobacco leaf extract	92	30.67
33	Palmyra	175	58.33
34	Common ash	182	60.67
35	Lime + ash	176	58.67
36	Common salt	230	76.67
37	Integrated farming system (IFS) goat	168	56.00
38	Integrated farming system (IFS) fish	140	46.67
39	Integrated farming system (IFS) poultry	100	33.33
40	Pheramone traps	210	70.00
41	Light traps	236	78.67
42	Yellow sticky traps	208	69.33
43	Parasites	192	64.00
44	Predators	175	58.33
45	Tanjore kitti	166	55.33
46	Panchakavya	260	86.67
47	Thusakavya	195	65.00
48	Spraying cow urine	232	77.33
49	Sheep penning	225	75.00
50	Hot water treatment of seeds	90	30.00
51	Good quality seeds	290	96.67
52	Clipping top portion of rice seedlings	220	73.33
53	Reducing plant population to lower the humidity	120	40.00

From Table 2, it could be observed that the farm women in paddy cultivation expressed high level of adoption of eco-friendly technologies. It is quite interesting to know the results from table that out of fifty three technologies studied for assessing the adoption of farm women in recommended eco-friendly technologies, a high level of adoption was observed in twenty four technologies with the percentage ranging from 66.67 to 100. The specific technologies identified with high level adoption were viz. ploughing the field 4-6 times (100 per cent), trimming the field bunds (100 per cent), application of farm yard manure (98 per cent), selection of good quality seeds (96.67 per cent), application of azospirillum mixed with seed treatment (88.67 per cent), application of panchakavya (86.67 per cent), neem leaves (81.67 per cent), enriched FYM (80 per cent), pungam leaves (80 per cent), fixing light traps (78.67 per cent), application of compost (78.33 per cent), spraying cow urine (77.33 per cent), azospirillum applied in soil (76.67 per cent), common salt (76.67 per cent), sheep penning (75 per cent), clipping top portion of rice seedling (73.33 per cent), seedling can be dipped in azospirillum (70.67 per cent), pheromone traps (70 per cent), growing daincha (69.66 per cent), yellow sticky traps (69.33 per cent), pig manure (67 per cent), vermicompost (66.67 per cent), application of neem cake (66.67 per cent) and growing sunhemp (66.67 per cent). From the above findings, it could be inferred that most of the technologies had adopted by farm women with an adoption percentage was high. As the knowledge level of the farm women were found to be high, it is quite natural that adoption level also to be high. The other reasons behind such a high level of adoption may be contributed to

efficient use of extension methods and know the advantages of eco-friendly technologies it would be help to produce healthy and environmental safe food production and collective activities performed by the family members. The result is in agreement with the results of Jermykonsam (2014).

Twenty four technologies fell under moderate level of adoption and the percentage under this category ranged from 35.33 to 66. The technologies were poovarasu leaves (66 per cent), thusakavya (65 per cent), kattamanakku leaves (64 per cent), neem oil (63.33 per cent), erukku leaves (63.33 per cent), nuna leaves (62.67 per cent), subabul leaves (61.67 per cent), neem seed kernals (61.67 per cent), nochi leaves (60.67 per cent), common ash (60.67 per cent), lime plus ash (58.67 per cent), palmyra (58.33 per cent), predators (58.33 per cent), integrated farming system for goat (56 per cent), tanjore kitti (55.33 per cent), pungam oil (55.33 per cent), application of blue green algae (53.33 per cent), cultivation of wildindigo (50.67 per cent), spraying of extracted FYM solution (50 per cent), integrated farming system for fish (46.67 per cent), pungam plus sangupoo leaves (46.67 per cent), reducing plant population to lower the humidity (40 per cent) and presmud (35.33 per cent). A low level of adoption was expressed by farm women against five technologies and the percentage ranged from 30 to 33.33. The technologies were integrated farming system for poultry (33.33 per cent), pig manure (32.67 per cent), application of azolla (32.67 per cent), spraying tobacco leaf extract (30.67 per cent) and hot water treatment of seeds (30. per cent). The farm women were not aware of these technologies and knowledge level of the technologies also low. Hence, the respondents had not attributed much importance to these technologies thereby resulting with low level of adoption. This finding is in conformity with the findings of Sathishkumar (2016) who also reported that the above said technologies had low level of adoption of eco-friendly paddy technologies.

4. Conclusion

From the findings, it was noticed that most of the eco-friendly farm technologies for paddy were perceived as medium to high level of adoption by small farm women. Low cost women oriented eco-friendly technologies should be developed to put them into immediate use in the rural farm setting. Research efforts should be channelized in order to fabricate necessary tools and implements especially for the farm women to carry out the farm operations; it would be increasing the adoption level of eco-friendly technologies.

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