



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

Darling B. Suji, M. Tamilselvan and C. Praveen Sampath Kumar*

Department of Agricultural Extension, Annamalai University, Annamalai Nagar 608 002, Tamilnadu, India.

*Depart.of Genetics and Plant Breeding Faculty of Agriculture, Annamalai University, Annamalai Nagar-608 002

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.

Keywords: Eco-friendly farming, harvesting, Eco-agriculture.

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/hectare 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.

The zero order correlation was computed to know the relationship of the socio-economic and psychological characteristics of the respondents with their knowledge on eco- friendly farming practices. The results are given in Table 2.

It could be observed from the data in Table 2 that out of thirteen independent variables, five variables namely educational status (X_2), extension agency contact (X_8),

risk orientation (X_{10}), scientific orientation (X_{11}), economic motivation (X_{11}), were found to be significant at 1 percent level of probability, the variable farming experience (X_5), and social participation (X_7), were positively significant at 5 per cent level of probability. The correlation values

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 <i>Trichoderma viride</i> at the rate of 2.5CC/release/hectare 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("sogaiurithal"))	68	56.66
10.	Growing castor as border crop to control early shoot borer attack in sugarcane.	68	56.66
	Mean		48.99

Table 4: Zero order correlation of characteristics of respondents with their extent of utilization of eco-friendly farming practices in paddy, banana and sugarcane

Variables	Independent variables	Correlation coefficient
X ₁	Age	0.015NS
X ₂	Educational status	0.262**
X ₃	Occupational status	0.060NS
X ₄	Farm size	-0.049NS
X ₅	Farming experience	0.218**
X ₆	Annual Income	-0.103NS
X ₇	Social participation	0.234*
X ₈	Extension agency contact	0.238*
X ₉	Mass media exposure	0.157NS
X ₁₀	Risk orientation	0.326**
X ₁₁	Scientific orientation	0.269**
X ₁₂	Economic motivation	0.200*
X ₁₃	Innovativeness	0.229*

** Significant at 1 per cent level

* Significant at 5 per cent level

NS – Non-Significant

positively significant at 5 percent level of probability. The correlation values of the remaining variable were found to be non-significant. Based on this it may be inferred that more the educational status, farming experience, extension agency contact, scientific orientation and innovativeness.

Risk orientation had also shown a positive and significant relationship at 0.01 percent level of probability. Thus, it is quite obvious for the respondents with high risk bearing tendency to have increased utilization level

in paddy, banana and sugarcane cultivation for better utilization of resources on eco-friendly farming practices. Scientific orientation was found to have positive and significant relationship at 0.01 percent level of probability. Respondents with more scientific orientation definitely gather information an eco-friendly farming practices in paddy, banana and sugarcane.

Innovativeness showed a positive and significant relationship at 0.05 percent level of probability. This shows that more the innovativeness more will be the utilization of eco-friendly farming practices in paddy, banana and sugarcane. It is obvious that innovativeness could contribute to the utilization of eco-friendly farming practices in paddy, banana and sugarcane for more the innovativeness more the farmers would try to acquire information about the eco-friendly farming practices.

Regression of characteristics of respondents with their extent of utilization on eco-friendly farming practices in paddy, banana and sugarcane

Regression was computed to know the relationship of characteristics of the respondents with their adoption of eco-friendly technologies. The results are given in Table 5.

It could be observed from Table 5 that all selected thirteen independent variables together explained 51.60 percent of variation in utilization. Hence, it could be concluded that the functional linear relationship between independent variables and dependent variable could be established of the thirteen variables taken for the analysis, educational status (X₂) and farming experience (X₅) were

Table 5: Regression of socio-economic and psychological characteristics of respondents with their perception on eco-friendly farming practices in paddy, banana and sugarcane

Vari-ables	Independent variables	Regression coefficient	Standard error	't' value
X ₁	Age	-0.072	1.212	-0.719NS
X ₂	Educational status	0.260	0.421	3.042**
X ₃	Occupation status	0.028	1.403	0.334NS
X ₄	Farm size	0.031	0.906	0.300NS
X ₅	Farming experience	0.498	0.156	3.192**
X ₆	Annual Income	-1.400	1.200	-1.166NS
X ₇	Social participation	0.586	0.326	1.797*
X ₈	Extension agency contact	1.366	0.612	2.232*
X ₉	Mass media exposure	0.041	0.119	0.411NS
X ₁₀	Risk orientation	1.478	0.862	1.714*
X ₁₁	Scientific orientation	2.318	1.410	1.693*
X ₁₂	Economic motivation	0.398	0.298	1.335NS
X ₁₃	Innovativeness	0.040	0.430	0.456NS

a = 5.572

R² = 0.516

F = 6.121**

**Significant at 1% level of probability

*Significant at 5% level of probability

NS – Non-Significant

found to be significant at 1 percent level of probability. Social participation (X₇), extension agency contact (X₈), risk orientation (X₁₀) and scientific orientation (X₁₁) were significant at 0.05 level of probability towards utilization of eco-friendly farming practices in paddy, banana and sugarcane.

The variable educational status (X₂), farming experience (X₅), Social participation (X₇), extension agency contact (X₈), risk orientation (X₁₀) and scientific orientation (X₁₁) would bring about 3.042, 3.192, 1.797, 2.232, 1.714 and 1.693 units increasing in utilization respectively.

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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