The Journal of Rural and Agricultural Research Vol. 16 No. 1, 68-71 (2016)
Received July 2015; Acceptance January 2016

Adoption of Organic Farming Practices by Organic and Conventional Farmers

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Abstract

Organic farming is one of the sustainable farming systems, which offers a lucrative option to the Indian farmers whose realizations from the business of the agriculture, are declining. The present study was conducted in the 6 selected villages of purposely selected Govindgarh Panchayat Samiti of Jaipur district. From these villages 50 organic and 50 conventional farmers were selected by simple random sampling technique for the study purpose by proportional allocation method. It was reported that majority of the organic (40.00%) and conventional farmers (31.00%) fall under medium adoption category about organic farming. At the same time it was noted that all the 60.00 per cent respondents falling in high adoption category were organic farmers, whereas none of the conventional farmer could be placed in high adoption category. It was also found that there was a significant difference (Z-value 12.80) between the organic and conventional farmers in their extent of adoption of organic farming practices at 1 per cent level of significance. It was further reported that out of six aspects identified under the study for organic farming, the adoption of the aspect of "Organic weed management" was found to be at top rank by both organic (MPS 47.14) and conventional (MPS 36.42) respondents with adoption gap of 52.86 and 63.58, respectively, whereas, three important aspects namely "NADEP compost" (MPS 16.09), "Trichocards" (MPS 7.58) and "HaNPV" (MPS 6.77) were not much adopted by the farmers with an adoption gap of 83.91, 92.42 and 93.23, respectively. It was also found that, there was a significant difference between organic and conventional farmers in their extent of adoption of different aspects of organic farming namely NADEP compost ('Z' value 13.19, vermicompost ('Z' value 17.11), HaNPV ('Z' value 20.20), trichocards ('Z' value 53.15), organic weed management ('Z' value 11.09) and biofertilizers ('Z' value 13.99). It was also found that the adoption gap in overall organic farming practices was higher in case of conventional farmers (87.48%) as compared to organic farmers (75.66%).

Key words: Organic Farming, NADEP, Vermicompost, Trichocards, Biofertilizers

Introduction

Adoption is the decision to continue full use of the innovations as the best course of action available. The gravity of environmental degradation resulting from faulty agricultural practices has caused alarm among the concerned farmers, scientists and conservationists. In today's unstable degrading environment, a greater viable and sustainable farming system has become a necessity, which can help to overcome the problems of declining soil fertility and environmental pollution. Organic farming is one of such sustainable farming systems, which offers a lucrative option to the Indian farmers whose realizations from the business of the agriculture, are declining.

Organic farming is one of the several approaches to sustainable agriculture, which is a necessity in today's unstable and degrading environment. In Rajasthan, RAU, Bikaner and Morarka foundation are stepping up efforts to promote organic farming. Typically, organic exports are sold at impressive premiums, often at prices 50 per cent higher than identical products produced on non-organic farms. Thus, it is more viable and sustainable farming system, which provides a lucrative option to the farmers.

Keeping in mind, the above facts and importance of organic farming the study entitled "Adoption of Organic Farming Practices by Organic and Conventional Farmers" was undertaken with the following specific objectives:

1. Levels of adoption of organic farming practices by organic and conventional farmers

2. Extent of adoption of different aspects of organic farming by the organic and conventional farmers and
3. Extent of adoption of different practices of organic weed management by organic and conventional farmers.

Methodology

The present study was under taken in the purposely selected Govindgarh panchayat samiti of Jaipur district, because Govindgargh Panchayat samiti had maximum number of organic farmers as identified by Morarka Foundation so it was selected purposely. There were 42 adopted organic villages of Morarka Foundation in the Govindgarh panchayat samiti, out of which six organic villages having maximum number of organic farmers were selected for the study purpose.

From the selected villages a sample of 50 organic farmers was selected randomly in such a manner that the number of organic farmers selected from a village was proportional to the total number of organic farmers of that village. Equal number of conventional farmers (50) was also selected randomly from the selected village for comparison purpose. Thus, the total sample size would be 100.

An interview schedule consisting of measuring devices of dependent and independent variables along with face data of farmers was used for collecting response of the farmers. The data were classified, tabulated and inferences were drawn after subjecting the data to appropriate statistical analysis which led to the following major findings:

Results and Discussion

The findings are presented in three sub-heads :

1. Levels of adoption of organic farming practices by organic and conventional farmers

To get an overview of the adoption level, the respondents were grouped into three strata *viz*., high adoption group (score above 130.70), medium adoption group (score from 52.96-130.70) and low adoption group (score below 52.96). This stratification was based on the calculated mean and standard deviation of the adoption scores obtained by the respondents. On the basis of stratification, the frequency distribution and percentage have been worked out and presented in Table 1.

