RESEARCH NOTE

Association between the Characteristics of Vegetable Growers and Level of Adoption of Eco-Friendly Technologies in Vegetable Cultivation

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ABSTRACT

Eco-friendly farming is an alternative farming technique of producing crops naturally. Though it has been identified and practiced in worldwide, the extent of adoption varies from place to place and from time to time. The study was conducted to investigate the association of characteristics of vegetable growers in determining the adoption behaviour of eco-friendly technologies in vegetable cultivation. The study employed an Ex post facto research design where the information was collected from 240 farmers of Udaipur District of Southern Rajasthan. The findings shows that utilization of mass media, scientific orientation , training exposure and cosmopolitan outlook had significant association with the level of adoption of eco-friendly technologies in vegetable cultivation. While, characteristics viz. age, education, size of family, annual income, size of land holding, farming experience, innovative proneness, economic orientation, achievement motivation, risk orientation, extension participation and institutional participation were non-significant with the adoption level.

Key words: *Eco-friendly; Sustainability; Adoption; Association; Vegetable growers;*

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. The eco-friendly technologies are a combination of Integrated Crop Management (ICM), Integrated Pest Management (IPM) and Integrated Farming System (IFS). Though large number of farmers are working on eco-friendly technologies, it is very important to know how well our farmers are equipped to these technologies. Numerous studies related with personal characteristics and adoption of eco-friendly management as well as other alternative farming practices in crop cultivation has been done in various parts of the world. Factors like education, land holding, size of family, occupation, social participation, annual income, extension participation and socio economic status of the respondents had a significant and positive association with level of adoption of eco-friendly management practices (*Dhakad, 2007*). Whereas, *Chowdhary and Ray (2010)* found that age, caste, educational status, total monthly income of the family, material possession, type of farm power used in vegetable cultivation, experience of respondents in vegetable cultivation, social participation, respondent's family contact with extension agencies and exposure of the respondents to the mass media sources were significantly and positively correlated with the adoption level of the respondents and the knowledge index and adoption level of the respondents regarding the IPM techniques in the selected vegetable cultivation were highly and positively correlated. Considering these facts, an investigation was conducted with specific objectives:

i. To study the personal characteristics of them.
ii. To ascertain the association between personal, characteristics variables with the adoption level of farmers about eco-friendly technologies.

METHODOLOGY

The *Ex post facto* research design used for the study.

The present study was conducted in Udaipur district of Rajasthan. Udaipur district was purposively selected. The district consists of eleven Tehsils, four Tehsils namely Girwa, Badgaon, Sarada and Mavli were selected on the basis of maximum area in vegetable cultivation. Among these five villages were selected on the basis of maximum area in vegetable cultivation form each Tahsil. Thus, twenty villages were selected for the study. From each village, twelve respondents were selected randomly from the comprehensive list of vegetable growers prepared with the help of personnel of Agriculture Department. Thus, in all 240 respondents were interviewed for the study. A comprehensive interview schedule was developed considering the specific objectives formulated for the study. Eco-friendly technology consists of various traditional practices and appropriate new technologies. In this study, different eco-friendly practices as well as the socio-economic and psychological aspects of respondents were assessed using suitable measuring techniques. Data was collected by using personal interview method and analyzed with appropriate statistical measurement.

RESULTS AND DISCUSSION

Data presented Table 1 shows that majority of the respondents were middle aged of 33 to 56 years, were educated above middle school and were doing farming as a sole profession. While, 80.00 per cent of the respondents were marginal farmers with a land holding up to 1 hectare and majority of the vegetable grower belonged to small family. It was further noted that 44.16 per cent of the respondents had their annual income in a range of Rs. 1,00,000 to Rs. 2,00,000 as well as majority of the respondents were highly experienced in farming. It was also found that majority had medium scientific orientation, achievement motivation and economic motivation. From the analysis, it was observed that more than 41.00 per cent of the respondents were actively participated in various institutions and also it was found that 57.91 per cent of the respondents had medium level of extension participation followed by 22.08 per cent of the respondents had low level of extension participation.

