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Attitude of Vegetable Growers towards Eco-Friendly Technologies in Udaipur District of Rajasthan, India

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A B S T R A C T

The present study was aimed to analyze the attitude of vegetable growers towards eco-friendly technologies in vegetable cultivation. The study was conducted in four tehsils of Udaipur district. From each tehsil, five villages were selected and from each village, twelve vegetable growers were selected randomly. To measure the attitude of vegetable growers an attitude scale was developed and administered. The responses were recorded and mean percent score was calculated. From the responses it was noted that majority of the respondents strongly agreed the statement "EFT won't give much production than inorganic cultivation" followed by "vegetables produced through the application of EFT has good taste.

Introduction

The most effective way of rising any crops is by adopting good management practices. Green revolution and rapid dissemination of modern agricultural technologies has led to the adverse effects on the ecosystem. Unsystematic use of pesticides and herbicides has critically affected the well-being of humans. Currently world is experiencing a serious issue with the cancer. Research conducted in various farming communities all over the world found that people exposed to certain pesticides have higher potential to cancer risk. Most elevated pesticide utilization was found in Cotton pursued by Vegetables. Since it is extremely succulent and short lived crops, the pesticide utilization is likewise higher.

Vegetable is indispensable requirement to meet nutrients and mineral needs of the

human body. Vegetables are widely cultivated in the Udaipur district and produces were sold in metro cities, hence it is important to know the farmers' behaviour regarding the different eco-friendly technologies.

Eco-friendly farming is the method of producing crops by utilizing locally available inputs with minimal destruction to the eco-system. It is a comprehensive generation framework which improves agro-environment, including biodiversity, biological cycles, and soil organic action. As per the records, India's rank in terms of World's Organic Agriculture land was ninth and in terms of total number of producers was first as per 2018 data (Source: FIBL &IFOAM Year Book). Among the different states which adopted organic farming Madhya Pradesh was the largest producer followed by Maharashtra, Karnataka, Uttar Pradesh and Rajasthan.

Attitude is an organized predisposition to think, feel, perceive and behave towards a referent or cognitive object (Kerlinger, 1995). Alzaidi *et al.,* (2013) revealed that majority of farmers had positive attitude and 34.30 per cent had neutral and negative attitudes regarding organic farming. While Kotresha *et al.,* (2014) found that the attitudes of farmers were negative regarding the organic farming and the respondents were dependent on conventional practices for controlling pest and diseases. In some of the literatures, it was reported that there were difficulties in implementation of organic cultivation in field (Mondal *et al.,* 2014). Attitude in the present study is defined as "the degree of positive or negative feeling, opinion, belief and action associated with eco-friendly technologies in vegetable cultivation by the farmers of Udaipur district" in which attitude of people can differ in varying degrees. Very less literature is available about eco-friendly practices in Southern Rajasthan. Hence, it was felt requisite to study the eco-friendly practices in vegetables by the farmers of Udaipur District of Rajasthan.

Materials and Methods

The present study with the aim to know the behavioural responses of vegetable growers towards eco-friendly technologies and hence, study was conducted on *ex-post facto* technique. *Ex-post facto* is applied where it is not possible manipulate the characteristics of responses obtained from respondents. It is mainly used to test the hypotheses framed for the research. The present study was conducted in Udaipur district of Southern Rajasthan. Udaipur district consists of thirteen tehsils, out of which four tehsils namely Girwa, Mavli, Badgaon and Sarada were selected on the basis of maximum area under vegetable cultivation. Out of the selected tehsils, Girwa and Badgaon are situated near to Udaipur city and Maharana Pratap University of Agriculture and Technology, Udaipur. Whereas, Mavli and Sarada are distantly situated tehsils from the city. List of major vegetable cultivating villages from the selected tehsils were prepared with the help of personnel of State Horticulture Department and Agriculture officers in the Udaipur. From the list so prepared, five villages from each identified tehsil on the basis of maximum area under vegetable cultivation were selected for the study purpose. Hence, twenty villages were selected for investigation. For the selection of respondents, a comprehensive list of vegetable growers was prepared from the selected villages with the help of Agriculture supervisor and Patwari of respective village. Twelve vegetable growers were identified from each identified village through random selection method. Thus, total 240 vegetable growers were included in the sample of study. A scale was developed of measure the attitude of vegetable growers towards eco-friendly practices by using Likert's technique of

