Correlates of biodynamic compost method on its beneficiary farmers

■ R.T. KATOLE, UMESH R. CHINCHMALATPURE AND G.B. MORE

SUMMARY : The present study was undertaken in 16 villages of Telhara Panchayat samiti of Akola district in Maharashtra state.For the present study, 112 beneficiary farmers were purposively selected from 16 villages and the data from selected 112 beneficiary farmers were collected. An exploratory research design was used for the present study. The findings of the present study revealed that majority of beneficiary farmers were from middle age group, had education upto high school level, belonging to small land holding, the annual income was observed above Rs.2,00,000/-, had medium level of animal possession (5-8 animal), had medium level of sources of information, had medium level of extension contact, had medium levels of scientific orientation, had medium levels of risk preference and innovativeness. The per cent change in annual income after use of biodynamic compost method was 11.76 per cent. Soybean and cotton crops showed change in average productivity in positive direction *i.e.* increase in productivity. Soybean showed maximum increase in average productivity (16.71%) over base year followed by cotton (10.76%). The variables *viz.*, livestock possession, sources of information, scientific orientation, risk preference and innovativeness were found to be significant at 0.05 per cent level of probability with change in annual income, whereas independent variable extension contact had positive and highly significant relationship with change in productivity at 0.01 per cent level of probability. However, age and education had shown non-significant relationship with the change in annual income and change in productivity, respectively.

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BACKGROUND AND OBJECTIVES

Compost is the natural process of 'rotting' or decomposition of organic matter by micro-organism under controlled condition. Raw organic materials such as crop residues, animal waste, food garbage, some municipal waste and suitable industrial waste, enhance their suitability for application to the soil as a fertilizing sources, after having undergone composting. Compost is rich source of organic matter. There are various methods of compost making such as Bangalore method, Indore method, PDKV compost method, NADEP method, biodynamic method, vermicomposting etc.

Biodynamic compost method is one of the most important rapid methods of composting which has given wide publicity by the State Department of Agriculture under farming scheme of 'MAHAPIK' plan. In

biodynamic compost dry farm waste material, green biomass, cow dung are used as NADEP method along with bio-dynamic compost inoculums culture (S-9) which faster the decomposition process. In this composting process, 60-70 per cent dry farm material and green biomass along with 30 per cent cow dung is used. Biodynamic compost method decomposes the organic matter faster than other methods of composting. In this method organic material decompose faster than another method of composting and produce good quality compost within 45-50 days.

The study was taken up with objectives to study the profile of beneficiaries of biodynamic compost method, to study the change in annual income and productivity of farmers using biodynamic compost method; and to study the correlates of selected characteristics of beneficiary farmers with change in their annual income and productivity.

RESOURCES AND METHODS

An exploratory design of social research was used for present study aims at assessing the impact of biodynamic compost method on its beneficiaries. Present study was conducted at Telhara Panchayat Samiti of Akola district of Vidarbha region in Maharashtra state. Akola district comprises of total 7 Panchayat Samities and out of them Telhara Panchayat Samiti was purposively selected for the present investigation because of having maximum number of respondents. Sixteen villages were selected in Telhara tahasil on the basis of number of farmers who were beneficiaries of biodynamic compost method. A list of farmers having biodynamic compost method of each village, 7 respondents from each village were selected. Thus total 112 respondents were purposively selected for the present study.

OBSERVATIONS AND ANALYSIS

Nearly half of the respondents (44.64%) belonged to middle age group followed by 33.93 per cent of respondents belonged to young age category, most of the respondents (36.61%) were studied upto high level followed by 28.57 per cent attended college and above level of education, (30.36%) belonged to category of small land holding, majority (33.93%) of the respondents belonged to the annual income ranging above Rs. 2,00,000/-. Most of the respondents (59.82%) were

belonged to medium level of animal possession, majority of the respondents (56.25%) were having sources of information came under medium level. Relatively higher proportion (77.68%) of respondents had medium level of extension contact, higher proportion (68.75%) of respondents were observed under medium category of scientific orientation. Maximum per cent of respondents (58.04%) were observed under medium category of risk preference, lastly (70.54%) of respondents observed under medium category of innovativeness.

