ADOPTION OF ECO-FRIENDLY MANAGEMENT PRACTICES BY VEGETABLE GROWERS

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Abstract: The investigation was undertaken during the year 2008-09 in purposively selected Indore block of Indore district of Madhya Pradesh in terms of socio-personal, economic and communication profile of vegetable growers. Regarding the knowledge about eco-friendly management practices most of the respondents possessed medium to high level of knowledge. Higher percentage of the respondents (61.25%) had medium adoption of eco-friendly management practices.. About 88.22 per cent variation in level of knowledge was contributed by all eleven antecedent variables related to socio-personal, economic and communication characteristics of vegetable growers. Education, mass media exposure, extension participation and information seeking behaviour were positively and significantly influenced the knowledge to the extent of 87.05 per cent. Education showed its superiority over remaining variables in respect of influencing knowledge level. Education had recorded highest percentile contribution (28.93) followed by mass media exposure (24.80), information seeking behaviour (21.50) and extension participation (13.83). About 83 per cent variation in extent of adoption was explained by all eleven antecedent variables. Education, mass media exposure, information seeking behaviour and land holding significantly influenced the adoption of eco-friendly management practices by the vegetable growers to the extent of 80.83 per cent. Education recorded highest percentile contribution (54.70) followed by mass media exposure (34.98) and information seeking behaviour (21.59). Extent of adoption was negatively and significantly influenced by size of land holding to the extent of –2.53 per cent in terms of percentile contribution towards multiple R^2 value.

Keywords: Adoption, Management practices, Vegetable

INTRODUCTION

Vegetables are grown in India since thousands of years but now a day it has become an important enterprise at national and international level. In recent years, the vegetable now become an essential requirement of the daily human diet, because of its nutritional value. In M.P. total area under vegetable cultivation is 663.9 lakh hectares, (2004-2005) with a production of 31.84 lakh tonne and in Indore district 22.68 thousand hectares in 1999-2000 which increased to 26.46 thousand hectares in 2003-04 and later reduced to 22.25 thousand hectares in 2004-05 and further increased to 26.48 thousand hectares in 2006-07 (Source- Commissioner, Land Record, M.P.). The production of vegetable crops in Indore district was at 6352.50 thousand tonnes in 2006-07 and further increased to 6423.90 thousand tonnes in 2007-08 (Source- Government Department of Horticulture, Indore).

The modern agriculture has been successful in meeting the increased food needs of alarmingly growing population. But, the problem associated with modern agriculture like, the high cost of inorganic chemical fertilizers and plant protection chemicals, stagnated yield levels over the years and the mounting health and environmental hazards have forced many farmers and scientists to focus attention on ecologically sound, viable and sustainable alternative non-chemical farming.

MATERIAL AND METHOD

The study was conducted during 2008-09 in Indore district of Madhya Pradesh. The research design adopted for this study was ex-post facto technique. . From Indore district, Indore Block was purposively selected based on maximum area under vegetable crop. Accessibility, time available with the researcher etc. were the other criteria for the selection of this block. There are 16 RAEOs circles in Indore block. Out of 16, 5 RAEOs circles were selected randomly. Two villages from each selected RAEO circle were selected randomly. Their selection was made from the list of villages prepared for each selected RAEOs circle through simple random sampling method. A list of vegetable growers was prepared separately for each of the selected village. From the prepared list, eight vegetable growers were selected randomly for each village irrespective of total number of farmers in that village. Thus, the sample size comprised of 80 vegetable growers. All the respondents were individually interviewed using pre-tested interview schedule. Adoption and knowledge of eco-friendly management practices by vegetable growers are the dependent variables. Based on the scores, the respondents were classified in to the three adopters and knowledge categories viz., low, medium and high using mean and standard deviation as measure of check.

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RESULT AND DISCUSSION

Knowledge of vegetable growers about eco-friendly management practices.

As regard to the knowledge of eco-friendly management practices, majority (56.25%) of the respondents had medium, 26.25 per cent high and 17.50 per cent had low level of knowledge about eco-friendly management practices. The result expressed by the respondents regarding knowledge about eco-friendly management practices was medium.

The findings were in conformity with the findings of Borkar et al. (2000) and Kalashkar et al. (2001),

Table 1. Distribution of vegetable growers according to their overall knowledge level about eco-friendly management practices

Knowledge category	Vegetable growers	
	Frequency	Per cent
Low (< 10.47)	14	17.50
Medium (10.47 – 18.21)	45	56.25
High (> 18.21)	21	26.25

Mean = 14.34 SD = 3.87

Distribution of vegetable growers according to their overall extent of adoption of eco-friendly management practices

It was observed from the data presented in Table 4.7 that majority (61.25%) of the respondents belonged to medium adoption category, whereas, 23.75 and 15.00 per cent of them in high and low adoption categories of eco-friendly management practices, respectively.

This, findings were in accordance with Sriram and Paliniswamy (1999), Chothe and Borker (2000), and Nagdev and Venkatramaiah (2006).

