Original Research Article

Study on Organic Farming and its Awareness level in Varanasi District of Uttar Pradesh

ABSTRACT

The present study was conducted in four blocks of Varanasi district (Uttar Pradesh) a total 332 respondents from 63 villages were selected by the researcher the objective of the study was to know the awareness level of respondent towards the organic fertilizers, organic farming, sources of information regarding awareness and duration of practicing organic farming. It was found that around 43.97 percent of the respondent were aware about the organic farming in the study area However only four types of organic fertilizers Organic Manure, Vermicompost, City compost and PROM was known to the respondent out of 10 fertilizer recommended under FCO 1985 amended in July 2021. Most of the respondent practicing organic farming within last 6 to 8 years which was concurrent with the government policies which emphasizes on organic farming. The most important source of information regarding awareness towards organic farming was Krishi Vigyan Kendra and NGOs in the study area.

Keywords: Organic Farming, Awareness Level, Organic Fertilizers, Promotional activity

INTRODUCTION

As per the definition of the United States Department of Agriculture (USDA), study team on organic farming "organic farming is a system which avoids or largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc.) and to the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection". The goal of organic agriculture is to contribute to the enhancement of sustainability refers to the successful management of agricultural resources to satisfy human needs while at the same time maintaining or enhancing the quality of the environment and conserving natural resources for future generationsThe concept of organic agriculture is not alien

to India. In fact, the first scientific approach to organic farming dates back to the Vedas of the later Vedic period, the essence of which is to live in harmony with, rather than exploit, Mother Nature. There is brief mention of several organic inputs in our ancient literatures like Rigveda, Ramayana, Mahabharata, Kautilya Arthasashthra etc. In fact, organic agriculture has its roots in traditional agricultural practices that evolved in countless village's and farming communities over the millennium. Major milestones in the area of organic farming are presented in the Table 1.

Table 1: Historical perspective of organic farming in India	
Ancient period	
Oldest practice	10000 years old, dating back to Neolithic age, practiced by ancient civilization like Mesopotamia, Hwang-Ho basin etc.
Ramayana	All dead things - rotting corpse or stinking garbage returned to earth are transformed into wholesome things that nourish life. Such is the alchemy of mother earth - as interpreted by C. Rajagopalachari
Mahabharata (5500 BC)	Mention of Kamadhenu, the celestial cow and its role on human life and soil fertility
Kautilya Arthashastra	Mentioned several manures like oil cake, excreta of animals
Brihad-Sanhita (by Varahmihir)	Described how to choose manures for different crops and the methods of manuring.
Rig Veda (2500–1500 BC)	Mention of organic manure in Rig Veda 1, 161, 10, 2500–1500 BC, is Green Manure in Atharva Veda II 8.3, (1000 BC). In Sukra (IV, V, 94, 107–112) it is stated that to cause healthy growth, the plant should be nourished by dungs of goat, sheep, cow, water as well as meat. A reference of manure is also made in Vrksayurveda by Surpala (manuscript, oxford, No 324 B, Six, 107-164)
Holy Quran (590 AD)	At least one third of what you take out from soils must be returned to it implying recycling or post-harvest residue.

Material and Methodology

Ist Stage - Selection of the District

Varanasi District were divided into 3 tehsils (Tehsil sadar, Tehsil Pindra and Tehsil Rajatalab) and 8 blocks. The reason for selection district were following

1. The researcher himself is familiar with the area.

2. The researcher is conversant with the local language, geography, agricultural situation and other aspects of the area.
3. The knowledge of tract was also helpful for collecting reliable information's.

IInd Stage - Selection of the Block

Varanasi district comprises of eight development blocks viz., Arajiline, Baragaon, Chiraigaon, Cholapur, Harhua, Kashi Vidhya Peeth, Pindara, Sewapuri. Out of these 8 blocks, 50 percent blocks namely Kashi Vidhyapeeth, Baragaon, Harhua and Pindara were selected purposively for the present study.