Table 1 makes it clear that 40.00 per cent organic farmers and 62.00 per cent conventional farmers were included in the category of medium level of adoption, only 60.00 per cent organic farmers could be placed in high adoption category, while no conventional farmer could be placed in high level of adoption category. The Table also depicts that 38.00 per cent conventional farmers could be placed in low adoption category, while no organic farmers could be placed in low level of adoption category. Thalor (2004) reported that most of the non-beneficiary i.e., 73 (97.33%) respondents were found to be in the low adoption category, whereas among beneficiary farmers, 39 and 33 (52.00 and 44.00 %) possessed high and low level of adoption, respectively. Ranganatha *et al.* (2001) revealed that nearly half of the small farmers (49%) were medium adopters, while 30% and 21% of them were low and high adopters of organic farming practices in rice cultivation.

It is inferred therefore, that almost half of the organic respondents fell in the category of high adoption while most of the conventional respondents fell in the category of medium level of adoption. The superiority of organic farmers about higher adoption level might be due to their involvement in the training programmes.

To determine the difference between organic and conventional farmers in their adoption levels about organic farming, 'Z' test was applied. The 'Z' value (12.80) between the scores of the extent of adoption of organic farming practices by the organic and conventional farmers was found significant at 1 per cent level of significance. Thus the hypothesis formulated in null form that there is no significant difference between organic and conventional farmers in their adoption levels about organic farming was rejected and the alternative hypothesis was accepted.

Table 1: Distribution of organic and conventional farmers according to their levels of adoption of organic farming practices (N = 100)

S. No.	Adoption level	Organic Farmers (N=50) F	%	Conventional farmers (N=50) F	%	"Z" value
1.	Low adoption (less than 52.96)	0	0.00	19	38.00	12.80**
2.	Medium adoption (from 52.96-130.70)	20	40.00	31	62.00	
3.	High adoption (more than 130.70)	30	60.00	0	0.00	
	Total	50	100.00	50	100.00	

X = 91.83 ó = 38.87 F = frequency % = percentage

**Significant at 1 percent level of significance

It means that there is a significant difference between the organic and conventional farmers in their adoption levels about organic farming.

2. Extent of adoption of different aspects of organic farming by the organic and conventional farmers

In this part an attempt was made to see the adoption level of major aspects of organic farming to determine the difference in their adoption between organic and conventional respondents. The results are presented in table 2. The findings of table 2 shows that out of six aspects identified under the study for organic farming, the aspect of "Organic weed management" was found to be at top rank as far as its adoption was concerned by both organic (MPS 47.14) and conventional (MPS 36.42) respondents with adoption gap of 52.86 and 63.58, respectively. It was also observed that "Biofertilizer" aspect got second priority by both organic (MPS 35.90) and conventional (MPS 19.69) respondents regarding their adoption with adoption gap of 64.10 and 80.31, respectively. It was followed by the aspect of "Vermicomposting" by both organic (MPS 32.54) and conventional (MPS 13.54) farmers with adoption gap of 67.46 and 86.46, respectively. Thalor (2004) also found that out of total five aspects of organic farming selected for assessing extent of adoption, maximum adoption was reported in "organic weed management" and least adoption was found in the major aspect of "NADEP compost." He also found that beneficiary farmers possessed comparatively more adoption of organic farming compared with those of non-beneficiary respondents. Thayagarajan and Ramanathan (2001) also reported that majority of the respondents (44.33%), were found to be low adopters followed by high (31.67%) and medium (25.00%) adopters of biofertilizers in rice cultivation.

Based on the table 2, it can also be highlighted that, out of total six aspects of organic farming, three important aspects namely "NADEP compost" (MPS 16.09), "Trichocards" (MPS 7.58) and "HaNPV" (MPS 6.77) were not much adopted by the farmers and were ranked 4th, 5th and 6th, respectively with adoption gap of 83.91, 92.42 and 93.23, respectively. It might be due to their complexity, high cost and less persuation by the agencies. These need attention further.

The in depth analysis of table 2 also reveals that organic farmers had some satisfactory adoption about only one aspect *i.e.* "Organic weed management" whereas another five important aspects *viz*, NADEP compost, vermicomposting, HaNPV, trichocards and biofertilizers were not followed satisfactorily by the organic as well as conventional respondents of the study area . Thereafter 'Z'-test was applied to see the difference between organic and conventional respondents with regards to their overall extent of adoption about major aspects of organic farming.

