

Tomato growers with their psychological variables, constraints and suggestions

■ Bhisman Sangada and Girish Deshmukh*

Department of Agricultural Extension, Junagadh Agricultural University, JUNAGADH (GUJARAT) INDIA
(Email: 251girish@gmail.com)

ARTICLE INFO :

Received : 30.10.2014
Revised : 14.11.2014
Accepted : 27.11.2014

KEY WORDS :

Economic motivation, Market orientation, Scientific orientation, Risk orientation, Cosmopolitaness

HOW TO CITE THIS ARTICLE :

Sangada, Bhisman and Deshmukh, Girish (2014). Tomato growers with their psychological variables, constraints and suggestions. *Adv. Res. J. Soc. Sci.*, 5 (2) : 193-197.

*Author for correspondence

ABSTRACT

Tomato is one of the most important protective foods because of its special nutritive value. It is one of the most versatile vegetable with wide usage in Indian culinary tradition. Tomatoes are used for soup, pickles, ketchup, puree, sauces and in many other ways. It is also used as a salad vegetable. Tomato has very few competitors in the value addition chain of processing. Tomato cultivation requires enough care right from nursery raising to post harvesting operations. Necessary package of practices must be followed for the better yield. It demands complete knowledge of methods and same must be followed by the tomato growers in right manner and at right time. The methodological procedure consisted of dependent and independent variables, setting and selection of the respondents, analysis of data and various statistical measures used to test the hypothesis. Majority (82.50 %) of the tomato growers were found with medium to high economic motivation. Vast majority (79.17 %) of the tomato growers had medium level of market orientation. Two-third (66.66 %) of the tomato growers had medium scientific orientation. Overwhelming majority (95.00 %) of the tomato growers had medium to high level of risk orientation. Two-third (65.00 %) of the tomato growers were found with low level of cosmopolitaness.

INTRODUCTION

Agriculture has been and will continue to be the lifeline of the Indian economy. As the largest private enterprise in India, agriculture contributes nearly one-fifth of the national G.D.P. and sustains livelihood of about two third of the population and is the backbone of agro-based industries. Though the update of modern agricultural technology, India has moved from an era of chronic food shortage and begging bowl status up to 1960 to food self sufficient and even food exports. Since 1950, the productivity gain is nearly 3.3 times in food grain, 1.6 times in fruits, 2.1 times in vegetables, 5.6 times in fish, 1.8 times in milk and 4.8 times in eggs (Anonymous, 2004). Horticulture is prominent sector among agriculture and allied activities as a means of diversification for making agriculture more profitable through efficient land use, optimum utilization of natural resources and creating skilled employment

for rural masses.

India has favourable climate and soils for growing large number of horticultural crops, which includes vegetables, fruits, ornamental plants, medicinal plants, aromatic plants and species etc. It is the largest producer, consumer and exporter of species and spice-based products in the world. Thus, India is on a brink of golden revolution in horticulture. In the horticultural development map of the world the nature has placed this country in a place of pride. Our daily lives revolve around horticulture products but we hardly tend to realized its importance. The country's urgent requirement is to enhance the production of nutritious feed in a sustainable manner and improve the farm family income in order to ensure house hold food security. At the same time conserving the natural resources is of utmost importance for sustaining the production of vegetables are a vital source of minerals, vitamins and dietary fibres of thus play an important role in human nutrition in

supplying adequate quantity of free radicals, anti-oxidants micronutrients and essential amino acids, which are essential for normal functioning of human metabolic process.

Tomato is one of the most important protective foods because of its special nutritive value. It is one of the most versatile vegetables with wide usage in Indian culinary tradition. Tomatoes are used for soup, pickles, ketchup, puree, sauces and in many other ways. It is also used as a salad vegetable. Tomato has very few competitors in the value addition chain of processing. Tomato is the world's largest producing vegetable crop after potato and sweet potato, but it tops of the list of canned vegetables. The total global area under tomato is 4582 lakh ha. and the global production is to the tune of 1505 lakh tonnes. Tomato is rich source of vitamins A, C, potassium, minerals and fibres.