summated rating was constructed. The scale consists of 32 statements, out of which 16 positive and 16 negative. The responses were assigned scores as 5,4,3,2 and 1 to strongly agree, Agree, Undecided, Disagree and Strongly disagree in case of positive statements and for negative statements, pattern scoring was reversed. Based on the responses, Mean Percent Score (MPS) and rank was calculated.

Results and Discussion

Statement-wise attitude of eco-friendly technologies in vegetable cultivation

For knowing the attitude of respondents towards the Eco-friendly technologies in vegetable cultivation, the developed scale. It was consists of 32 statements and mean per cent scores (MPS) of all the statements were calculated and ranked accordingly. The results were presented in Table 1.

The results in the Table 1 reveals that majority of the vegetable growers strongly agreed to the positive statement namely "EFT won't give much production than inorganic cultivation" which was ranked first with mean per cent score of 83.33. This statement was followed by "Vegetables produced through the application of EFT has good taste" and strongly disagreed to the statement "EFT demands less patience for vegetable cultivation" with 81.66 MPS and 81.08 MPS which ranked second and third, respectively.

It is also clear that vegetable growers had a positive attitude towards the statements "EFT reduces environmental pollution", "EFT in vegetable cultivation is very easy to adopt by the farmers" and "EFT is transitionally difficult to sustain the livelihood of the vegetable growers" with mean per cent score of 80.66, 79.33 and 79.08 and ranked fourth, fifth and sixth, respectively.

Majority of the respondents agreed that "Timely weeding helps to provide required nutrients to vegetable crops" as well as "Package of practices about EFT is lacking in current scenario" and strongly disagreed that "EFT requires less time than conventional agriculture" with 79.00 MPS, 78.66 MPS and 78.00 MPS which ranked seventh, eighth and ninth rank among the total statements.

Farmers opinioned favourable towards "Eco-friendly technologies provide better quality vegetables" of 77.50 MPS and it was ranked tenth while respondents expressed the disagreement towards "EFT reduces input costs of vegetable production" which ranked eleventh among the statements.

Respondents were in a strong opinion that "Eco-friendly technologies ensures biodiversity" and" Timely inter cultivation is most important to check weed, pest, diseases, etc." with 75.25 MPS and 74.41MPS, respectively and which ranked twelfth and thirteenth.

Majority of the vegetable growers agreed to the positive statements "Farmers can obtain optimum production if he possess livestock at their farm", "EFT provides social compatibility" which ranked fourteenth and fifteenth. While, the respondents expressed the disagreement towards the "Eco-friendly technologies not improves soil structure and fertility" which ranked seventeenth among the statements. Among the positive statements, majority of the farmers agreed with "Vegetables produced through EFT is good for normal health"(70.50MPS),

"I feel young farmers should take up EFT in vegetable cultivation"(69.91MPS) whereas, respondents disagreed with "Vegetables produced through eco-friendly technologies has less demand than conventionally produced ones" (68.75MPS).

