

Assessing Differential Knowledge and Attitude Level Apropos Eco-friendly Practices (EFP) Among the Vegetable Growers

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ABSTRACT

Management of eco-friendly farming is focussed on the whole farm system and its interactions with climate, environment, social as well as economic conditions, rather than considering the farm as individual enterprises. The study was conducted in Indore district of Madhya Pradesh with 120 vegetable growers of 10 villages which were selected randomly. All the selected farmers were interviewed personally using a well-structured interview schedule. For analysis of collected data, descriptive statistics (frequency and percentage) and analytical statistics were used. The finding reveals that the higher percentage of vegetable growers (64.17%) had low knowledge of technology. This may be due to lack of awareness of scientific technology and lack of exposure of about improved technologies in agriculture. Majority (59.16 %) of vegetables growers were in the category of favourable attitude towards use of eco-friendly management practices.

Key word: Knowledge level, Eco-friendly management practices, Vegetable.

INTRODUCTION

The modern farming systems aim at maximizing production through the use of increased quantities of external inputs such as fertilizers and plant protection chemicals without due consideration to their ill effects. Consequently, the traditional agronomic practices such as green manuring, use of farm wastes either as such or after composting and other soil ameliorative measures have not become part of the farming systems.

This has resulted in a slow but steady decline in the productivity of the soil. The use of fertilizer and pesticides is increasing in the process of adopting high yielding varieties (HYV) and hybrids without giving attention towards proper dosages and methods of application and waiting periods. This is gradually leading to many adverse and hazardous effects on environment and human beings. These hazards are of different kinds with different intensity.

There are many articles supporting the issue that the pesticide residues are found in every day diet and in the human body which may cause severe health hazards. The chemical detrimental effects of fertilizers in plants are reduction in germination, retardation in seedling growth, scorching and increased susceptibility to diseases (*Asha et. al.*, 2001). The eco-friendly pest management is

viewed as a broad ecological approach to pest control employing several methods and techniques *viz.*, cultural, mechanical, biological and chemical in a compatible manner to keep the pest level below economic threshold. The eco-friendly nutrient management involves the use of bulk organic nutrient base like FYM, press mud, green manure, earthworm meal, plant residues such as coir pith, sugarcane thrash *etc.*, in combination with several agronomic practices.

METHODOLOGY

The study was conducted in Indore district of Madhya Pradesh. Indore district comprises of four blocks namely, Depalpur, Saver, Indore, Mahow. An extensive survey was conducted in vegetables growing villages.

A sample of 120 vegetable growers was drawn from 10 vegetable growing villages using proportionate random sampling technique. Based on the expert's opinion, recommended vegetable cultivation practices were selected for studying the extent of adoption.

All the selected farmers were interviewed personally using a well-structured interview schedule. For analysis of collected data, descriptive statistics (frequency and percentage) and analytical statistics in were used.

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RESULTS AND DISCUSSION

Table 1: Profile of the vegetables growers

Variables	No.	Percentage (%)
Age		
Young (21 to 35 years)	30	25.00
Middle (36 to 50 years)	71	59.17
Old (above 50 years)	19	15.83
Annual income		
Low income (Up to ₹ 50,000/-)	73	60.83
Medium income (₹ 50,001 to 1,00,000/-)	26	21.67
High income (Above ₹ 1,00,000/-)	21	17.50
Land Holding		
Marginal (Up to 1.00 ha)	07	05.83
Small (1.10 to 2 ha)	11	09.17
Medium (2.1 to 5 ha)	75	62.50
Large (above 5 ha)	27	22.50
Education		
Illiterate	06	05.00
Can read and write	42	35.00
Primary school	19	15.85
Middle school	26	21.66
Higher secondary	26	21.66
College	01	0.83
Occupation		
Vegetable production + labours	05	04.17
Vegetable production + Business (Caste occupation + Dairy)	25	20.83
Vegetable production + Shop keeping	41	34.16
Solely vegetable production	44	36.67
Vegetable production + Services	05	04.17
Socio-economic status		
Low (24 to 36 score)	25	20.83
Medium (37 to 49 score)	76	63.33
High (above 49 score)	19	15.84
Economic Motivation		
Low (4 to 6 score)	33	27.50
Medium (7 to 9 score)	70	58.33
High (above 9 score)	17	14.17
Knowledge Level		
Low (1 to 5 scores)	77	64.17
Medium (6 to 10 scores)	26	21.66
High (above 10 scores)	17	14.17
Economic motivation		
Low (4 to 6 score)	33	27.50
Medium (7 to 9 score)	70	58.33
High (above 9 score)	17	14.17
Market Orientation		
Low (1 to 5 score)	63	52.50
Medium (6 to 10 score)	36	30.00
High (above 10 score)	21	17.50