In India total area under tomato cultivation is 865000 ha, total production is 16826000 tonnes and the productivity is 19.5 t/ ha (Table A). As far as Gujarat is concerned the area under tomato cultivation is 3567 ha, production is 129940 tonnes and productivity is 36.43 t/ ha (Table B). In Gujarat, the area, production and productivity of tomato are being gone-up year by year. This can be seen from the data presented in Table B.

MATERIAL AND METHODS

The present investigation was undertaken in Junagadh district of Gujarat State. Gujarat state has 27 district out of which Junagadh district was selected for this study. Talala taluka was selected purposively because large area and more number of tribal tomato growers are available. From selected taluka 12 villages having large area under tomato cultivation were selected purposively. Thus, total twelve villages were selected for the study and from each selected villages 10 farmers were randomly selected. Thus, purposively random sampling procedure was used to constitute the sample. The sample size was decided on the basis of co-efficient of variability existing in the population by carrying out the pilot survey research study. A well-structured, pre-tested interview schedule was prepared in view of the objectives of the study and data were collected by personal interview of selected tomato growers. The information needs and personal characteristics of the tomato growers were assessed for the study. Based on mean and standard deviation of each aspect, the respondents were categorized into three groups viz., Low (Below Mean – S.D.), medium (in between Mean \pm S.D.) and high (above Mean +

Table A : World major tomato producers and its share in world tomato production

Country	Major tomato producing countries in the world (2010-11)			
	Area ('000ha)	Production ('000 tons)	Productivity (tons/Ha)	% Share of world production
China	871235	41879684	48.1	28
India	865000	16826000	19.5	11
USA	159200	12902000	81.0	9
Turkey	304000	10052000	33.1	7
Egypt	216385	8544990	39.5	6
Italy	118822	6024800	50.7	4
Iran	146985	5256110	35.8	3
Spain	58300	4312700	74.0	3
Brazil	60772	3691320	60.7	2
Mexico	98189	2997640	30.5	2
Others	1683550	38026569	22.6	25
World (Total)	4582438	150513813	32.8	100

Table B : Area, production and productivity of tomato in Gujarat state

Year	Area (00ha)	Production (00MT)	Productivity (MT/ha)
2007-2008	2960	88800	30.00
2008-2009	3040	98800	32.5
2009-2010	3192	111720	35
2010-2011	3511	126396	36.00
2011-2012	3567	129940	36.43

Source: Directorate of agriculture, Gandhinagar, 2012

S.D.) Relationship between information need and characters of tribal farmers determined with help of Karl Pearson's co-efficient correlation. The statistical tools used were percentage, mean score, standard deviation, correlation co-efficient and arbitrary method for categorization.

OBSERVATIONS AND ANALYSIS

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Psychological characteristics of the tomato growers :

Psychological variables :

Economic motivation :

The data in Table 1 revealed that a slightly less than two-third (65.00 %) of the tomato growers belongs to medium economic motivation category. Whereas, 17.50, 16.67 and 0.83 per cent of the respondents had high, low and very high level of economic motivation, respectively. No respondent was found under the category of very low. It can be inferred that great majority (82.50 %) of the tomato growers had medium to high economic motivation. It can be concluded that majority (82.50 %) of the tomato growers were found with medium to high economic motivation. This may be due to belief among the farmers that, there are more chances of high economic return from tomato cultivation as compare to other crops like maize, paddy, tur, urid etc.

