



Research Article

STUDY ON ADOPTION LEVEL OF FARMERS TOWARDS ORGANIC FARMING PRACTICES IN DEWAS DISTRICT

PATEL A.¹, RAI D.P.¹, PATEL N.² AND GARG N.¹

¹Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot, 485334, Madhya Pradesh, India

²Scientist, ICAR-Krishi Vigyan Kendra, Dewas, 455111, Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior, 474002, Madhya Pradesh, India

*Corresponding Author: Email - neerja.patel1988@gmail.com

Received: June 23, 2023; Revised: July 27, 2023; Accepted: July 28, 2023; Published: July 30, 2023

Abstract: The present study was conducted in Khategaon block of Dewas district in Madhya Pradesh. The sample consisted of 120 organic farmers selected from five different villages used by purposive sampling method. Data collection was performed using a meticulously designed and pre-tested interview schedule, developed in accordance with the study's objectives. The result of this study revealed that maximum farmers had strongly favorable attitude about the practice of organic farming. It can be stated that the majority of farmers (56.66 percent) had an Adoption level of organic farming practices. Correlation coefficient between independent variables with adoption of organic farming reveals that at the 0.05 level of probability, adoption of organic farming had a positive and significant relationship with age, annual income, farming experience, irrigation sources, risk orientation, extension participation, mass media exposure and attitude of farmers toward organic farming, whereas educational status and size of land holding was found to have non-significant relationship.

Keywords: Organic farming, Attitude, Adoption level, Farming experience

Citation: Patel A., et al., (2023) Study on Adoption Level of Farmers Towards Organic Farming Practices in Dewas District. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 15, Issue 7, pp.- 12529-12531.

Copyright: Copyright©2023 Patel A., et al., This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Academic Editor / Reviewer: Dr Debasish Borah, Kamini Bisht

Introduction

Organic farming practices prioritize the use of organic matter, compost, and natural fertilizers to improve soil fertility and structure. This approach enhances the long-term productivity of the land, reducing the need for costly synthetic inputs. As a result, farmers practicing organic methods can reduce production costs and maintain higher yields over time, contributing to their economic stability. Organic farming practices prioritize ecological sustainability, such as preserving biodiversity, conserving water resources and minimizing pollution. By adopting organic methods, farmers contribute to environmental protection and can benefit from ecosystem services, such as improved pollination, natural pest control, and enhanced water quality. This ecological balance promotes long-term agricultural sustainability, protecting farmers & livelihoods for future generations. Organic products are in high demand in many markets, as consumers increasingly value organic produce for its perceived health and environmental benefits [1,2]. By adopting organic practices, farmers can tap into these niche markets, potentially commanding higher prices and securing stable market outlets for their produce. Accordingly, the present study has been taken up with the following specific objectives:

- 1) To determine the extent of adoption of farmers towards organic farming practices.
- 2) To ascertain the relationship between attributes of farmers with adoption level of organic farming practices.

Materials and Methods

Dewas District is situated on the Malwa plateau in the West-central part of Madhya Pradesh. The Dewas district comprises 6 blocks, out of which only one block, namely Khategaon was selected purposively because this block having maximum area under organic farming as compared to other blocks. The Khategaon block comprises of 72 villages out of which 5 villages were selected with the help of KVKs and Dept. of Farmers Welfare and Agriculture Development of Dewas, they provided the name of villages practicing the organic farming.

Thus, the sample consist 5 villages namely Harangaon, Dulwa, Nemawar, Guradiya and Barwai. From each selected villages 24 farmers were selected, a list of farmers who practicing the organic farming was prepared with the help of KVK by using purposive sampling method. Thus, the total sample size was 120 farmers for further study. The primary data were collected with the help of pre-tested interview schedule. The data were recorded; classified, tabulated and appropriate statistical tools like frequency, percentage, mean, correlation co-efficient etc. were applied according to the nature and demand of data.

