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A STUDY ON THE UTILIZATION BEHAVIOUR OF ECO-FRIENDLY AGRICULTURAL PRACTICES AND THE CHARACTERISTICS OF THE RESPONDENTS IN ERODE DISTRICT

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Abstract

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 term "Eco-agriculture" was coined by Charles Walters, economist, author, editor, publisher and founder of Acres Magazine in 1970 to unify under one umbrella the concepts of 'ecological' and 'economical' in the belief that unless agriculture was ecological it could not be economical. This belief becomes the motto of the magazine: "To be economical agriculture must be ecological." Eco-agriculture is both a conservation strategy and a rural development strategy. A study was conducted in Erode district to study the utilization of eco-friendly agricultural practices. The findings shows that the mean value of eco-friendly farming practices in harvest was 85.83. Majority (90.00 percent) of the respondents had utilized right stage of harvesting and more than four fifth (81.66 percent) of the respondents utilized the practices of harvesting at 80 percent grain maturity.

Key words: Eco-friendly technology, environment, farming.

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 term "eco-agriculture" was coined by Charles Walters, economist, author, editor, publisher and founder of Acres Magazine in 1970 to unify under one umbrella the concepts of 'ecological' and 'economical' in the belief that unless agriculture was ecological it could not be economical. This belief becomes the motto of the magazine: "To be economical agriculture must be ecological." Eco-agriculture is both a conservation strategy and a rural development strategy. Eco-agriculture recognizes agricultural producers and communities as key stewards of ecosystems and biodiversity and enables them to play those roles effectively. Eco-agriculture applies an integrated ecosystem approach to agricultural landscape to address all the three pillars – conserving biodiversity, enhancing agricultural production and improving livelihood – driving the divers' elements of production and conservation management systems. The core of this ecological-based farming is ensuring that business or agricultural activity is consistent with the natural functions of ecosystems, where for instance, the cycle of soil nutrients and biodiversity structure are maintained so as to create a system of agriculture that is resistant to pests and has self-maintained natural soil nutrients. Thus, farmers will no longer depend on costly chemicals and artificial pest control.

Materials and Methods

In the present study extent of utilization pattern of eco-friendly farming practices of paddy, banana, and sugarcane crops by the farmers in their own field. An index was developed to determine the extent of utilization pattern in relation to eco-friendly farming practices by the farmers. The index consisting of 48 statements which cover all the important components of eco- friendly farming practices namely soil conservation, water conservation, seed management, integrated weed

management, integrated disease and pest management and integrated nutrient management practices. The maximum obtainable score was 96 and minimum score was 48. The responses of respondents were asked to give name of practices used by them. On the basis of score obtained by them, respondents were categorized in to three categories *viz.* low, medium and high based on the cumulative frequency.

Results and Discussion

Results of distribution of respondents according to their practice wise utilization of eco-friendly farming practices in sugarcane cultivation are given in Table 1.

It could be noted from Table 1 that the utilization level of eco-friendly farming practices of sugarcane mean value was 48.99. Nearly three fourth (73.33 percent) of the respondents had highly practicing earthing up in sugarcane at 50 days after planting to control early shoot borer followed by sugarcane trashes are burnt before the next ratoon crop for killing insects and pathogens (65.00 percent), topping and breaking the ridges with spade after the harvest of canes before allowing for ratoon for root growth and soil aeration (65.00 percent), application of FYM at 12.5t/ha before last ploughing in garden land. In wetlands this may be applied along the furrow and incorporated well (63.33 percent), detrashing the canes to control scales and mealy bugs (56.66 percent), growing castor as border crop to control early shoot borer attack in sugarcane (56.66 percent), sheep penning is practiced and sheep manure is applied (6.25t/ha) to increase the sugar content of the canes (51.66 percent), sett treatment with azospirillum prepare the slurry with 10 packets 200gm each (10 packets/ha) of azospirillum inoculums with sufficient water and soak the setts in the slurry for 10-15 minutes before planting (36.66 percent), selecting seeds with shorter internodes for planting to maintain optimum plant density (11.66 percent) and releasing egg parasites of *Trichoderma viride* at the rate of 2.5CC/ release/hec six release for every fifteen day starting from fourth month onwards will be necessary to control internode borer (10.00 percent). Nearly three fourth (73.33 percent) of the respondents had practicing earthing up in sugarcane at 50 days after planting to control early shoot borer because this is the traditional practice and this practice is one of the way to increase production.

Socio-economic and psychological characteristics of the respondents

In this section, results on socio-economic and psychological characteristics of the respondents *viz.,* age, educational status, occupational status, farm size, farming experience, annual income, social participation, extension agency contact, mass media exposure, risk orientation, scientific orientation, economic motivation and innovativeness are discussed.