Sr. No.	Category	Respondents	
		Frequency	Per cent
1.	Very low (Up to 10.80 score)	0	0.00
2.	Low (10.81 to 15.60 score)	20	16.67
3.	Medium (15.61 to 20.40 score)	78	65.00
4.	High (20.41 to 25.20 score)	21	17.50
5.	Very high (Above 25.20 score)	01	0.83
	Total	120	100.00

Mean = 18.25

Market orientation :

The data presented in Table 2 revealed that less than half (47.50 %) of the tomato growers had medium level of market orientation, followed by 31.67 per cent and 20.83 per cent of them with high and very high level of market orientation, respectively. No respondent were found under the category of very low and low. From the above findings it can be said that vast majority (79.17 %) of the tomato growers had medium level of market orientation. This might be due to they are migratory people. So their knowledge about different markets is better.

Table 2 : Distribution of the respondents according to their level of market orientation (n=120)

Sr. No.	Category	Respondents	
		Frequency	Per cent
1.	Very low (Up to 14.40 score)	0	0.00
2.	Low (14.41 to 20.80 score)	0	0.00
3.	Medium (20.81 to 27.20 score)	57	47.50
4.	High (27.21 to 33.60 score)	38	31.67
5.	Very high (Above 33.60 score)	25	20.83
	Total	120	100.00

Mean = 28.89

Scientific orientation :

The results in Table 3 indicate that two-third (66.66 %) of the tomato growers had medium scientific orientation, followed by 25.00 per cent, 6.67 per cent and 1.67 per cent had high, very high and low scientific orientation. No respondent were found under the category of very low. It can be inferred that a vast majority (91.66 %) of the tomato growers had medium to high scientific orientation. This might be attributed to their moderate trustworthiness in scientific methods of farming due to moderate social participation and their own experience in tomato cultivation they realized the importance of modern technology in increasing their farm produce.

Table 3: Distribution of the respondents according to their scientific orientation (n=120)

Sr. No.	Category	Respondents	
		Frequency	Per cent
1.	Very low (Up to 25.20 score)	0	0.00
2.	Low (25.21 to 36.40 score)	02	01.67
3.	Medium (36.41 to 47.60 score)	80	66.66
4.	High (47.61 to 58.80 score)	30	25.00
5.	Very high (above 58.80 score)	08	06.67
	Total	120	100.00

Mean = 47.58

Risk orientation :

It can be seen from the data presented in Table 4 that nearly three-fifth (57.50 %) of the tomato growers had medium level of risk orientation. Whereas, 37.50, 03.33 and 01.67 per cent of the respondents had high, very high and low level of risk orientation, respectively. No respondent were found under the category of very low. It can be concluded that over whelming majority (95.00 %) of the tomato growers had medium to high level of risk orientation. This might be due to the reason that the tribal farmers living in isolated area they have learned to fight against the natural calamities like, drought situation, insect and pest, lack of infrastructure facilities, lack of market facilities etc.

Table 4 : Distribution of the respondents according to their risk orientation (n=120)

Sr. No.	Category	Respondents	
		Frequency	Per cent
1.	Very low (Up to 18 score)	0	0.00
2.	Low (19 to 26 score)	02	01.67
3.	Medium (27 to 34 score)	69	57.50
4.	High (35 to 42 score)	45	37.50
5.	Very high (above 42 score)	04	03.33
Total		120	100.00

Mean = 33.16

Cosmopoliteness :

The data presented in Table 5 revealed that slightly less than two-third (65.00 %) of the tomato growers were found with low level of cosmopoliteness, followed by 35.00 per cent of them had very low level of cosmopoliteness. No respondents were found under the category of medium, high and very high cosmopoliteness. It shows that majority (65.00 %) of the tomato growers had low level of cosmopoliteness. The result indicates that farmers having low level of tendency to be in contact with sources outside their community for getting more information. Also their mentality is not to contact other farmers.