Result and discussion

Extent of adoption of farmers towards organic farming practices

Result revealed in [Table-1] that the extent of adoption of organic farming practices of farmers. The practices wise adoption regarding different practices are in field preparation farmers had 2.33 mean score, in case of application of organic manure likewise crop residue, FYM, vermicompost etc had 2.39 mean score, in case of seed treatment likewise biofertilizer, *Azospirillum* got mean score 2.16, in crop selection the total mean score 1.89 for mono and multiple cropping, in irrigation management got total mean score 2.23, in growth promoting measure likewise panchagavya, jeevanmitra got total mean score 1.66, whereas in weed management total mean score is 2.11, in case of pest and disease management likewise intercropping system, trap cropping, *Trichoderma viride* got total mean score 1.88. The work of Singh et.al. (2021) [3] are in coherence of present study. The [Table-2] revealed that the application of Organic Manures (2.39) had the highest mean adoption score among all organic farms, according to [Table-2] Field preparation (2.33) got rank II, Irrigation Management (2.23) got rank III, Seed Treatment (2.16) got rank IV, Weed management (2.11) got rank V, Selection of Crops (1.89) got rank VI, Pest and Disease management (1.81) got rank VII, and Growth Promoters Measures (1.66) got rank VIII. In addition, it is concluded that the overall mean adoption score for all main organic farming practices was 2.08. The findings were similarity with the work of Singh and Bansal (2022) [4].

Table-1 Distribution of farmers according to their Practice wise Adoption of Organic Farming Practices

SN	Organic farming practices	Adoption level			Mean score
		No	Partial	Complete	
1	Field preparation - Plough the land to fine tilth. Clean the ploughing implements before and after use to avoid contamination	20(16.66)	40(33.34)	60(50.00)	2.33
	Total mean score				2.33
2	Application of organic manures - a. Crop residues- Incorporate the crop residues after the harvest of previous crop	10(0.08)	38(31.66)	72(60.00)	2.51
	b. Farm Yard Manure (FYM) - Apply FYM@10-20 tonnes /ha or goat manure/poultry manure	0	35(29.16)	85(70.83)	2.7
	c. Jeevamirtha - Spraying 200 litres Jeevamirtha/acre with water	30(25.00)	38(31.66)	52(43.33)	2.18
	d. Vermi compost - Apply 0.5-1.0 tonnes of compost/vermicompost	12(01.00)	74(61.66)	34(28.33)	2.18
	Total mean score				2.39
3	Seed treatment - a. Biofertilizers - <i>Azotobacter sp</i> , <i>Rhizobium sp</i> , <i>Phospho bacteria sp</i> (200g) mixed with 200 ml to make slurry for 10 kg of seeds as seed treatment.	09(07.50)	67(55.83)	44(36.66)	2.29
	b. <i>Azospirillum Azospirillum</i> 2 kg + <i>Phosphobacteria</i> 1 kg for one acre as root dip method	37(30.83)	83(69.16)	0	2.38
	c. Panchagavya - 3% solution of Panchagavya can be used to soak the seeds or dip the seedlings before planting.	29(24.16)	53(44.16)	28(23.33)	1.83
	Total mean score				2.16
4	Selection of crops - a. Mono cropping	33(27.50)	47(39.16)	40(33.34)	2.05
	b. Multiple cropping	56(46.66)	40(33.34)	24(20.00)	1.73
	Total mean score				1.89
5	Irrigation management a. Drip irrigation	28(23.33)	49(40.83)	43(35.83)	2.12
	b. Conventional method	22(18.33)	34(28.34)	64(53.33)	2.35
	Total mean score				2.23
6	Growth promoting measures - a. Panchagavya - Apply Panchagavya @ 3% solution. 3 litres in 100 litres of water as foliar spray, seedling treatment or 1% solution is used to depth seeds before sowing. Soil application @ 10litres / acre	49(40.83)	38(31.66)	33(27.50)	1.86
	b. Jeevamirtha - Mix Jeevamirtha in 100 litres water and apply before sowing, 2 nd time @ 30 DAS and 3 rd time of 45 DAS.	52(43.33)	38(31.66)	30(25.00)	1.81
	c. Amudhakaraisal - Foliar spray @10% as growth promoter as pest repellent.	50(41.66)	40(33.34)	30(25.00)	1.33
	Total mean score				1.66
7	Weed management - a. Manually by cutting/uprooting the weeds	12(01.00)	69(57.50)	39(32.50)	2.22
	b. Mulching with crop biomass	38(31.66)	42(35.00)	40(33.34)	2.01
	Total mean score				2.11
8	Pest and disease management - a. Intercropping system Pest outbreak less in mixed stands due to crop diversity than in sole stands	49(40.83)	33(27.50)	38(31.66)	1.9
	b. Trap cropping- Crops that are grown to attract insects or nematodes to protect target crops from pest attack	54(45.00)	36(30.00)	30(25.00)	1.8
	c. <i>Trichoderma viride</i> - Papaya juice, Effective Microorganism and <i>Trichoderma viride</i> mixture	50(41.66)	26(21.66)	44(36.66)	1.95
	Total mean score				1.88

