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RESEARCH ARTICLE :

Socio-economic and psychological characteristics of vermicomposting farmers of Gulbarga district of Karnataka

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SUMMARY : The study was conducted in Gulbarga district of Karnataka during the year 2012-13. Four taluks namely Gulbarga, Jewargi, Aland and Afazalpur were purposively selected based on highest number of vermicomposting pits and from each taluk, two villages were selected and from each village, fifteen farmers were selected randomly thus the total sample comprised of 120 respondents. The expost facto research design was used for the study. The data were collected using pre-tested structured interview schedule personally. The collected data were analyzed using appropriate statistical tools. The results of the study revealed, majority of the respondents was middle aged and more number of farmers had studied upto high school, majority of the vermicompost farmers had high farming experience with small landholdings. Majority of the vermicompost farmers belonged to high annual income (> Rs. 51,000) and half of the farmers had regular habit of consulting neighbors and relatives as a source of information for taking operational decision for both agricultural as whole in addition to vermicomposting. High majority of the farmers regularly participated in training, krishimela and demonstration. Cent per cent of respondents were regular viewers of Television, occasional listener of radio and occasional reader of news papers. Majority of respondents belonged to medium level category of economic motivation, risk orientation, scientific orientation and market orientation.

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BACKGROUND AND OBJECTIVES

Vermicompost is highly nutritive and a powerful plant growth promoter and protector and is scientifically proving to be a miracle plant growth promoter. It is rich in NPK, micronutrients, beneficial soil microbes and also contains plant growth hormones and enzymes secreted by earthworms. Vermicompost rich in humus (secreted by earthworms) provide the ability to glue clay, silt and sand particles together enhancing the texture and structure of soil and preventing soil erosion. There is a tremendous scope to convert the bio-degradable waste into organic manure through vermiculture biotechnology or vermicomposting. Vermicompost technology has promising potential to meet the organic

manure requirement in both irrigated and rainfed areas. It has tremendous prospects in converting agro-wastes and city garbage into valuable agricultural input. Vermicompost enjoys various advantages like it is an eco-friendly natural fertilizer prepared from biodegradable organic wastes and is free from chemical inputs, it does not have any adverse effect on soil, plants and environment, it promotes better root growth and nutrient absorption. It improves nutrient status of soil both macro and micro-nutrients, it improves the physical, chemical and biological properties of the soil and it improves soil aeration, texture and tilth thereby reducing soil compaction.

When organic manures are used, the chemical nutrients are also utilized well by crops as they improve soil health and balance the negative effects of chemicals. The prime market for vermicompost is in agriculture and horticulture. A large number of farmers are using vermicompost in large quantities. Small and marginal farmers would do well to produce vermicompost on their own. Keeping this in background, the present study was undertaken to know the socio-economic characteristics of the farmers who have adopted the vermicomposting technology.

RESOURCES AND METHODS

The present study was conducted in Gulbarga district of Karnataka during the year 2012-13. Gulbarga district was purposively selected for the study because the district stands top in number of vermicompost pits. Ex-post facto research design was employed in the present investigation. Out of seven taluks, four taluks *viz*., Gulbarga, Jewargi, Aland and Afazalpur were purposively selected and from each taluk, two villages were selected and from each village, fifteen farmers were selected randomly. Thus, the total sample size constituted of 120 respondents for the study. The data were collected using pre-tested structured interview schedule personally. the collected information was analyzed using appropriate statistical tools like frequency, percentage, mean, standard deviation and correlation.

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads:

Distribution of the respondents based on their personal characteristics :

Age :

The results pertaining to age presented in Table 1 indicated that majority (75.00 %) of the respondents were middle aged. followed by old age (15.83 %) and young age (9.17 %). Middle aged farmers are more enthusiastic had more knowledge and experience regarding vermicomposting technology. Generally this age group (between 31 to 49 years) farmers have more physical vigor, active in adoption of agricultural practices and also have more responsibility towards family than younger ones. Thus, most of the vermicompost farmers were from middle age group that could be justified.