Table 5 : Distribution of respondents according to their cosmopoliteness (n=120)

Sr. No.	Category	Respondents	
		Frequency	Per cent
1.	Very low (Up to 4.2 score)	42	35.00
2.	Low (4.3 to 8.4 score)	78	65.00
3.	Medium (8.5 to 12.6 score)	0	00.00
4.	High (12.7 to 16.8 score)	0	00.00
5.	Very high (16.9 to 21 score)	0	00.00
Total		120	100.00

Mean = 5.13

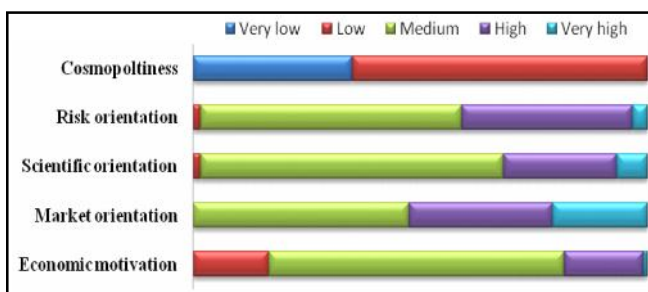


Fig. 1 : Distribution of farmers according to psychological variables (%)

Constraints faced by tomato growers in getting information regarding various aspects of tomato production technology :

In the present study, some constraints faced by the tomato growers were also studied. The information regarding this is given in Table 6.

Table 6 : Distribution of the respondents according to the constraints faced in getting information regarding various aspects of tomato production technology (n=120)

Sr. No.	Constraints	No./(%)	Rank
1.	Agricultural information is not available as and when required	95 (79.16)	I
2.	Agricultural information broadcasted through radio/TV is not timely	93 (77.50)	II
3.	Irregular visit of VLWs	91 (75.83)	III
4.	Agricultural information broadcasting through radio/TV is not sufficient	87 (72.50)	IV
5.	Time of broadcast of radio programme is not suitable	82 (68.33)	V
6.	Insufficient organization of field demonstrations	79 (65.83)	VI
7.	Lack of government policies related to agriculture marketing	77 (64.16)	VII
8.	Lack of information on side of VLWs	74 (61.66)	VIII
9.	Agricultural information received through VLWs is insufficient	69 (57.50)	IX
10.	Location of research station is far away	63 (52.50)	X
11.	Unavailability of transport facilities for sale of tomato	60 (50.00)	XI
12.	Lack of open auction	58 (48.33)	XII

The data presented in Table 6 reveal that out of twelve items of constraints experienced by the tomato growers in getting information regarding various aspects of tomato production technology in descending order of rank were agricultural information is not available as and when required (79.16 %), followed by agricultural information broadcasted through radio/TV is not timely (77.50 %), irregular visit of VLWs (75.83 %), agricultural information broadcasting through radio/TV is not sufficient (72.50 %), time of broadcast of radio programme is not suitable (68.33 %), insufficient organization of field demonstrations (65.83 %), lack of government policies related to agriculture marketing (64.16 %), lack of information on side of VLWs (61.66 %), agricultural information received through VLWs is insufficient (57.50 %), location of research station is far away (52.50 %), unavailability of transport facilities for sale of tomato (50.00 %), lack of open auction (48.33 %).

Suggestions offered by the tomato growers to overcome the constraints faced by them :

An attempt has been made to ascertain the suggestions of tomato growers to overcome the various problems faced by them regarding tomato production technology. The respondents were requested to offer their valuable suggestions for solving the problems faced by them regarding tomato

production technology. In this regards their responses are presented in Table 7.

Sr. No.	Suggestions	No. / Per cent	Rank
1.	Agricultural information centre should be established at village	111 (92.50)	I
2.	VLWs should visit regularly	96 (80.00)	II
3.	TV/radio programme telecast should be at suitable time	91 (75.83)	III
4.	Field demonstrations should be organized in different area of village	73 (60.83)	IV
5.	Information about TV/radio programme should be available as per requirement of farmers	70 (58.33)	V
6.	Agricultural information should be published in leading newspapers everyday	62 (51.67)	VI
7.	Field visits to research stations should be organized	61 (50.83)	VII
8.	Separate TV channel should be started	58 (48.33)	VIII