Distribution of the beneficiary farmers according to their annual income in both the categories *i.e.* before and after use of biodynamic compost method presented in Table 2, in before category it was found that relatively higher proportion (31.25 %) of the respondents having their annual income Above Rs. 2,00,000/- followed by the respondents (25.00%) were having their annual income in the range of Rs. 1,00,001 to Rs. 1,50,000/-, whereas, 24.11 per cent respondents were having their annual income in the range of Rs. 50,001 to Rs. 1,00,000/- and the less respondents (10.71%) were having their annual income in the range of Rs. 1,50,001 to Rs. 2,00,000/- and only (8.93%) of the respondents having their annual income to Rs. 50,000/-.

After use of biodynamic compost method majority of respondents (33.93%) were having their annual income in range of above Rs. 2,00,000/-, followed by 21.43% respondents found in the range of Rs. 50,001 to Rs.1,00,000/-, whereas, 19.64% were having annual income in the range of Rs. 1,00,001 to Rs.1,50,000/- and 17.86% of the respondents were having their annual income ranging from Rs. 1,50,001 to Rs. 2,00,000/-. And only 7.14% of the respondents were having their annual income ranging upto Rs. 50,000/-.

The per cent change in annual income after use of biodynamic compost method was 11.76 per cent. From the above findings it can be noted that after biodynamic compost method the annual income of beneficiaries was increased. These findings was supported by the findings of Anonymous (2013).

Change in productivity :
Distribution of respondents according to change in productivity of *Kharif* crops in quintals /ha are given in Table 3.

It is revealed from Table 3 that, soybean and cotton crops showed change in average productivity in positive

Sr. No.	Variables and category	Respondents	
		Number	Percentage
1.	**Age**		
	Young (Upto 35 years)	38	33.93
	Middle (36 to 50 years)	50	44.64
	Old (Above 50 years)	24	21.43
2.	**Education**		
	Illiterate	2	1.79
	Primary School	11	9.82
	Middle School	26	23.21
	High School	41	36.61
	College	32	28.57
3.	**Land holding :**		
	Marginal (Upto 1 ha)	24	21.43
	Small (1.01 to 2 ha)	34	30.36
	Semi-medium (2.01 to 4 ha)	29	25.89
	Medium (4.01 to 10 ha)	24	21.43
	Large (Above 10 ha)	1	0.89
4.	**Annual income**		
	Upto Rs. 50,000	8	7.14
	Rs. 50,000 to Rs. 1,00,000	24	21.43
	Rs. 1,00,001 to Rs. 1,50,000	22	19.64
	Rs. 1,50,001 to Rs. 2,00,000	20	17.86
	Above 2,00,000/-	38	33.93
5.	**Livestock possession**		
	Small herd (Upto 4)	32	28.57
	Medium herd (5 to 8)	67	59.82
	Big herd (Above 8)	13	11.61
6.	**Sources of information**		
	Low (Upto 11)	28	25.00
	Medium (12 to 23)	63	56.25
	High (Above 23)	21	18.75
7.	**Extension contact**		
	Low (Upto 4)	20	17.86
	Medium (5 to 15)	87	77.68
	High (Above 15)	05	4.46
8.	**Scientific orientation**		
	Low (Upto 23)	29	25.89
	Medium (24 to 27)	77	68.75
	High (Above 27)	6	5.36
9.	**Risk preference**		
	Low (Upto 18)	32	28.57
	Medium (19 to 23)	65	58.04
	High (Above 23)	15	13.39
10.	**Innovativeness**		
	Low (Upto 9)	23	20.54
	Medium (10 to 15)	79	70.54
	High (Above 15)	10	8.92

Table 1 : Distribution of the respondents according to their characteristics (n=112)

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Table 2 : Distribution of beneficiary farmers according to their change in annual income before and after use of biodynamic compost method

(n = 112)