The analyzed data showed that majority (59.17 %) of the respondents were from middle age group (36-50 years). This result is in the line of work of Singh and Bhagat (2002), Meena *et al.* (2005), Pyasi, R.D. (2009) and Natya, V.K. (2011). Higher percentage of respondents (60.83%) had low annual income (Up to ₹ 50,000/-), followed by 21.67 per cent growers had medium annual income (₹ 50,001 to 1,00,000/-), and 17.50 per cent growers had high annual income group (above

₹ 1,00,000/-). This finding has conformity with Natya, V.K. (2011) & Patel, G.P. (2007). Majority (62.50%) growers had medium farmers (2.10 to 5.00 ha.) of cultivable land under vegetable crops. The highest proportions of the respondents (35.00 %) were Can read and write, whereas 21.66 per cent were middle & up to higher secondary, 15.86 per cent were up to 5th class, 5.00 per cent were illiterate and only 0.84 per cent were graduate. Majority (36.67%) of vegetable growers were solely engaged in vegetable production as their main occupation followed by 34.14 percent had done vegetable cultivation + shop keeping. The work of Pyasi, R.D. (2009) and Natya, V.K. (2011) is in support this finding. Out of total vegetable growers, 63.33 per cent were having medium socio-economic status, followed by 20.83 per cent low and 15.84 per cent had high socio-economic status. Majority 58.33 per cent had medium economic motivation, followed by 27.50 per cent had low and 14.17 per cent vegetable growers had high economic motivation. Majority of growers (85.83%) were having low to medium knowledge of vegetable production practices, while only 14.17 per cent were having high knowledge of practices. Majority 52.50 per cent had low market orientation, followed by 30.00 per cent had medium and 17.50 per cent vegetable growers had low market orientation.

Attitude towards use of eco-friendly management practices:

Attitude is one of the important psychological factors. Attitude is an individual's point of view or way of thinking regarding some phenomenon. Here, this variable was intended to discover whether vegetable growers consider vegetable growing as a profitable and prestigious business or to continue or treat it as an inferior business and is doing it owing to their helplessness.

Table 2: Distribution of respondents according to their Attitude towards use of eco-friendly management practices

Categories	Frequency	Percentage
Unfavourable attitude	32	26.67
Neutral attitude	17	14.17
Favourable attitude	71	59.16
Total	120	100.00

The data of table 2 indicates that out of total vegetable growers, 59.16 per cent were in the category of favourable attitude towards use of eco-friendly management practices, followed by 26.67 per cent had unfavourable attitude towards use of eco-friendly management practices. Thus, it may be concluded that higher percentage of vegetable growers (59.16%) had favourable attitude towards use of eco-friendly management practices. The work of Dohare (2007) supports the present study.

Distribution of respondents according to their knowledge of eco-friendly management practices.

Knowledge level of respondents was determined through direct questions (about recommended improved farm practices and eco-friendly management practices of vegetable cultivation) asked to the respondents by the researcher. The knowledge of eco-friendly management practices in vegetable production was analyzed and six practices were delineated for the study viz., cultural control, mechanical control, biological pest control, use of bio-pesticides, application of organic manures, use of inorganic fertilizer In order to ascertain knowledge of eco-friendly management practices in vegetable production, complete knowledge and the results are presented in table 3

Table 3: Distribution of respondents according to their knowledge of eco-friendly management practices.

Practices	Frequency	(%)	Rank
Cultural control:			
Summer deep ploughing	120	100.00	I
Growing mustard/marigold/rape seed as trap crop	45	37.50	XI
Crop rotation with vegetable crops	80	66.66	VI
Inter crops in vegetable	40	33.33	XII
Seed treatment with chemicals	75	62.50	VII
Disease resistant varieties/hybrid in vegetable	55	45.83	VIII
Mechanical control:			
Hand pecking of larvae	22	18.33	XVI
Monitoring of pest	48	40.00	X
Uprooting alternate host plant	50	41.66	IX
Use of pheromone traps	13	10.83	XIX
Use of light traps	15	12.50	XVIII
Biological pest control:			
Conservation and encouraging of predators	04	3.33	XXIV
Conservation and encouraging of parasitic wasps	05	4.16	XXIII
Use of NPV and concentration of spray	12	10.00	XX
Introduction of bio-control agents	20	16.66	XVII
Use of bio-pesticides:			
Knowledge about neem seed kernel extract	25	20.83	XV
Preparation of seed kernel extract	10	8.33	XXI
Concentration seed kernel extract	08	6.66	XXII
Frequency of spraying neem seed kernel extract	27	22.50	XIV
Application of organic manures:			
Farm yard manure/green manure/vermi compost	110	91.66	III
Press mud/seed cake	35	29.16	XIII
Use of inorganic fertilizer:			
Application of recommended dose	85	70.83	V
Time of application	90	75.00	IV
Method of application	115	95.83	II