Table 1 : Distribution of the respondents according to their personal characteristics **(n = 120)**

Sr. No.	Characteristics	Frequency	Percentage
1.	**Age**		
	Young (upto 30 years)	11	9.17
	Middle (31-50 years)	90	75.00
	Old (>51 years)	19	15.83
2.	**Education**		
	Illiterate 2	6	21.67
	Primary (1-4th)	21	17.50
	Middle school (5th – 7th)	17	14.16
	High school (8th -10th)	32	26.67
	PUC (11th -12th)	14	11.67
	Degree (>12th)	10	8.33
3.	**Farming experience**		
	Low	17	14.17
	Medium	37	30.83
	High	66	55.00

Education :

With regard to level of education, it is evident that more number (26.67 %) of farmers had studied upto high school followed by illiterate (21.67 %), primary school (17.50 %) and middle school (14.16 %). The rest were educated upto PUC (11.67 %) and degree (8.33 %). Non-realization of the influence of formal education in one's life, illiteracy of the parents might have come in the way of providing better education by their parents. Another contributing reason could be the rural social environment might have not encouraged their parents to give education to the children. As the rural people are still traditional based they generally do not prefer to send their children to college and they expect their children to assist in farm and household activities. The distance of higher study centers from the villages and financial constraints also might have prevented the parents from providing higher education to their children.

Farming experience :

A perusal of the Table 1 indicated that majority of the vermicompost farmers (55.00 %) had high farming experience followed by medium (30.83 %) and low (14.17 %) farming experience.

Farming experience mainly depends upon age and education of the farmer. Majority of respondents belonged to middle aged and old age category and they might have started farming in their early age itself. So majority of respondents had medium farming experience. Since agriculture is the main occupation of majority and the need to support family members.

Land holding :

With respect to land holding (30.00 %) of the vermicompost farmers belonged to Small farmers category followed by big farmers (25.84 %), semi medium farmers (23.33 %) and medium farmers (16.67 %) and very negligible per cent (4.17 %) of them belonged to marginal farmers (Table 2). Over one third (30.00 %) of the vermicompost farmers belonged to small farmers category this could be due to fragmentation of ancestral land from generation to generation because of increased population day by day might have led to smaller size of land holdings. However, 30.83 per cent of the respondents

Table 2: Distribution of the respondents according to their economic characteristics **(n = 120)**

Sr. No.	Characteristics	Frequency	Percentage
1.	**Land holding**		
	Marginal (upto 2.5 acre)	5	4.17
	Small (2.51-5.00 acre)	36	30.00
	Semi medium (5.01-10.00 acre)	28	23.33
	Medium (10.01-25.00 acre)	20	16.67
	Big (>25.00 acre)	31	25.84
2.	**Annual income**		
	Low income group (upto Rs.17000)	2	1.67
	Medium income group (Rs. 17001 to Rs. 34000)	17	14.17
	Semi medium income group (Rs. 34001 to Rs. 50000)	16	13.33
	High income group (Above Rs. 50001)	85	70.84

Table 3: Distribution of respondents according to their source of information **(n = 120)**

Sr. No.	Source of information	Extent of participation					
		Regular		Occasionally		Never	
1.	Relatives	57	47.50	61	50.84	2	1.66
2.	Neighbours	62	51.67	54	45.00	4	3.33
3.	Private agencies	5	4.17	67	55.83	48	40.00
4.	SMS	48	40.00	54	45.00	18	15.00
5.	Agril. staff	38	31.66	53	44.17	29	24.17
6.	Hort. staff	14	11.67	55	45.83	51	42.5
7.	NGO	82	68.33	26	21.67	12	10.00
8.	Bank	15	12.50	79	65.83	26	21.67
9.	Newspaper	17	14.17	82	68.34	21	17.5

who had land holding above 10 acres. The possible reasons that could be attributed to this were those who had agriculture as the main occupation of the family almost depended on their land for their livelihood. Since the size of land holding will be generally high in dry areas.