IIIrd Stage – Selection of the Villages

There are 1360 villages in Varanasi district. A complete list of villages was obtained from the respective selected block development offices. The villages were arranged in ascending order on the basis of their size of land holding in the block. Than 10% villages from each block were selected randomly i.e. 63 villages

Table 2: Distribution of farmers in study area

Blocks	**Villages selected**	**Marginal farmers**	**Small farmers**	**Semi-medium farmers**	**Medium farmers**	**Large farmers**	**Total**
KashiVidhyapeeth	13	4	10	32	26	4	76
Baragaon	14	10	16	28	22	6	82
Harhua	17	8	10	24	24	4	70
Pindara	19	12	16	38	28	10	104
Total	63	34	52	122	100	24	332

Frequency:

This measure was used to know the distribution pattern of respondent's variable wise and to categorize the problems perceived by respondents in order of importance.

Percentage Analysis Method: -

Simple percentage analysis method refers to special kind of ratio. With the help of absolute figures, it was difficult to interpret any meaning from the collected data, but when percentages are found out, and then it becomes easy to find the relative difference between two or more attributes.

Formula: -

$$P = \frac{X}{N} * 100$$

Where;

P= Percentage

X= Frequencies

N= Total number of respondent

Chi-square Test - A chi-square (χ^2) statistic is a test that measures how a model compares to actual observed data. The data used in calculating a chi-square statistic must be random, raw, mutually exclusive, drawn from independent variables, and drawn from a large enough sample.

The Formula for Chi-square test-

$$\boldsymbol{x^2 = \sum \frac{(O_i - E\hat{i})^2}{E_i}}$$

Where,

$\boldsymbol{x^2}$ = Chi Squared

$\mathbf{0_i}$ = Observed Value

$\mathbf{E_i}$= Expected Value

Table 3. Awareness about Chemical and Organic Fertilizer

Sample size: 332

		Chemical fertilizer	**Organic fertilizer**
Types of land holding	Marginal	34 (10.24)	20 (6.02)
	Small	42 (15.66)	24 (7.22)
	Semi medium	122 (36.74)	46 (13.85)
	Medium	100 (30.12)	40 (12.04)
	Large	24 (7.22)	16 (4.81)
Total		**332 (100.00)**	**146 (43.97)**

Source: Based on data collected by researcher in study Area

Results and discussion

The table 3 revealed that all the respondent in the study area were aware about the chemical fertilizers among 10.24 percent of the Marginal farmer were aware about chemical fertilizer however only 6.02 percent of marginal farmers were aware about Organic fertilizer, in small land

holding farmer which were 15.66 percent of total respondent only 7.22 percent were aware about the organic fertilizer. The Semi medium group which account for 36.74 percent of respondent has the highest awareness level of 13.85 percent. The medium landholder which account for 30.12 percent of total respondent had second highest awareness regarding organic fertilizer which stood at 12.04 percent. The large landholder which has least number had an awareness of 4.81 percent. the overall awareness regarding the organic fertilizer stood at 43.97 percent. The Fig 1 reveals that out to total aware respondent towards organic fertilizer i.e. 146 (43.97) the maximum share around 32 percent belong to semi medium respondents followed by 27 percent medium respondent so both group combine make more than 50 percent share in awareness regarding the organic fertilizer the other group small (16 percent) and marginal (14 percent) contribute in awareness however 11 percent of respondent were from large land holding.

Table 4. Distribution of respondent based on type of Organic Fertilizer used.

Type of Organic Fertilizers	Type of Land Holding				
	Marginal	Small	Semi medium	Medium	Large
City Compost	0(0.00)	2(1.36)	6(4.10)	4(2.73)	0(0.00)
Vermicompost	8(5.47)	6(4.10)	14(9.58)	12(8.21)	6(4.10)
Phosphate-rich organic manure	2(1.36)	0(0.00)	2(1.36)	0(0.00)	0(0.00)
Organic manure	10(6.84)	16(10.95)	24(16.43)	24(16.43)	10(6.84)
Bio-enriched organic manure	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Raw bone meal	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Steamed bone meal	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Potashderive from Rhodophytes	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Fermented organic manure	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Liquid fermented organic manure	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)
TOTAL	20(13.69)	24(16.43)	46(31.50)	40(27.39)	16(10.95)