The data of Table 3 indicated that cent per cent of the respondents had knowledge about summer deep ploughing at ranked I, growing mustard/ marigold/ rapeseed as trap crop at ranked XI (37.50%), crop rotation with vegetable crops at ranked VI (66.66%), inter crop in vegetable at ranked XII (33.33%). Majority of the

vegetable growers possessed the knowledge of seed treatments with chemicals as a control measure of pest at ranked VII (62.50%), disease resistance varieties/ hybrids in vegetables at ranked VIII (45.83%), hand picking of larvae at ranked XVI (18.33%), monitoring of pest at ranked X (40.00%), uprooting alternate host plant at ranked IX (41.66%), use of pheromone trap at ranked XIX (10.83%), use of light trap at ranked XVIII (12.50%), conservation and encouraging of predators at ranked XXIV (03.33%), conservation and encouraging of parasitic wasps at ranked XXIII (04.16%), use of NPV and concentration of spray at ranked XX (10.00%), introduction of bio-control agents at ranked XVII (16.66%), knowledge about neem seed kernel extract at ranked XX (20.83%), preparation of neem seed kernel extract at ranked XXI (08.33%), concentration of neem seed kernel extract at ranked XXII (06.66%), frequency of spraying neem seed kernel extract at ranked XIV (22.50%), farmyard manure/ green manure/ vermin compost at ranked III (91.66%), press mud/seed cake at ranked XIII (29.16%), application of recommended dose at ranked V (70.83%), time of application at ranked IV (75.00%) and method of application at ranked II (95.83%).

Perusal of table 3 concluded that deep summer ploughing, application of farmyard manure/ green manure/ vermicompost and method of application were well known to all the farmers. Whereas, majority of the farmers know about knowledge of seed treatments with chemicals as a control measure of pest, time of application of inorganic fertilizers, application of recommended dose of inorganic fertilizers, crop rotation with vegetable crops and disease resistance varieties/ hybrids in vegetables. The practice of components which are technically skill orientated are less know to farmers namely ues of pheromone traps, light traps, biological pest control measures, which consists of conservation and encouraging predators and parasitic wasps and introduction of bio-control agents. It is logical to derive from the above discussion that practices, which are complex and difficult to remember, are least known to farmers, on the other hand the practices which are simple and are being practiced by forefathers are known to most of the farmers. The findings support with the work of *Bhople et al.* (2001), *Rajendra Chapke* (2001), *Darling and Vasanthkumar* (2004), *Noorjehan and Ganesan* (2004).

CONCLUSION

The finding reveals that the higher percentage of vegetable growers (64.17%) had low knowledge of

technology. This may be due to lack of awareness of scientific technology and lack of exposure of about improved technologies in agriculture. Summer ploughing, application of farmyard manure/ green manure/ vermicompost and method of application were well known to all the farmers. Whereas, majority of the farmers know about knowledge of seed treatments with chemicals as a control measure of pest, time of application of inorganic fertilizers, application of recommended dose of inorganic fertilizers, crop rotation with vegetable crops and disease resistance varieties/ hybrids in vegetables. The practice of components which are technically skill orientated are less know to farmers namely pheromone traps, light traps, biological pest control measures, which consists of conservation and encouraging predators and parasitic wasps and introduction of bio-control agents. The government needs to create awareness, encourage and ensure full community participation through effective propagation of relevant information, necessary institutional arrangements. There is a need to create awareness among the farmers about eco-friendly management practices in vegetables cultivation through various extension methods. It is recommended that greater emphasis should be given to educate the farmers about complete package of practices about eco-friendly practices *i.e.* use of pheromone trap, light trap, sticky trap, neem oil, neem cake, bio-pesticide, cropping system, green manuring, compost *etc.*

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