Age

The results on distribution of respondents according to their age are presented in Table 2.

Table 1: Distribution of respondents according to their practicewise utilization level of eco-friendly farming practices in sugarcane cultivation (n=120).

S. No.	Eco-friendly farming practices	Number of respondents	Percent
1.	Application of FYM at 12.5t/ha before last ploughing in garden land. In wetlands this may be applied along the furrow and incorporated well.	76	63.33
2.	Sugarcane trashes are burnt before the next ratoon crop for killing insects and pathogens.	78	65.00
3.	Practicing earthing up in sugarcane at 50 days after planting to control early shoot borer.	88	73.33
4.	Topping and breaking the ridges with spade after the harvest of canes before allowing for ratoon for root growth and soil aeration.	78	65.00
5.	Sheep penning is practiced and sheep manure is applied (6.25t/ha) to increase the sugar content of the canes.	62	51.66
6.	Sett treatment with azospirillum prepare the slurry with 10 packets 200gm each (10 packets/ha)of azospirillum inoculums with sufficient water and soak the setts in the slurry for 10-15 minutes before planting.	44	36.66
7.	Releasing egg parasites of *Trichoderma viride* at the rate of 2.5CC/ release/hec six release for every fifteen day starting from fourth month onwards will be necessary to control internode borer.	12	10.00
8.	Selecting seeds with shorter internodes for planting to maintain optimum plant density.	14	11.66
9.	Detrashing the canes to control scales and mealy bugs. (it is locally called as(“sogaiuriththal”)	68	56.66
10.	Growing castor as border crop to control early shoot borer attack in sugarcane.	68	56.66
	Mean		**48.99**

It could be seen from Table 2 reveals that nearly three fourth (72.00 percent) of the respondents were old aged followed by middle age (18.00 percent) and young age (10.00 percent). This may be due to the nature of the sample selected for the study. This finding is in line with the findings of Termaric oinam (2014).

Educational status

The results on distribution of the respondents according to their educational status are presented in Table 3.

It could be observed from the Table 3 reveals that 30.00 per cent of the respondents had attained primary education followed by middle school education (23.34 percent), higher secondary education (18.33 percent), illiterates (11.67 percent), high school education (8.33 percent) and college education (8.33 percent). This may be due to their unawareness about the importance of education. This finding is in line with the findings of Jeyalakshmi (2008).

Table 2: Distribution of respondents according to their age (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Young	12	10.00
2.	Middle	22	18.00
3.	Old	86	72.00
Total	120	100.00	

Table 3: Distribution of respondents according to their educational status (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Illiterates	14	11.67
2.	Primary education	36	30.00
3.	Middle school education	28	23.34
4.	High school education	10	8.33
5.	Higher secondary education	22	18.33
6.	Collegiate education	10	8.33
	Total	120	100.00

Table 4: Distribution of respondents according to their occupational status (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Agriculture as primary occupation	76	63.40
2.	Agriculture as Secondary occupation	44	36.60
	Total	120	100.00

Table 5: Distribution of respondents according to their farm size (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Marginal farmers (below 2.5 acres)	54	45.00
2.	Small farmers (2.5-5 acres)	20	16.67
3.	Big farmers (above 5 acres)	46	38.33
	Total	120	100.00

Occupational status

The results on distribution of respondents according to their occupational status are presented in Table 4.

It could be observed from the Table- 4 that majority of the respondents (63.40 percent) were found to have agriculture as their primary occupation. Respondents with agriculture as their secondary occupation constituted only a limited proportion (36.60 percent). It could be concluded that majority of the farmers depend only on agriculture for their family income. There is no industries in the study area and most of the villages are hamlets without any basic infrastructure facilities. Hence, there was no option for them to get any other job. This finding is in line with the findings of Sangma (2017).

Farm size

The results on distribution of respondents according to their farm size are presented in Table 5.

It may be seen from the Table 5, that nearly half (45.00 percent) of the respondents were marginal farmers followed by big farmers (38.33 percent) and only 16.67 percent of the respondents were small farmers. This may be due to the fact that the land has been fragmented too much resulting in more marginal farmers. This findings is in line with the findings Satarji (2011).

Table 7: Distribution of respondents according to their annual income (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Low	36	30.00
2.	Medium	64	53.33
3.	High	20	16.67
	Total	120	100.00

Table 8: Distribution of respondents according to their social participation (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Low	30	63.33
2.	Medium	14	11.67
3.	High	76	25.00
	Total	120	100.00

Table 9: Distribution of respondents according to their extension agency contact (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Low	46	38.33
2.	Medium	48	40.00
3.	High	26	21.67
	Total	120	100.00

Farming experience

The results on distribution of the respondents according to their

farming experience are presented in Table 6.