Sr. No.	Annual income (Rs.)	Beneficiary farmers			
		Before use of biodynamic compost method		After use of biodynamic compost method	
		Frequency	Per cent	Frequency	Per cent
1.	Upto Rs. 50,000/-	10	8.93	8	7.14
2.	Rs. 50,001 to Rs. 1,00,000/-	27	24.11	24	21.43
3.	Rs. 1,00,001 to Rs. 1,50,000/-	28	25.00	22	19.64
4.	Rs. 1,50,001 to Rs. 2,00,000/-	12	10.71	20	17.86
5.	Above Rs. 2,00,000/-	35	31.25	38	33.93
	Total	112	100.00	112	100.00
	Mean	188303.60		210464.30	11.76

Table 3 : Distribution of different *Kharif* crops (soybean and cotton) according to their change in productivity before and after use of biodynamic compost method

(n=112)

Sr. No.	Crops	Beneficiary farmers		
		Before use of biodynamic compost method	After use of biodynamic compost method	Per cent change
		Quintals/ha	Quintals/ha	Per cent
	Kharif			
1.	Soybean	16.77	19.57	16.71
2.	Cotton	32.28	35.75	10.76

Table 4 : Co-efficient of correlation of selected characteristics of the beneficiary farmers with change in annual income

Sr. No.	Variables	'r' values
1.	Age	-0.073
2.	Education	-0.075
3.	Land holding	-0.365**
4.	Annual income	-0.428**
5.	Livestock possession	0.203*
6.	Sources of information	0.247*
7.	Extension contact	0.445**
8.	Scientific orientation	0.201*
9.	Risk preference	0.214*
10.	Innovativeness	0.225*

* and ** indicate significance of values at P=0.05 and 0.01, respectively

direction *i.e.* increase in productivity. Majority of *Kharif* crops showed increase in average productivity. In *Kharif* crops soybean had maximum increase in average productivity (16.71%) over base year followed by cotton increased productivity which was observed as 10.76%. From the above findings it could be concluded that there was definite impact of biodynamic compost method on productivity of different *Kharif* crops. These findings are in accordance with the findings of Anonymous (2013).

Relational analysis :

Efforts were made to find out the relationship of the selected characteristics of the respondents with their impact of biodynamic compost method on its beneficiaries.

It is apparent from Table 4 that the independent variable extension contact had positive and highly significant relationship with change in annual income at 0.01 per cent level of probability whereas, variables land holding and annual income had negative and highly significant relationship with change in annual income at 0.01 per cent level of probability whereas, the variables *viz.*, livestock possession, sources of information, scientific orientation, risk preference and innovativeness were found to be significant at 0.05 per cent level of probability. The other variables such as age and education showed non-significant relationship with the change in annual income. Thus, the Null hypothesis for these non-significant variables, therefore, was accepted. More or less similar results were also found by Borhade (2011);

Table 5 : Co-efficient of correlation of selected characteristics of the beneficiary farmers with change in productivity

Sr. No.	Variables	'r' values
1.	Age	-0.071
2.	Education	-0.153
3.	Land holding	-0.445**
4.	Annual income	-0.482**
5.	Livestock possession	0.256*
6.	Sources of information	0.225*
7.	Extension contact	0.279**
8.	Scientific orientation	0.209*
9.	Risk preference	0.250*
10.	Innovativeness	0.198*

* and ** indicate significance of values at P=0.05 and 0.01, respectively

Gawande (2008) and Jadhav (2008).

It is apparent from Table 5 that the independent variable extension contact had positive and highly significant relationship with change in productivity at 0.01 per cent level of probability whereas, variables land holding and annual income had negative and highly significant relationship with change in productivity at 0.01 per cent level of probability whereas, the variables *viz.*, livestock possession, sources of information, scientific orientation and innovativeness were found to be significant at 0.05 per cent level of probability. The other variables such as age and education showed non-significant relationship with the change in productivity. Similar work related to the present investigation was also conducted by Kalaskar *et al.* (2001); Kubade *et al.* (2007); More (2004) and Vyas *et al.* (2003).

Conclusion:

These findings revealed that, the 11.76 per cent change happened in annual income after use of biodynamic compost method. Whereas, soybean and cotton crops showed change in average productivity in positive direction *i.e.* increase in productivity. Soybean showed maximum increase in average productivity (16.71%) over base year followed by cotton (10.76%).

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