Annual income :

The data presented in Table 2 indicated that a majority of the vermicompost farmers (70.84 %) belonged to high annual income (> Rs. 51,000). The possible reason could be due to large size of land holdings. Whereas 14.17 per cent of vermicompost farmers were in medium annual income of Rs. 17,001.00 to 34,000.00, followed by only 13.33 per cent were in semi medium category of Rs. 34,001.00 to 50,000.00 and very negligible percentage of respondents (1.67 %) belonged to low income category *i.e*. upto Rs. 17, 000.00. This could be due to the family background of the respondents. the other reasons was small land holding, lack of technical guidance about vermicomposting technology and low risk taking ability leading to low income.

Source of information :

Around 50 per cent of the farmers had regular habit of consulting neighbors, relatives as a source of information for taking operational decision for both agricultural as whole in addition to vermicomposting.

In case of occasional participation more than 50 per cent of the farmers had habit of consulting to relatives, neighbours, SMS, agricultural staff, horticultural staff, bank and news paper also the possible reason might be relatively higher income group, larger size land holding relatively medium to high both risk and scientific orientation of the respondents. Whereas in case of never participation meagre percentage of the farmers were not consulting any sources which are being listed in the research tool (Table 3).

Extension participation :

It could be observed from the Table 4 that, cent per cent, 98.33 per cent and 90.84 per cent respondents were regularly participated in training, krishimela and demonstration, respectively. From the above results, we come to know that, more than 80 per cent of the respondents had participated in training, krishimela and demonstration as it was encouraged and organized by KVK. Also, 30 to 60 per cent of the trained respondents had participated regularly in group discussion, field visit and educational tour, field days and agricultural exhibition. The probable reason for above findings might be due to their interest in extension activities, which directly helps them to get information on relevant innovations, technologies and skills which help them to seek information from extension experts, subject matter specialists, scientist etc. from the Krishi Vigyan Kendra and NGO. This inturn helps to increase their knowledge and adoption level.

Mass media participation :

It is evident from the Table 5 that, cent per cent of respondents were regularly viewers of Television, occasional and listener of radio and News papers, respectively.

The probable reason for majority of the trained and untrained farmers to be in regular and occasionally listener, viewers and readers of the radio, T.V. and News paper. with regarded to agricultural programmes might be due to their interest in acquiring latest information in agriculture and market news etc. The mass media provides information on experiences of successful

Table 4: Distribution of respondents according to their extension participation **(n = 120)**

Sr. No.	Extension Activities	Participation		Extent of participation					
		Yes		Regularly		Occasionally		Never	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	Training	105	87.50	12	10.00	93	77.50	15	12.50
2.	Demonstration	109	90.83	18	15.00	92	76.67	10	8.33
3.	Field days	53	44.17	22	18.34	31	25.83	67	55.83
4.	Field visit	36	30.00	16	13.33	21	17.50	83	69.17
5.	Group meting	34	28.33	8	6.67	25	20.83	87	72.50
6.	Agril exhibition	47	39.17	17	14.17	31	25.83	72	60.00
7.	Krishi mela	118	98.33	109	90.84	10	8.33	1	0.83
8.	Education tours	69	57.50	20	16.67	51	42.50	49	40.83

farmers through various channels like television, radio and newspaper etc. which creates the awareness in other farmers to take up similar activities or try out new innovations.

Economic motivation :

It is clear from the Table 6 that the majority of respondents (36.66 %) to medium level economic motivation category followed by high (30.84 %) and low (32.50 %) economic motivation categories, respectively. The reason for medium economic motivation of the respondents might be due to low economic background of the respondents and most of the decisions are made by the older member of the family. The responsibilities of middle and young were restricted to care and management of agricultural enterprises.

