



A STUDY ON THE PERCEPTION OF ECO-FRIENDLY AGRICULTURAL PRACTICES 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 perception of eco-friendly agricultural practices. The findings shows that majority (78.33 per cent) of the respondents had perception on practicing earthing up on sugarcane 50 days after planting to control early shoot borer.

Key words : Sugarcane, Eco-friendly 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 this present study, the perception level denoted the understanding of farmers about eco-friendly farming practices. In this study, perception is defined as the understanding of farmers about the eco-friendly farming practices. Forty nine eco-friendly farming practices were selected for testing the perception level of the respondents and they were 34 technologies in paddy, banana 5, and 10 eco-friendly farming practices in sugarcane. These 49 practices were selected based on the opinion of the scientists of agricultural university, experts from agriculture, horticulture departments and local leaders of gobichettipalayam block. Each item of perception was dichotomized into correct and incorrect responses with the score of two and one. Maximum score would indicate the perception of the respondents. The respondents were categorized into low, medium and high by using cumulative

frequency.

Result and Discussion

Results of the distribution of respondents according to their practice wise perception of eco-friendly farming practices in paddy cultivation are given in table 1.

I. Nursery area

The mean value of eco-friendly farming practices in nursery area is 79.44. Majority of the respondents had high level of knowledge on the application of farmyard manure/compost (98.33 per cent), flooding of nursery field to control nursery pests (95.00 per cent), separation of quality seeds (91.66 per cent), sun drying of seeds (90.00 per cent), use of recommended quantity of seeds (88.33 per cent), seed treatment with azospirillum (66.66 per cent), seed treatment with pseudomonas (65.00), keeping water in wet gunny bags in darkness for 24 hours to facilitating for seeds sprouting (61.66 per cent), and breaking seed dormancy (58.33 per cent). The importance and utility of farm yard manure/compost for paddy crop is widely recognized by way of their own experience and this might be the reason for the respondents to have good knowledge on it. The respondents had low perception about breaking seed dormancy because lack of awareness of the respondents.

Main field

Transplanting

The mean value of eco-friendly farming practices in transplanting is 79.58. Majority of the respondents had perception on transplanting of seedlings at the right age (88.33 per cent), Spacing in transplanting (85.00 per cent), transplanting of the seedlings at the same day of picking the seedlings (81.66 per cent) and quantity of *Azospirillum* for seedling treatment (63.33 per cent).

Bio-fertilizers

The mean value of eco-friendly farming practices in bio-fertilizer is 64.99. Majority of the respondents had perception on *Azospirillum* broadcast 10 packets (200 gm each) per hectare (68.33 per cent) and seedling dip with *Azospirillum* /5 packets (200 gm each) per hectare (61.66 per cent). A vast majority (68.33 per cent) of the respondents had knowledge about *Azospirillum* broadcast 10 packets (200 gm each) per hectare because the state department of agriculture created the awareness and provide the bio-fertilizer at free of cost. This finding is in accordance with the findings of Supriya (2018).

Organic manure

The mean value of eco-friendly farming practices in organic manure is 76.10. Majority of the respondents had

perception on the application of FYM/ compost 12.5 tonnes per hectare (86.66 per cent), application of green manure 6.25 tonnes per hectare (73.33 per cent), and Integrated nutrient management (68.33 per cent). Organic manure is highly used in now a days because all are aware about the organic manure.

Water management

The mean value of eco-friendly farming practices in water management is 70.00. Majority of the respondents had high perception on maintaining 1.5 – 2.5 cm water depending on the seedling height (70.00 per cent). This is in line with the findings of Suji (2012).

Weed management

The mean value of eco-friendly farming practices in weed management is 86.24. Majority of the respondents had perception on usage of clean seeds (98.33 per cent), proper composting (86.66 per cent), summer ploughing (83.33 per cent) and trimming and plastering of bunds (76.66 per cent). The farmers had knowledge about weed management practices because control of the weeds will increase the productivity.

Eco-friendly pest and disease management

Mechanical practices

The mean value of eco-friendly pest and disease management in mechanical practices is 63.33. Majority of the respondents had perception on trimming and plastering of bunds (76.66 per cent), alternate wetting and drying (73.33 per cent) and use of pheromone trap (40.00 per cent) to control the pests in paddy field.

