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Anuja Patel
M.Sc. Scholar, Mahatma Gandhi
Chitrakoot Gramodaya
Vishwavidyalaya, Chitrakoot,
Madhya Pradesh, India

Dr. DP Rai
Dean, Mahatma Gandhi
Chitrakoot Gramodaya
Vishwavidyalaya, Chitrakoot,
Madhya Pradesh, India

Neerja Patel
Scientist, Krishi Vigyan Kendra,
Dewas, Madhya Pradesh, India

Study on knowledge level of farmers towards organic farming practices in Dewas district

Anuja Patel, Dr. DP Rai and Neerja Patel

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 favourable attitude about the practice of organic farming. It can be stated that the majority of farmers (56.66 percent) had a knowledge level of organic farming practices. Correlation coefficient between independent variables with Knowledge 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, knowledge level, farming experience

Introduction
Organic farming practices on natural methods and minimize inputs as chemical fertilizer and pesticides. This reduction helps in financial security of farming community, especially for small farmers, it focusing on building soil health, conserving water resources, promote biodiversity. Sometimes organic farming emphasize the community engagement knowledge sharing among the farming community, also by practicing this farming networks and cooperatives can benefit from market efforts and shared resources.

It often focuses on crop rotation, which can reduce the farmer's reliance on single crop, so the diversification can help the mitigation of financial risk associated with market and crops. This farming generally avoids the synthetic fertilizer, herbicides and pesticides. Instead it relies the natural method to manage the soil, insect-pest, disease and fertility. This farming requires an understanding of ecological process, biodiversity, and natural resources management. There are many aspects on which the impact of organic farming on livelihood security depends likewise access to resource, market demand, economic context, farmers knowledge and skills. Overall, organic farming offers numerous opportunities for farmers to improve their economic stability, reduce risks, and contribute to sustainable agriculture, also organic farming offers numerous opportunities for farmers to enhance their economic viability, environmental sustainability, and overall quality of life. Accordingly, the present study entitled as "Study on knowledge level of farmers towards organic farming practices" has been taken up with the following specific objectives.
1. To study the attitude of farmers towards organic farming practices.
2. To determine the extent of knowledge of farmers towards organic farming practices.
3. To ascertain the relationship between attributes of farmers with knowledge about 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.

Corresponding Author:
Anuja Patel
M.Sc. Scholar, Mahatma Gandhi
Chitrakoot Gramodaya
Vishwavidyalaya, Chitrakoot,
Madhya Pradesh, India

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.

Results and Discussion
Attitude of farmers towards organic farming practices
The result revealed in table 1 indicates the attitude of farmers towards organic farming practices, it showed among all farmers, 13.34% had less favourable attitude toward organic farming, whereas 16.66% had favourable and 70% had strongly favourable toward organic farming. Thus, it can be inferred that the majority of farmers (70.00%) had strongly favourable view of organic farming. This conclusion is backed by the research of Priyadharshini (2016) [10] and Muralikrishnan (2015) [11].

Table 1: Distribution of farmers according to attitude toward organic farming practices

S. No.	Categories	Frequency	Percentage
1.	Less favourable (Up to 20 scores)	16	13.34
2.	Favourable (21-40 scores)	20	16.66
3.	Strongly favourable (Above 41 scores)	84	70.00
	Total	120	100.00

Extent of Knowledge of organic farming practices of farmers
Table no. 2 revealed that the extent of knowledge of organic farming practices of farmers. The majority of farmers 57.50 percent had complete knowledge about different practices regarding field preparation with mean score 2.4, in case of application of organic manure like crop residue, FYM, vermicompost etc. had 2.32 mean score, in case of seed treatment like biofertilizer, Azospirillum etc. got mean score

1.82, in crop selection the total mean score 1.98, in irrigation management got total mean score 1.97, in growth promoting measure likewise panchagavya, Jeevanmitra etc. got mean score 1.72, whereas in weed management total mean score is 2.44, in case of pest and disease management likewise intercropping system, trap cropping, *Trichoderma viride* got total mean score 2.09. The similar work of Naik A., Sreenivasulu M., Sreenivasa Rao I. and Lankati M (2018) [3] are in coherence of present study.

Table 2: Distribution of farmers according to their Practice wise knowledge of Organic Farming Practices

S. No.	Organic farming practices	No	Partial	Complete	Mean score
1.	Field preparation Plough the land to fine tilt. Clean the ploughing implements before and after use to avoid contamination	00	31 (43.50)	69 (57.50)	2.24
	Total mean score				2.24
2.	**Application of organic manures** a. Crop residues Incorporate the crop residues after the harvest of previous crop.	00	30 (25.00)	90 (75.00)	2.75
	b. Farm Yard Manure (FYM) Apply FYM@10-20 tonnes /ha or goat manure/poultry manure.	00	00	120 (100.00)	3
	c. Jeevamirtha Spraying 200 litres Jeevamirtha/acre with water	52 (43.33)	38 (31.66)	30 (25.00)	1.81
	c. Vemi compost Apply 0.5-1.0 tonnes of compost/vermicompost	66 (55.00)	20 (16.66)	34 (28.33)	1.73
	Total mean score				2.32
3.	Seed treatment a. Biofertilizers *Azotobacter sp, Rhizobium sp, Phospobacteriasp* (200g) mixed with 200 ml to make slurry for 10 kg of seeds as seed treatment.	22 (18.33)	68 (56.67)	30 (25.00)	2.06
	b. Azospirillum *Azospirillum* 2 kg +*Phospobacteria* 1 kg for one acre as root dip method	44 (36.67)	42 (35.00)	34 (28.33)	1.91
	c. Panchagavya 3% solution of Panchagavya can be used to soak the seeds or dip the seedlings before planting.	74 (61.66)	30 (25.00)	16 (13.34)	1.51
	Total mean score				1.82
4.	Selection of crops a. Mono cropping	33 (27.50)	40 (33.34)	47 (39.16)	2.11
	b. Multiple cropping	40 (33.34)	56 (46.66)	24 (20.00)	1.86
	Total mean score				1.98
5.	**Irrigation management** a. Drip irrigation	17 (14.17)	79 (65.83)	24 (20.00)	2.05
	b. Conventional method	35 (29.16)	61 (50.84)	24 (20.00)	1.90
	Total mean score				1.97
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 storing. Soil application @ 10litres / acre	21 (17.50)	67 (55.83)	32 (26.67)	2.09