Risk orientation :

The result shown in Table 6 revealed that, majority (40.83 %) of the farmers had medium level of risk orientation followed by high (37.50 %) and low (21.67 %) categories, respectively. It should be mentioned here that, the individuals will be very critical and cautious in understanding different aspects of technology. There is a tendency in farmers to take risk based on their income, land holding and other resources. Risk taking varies with

Table 5: Distribution of respondents according to their mass media participation **(n = 120)**

Sr. No.	Sources	Subscribed/Possessed		Programmes	Frequency of use					
					Regular		Occasionally		Never	
		Freq.	%		Freq.	%	Freq.	%	Freq.	%
1.	Radio	45	37.50	Agriculture	4	3.34	28	23.33	88	73.33
				General	14	11.67	32	26.67	74	61.66
2.	TV	120	100.00	Agriculture	54	45.00	39	32.50	27	22.50
				General	117	97.50	1	0.83	2	1.67
3.	News paper	75	62.50	Agriculture	44	36.67	23	19.17	53	44.16
				General	54	45.00	13	10.83	53	44.17
4.	Magazine	49	40.83	Agriculture	23	19.17	20	16.67	77	64.16
				General	37	30.83	9	7.5	80	66.67

Table 6 : Distribution of the respondents according to their psychological characteristics **(n = 120)**

Sr. No.	Characteristics	Frequency	Percentage
1.	**Economic motivation**		
	Low (Mean – 0.425 SD)	39	32.50
	Medium (Mean ± 0.425 SD)	44	36.66
	High (Mean + 0.425 SD)	37	30.84
		Mean = 8.35 and SD = 1.84	
2.	**Risk orientation**		
	Low (Mean – 0.425 SD)	26	21.67
	Medium (Mean ± 0.425 SD)	49	40.83
	High (Mean + 0.425 SD)	45	37.50
		Mean = 5.05 and SD = 0.99	
3.	**Scientific orientation**		
	Low (Mean – 0.425 SD)	38	30.00
	Medium (Mean ± 0.425 SD)	45	38.34
	High (Mean + 0.425 SD)	37	31.66
		Mean = 8.75 and SD = 1.38	
4.	**Market orientation**		
	Low (Mean – 0.425 SD)	24	20.00
	Medium (Mean ± 0.425 SD)	71	59.17
	High (Mean + 0.425 SD)	25	20.83
		Mean = 9.55 and SD = 2.70	

socio-economic status of the individuals. In the study most of the respondents belonged small land holdings. Hence, the results could have been obtained.

Scientific orientation :

The result shown in Table 6 revealed that, majority (38.34 %) of the vermicompost farmers had medium scientific orientation whereas, 31.66 per cent and 30.00 per cent of them had high and low level of scientific orientation, respectively. The possible reason could be scientific orientation is the orientation of farmer to adopt new technologies in a scientific way. This might be due to the willingness to take risks partly.

Market orientation :

The data from Table 6 revealed that more than half of the (59.17 %) vermicompost farmers had medium level of market orientation, where as 20.83 per cent of farmers had high market orientation and 20.00 per cent farmers had low market orientation. Majority of the farmers belonged to medium market orientation (59.17 %). This might be due to relatively large size of land holding of the respondents' influence the availability of more and more quantity of crop residues which tempted the farmers to produce more and more vermicompost to meet self requirement and remaining quantity will be planned to sell in the market resulting in a medium level of market orientation. Similar work related to the present investigation was also conducted by Bhople *et al.* (1997); Kanavi (2000); Nagesh (2006); Natikar (2001); Raghavendra (2007); Temkar (2000) and Vijayakumar (1997).

Conclusion :

It is clear from the results that, majority of the respondents was middle aged and more number of farmers had studied upto high school, majority of the vermicompost farmers had high farming experience with small landholdings. Majority of the vermicompost farmers belonged to high annual income (> Rs. 51,000) and half of the farmers had regular habit of consulting neighbors and relatives as a source of information for taking operational decision for both agricultural as whole in addition to vermicomposting. High majority of the farmers regularly participated in training, krishimela and demonstration. Cent per cent of respondents were regular viewers of Television, occasional listener of radio and occasional reader of News papers. Majority of respondents belonged to medium level category of economic motivation, risk orientation, scientific orientation and market orientation.

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