It is also obvious from the table 2 that the 'Z' values between the organic and conventional farmers for the adoption of trichocards was found to be 53.15, whereas the 'Z' values for HaNPV, vermicompost, biofertilizer, NADEP compost and organic weed management were 20.20, 17.10, 13.98, 13.19 and 17.10 respectively, which were statistically significant at 1 per cent level of significance, which depicts that there had been a highly significant difference between the organic and conventional farmers regarding their extent of adoption of these 6 aspects of organic farming.

Therefore, the null hypothesis was rejected and alternative hypothesis was accepted. It means that organic and conventional farmers have more variation in the level of adoption about organic farming. This is also clear with seeing the difference in mean per cent scores of adoption of organic farming by organic (MPS 24.34) and conventional (MPS 12.51) respondents,

Table 2: Extent of adoption by organic and conventional farmers regarding different aspects of organic farming

N=100

S. No.	Aspects of organic farming	Organic farmers (N =50) MPS	Rank	Adoption gap (%)	Conventional Farmers (N =50) MPS	Rank	Adoption gap (%)	'Z' Value
1.	NADEP compost	16.09	IV	83.91	0.00	VI	100.00	13.19**
2.	Vermicompost	32.54	III	67.46	13.54	III	86.46	17.10**
3.	HaNPV	6.77	VI	93.23	2.92	IV	97.08	20.20**
4.	Trichocards	7.58	V	92.42	2.50	V	97.50	53.15**
5.	Organic weed management	47.14	I	52.86	36.42	I	63.58	11.08**
6.	Biofertilizers	35.90	II	64.10	19.69	II	80.31	13.98**
	Overall	24.34		75.66	12.51		87.49	

**Significant at 1% level of significance MPS = Mean per cent score

Table 3: Extent of adoption of different practices of organic weed management by organic and conventional farmers

N = 100

S. No.	Practices	Organic Farmers (N =50) MPS	Rank	Adoption gap (%)	Conventional farmers (N =50) MPS	Rank	Adoption gap (%)
1.	Primary and secondary tillage	100.00	I	0.00	97.33	I	2.67
2.	Sowing on recommended time	66.66	III	33.34	52.66	III	47.34
3.	Using weed free seeds	76.33	II	23.67	71.66	II	28.34
4.	Spreading neem leaves in inter-row space	16.00	V	84.00	8.33	V	91.67
5.	Community sanitation	13.33	VI	86.67	0.00	VI	100.00
6.	Intercropping of moong etc. in inter-row space	6.66	VII	93.34	0.00	VI	100.00
7.	Crop rotation for checking specific weeds	51.00	IV	49.00	25.00	IV	75.00
	Overall	47.14		52.86	36.43		63.57

MPS = Mean per cent score

respectively.

The considerable difference between organic and conventional farmers about adoption of organic farming is no doubt due to involvement of organic farmers in trainings organized by Morarka Foundation, KVK and Department of Agriculture. Hence the efforts in this direction must be more intensified.

3. Extent of adoption of different practices of organic weed management by organic and conventional farmers:

Table 3 speaks that both organic (MPS 100.00) and conventional (MPS 97.33) farmers of the study area gave first priority to "Primary and secondary tillage" and ranked first regarding organic weed management with adoption gap of 0.00 and 2.67, respectively. This was followed by "Using weed free seeds" (MPS 76.33 and 71.66, respectively and adoption gap of 23.67 and 28.34, respectively) and "Sowing on recommended time" (MPS 66.66 and 52.66, respectively and adoption gap of 33.34 and 47.34, respectively) which were ranked second and third by both the categories of the respondents.

The table also shows that the least adoption of "Inter-cropping of moong etc. in inter-row space" (MPS 6.66) was observed in the organic farmers, whereas the practice of "Spreading neem leaves in inter-row space" (MPS 8.33) was least adopted by the conventional farmers with adoption gap of 93.34 and 91.67, respectively, whereas the practices "Community sanitation" and "Inter-cropping of moong etc. in inter-row space" were not adopted by the conventional farmers with 0.00 MPS and ranked last with adoption gap of 100.00. Ramesh and Govind (2001) reported that farmer's extent of adoption level was high about all the organic farming practices especially in water management, land preparation and storage practices. Majority of the respondents had adopted the organic farming practices in paddy crop. Saxena and Singh (2000) reported that majority of the farmers (40.90 per cent) belonged to medium level of adoption category who were following 5 to 7 out of 10 organic farming practices. Also, more than 33 per cent farmers followed more than 7 organic farming practices, whereas there were 25 per cent farmers who were practicing 3 to 5 practices and were placed in low adoption category.

The overall extent of adoption of different practices of organic weed management by the organic and conventional farmers were 47.14 and 36.43 MPS, respectively which indicates the glaring gap in extent of adoption of different practices of organic weed management with 52.86 and 63.57%, respectively in case of organic and conventional farmers.

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