On the basis of rank order of frequency/ percentage, it is clearly observed from Table 7 that great majority of the tomato growers suggested that agricultural information centre should be established at village (92.50 %), VLWs should visit regularly (80.00 %), TV/radio programme telecast should be at suitable time (75.83 %), field demonstrations should be organized in different area of village (60.83 %), information about TV/radio programme should be available as per requirement of farmers (58.33 %), agricultural information should be published in leading newspapers everyday (51.67 %), field visits to research stations should be organized (50.83 %), separate TV channel should be started (48.33 %). Similar work related to the present topic was also done by Jahagirdar and Sundaraswamy (2002); Marimuthu (1998) and Sangeetha (2009) and Makwan (2005).

Conclusion :

Tomato is one of the most important protective foods because of its special nutritive value. It is one of the most versatile vegetable with wide usage in Indian culinary tradition. Tomatoes are used for soup, pickles, ketchup, puree, sauces and in many other ways. It is also used as a salad vegetable. To epitomized the results it can be said that majority of the tomato growers belonged to medium level of economic motivation, market orientation, scientific orientation, risk orientation and very low level of cosmopolitaness. Agricultural information is not available as and when required were the major constraints

faced by the tomato growers in getting information regarding various aspects of tomato production technology. Most of tomato growers suggested that agricultural information centre should be established at village, TV/ radio programme telecast should be at suitable time and field demonstrations should be organized in different area of village. These findings of the study focus on some of the inherent short coming in tomato cultivation, which will go a long way in providing much needed feedback to the scientist and the solutions of the problems, should reach to the tomato growers.

REFERENCES

- Anonymous (2004). Indian Agriculture-2003, Indian economic data research, NEW DELHI (INDIA).
- Chaudhari, N.V., Waghmare, S.K., Thakkar, K.A. and Soni, M.C. (1990). Participation of tribal women in agriculture. *Gujarat J. Extn. Edu.*, **1** : 57-61.
- Jahagirdar, A.K. and Sundaraswamy, B.S. (2002). Adoption of recommended practices of tomato cultivation. *Agric. Extn. Rev.*, **14**(2): 12-16.
- Kerlinger, F.N. (1976). Foundation of behaviour research. New Delhi, surjee pub. 198- 204 pp.
- Makwan, A.R. (2005). Information need and marketing constraints of banana growers. M.Sc. (Ag.) Thesis, Anand Agricultural University, Anand, GUJARAT (INDIA).
- Marimuthu, P. (1998). Marketing behaviour of tomato growers. M.Sc. (Ag.) Thesis, Tamil Nadu Agricultural University, Coimbatore, T.N. (INDIA).
- Patel, M.C. (2007). Constuction of scale to measure scientific orientation and risk orientation, 4th Agresco subcommittee on social sciences, Anand Agricultural University, Anand, GUJARAT (INDIA).
- Parmar, N.B. (2008). Information needs of tobacco cultivators about tobacco cultivation in anand district of Gujarat. M.Sc. (Ag.), Thesis, Anand Agricultural University, Anand, GUJARAT (INDIA).
- Pawar, S.P., Sawant, P.A. and Nirban, A.J. (2001). Agriculture information needs of neo-literate farmers from Sindhudurg district. *Maharashtra. J. Extn. Edu.*, **20** : 53-55.
- Raju, D.J. and Reddy, K.J. (2003). Agricultural information management behaviour of farmers. *Extn. Res. Rev.*, : 144-152.
- Sangeetha, S. (2009). Study on factors influencing the adoption of precision farming technologies in tomato cultivation. M.Sc. (Ag.) Thesis, Tamil Nadu Agricultural University, Coimbatore (T.N.) INDIA.
- Sankar Rao, A.B. and Reddy, M.S. (1997). Information need of tribal farmers towards mango production technology. *Maharashtra. J. Extn. Edu.*, **16** : 78-81.