	b. **Jeevamirtha** Mix Jeevamirthain 100 litres water and apply before sowing, 2nd time @ 30 DAS and 3rd time of 45 DAS.	34 (28.33)	56 (46.67)	30 (25.00)	1.06
	c. Amudhakaraisal Foliar spray @10% as growth promoter as pest repellent.	26 (21.66)	65 (54.17)	29 (24.17)	2.02
	Total mean score				1.72
7.	**Weed management** a. Manually by cutting/uprooting the weeds	00	35 (29.16)	85 (70.83)	2.70
	b. Mulching with crop biomass	30 (25.00)	38 (31.66)	52 (43.33)	2.18
	Total mean score				2.44
8.	**Pest and disease management** Intercropping system Pest outbreak less in mixed stands due to crop diversity than in sole stands	28 (23.33)	49 (40.83)	43 (35.83)	2.12
	Trap cropping Crops that are grown to attract insects or nematodes to protect target crops from pest attack	22 (18.33)	34 (28.34)	64 (53.33)	2.35
	c. *Trichoderma viride* Papaya juice, Effective Microorganism and *Trichoderma viride* mixture	34 (28.34)	26 (21.66)	44 (36.66)	1.81
	Total mean score				2.09

Table 3: Overall Extent of knowledge of organic farming practicing by farmers

S. No.	Organic Farming practices	Mean value	Rank
1	Field preparation	2.24	III
2	Application of Organic Measures	2.32	II
3	Seed Treatment	1.82	VII
4	Selection of Crops	1.98	V
5	Irrigation Management	1.97	VI
6	Growth Promoters Measures	1.72	VIII
7	Weed management	2.44	I
8	Pest and disease management	2.09	IV
	Overall Mean	2.14	-

In table 3 result found that Weed management had the highest mean knowledge score (2.44) among all organic farmers and got I rank, application of organic manure (2.32) got rank II, Field preparation got rank III with 2.24 mean score, Pest and disease management (2.09) got rank IV, Selection of Crops (1.98) got rank V, Irrigation Management (1.97) got rank VI, Seed Treatment (1.82) got rank VII and Growth Promoters Measures got rank VIII with 1.72. mean score. In addition, it is concluded that the overall mean knowledge score for all main organic farming practices was 2.14. The work of Patidar S. and Patidar H. (2020) [6] is in coherence of present study.

Table 4: Distribution of the farmers according to their extent of knowledge of organic farming practices of farmers

S. No.	Categories	Frequency	Percentage
1	Low (up to 20)	28	23.34
2	Medium (21 to 40)	30	25.00
3	High (above 40)	62	51.66
	Total	120	100.00

Table 4 revealed that, among all farmers, 51.66 percent had high knowledge rate about organic farming practices, 25.00 percent had medium knowledge rate and only 23.34 percent had low knowledge rate. Thus, it can be stated that the majority of farmers (51.66 percent) had high knowledge level about organic farming practices. The findings were similarity with the work of Sharma, S. and C. Kaur. (2015) [7] and Shashikiran, S. Surekha and Hiremath D. (2020) [8].

Relationship between attributes of farmers with knowledge of organic farming

Table 5: Relationship between attributes of farmers with Knowledge of organic farming

S. No.	Independent variables	Correlation coefficient
1	Age	0.306
2	Educational status	-0.185
3	Size of land holding	-0.082
4	Annual income	0.060
5	Farming experience	0.132
6	Irrigation sources	0.377
7	Risk orientation	0.434
8	Extension participation	0.863
9	Mass media exposure	0.592
10	Attitude of farmers towards organic farming	0.520

**significant at 0.05 probability level

Table 5 revealed that the Zero order correlation coefficient between 10 different variables and knowledge about organic farming at the 0.05 level of probability, knowledge about organic farming had a positive and significant relationship with age (r=0.306), annual income (r=0.060), farming experience (r=0.132), irrigation sources (r=0.377), risk orientation (r=0.434), extension participation(r=0.863), mass media exposure (r=0.592) and attitude of farmers toward organic farming (r=0.520), whereas educational status (r=-0.185) and size of land holding (r=-0.082) was found non-significant relationship. The work of (Thamaraiselvan. J and B. Arunkumar. 2021) [9] are in coherence of present study.

Conclusion
It can be concluded that the respondents had high level of knowledge regarding organic practices. A strategy for knowledge 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 knowledge 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.

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