Knowledge Level of Farmers on Organic Farming in Tamil Nadu

D. Jaganathan[1], Ram Bahal[2], R. Roy Burman[3] and V. Lenin[4]

1. Scientist (Agril. Ext.), CPCRI Regional Station, Vittal, Karnataka, 2. Former Principal Scientist, 3. Sr. Scientist, Division of Agril. Ext., IARI, New Delhi, 4. Scientist (Agril. Ext.), CHES, Vejalpur, Gujarat
Corresponding author email: djaganathtn@gmail.com

ABSTRACT

Organic farming is a production system in which the environment is preserved, farmers and workers have fair access to the means of food production while receiving a fair return for their labour and consumers have their food at fair prices. The area under organic farming in India has been increasing steadily since 2000 after launching National Programme for Organic Production. The study was conducted to find out the knowledge level of organic and inorganic farmers on organic farming in Tamil Nadu. A total of 240 farmers comprising 120 organic farmers and 120 inorganic farmers drawn randomly from four districts in Tamil Nadu constituted the sample for the study. A test was developed for assessing the knowledge of farmers. Organic farmers had better knowledge than inorganic farmers with the mean score difference of 3.73. The variables namely, innovativeness, market orientation, extension orientation and mass media exposure had significant relationship with knowledge level of organic farmers.

Key words: *Organic farming; Knowledge level; Innovativeness; Market orientation; Extension orientation;*

National Programme for Organic Production (NPOP) was launched in May 2000 with the objective of promoting organic farming in Indialeading to development of a movement among the farmers, agriculture experts and scientists in favour of organic farming in Tamil Nadu. State Department of Agriculture, NGOs, Tamil Nadu Agricultural University and other government and private agencies have started advocating organic farming in major crops. Hence accessment of knowledge level among farmers on organic farming have became an important issue which needs to be explored. Therefore this study was conducted to assess the knowledge of organic and inorganic farmers on organic farming.

METHODOLOGY

Ex-post facto research design was used in this study. In total 240 farmers comprising 120 organic farmers and 120 inorganic farmers were selected randomly from 8 taluks of four districts, namely, Kancheepuram, Erode, Dindigul and Karur taking into account considering the maximum number of organic paddy growers (Kancheepuram and Erode) and organic banana growers (Dindigul and Karur). However 15 organic and inorganic farmers were randomly selected from each taluk with priority to list collected from Non Governmental Organizations, Krishi Vigyan Kendras and experts in order to assess their knowledge level. *A standardized knowledge test was developed to measure the knowledge of farmers about organic farming taking into consideration the procedures adopted by Sulaiman (1989), Bonny (1991) and Sushama (1993).* However the knowledge index was calculated by the formulae -

$$\text{Knowledge Index} = \frac{\text{Respondent's total score}}{\text{Total possible score}} \times 100$$

RESULTS AND DISCUSSION

Extent of knowledge of organic and inorganic farmers about organic farming: Results presented in Table 1 shows that majority of organic (67.50 %) and inorganic farmers (74.16 %) had medium level of knowledge followed by high (11.67 % organic and 10.83 % inorganic) and low (18.33 % organic and 9.17 % inorganic) levels of knowledge. Few farmers both in organic and inorganic group had very low and high levels of knowledge as earlier reported by *Jeyaraj (1997)*. However *Elakkia (2007)* opined that majority of the farmers had high level of knowledge about organic farming. However the Z value as presented in Table 2 reveals that knowledge level of organic and inorganic farmers was found to be significantly different at

Table 1. Knowledge level of organic and inorganic farmers about organic farming

Category	Organic (n=120)			Inorganic (n=120)		
	Index range	f	%	Index range	f	%
Very low (Mean-2SD)	<62.01	3	2.50	<36.19	5	4.17
Low (Mean-SD)	62.01 - 71.69	22	18.33	36.19 - 49.45	11	9.17
Medium (Mean ±SD)	71.70 - 91.04	81	67.50	49.46 - 75.97	89	74.16
High (Mean+ SD)	91.05 - 100.73	14	11.67	75.98 - 89.23	13	10.83
Very high (Mean+2SD)	>100.73	0	0	>89.23	2	1.67
Total 120	100		120	100		