Table.1 Attitude of respondents towards eco-friendly technologies

n=240

S. No.	Statements	MPS	Rank
1.	Eco-friendly technologies ensures biodiversity	75.25	12
2.	EFT requires less time than conventional agriculture	78.00	9
3.	EFT reduces environmental pollution	80.66	4
4.	EFT demands less patience for vegetable cultivation	81.08	3
5.	Eco-friendly technologies provides better quality vegetables	77.50	10
6.	EFT is not efficient in mitigating climate change effects	65.08	23
7.	EFT is transitionally difficult to sustain the livelihood of the vegetable growers	79.08	6
8.	Agricultural professionals posses proper knowledge about EFT in vegetable cultivation	68.50	20
9.	EFT provides social compatibility	72.58	15
10.	EFT in vegetable cultivation is very easy to adopt by the farmers	79.33	5
11.	EFT won't give much production than inorganic cultivation	83.33	1
12.	Eco-friendly technologies improves soil structure and fertility	72.41	16
13.	Vegetables produced through the application of EFT has good taste	81.66	2
14.	EFT reduces input costs of vegetable production	76.08	11
15.	Package of practices about EFT is lacking in current scenario	78.66	8
16.	EFT won't strengthen the use of indigenous knowledge among the farmers	66.75	21
17.	Proper demarcation from eco-friendly to conventional agriculture is known.	47.75	31
18.	Vegetables produced through eco-friendly technologies has less demand than conventionally produced ones	68.75	19
19.	Majority of consumers are not still aware of the advantages of eco-friendly vegetables	58.83	26
20.	EFT is difficult to manage by fellow farmers	43.91	32
21.	EFT reduces pests and disease infestation in vegetables	50.75	30
22.	Premium price is not ensured for the vegetables produced through eco-friendly technology	57.00	27
23.	Farmers can obtain optimum production if he possess livestock at their farm	73.16	14
24.	Shifting from conventional agriculture to eco-friendly cultivation is laborious	51.25	29
25.	Vegetables produced through EFT is good for normal health	70.50	17
26.	Eco-friendly technologies in vegetable cultivation does not offer potential for food security	53.33	28
27.	I feel young farmers should take up EFT in vegetable cultivation	69.91	18
28.	Use of neem cake cannot control nematode/ root disease	62.91	25
29.	Timely inter cultivation is most important to check weed, pest, diseases, etc.	74.41	13
30.	Application of green manure won't gives good results in vegetable production	65.33	22
31	Application of crop residues in field can acts a invitation for new pest	64.00	24
32.	Timely weeding helps to provide required nutrients to vegetable crops	79.00	7

MPS= Mean Per cent Score

From Table 1 it was clear that majority of the farmers disagreed the negative statements "Agricultural professionals posses proper knowledge about EFT in vegetable cultivation", "EFT won't strengthen the use of indigenous knowledge among the farmers" and "Application of green manure won't gives good results in vegetable production" with 68.50 MPS, 66.75 MPS and 65.33 MPS which ranked twenty, twenty-one and twenty three, respectively. Whereas, the respondents have given their strong opinion towards the negative statement entitled "EFT is not efficient in mitigating climate change effects" with 65.08 MPS and ranked as twenty three respectively.

It was also found that respondents had agreed to the statement "Application of crop residues in field can acts a invitation for new pest" with 64.00 MPS and assigned rank as twenty four whereas the negative statement, "Use of neem cake cannot control nematode/ root disease" with 62.91 MPS which ranked twenty five by the respodents. While the statements, "Majority of consumers are not still aware of the advantages of eco-friendly vegetables", "Premium price is not ensured for the vegetables produced through eco-friendly technology", "Eco-friendly technologies in vegetable cultivation does not offer potential for food security" and "Shifting from conventional agriculture to eco-friendly cultivation is laborious " with 58.83 MPS, 57.00 MPS, 53.33 MPS and 51.25 MPS and ranked twenty six, twenty seven, twenty eight and twenty nine, respectively.

Results mentioned in the Table 1 also express that among the total 32 statements, positive statements "EFT reduces pests and disease infestation in vegetables", "Proper demarcation from eco-friendly to conventional agriculture is known" with 50.75 MPS and 47.75 MPS and got least ranks as thirty and thirty one respectively. This might be due to the lack of proper knowledge regarding the eco-friendly pests and disease management as well as with regard to package of practices. Farmers were in need to get aware about the various aspects of eco-friendly practices. The statement "EFT is difficult to manage by fellow farmer" ranked lowest out of all the statements.

From the findings it can be concluded that the respondents had a favorable attitude towards the eco-friendly technologies in vegetable cultivation but the respondents need proper training and encouragement for adopting the practices. It was also noted that the revitalization of extension system at the grass root level is required for enhancing the technical knowledge of farmers and for changing the attitude of farmers.

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