The data in Table 6, shows that more than half of the respondents (62.00 percent) had high level of farming experience followed by medium (32.00 percent) and low (6.00 percent) level of farming experience respectively. Majority of the farmers had high level of experience in paddy cultivation may be due the reason that majority of the farmer were old aged farmers. This finding is in line with the findings Punitha (2005).

Table 10: Distribution of respondents according to their mass media exposure (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Low	36	30.00
2.	Medium	66	55.00
3.	High	18	15.00
	Total	120	100.00

Table 11: Distribution of respondents according to their risk orientation (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Low	44	36.67
2.	Medium	60	50.00
3.	High	16	13.33
	Total	120	100.00

Table 12: Distribution of respondents according to their scientific orientation (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Low	16	13.33
2.	Medium	64	53.34
3.	High	40	33.33
	Total	120	100.00

Table 13: Distribution of respondents according to their economic motivation (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Low	30	25.00
2.	Medium	70	58.33
3.	High	20	17.67
	Total	120	100.00

Table 14: Distribution of respondents according to their innovativeness (n=120).

S.No	Category	Respondents	
		Number	Per cent
1.	Low	100	83.33
2.	Medium	14	11.67
3.	High	6	5.00
	Total	120	100.00

Annual income

The results on distribution of the respondents according to their annual income are presented in Table 7.

It could be seen from the Table 7, that more than half of the respondents (53.33 percent) had medium annual income followed by low (30.00 percent) and only 16.67 percent of the respondents had high annual income. This might be due to the fact that majority of the respondents were engaged only in farming traditionally which resulted in lesser income from agriculture. This finding is in line with the findings of Supriya (2018).

Social participation

The results on distribution of respondents according to their social participation are presented in Table 8.

It could be noticed from the Table 8, that majority of the respondents (63.33 percent) had low level of social participation, followed by 25.00 percent of the respondents with high level of social participation. Only 11.67 percent of the respondents belonged to medium social participation. This might be due to the lack of awareness about the social organisations and lack of time for the farmers in the study area. This finding is in line with the findings of Kavaskar (2009).

Extension agency contact

The results on distribution of respondents according to their extension agency contact are given in Table 9.

It could be observed from Table 9, that nearly half of the respondents (40.00 percent) had medium level of extension agency contact followed by 38.33 percent and 21.67 percent of the respondents with low and high level of extension agency contact respectively. Lack of awareness about the extension agency and rare contacts with them might be the reasons for their poor extension agency contact. This finding is in line with the findings of Supriya (2018).

Mass media exposure

The results on distribution of respondents according to their mass media exposure are presented in Table 10.

Table 10 shows that more than half of the respondents (55.00 percent) had medium level of mass media exposure, followed by 30.00 percent of the respondents with low level of mass media exposure and 15.00 percent of the respondents with high level of exposure towards mass media. This may be due to their less education. This finding is in line with the findings of Supriya (2018).

Risk orientation

The results on distribution of respondents according to their risk orientation are presented in Table 11.

Table 11 shows that half of the respondents (50.00 percent) had medium level of risk orientation followed by 36.67 percent of the respondents with low and 13.33 per cent with high level of risk orientation. As most of the respondents were marginal farmers with medium land holdings and medium annual income, resulted in lesser risk orientation. This might be the reason for medium level of risk orientation. This findings is in line with the findings of Muruganantham (2008).

Scientific orientation

The results on distribution of respondents according to their Scientific orientation are presented in Table 12.

Table 12 shows that more than half (53.34 percent) of the respondents had medium level of scientific orientation followed by high (33.33 percent) and low (13.33 percent) level of scientific orientation. This may be due to medium educational status. This finding is in line with the findings of the Rajivgandhi (2010).

Economic motivation

The results on distribution of respondents according to their economic motivation are presented in Table 13.

Table 13 reveals that more than half (58.33 percent) of the respondents had medium level of economic motivation followed by one -third of the respondents (25.00 percent) had low level of economic motivation and 17.67 percent of the respondents with higher level of economic motivation. As most of the farmers were marginal farmers, had medium land holdings with medium annual income resulted in less economic motivation. This result is in line with the findings of Sujatha (2009).

Innovativeness

The results on distribution of respondents according to their innovativeness are presented in Table 14.

Table 14 reveals that 83.33 percent of the respondents had low level of innovativeness followed by medium (11.67 percent) and the remaining respondents (5.00 percent) with high level of innovativeness. The formal education of the respondents coupled with their low level of farming experience would have resulted in medium level of innovativeness among the respondents. This finding is in line with the findings of Salehin (2009).

Conclusion

This study clearly shows that majority of the farmers possess medium level of utilization of eco-friendly practices. This study has clearly indicated that the significant gain in utilization on eco-friendly technologies on account of the trainings.

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