Table-2 Overall Extent of adoption of organic farming practicing by farmers

SN	Organic Farming practices	Mean value	Rank
1	Field preparation	2.33	II
2	Application of Organic Manures	2.39	I
3	Seed Treatment	2.16	IV
4	Selection of Crops	1.89	VI
5	Irrigation Management	2.23	III
6	Growth Promoters Measures	1.66	VIII
7	Weed management	2.11	V
8	Pest and disease management	1.88	VII
	Overall Mean	2.08	-

Table-3 Distribution of the farmers according to their extent of adoption towards organic farming practices of farmers

SN	Categories	Frequency	Percentage
1	Low (up to 20)	24	20.00
2	Medium (21 to 40)	68	56.66
3	High (above 40)	28	23.34
	Total	120	100

Among all farmers, 56.66 percent had a medium adoption rate of organic farming practices, 20.00 percent had a low adoption rate, and only 23.34 percent had a high adoption rate [Table-3]. Thus, it can be stated that the majority of farmers (56.66 percent) had a medium level of organic agricultural methods adoption. The findings were similarity with the work of Baskaur *et.al.* (2021) [5].

Table-4 Relationship between attributes of farmers with adoption of organic farming

SN	Independent variables	Correlation coefficient
1	Age	0.257**
2	Educational status	0.382**
3	Size of land holding	0.343**
4	Annual income	0.237**
5	Farming experience	0.342**
6	Irrigation sources	0.243**
7	Risk orientation	0.568**
8	Extension participation	0.259**
9	Mass media exposure	0.089NS
10	Attitude of farmers towards organic farming	0.280**

Relationship between attributes of farmers with adoption level towards organic farming practices

The Zero order correlation coefficient between 10 different variables and adoption

of organic farming [Table-4] reveals that at the 0.05 level of probability, adoption of organic farming had a positive and significant relationship with age ($r=0.257$), educational ($r=0.382$), size of land holding ($r=0.343$), annual income ($r=0.237$), farming experience ($r=0.342$), irrigation sources ($r=0.243$), risk orientation ($r=0.568$), extension participation ($r=0.259$), and attitude of farmers toward organic farming ($r=0.280$), whereas mass media exposure ($r=0.089$) was found to have non-significant relationship. The work of Malviya *et.al.* (2020) [6] are in coherence of present study.

Conclusion

From the research findings it divulges that all the respondents had medium adoption regarding organic farming practices. A strategy for adoption development or improvement in organic farming for the farmers, consumers and related government departments, agricultural research institutions would help in spreading of organic farming practices. So, there is lot of scope for increasing the existing level of adoption through skill-based training programmes, demonstrations, field days, exhibitions, camps, social media, radio/TV talks should be organized to increase the know-how of the farmers. Also, extension functionaries need to provide the organic farmers and farm women with necessary advice and help in time. There is a need to pay more emphasis on organic farming during the trainings and other extension activities. For exposure to new technologies, regular visits of farmers should be organized at KVK and ATIC centre.

Application of research: Study of organic farming practices in Dewas District

Research Category: Agriculture Extension

Acknowledgement / Funding: Authors are thankful to Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot, 485334, Madhya Pradesh, India and ICAR-Krishi Vigyan Kendra, Dewas, 455111, Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalyaya, Gwalior, 474002, Madhya Pradesh, India

****Research Guide or Chairperson of research:** Neerja Patel

University: Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalyaya, Gwalior, 474002, Madhya Pradesh, India

Research project name or number: MSc Thesis

Author Contributions: All authors equally contributed

Author statement: All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

Study area / Sample Collection: Khategaon block of Dewas district, Madhya Pradesh

Cultivar / Variety / Breed name: Potato, Tomato

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.
Ethical Committee Approval Number: Nil

References

- [1] Patidar S. and Patidar H. (2020) *International Journal of Application or Innovation in Engineering & Management*, 269-277.
- [2] Sahoo I.A., Parasar B., Prangya S. (2021) *International Journal of Current Microbiology and Applied Sciences*, 10,351-356.
- [3] Singh A., Pandey A.K., Singh U. T. (2021) *Chem. Sci. Rev. Lett.*, 10, 305-307.
- [4] Singh K. and Bansal V. (2022) *The Pharma Innovation Journal*, SP-11(9), 1930- 1933
- [5] Baskaur, Tyagi R. and Kumari V. (2021) *The Pharma Innovation Journal*, SP-10(5), 07-11.
- [6] Malviya A., Verma J., Dawar A. (2020) *International Journal of Current Microbiology and Applied Sciences*, 9, 3551-3555.