Biological pest control

The mean value of eco-friendly farming practices in biological pest control is 58.33. Use of *Trichogramma chinensis* (58.33 per cent) and Use of *Trichoderma viridi* (58.33 per cent). Most of the respondents had perception about the biological pest control because the state department of agriculture created awareness about the biological pest control in paddy.

Neem products

The mean value of eco-friendly farming practices in neem products is 68.33. Majority (81.66 per cent) of the respondents had perception about the application of neem kernel extract and majority (75.00 per cent) of the respondents had knowledge about the application of neem oil spray. This is in line with the findings of Suji (2003) In recent years, neem product were popular among the farmers by the awareness created by the state department of agriculture. The private companies also promoting the neem product through campaigns, meeting, seminars and trainings. These factors influenced the

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

S.No.	Eco-friendly farming practices	Number of respondents	Per cent
I	Nursery area		
1	Quantity of farmyard manure/compost	118	98.33
2	Separation of quality seeds	110	91.66
3	Breaking seed dormancy	70	58.33
4	Keeping water in wet gunny bags in darkness for 24 hours to facilitate for seeds sprouting	74	61.66
5	Sun drying of seeds	108	90.00
6	Seed treatment with azospirillum	80	66.66
7	Seed treatment with pseudomonas	78	65.00
8	Use of recommended quantity of seeds	106	88.33
9	Flooding of nursery field to control nursery pests.	114	95.00
	Mean		79.44
II	Main field		
A	Transplanting		
10	Transplanting seedlings at the right age	106	88.33
11	Quantity of <i>Azospirillum</i> for seedling treatment	76	63.33
12	Spacing in transplanting	102	85.00
13	Transplanting of the seedlings on the same day of picking the seedlings.	98	81.66
	Mean		79.58
B	Bio –fertilizers		
14	Seedling dip with <i>Azospirillum</i> /5 packets (200 gm each) per hectare	74	61.66
15	<i>Azospirillum</i> broadcast /10 packets (200 gm each) per hectare	82	68.33
	Mean		64.99
C	Organic Manure		
16	Application of FYM/ compost 12.5 tonnes per hectare	104	86.66
17	Application of green manure 6.25 tonnes per hectare	88	73.33
18	Integrated nutrient management	82	68.33
	Mean		76.10
D	Water management		
19	Maintaining 1.5 – 2.5 cm water depending on seedling height	84	70.00
	Mean		70.00
E	Weed management		
20	Summer ploughing	100	83.33
21	Proper composting	104	86.66
22	Usage of clean seeds	118	98.33
23	Trimming and plastering of bunds	92	76.66
	Mean		86.24
F	Eco–friendly pest and disease management		
	1) Mechanical practices		
24	Alternate wetting and drying	88	73.33
25	Use of pheromone trap	48	40.00
26	Trimming and plastering of bunds	92	76.66
	Mean		63.33
	2) Biological pest control		
27	Use of <i>Trichogramma chinensis</i>	70	58.33

Table 1 contd

Table 1 contd

S.No.	Eco-friendly farming practices	Number of respondents	Per cent
28	Use of <i>Trichoderma viridi</i>	70	58.33
	Mean		58.33
	3) Neem products		
29	Neem oil spray at 3 per cent	90	75.00
30	Neem kernel extract at 5 per cent	98	81.66
	Mean		68.33
G	Rodent management		
31	Tanjore trap	82	68.33
32	T-shaped bird perches	96	80.00
	Mean		74.16
H	Harvest		
33	Right stage of harvesting	112	93.33
34	Harvesting at 80 per cent grain maturity stage	116	96.66
	Mean		94.99

knowledge gain of the paddy farmers.

Rodent management

The mean value of eco-friendly farming practices in rodent management is 74.16. Majority (80.00 per cent) of the respondents had perception about T-shaped bird perches and more than half (68.33 per cent) of the respondents had knowledge about Tanjore trap.

Harvest

The mean value of eco-friendly farming practices in harvest is 94.99. Majority (96.66 per cent) of the respondents had perception about the harvesting at 80 per cent grain maturity stage and majority (93.33 per cent) of the respondents had perception about the right stage of harvest.

Distribution of respondents according to their practicewise perception on eco-friendly farming practices in paddy cultivation

Results of distribution of respondents according to their practice wise perception of eco-friendly farming practices in banana cultivation are given in table 2.