Mean: 81.37,　　　　SD: 9.68　　　　　　　　　Mean: 62.71,　　SD: 13.26

Table 2. Significant difference in knowledge level between organic and inorganic farmers

Variable	Mean values		Mean score difference	Z value
	Organic (n=120)	Inorganic (n=120)		
Knowledge	16.27	12.54	3.73	12.461**

**- Significant at 1 per cent level

Table 3. Relationship between the independent variables and knowledge level of organic farmers (N=120)

Profile characteristics	Correlation coefficient
Age	-0.164
Education	0.576**
Farming experience	0.114
Experience in organic farming	0.288**
Farm size	0.167
Area under organic farming	0.151
Livestock possession	0.349**
Social participation	0.339**
Extension orientation	0.494**
Mass media exposure	0.539**
Innovativeness	0.580**
Economic motivation	0.506**
Risk orientation	0.507**
Market orientation	0.502**
Decision making behaviour	0.337**
Environmental orientation	0.182*
Self confidence	0.298**
Level of aspiration	0.342**
Belief in organic farming	0.113

**- Significant at 1 per cent level
*- Significant at 5 per cent level

1 per cent level, which may be due to fact that organic farmers had better education, extension orientation, mass media exposure, environmental orientation and belief in organic farming.

Relationship between the independent variables and knowledge level of organic farmers: The variables of organic farmers played a vital role in determining their knowledge level about organic farming. Correlation analysis at 1 per cent and 5 per cent level is presented in Table 3 to assess the relationship between the independent variables and knowledge level of organic farmers.

The results in Table 3 reveals that innovativeness, education, mass media exposure, risk orientation, economic motivation, market orientation, extension orientation, livestock possession, level of aspiration, social participation, decision making behaviour, self confidence and experience in organic farming had a significant and positive relationship with knowledge level at 1 per cent level, but environmental orientation showed a significant and positive relationship with knowledge at 5 per cent level.

The significant and positive relationship between innovativeness and knowledge was also reported by *Manoj (2000) Venkatesan (2000)* and *Jaganathan (2004)*. Since a innovative farmer would be more curious enough to use all organic farming practices relatively earlier than others and look forward for latest informations on organic farming.

However, education too had a significant and positive relationship with knowledge level reveals that educated farmers know many things than less educated/ illiterates. Since highly educated farmers collect informations from various sources like mass media as well as through interaction with experts. Similar result were also reported by *Majjusha (2000), Manoj (2000), Jaganathan (2004)* and *Elakkia (2007)*.

The results further reveals that there was a significant and positive relationship between risk orientation and knowledge level shows that farmers face certain difficulties in practicing organic farming, but proper knowledge enable them to tackle risks as earlier reported by *Majjusha (2000), Manoj (2000)* and *Jaganathan (2004). However,* economic motivation

among farmers was due to reduction in cost of production which may increase their profits.

Market orientation among farmers indicate increase in their profit. Similarly extension orientation enables farmers to attend a number of training programmes conducted by a number of organizations along with their discussion with organic experts, who besides provides training also visit successful farmers' fields, conduct group discussion, conduct study tour to other states, etc. The most important extension activities were weekly farmers' meeting at village level to exchange ideas, problems and solutions related to organic farming among each other.

Social participation too had a significant and positive relationship with knowledge level reveals that frequent discussion, interaction, meetings etc. with scientists, experts and extension personnel enhance their knowledge level as earlier reported by *Elakkia (2007)*. Similarly decision making pattern, i.e., taking right decisions at right time and place not only saves a lot of resources but motivates farmers to switch over to organic farming.

However high self confidence among farmers develop faith within themselves and develops high esteem to face challenges, as also reported by *Jaganathan (2004)*.