The table 4 revealed that only 1.36 percent of the small land holding group uses the city compost, the semi medium group has highest percentage i.e. 4.10 percent in uses of city compost and the marginal landholder stood at 2.73 percent in using city compost it was found that no marginal and large group uses the city compost as a fertilizer. The overall contribution of city compost stood at 8.21 percent. The Vermicompost was maximumuse by semi medium group which stood at 7.58 percent followed by medium group which stood at 8.21 percent. there was tie in large and small farmers in uses of vermicompost which stood at 4.10 the marginal farmers stood at 5.47 percent in using the vermicompost. The vermicompost was second highest preference of the respondent in organic fertilizer.The Phosphate rich organic Manure (PROM)

which is an advance fertilizer has least uses in the study area only 2.73 percent of respondent using it only one respondent in each marginal group and semi medium group uses the PROM. The Organic Manure was found to be highest preference in organic fertilizer which stood at 57.53 percent. there is a tie between the semi medium and medium group in using organic manure as fertilizer which stood at 16.43 percent the small group uses 10.95 percent followed by marginal and large group which stood at 6.84 percent.However, there was no respondent who uses Bio enriched organic manure, Raw bone meal, streamed meal, Potash derived from Rhodophytes, fermented organic manure and liquid fermented organic manure. The overall percent of organic fertilizer uses was highest among semi medium group i.e. 31.50 followed by medium group at 27.39 percent, 16.43 percent in small group and 13.69 percent respondent of marginal categories uses organic fertilizer and the large farmers stood at 10.95 percent. The fig 1 showed that out of total 10 types of organic fertilizer only 4 were used by the respondent in which organic manure has highest preference of the respondent followed by vermicompost and city compost in the study area.

Table 5. Distribution of farmer based on year of practice for organic farming

Year of Practicing	Type of Land Holding					Total
	Marginal	Small	Semi medium	Medium	Large	
Less than 2 year	4 (2.73)	8 (5.47)	12 (8.21)	14 (9.58)	2 (1.36)	40 (27.39)
2-4 years	12 (8.21)	8 (5.47)	16 (10.95)	10 (6.84)	6 (4.10)	52 (35.61)
4-6 years	2 (1.36)	4 (2.73)	12 (8.21)	8 (5.47)	4 (2.73)	30 (20.54)
6-8 years	2 (1.36)	4 (2.73)	4 (2.73)	4 (2.73)	0 (0.00)	14 (9.58)
More than 8 year	0 (0.00)	0 (0.00)	2 (1.36)	4 (2.73)	4 (2.73)	10 (6.84)
Total	20 (13.69)	24 (16.43)	46 (31.50)	40 (27.39)	16 (10.95)	146 (100)

Source: Based on data collected by researcher in study Area

The table 5. revealed that the 27.39 percent of respondent practicing organic farming from less than 2 years. The maximum percent of respondent belong to Medium group which stood at 9.58 followed by semi medium group which stood at 8.21, the small group respondent has value of 8 respondents who practice organic farming less than 2 years. The marginal stood at 2.73 and the large farmer stood at 1.36 percent in less than 2 year of practicing organic farming. the highest percentage of respondent i.e. 35.61 practicing organic farming between past 2-4 year in which highest share was 10.95 percent of semi medium farmers followed by marginal farmers which stood at 8.21 percent, the medium farmer were 6.84 percent who practice organic farming between 2 to 4 years. 4.10 percent of large farmer practicing in this mention period, around 20.54

percent of respondent practicing organic farming between 4 to 6 year the highest share obtained by semi medium farmers i.e. 8.21 percent followed by small and large farmers with share of 2.73 percent however marginal farmer has least percentage in the year 4-6 year with 1.36 percent. For the year 6 to 8 the maximum share holder belong to small semi medium and medium categories farmers with each has equal share of 2.73 percent however there was no large farmer found in this category during the survey. The respondent who practicing organic farming from more than 8 years were highest in medium and large farmers with 2.73 percent in both categories and 2 respondent found in semi medium categories. However, there was no marginal and small farmer who practicing organic farming for more than 8 years. marginal farmers' maximum respondent performing organic farming Between 2 to 4 year However the average was found to be 5 years. In small farmers' categories maxim farmers lie between less than 2 year and 2 to 4 years, in semi medium categories maximum respondent practicing organic farming from 2 to 4 year, in medium farmers' categories maximum respondent belong to less than 2 year categories and in large farmers' maximum respondent belong to 2 to 4 year of practicing organic farming