It could be noted from table 2 that the knowledge level of eco-friendly farming practices of banana mean value is 59.33. More than three fifth (65.00 per cent) of the respondents had perception about the technology of arranging in a compact manner in a room with fumigation for quick ripening, more than half (63.33 per cent) of the respondents had perception to wilt in the shade for few days before planting allowing for good germination, more than half (63.33 per cent) of the respondents had perception on the application of castor cake 3-4 weeks before harvesting which improves the size, weight and

luster of the fruits, more than half (56.66 per cent) of the respondents had perception on preparing yellow coloured banana bunches, nearly half (48.33 per cent) of the respondents had perception on the application of castor oil and more than half (65.00 per cent) of the respondents had perception on fumigation of the banana bunches for quick ripening.

Distribution of respondents according to their practicewise perception on eco-friendly farming practices in sugarcane cultivation

Results of distribution of respondents according to their practice wise perception of eco-friendly farming practices in sugarcane cultivation are given in (Table 3).

It is noted from the table 3 that the perception of eco-friendly farming practices of banana mean value is 63.74. Majority (78.33 per cent) of the respondents had perception on practicing earthing up on sugarcane 50 days after planting to control early shoot borer, majority (76.66 per cent) of the respondents had perception on detrashing the canes to control scales and mealy bugs (it is locally called as ("sogaiurithal"), more than seventy per cent (71.66 per cent) of the respondents had perception on 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. More than seventy per cent (71.66 per cent) of the respondents had perception on topping and breaking the ridges with spade after the harvest of canes before allowing for ratoon for root growth and soil aeration. More than half (68.33 per cent) of the respondents had perception on sugarcane trashes are burnt before the next ratoon crop for killing insects and pathogens, more than half (68.33 per cent) of the

Table 2: Distribution of respondents according to their practicewise perception on eco-friendly farming practices in banana cultivation. (n=120)

S.No.	Eco-friendly farming practices	Number of respondent	Per cent
1.	Banana suckers are allowed to wilt in the shade for few days before planting for good germination.	76	63.33
2.	Castor cake is applied 3-4 weeks before harvesting which improves the size, weight and luster of the fruits.	76	63.33
3.	For getting yellow coloured banana, bunches are treated with ash and water.	68	56.66
4.	The banana bunches are arranged in compact manner in a room with fumigation for quick ripening.	78	65.00
5.	About two to three weeks before harvesting, a tin filled with castor oil is kept over the water channel in such a fashion that drops of oil fall into running water supplied to the banana trees improve the size, weight and luster of the fruits.	58	48.33
	Mean		59.33

Table 3: Distribution of respondents according to their practicewise perception of eco-friendly farming practices in sugarcane cultivation. (n=120)

S.No.	Eco-friendly farming practices	Number of respondent	Per cent
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.	86	71.66
2.	Sugarcane trashes are burnt before the next ratoon crop for killing insects and pathogens.	82	68.33
3.	Practicing earthing up in sugarcane at 50 days after planting to control early shoot borer.	94	78.33
4.	Topping and breaking the ridges with spade after the harvest of canes before allowing for ratoon for root growth and soil aeration.	86	71.66
5.	Sheep penning is practiced and sheep manure is applied (6.25t/ha) to increase the sugar content of the canes.	76	63.33
6.	Sett treatment with <i>Azospirillum</i> prepare the slurry with 10 packets 200gm each (10 packets/ha) of <i>Azospirillum</i> inoculums with sufficient water and soak the setts in the slurry for 10-15 minutes before planting.	68	56.66
7.	Releasing egg parasites of <i>Trichoderma viride</i> 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.	56	46.66
8.	Selecting seeds with shorter internodes for planting to maintain optimum plant density.	43	35.83
9.	Detrashing the canes to control scales and mealy bug. (it is locally called as (“sogaiurithal”))	92	76.66
10.	Growing castor as border crop to control early shoot borer attack in sugarcane.	82	68.33
	Mean		63.74

respondents had perception on growing castor as border crop to control early shoot borer attack in sugarcane, more than half (63.33 per cent) of the respondents had perception on application of sheep manure (6.25t/ha) to increase the sugar content of the canes, more than half (56.66 per cent) of the respondents had perception on 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. Nearly half (46.66 per cent) of the respondents had perception on 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 and nearly forty per cent (35.83 per

cent) of the respondents had knowledge on selecting seeds with shorter internodes for planting to maintain optimum plant density. Earthing up is traditionally followed method so the respondents had knowledge about that practice This finding is in accordance with the finding of this Sureshkumar (2015).

Conclusion

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

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