Table 2. Distribution of vegetable growers according to their adoption level of eco-friendly technologies

Adoption category	Vegetable growers	
	Frequency	Per cent
Low (< 24.22)	12	15.00
Medium (24.22 – 31.48)	49	61.25
High (> 31.48)	19	23.75

Mean = 27.85 SD = 3.63

Relationship between personal, socio-economic and communication characteristics of vegetable growers with knowledge and adoption of eco-friendly technologies:

The antecedent variables *viz.* education, size of family, annual income, land holding, occupation, social participation, socio-economic status, mass media exposure, extension participation and information seeking behaviour were found to have positive and significant correlation with the level of knowledge possessed by the vegetable growers regarding eco-friendly management practices.

The antecedent variables studied, education, size of family, annual income, occupation, social participation, socio-economic status, mass media exposure, extension participation and information seeking behaviour were significantly correlated with adoption of eco-friendly management practices by the vegetable growers whereas land holding was found to be non significant. Thus it could be inferred that vegetable growers with higher education, big size of family, higher annual income, subsidiary occupation along with farming, higher social participation, higher socio-economic status, high mass media use and higher information seeking behaviour had high extent of adoption of eco-friendly management practices in vegetable crop.

Table 3. Coefficient of correlation between the consequent variables extent of knowledge and adoption and rest eleven antecedent variables

S. No.	Variables	Knowledge	Adoption
1.	Age	0.175	0.135
2.	Education	0.871**	0.859**
3.	Size of family	0.287**	0.301**
4.	Annual income	0.363**	0.275*
5.	Land holding	0.238*	0.148
6.	Occupation	0.555**	0.416**

7.	Social participation	0.397**	0.353**
8.	Socio-economic status	0.334**	0.221*
9.	Mass media exposure	0.858**	0.811**
10.	Extension participation	0.791**	0.734**
11.	Information seeking behaviour	0.766**	0.760**

* = Significant at p=0.05 ** = Significant at p=0.01

Regression analysis

Level of knowledge

The step down regression analysis depicted that following factors, education, mass media exposure, extension participation and information seeking behaviour had been retained at the seventh step. These, however, elucidated their stupendous contribution (multiple R2=87.05 per cent) towards the total variation 88.22 per cent .It can be stated that only 1.17 percent variation in level of knowledge were unexplained by these four above-mentioned antecedent variables.

Table 4. Step down regression analysis: The 7th step showing regression coefficient of consequent variable level of knowledge on the antecedent variables

S.No.	Variables	BETA	BETA ×R	REG. COEF.-B
1.	Education (X2)	0.265	26.23	0.184*
2.	Mass media exposure (X9)	0.325	31.85	0.301**
3.	Extension participation (X10)	0.185	16.75	0.168*
4.	Information seeking behaviour (X11)	0.288	25.17	0.328**
Multiple R2 = 0.8705				

BETA = Partial contribution towards Y1

BETA×R = Percentile contribution towards R2 value of different antecedent variables

REG. COEF.-B = Regression coefficient of Y on Xi (i = 2, 9, 10, 11)

* = Significant at p=0.05 ** = Significant at p=0.01

Level of Adoption

The multiple R2 being 80.83 per cent, the inferences could be drawn that these four variables viz., education, land holding, mass media exposure and information seeking behaviour out of eleven studied variables had explained a substantive amount of total variation explained by all 11 variables

Table 5. Step down regression analysis: The 7th step showing regression coefficient of consequent variable extent of adoption on the antecedent variables

S. No.	Variables	BETA	BETA ×R	REG. COEF.-B
1.	Education (X2)	0.439	46.83	0.312**
2.	Land holding (X5)	-0.138	-2.54	-0.138*
3.	Mass media exposure (X9)	0.310	31.10	0.302*
4.	Information seeking behaviour (X11)	0.262	24.61	0.314*
Multiple R2 = 0.8083				

BETA = Partial contribution towards Y2,

BETA×R = Percentile contribution towards R2 value of different antecedent variables

REG. COEF.-B = Regression coefficient of Y2 on Xi (i = 2, 5, 9 and 11)

* = Significant at p=0.05 ** = Significant at p=0.01

CONCLUSION

It was concluded regarding the knowledge eco-friendly management practices most of the respondents possessed medium to high level of knowledge. Higher percentage of the respondents (61.25%) had medium adoption of eco-friendly management practices. Ten out of eleven variables, namely education, size of family, annual income, land holding, occupation, social participation, socio-economic status, mass-media exposure, extension participation and information seeking behaviour exhibited significant to highly significant positive association with knowledge of vegetable growers about eco-friendly management practices. All the studied socio-personal, economic and communication variables except age and land holding exhibited positive and significant association with adoption of eco-friendly management practices by vegetable growers.About 88.22 per cent variation in level of knowledge was contributed by all eleven antecedent variables related to socio-personal, economic and communication characteristics of vegetable growers. Education, mass media exposure, extension participation and information seeking behaviour were positively and significantly

influenced the knowledge to the extent of 87.05 per cent.

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