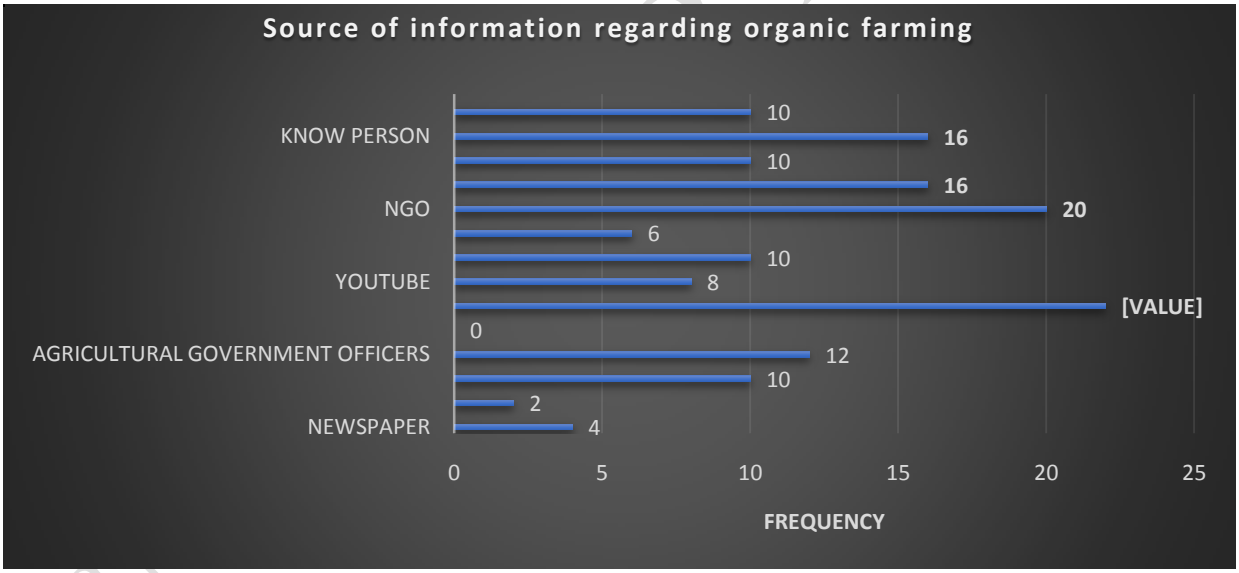

Fig 1. **Source of information regarding organic farming**

Fig revealed that the approx. 15.06 percent of the respondent affect from promotional activity performed by the Krishi Vigyan Kendra for awareness regarding the organic farming. the second highest promotional activity were performed by the NGO in the study areas which contribute 13.69 percent share in promoting awareness regarding

organic farming the third highest contribution was given by the workshop arranged by department of agriculture in the study area, also 10.95 percent of respondent stated that they know about organic farming from their relative person or "know person". Approx. 8.21 percent of respondent stated that they receive information regarding organic farming by the Agricultural officers in the study areas, Newspaper also contribute in promotional activity with contribution of 2.73 percent in awareness regarding organic farming.The poster for advertisement is also a promotional activity which contribute 1.36 percent in awareness of the respondent for organic farming, The Kisan Mitra in each village contribute 6.84 percent share in awareness regarding organic farming in the study areas, around 5.47 percent of respondent stated that they obtain information regarding organic farming from YouTube which act as a promotional tool for advertisement. Approx. 6.84 percent of respondent mentioned that they get information regarding organic farming from television by channel like DD Kisan etc., around 4.10 percent of respondent stated that they get information about organic farming from the wall painting in their village which contain motivational quotes and pictures, the Banaras Hindu University also plays a contribution in awareness regarding organic farming which is 6.84 percent.The kisan mela which was organized time to time act as a promotional activity for organic farming it contribute 6.84 percent in awareness share. In marginal categories of farmers i.e. 13.69 percent maximum 2.73 percent were influence by Krishi vigyan Kendra and kisan Mela in the study area.

Conclusion

It was concluded that around 42 percent of the respondent in the study area were aware about the organic farming and it was evident that mostly farmers engage in this activity for past 6 years which shows the government initiative like Namami Gange, PGS India and NPOP system in the study area However it was revealed that fertilizers shop has no contribution in the study area regarding awareness towards organic farming however around 22 respondents were influence by Krishi Vigyan Kendra in the study areas followed by 20 respondents by the NGO working in the study area. The least promotional activity was Poster, Newspaper and wall painting in the study areas. From the study it was revealed that maximum influence was done when respondents were in direct contact with the activity of awareness regarding organic farming.

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