Further it was also noted that 74.58 per cent of the respondents not received any kind of training exposure on eco-friendly technologies. Out of total respondents, 55.00 per cent had medium cosmopolitan outlook followed by 25.42 per cent of respondents had

Table 1. Characteristics of vegetable growers (N=240)

Characteristics	Category	No.	%
Age	Young	38	15.84
	Middle	166	69.16
	Old	36	15.00
Education	Illiterate	25	10.42
	Upto Middle	90	37.50
	Above middle	125	52.08
Occupation	Farming and daily wage	30	12.50
	Farming as a sole profession	173	72.08
	Farming & service	37	15.42
Land holding	Marginal (<1 ha)	192	80.00
	Small farmers (1-2ha)	34	14.16
	Large (>2 ha)	14	5.00
Size of family	Small	123	51.25
	Medium	95	39.58
	Large	22	9.16
Annual income	Low (<Rs.1 lakh)	42	17.50
	Medium (Rs.1.1akh-2 lakh)	106	44.16
	High (> Rs.2,lakh)	92	38.34
Farming	Low	21	8.75
experience	Medium	29	12.08
	High	190	79.17
Scientific	Low (<17.57)	37	15.41
orientation	Medium (17.57 to 22.98)	165	68.75
	High (>22.99)	38	15.83
Achievement	Low (<10.96)	28	11.66
motivation	Medium(10.96 to 14.40)	177	73.75
	High (>14.40)	35	14.59
Economic	Low (<20.34)	51	21.25
motivation	Medium (20.34 to 23.80)	128	53.24
	High (>23.80)	61	25.41
Institutional	No membership	55	22.91
Participation	Passive participation	85	35.41
	Active participation	100	41.68
Utilization of	Low (<2.40)	31	12.91
mass media	Medium (2.40 to 7.48)	176	73.33
	High (>7.48)	33	13.76
Extension	Low (<2.30)	53	22.08
Participation	Medium (2.31 to 9.72)	139	57.92
	High (>9.72)	48	20.00
Training	No training	179	74.58
Exposure	Training attended	61	25.42
Cosmopolitan	Low (<2.96)	47	19.58
outlook	Medium (2.96-7.25)	132	55.00
	High (above 7.25)	61	25.42
Risk	Low (<16.12)	63	26.25
orientation	Medium (16.12 to 18.90)	133	55.42
	High (>18.90)	44	18.33
Innovative	Low (<10.62)	35	14.58
proneness	Medium (10.62 to 13.70)	154	64.17
	High (>13.70)	51	21.25

cosmopolitan outlook. A similar pattern of results was obtained by *Shashidhara (2006)*.

A close observation of Table 1 shows that majority of the vegetable growers had medium level of risk orientation whereas, 26.25 per cent of respondents fell in low level of risk orientation. It was also observed that 42.19 per cent of the respondents had medium innovative proneness while 21.25 per cent of the respondents had high innovative proneness.

Association of independent variables with the adoption of eco-friendly technologies: Results presented in Table 2 indicates that scientific orientation, training exposure, utilization of mass media and cosmopolitan outlook had significant association with the adoption of eco-friendly technologies in vegetable cultivation at 5 per cent level of significance. Remaining independent variables like age, education, annual income, size of family, farming experience, achievement motivation, economic orientation, innovative proneness and risk orientation does not had any association with adoption level. The implications of the findings are similar to the findings of *Shashidhara (2006), Tambi and Tambi (2009)* and some of the other researchers like *Dohare (2007), Chowdhary and Ray (2010)* as well as by *Maratha et al (2018)*.

Table 2. Association between selected independent variables with the level of adoption of eco-friendly technologies in vegetable cultivation.

Variables	χ^2 value
Age	0.47^{NS}
Education	3.77 ^{NS}
Occupation	8.24 ^{NS}
Annual income	2.97 ^{NS}
Land holding	5.82 ^{NS}
Size of family	0.61 ^{NS}
Farming experience	0.45 ^{NS}
Scientific orientation	41.74**
Achievement motivation	3.59 ^{NS}
Economic motivation	3.11 ^{NS}
Extension Participation	6.75 ^{NS}
Institutional participation	7.64 ^{NS}
Training Exposure	24.58**
Risk orientation	0.83 ^{NS}
Innovative proneness	1.88 ^{NS}
Cosmopolitan outlook	18.77*
Utilization of mass media	9.11*

**Significant at 1 per cent level of significance;
* Significant at 5 per cent level of significance

CONCLUSION

From the findings it is inferred that initiatives must be taken at grassroots level for encouraging the farmers to adopt environmental friendly practices by providing intrinsic motivation and extrinsic motivation. For implementing the strategy, cluster approach will be effective. Since farmers will get chance to interact with various people as well as it helps in identifying the economically viable practices that can be implemented by marginal and small farmers. This can help to improve various personal factors like achievement motivation, risk orientation and economic motivation within the farmers.

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