The results further reveals that there was a significant and positive relationship between environmental orientation and knowledge level. Since farmers felt that highly polluted environment through inorganic farming may protect the environment for future generations while opting organic farming practices as reported by *Jaganathan (2004)*.

Stepwise linear regression analysis of independent variables of organic farmers with knowledge level: Stepwise linear regression analysis was carried out to identify the most important variables that affect the knowledge level about organic farming. The results in Table 4 reveals that variables, viz., innovativeness, market orientation, extension orientation and mass media exposure have significant relationship with knowledge level of organic farmers. However the strength of influence of these variables can be explained as one unit increase in innovativeness, market orientation, extension orientation and mass media would result in 0.087, 0.207, 0.118 and 0.167 units increase in knowledge respectively. Since R² value was 48.20 per cent, hence variation in knowledge level was exhibited by these four variables.

Table 4. Stepwise linear regression analysis of independent variables of organic farmers with knowledge level (N=120)

Independent variables	Regression coefficient	S.E of partial regression coefficient	t-value
Innovativeness	0.087**	0.032	2.758
Market orientation	0.207**	0.053	3.869
Extension orientation	0.118*	0.056	2.103
Mass media exposure	0.167*	0.080	2.076

** - Significant at 1 per cent level
*- Significant at 5 per cent level
$R^2 = 0.482$

Table 5. Stepwise logistic regression analysis of independent variables with knowledge level of organic and inorganic farmers (N=120)

Independent variables	Regression coefficient	SEP	Wald value ratio	Exp(B) /Odds
Age	0.046**	0.023	3.880	1.047
Social participation	0.324**	0.132	6.046	1.383
Eco. motivation	- 0.281**	0.098	8.125	0.755
Market orientation	0.176**	0.087	4.062	1.192
Environmental orientation	1.948**	0.392	24.691	7.016
Level of aspiration	1.315**	0.261	25.376	3.723
Belief in org. farming	0.761**	0.241	9.981	2.140

SEP = S.E of partial regression oefficient
** = Significant at 1 per cent level
Nagelkerke $R^2 = 0.752$

Stepwise logistic regression analysis of independent variables of organic and inorganic farmers with knowledge about organic farming: To determine the influence of independent variables on knowledge level of organic and inorganic farmers, stepwise logistic regression analysis was performed with the help of regression coefficients, standard error, *wald* values and odds ratios as presented in Table 5. It was observed that out of seventeen variables studied, seven variables, namely, age, social participation, market orientation, environmental orientation, level of aspiration and belief in organic farming had significant and positive effect on knowledge level, whereas economic motivation had negative influence on knowledge level at 1 per cent level. Hence the strength of these variables can be explained as one unit increase in age, social participation, market orientation, environmental orientation, level of aspiration and belief in organic farming would bring about 0.046,

0.324, 0.176, 1.948, 1.315 and 0.761 units increase in knowledge level respectively. Similarly one unit increase in economic motivation would decrease the knowledge level by 0.281 units. The results further reveals that farmers with high environmental orientation shall have 7.016 times more knowledge level about organic farming than others. Similarly, person with high level of aspiration, belief in organic farming, social participation, market orientation, age and economic motivation might have 3.723, 2.140, 1.383, 1.192, 1.047 and 0.755 times more knowledge level respectively than other farmers.

CONCLUSION

Knowledge level of the farmers about organic farming was found to be medium. A strategy for knowledge development in organic farming for the farmers/ producers, consumers and related government departments, agricultural research institutions and such regulatory bodies would help in spreading of organic farming practices. The characteristics like innovativeness, market orientation, extension orientation and mass media exposure were significant with knowledge level of organic farmers. Profile characteristics of organic and inorganic farmers, namely, age, social participation, economic motivation, market orientation, environmental orientation, level of aspiration and belief in organic farming had significant and positive effect on knowledge except economic motivation which had negative influence on knowledge about organic farming. Training institutions, NGOs and extension functionaries who are in constant contact with farming community need to take into account the profile characteristics while planning and executing the agricultural development programmes as these characteristics were found to influence their knowledge about organic farming.

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