



Factors Influencing The Knowledge Level of The Tomato Growers on Recommended Cultivation Practices

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ABSTRACT

The present investigation was carried out in Chittoor district of Andhra Pradesh state during 2016-17 to study the level of knowledge and factors influencing the level of knowledge of the tomato growers. A total of 120 participants were selected for the study. The results of the study revealed that 61.67 per cent of the farmers were having medium level of knowledge, followed by low (24.17%) and high (14.16%) levels. The profile characteristics viz., education, farm size, annual income, extension contact, mass media exposure, scientific orientation, risk orientation, management orientation, innovativeness and achievement motivation were found to be positively significant with the level of knowledge of respondents. Further, all the selected 14 independent variables put together explained about 66.50 per cent variation in the knowledge level of tomato growers.

KEY WORDS: Knowledge level, Tomato cultivation, Tomato growers

Received 10.07.2017

Revised 09.08.2017

Accepted 24.08.2017

INTRODUCTION

Tomato is a fruit that is almost universally treated as a vegetable and a perennial plant that is almost universally as an annual. Tomato is well known and very popular vegetable grown successfully throughout India. Tomato ranks third in priority after potato and onion in India but ranks second after potato in the world. India ranks second in the area as well as in production of tomato. Andhra Pradesh is producing about 36% of tomatoes in the country and is the leading producer of tomato involving a production of 1473.5 thousand million tones from an area of 54.2 thousand hectares with productivity of 27.2 mt/ha. In chittoor district horticulture crops are grown in an extent of 1.05 lakh hectares including fruits and vegetables. Out of 21199 hectares of vegetables, tomato is grown in an extent of 16000 hectares has a predominant vegetable crop. On this background, the study was planned in tomato growing area chittoor district of Andhra Pradesh with an objective to find out the knowledge level of tomato growers about recommended cultivation practices.

MATERIAL AND METHODS

Chittoor district of Andhra Pradesh was selected as tomato is extensively cultivated. Out of 66 mandals of chittoor district, three mandals namely Kurabalakota, Molakalacheruvu and Gurrampakonda were purposively selected based on the highest area under tomato cultivation. Four villages from each mandal were selected for the study. From each village 10 farmers were selected thus a total number of 120 respondents were selected from 12 villages.

RESULTS AND DISCUSSION

Knowledge is an indispensable criterion for the adoption of any innovation, as it enables the farmers to understand completely and clearly the recommended cultivation practices. The rate of adoption of an innovation is directly linked with level of knowledge of the respondents. Hence, it was felt necessary to know the knowledge level of the respondents on recommended cultivation practices.

Overall level of knowledge of tomato growers on recommended cultivation practices

In order to assess the overall knowledge level on the recommended cultivation practices of tomato growers, data were collected and the respondents were categorized into three groups viz., low, medium and high by using mean and standard deviation and the results were presented in Table 1.

A glance at the Table 1 revealed that 61.67 per cent of the participant farmers were having medium level of knowledge, followed by low (24.17%) and high (14.16%) levels of knowledge.

The probable reason for this trend might be that medium levels of mass media exposure, extension contact, scientific orientation and low marketing facilities and credit orientation of majority of the respondents might be the factors restrict the knowledge level of farmers to medium level inspite of their good level of education. Diversion of attention to subsidiary occupations might also be reducing their opportunities to acquire knowledge. Extension agencies must concentrate on encouraging young and middle aged people also indulging in farming activities, taking all farmers to research stations and demonstration plots, imparting them frequent trainings and inspiring them to have more extension contact and mass media exposure so that farmers will improve their knowledge about recommended package of practices. Similar findings were reported by Subhadeep Roy (2012).

Table 1. Distribution of respondents according to their overall level of Knowledge

N=120			
S.No	Level of knowledge	Frequency	Percentage
1.	Low	29	24.17
2.	Medium	74	61.67
3.	High	17	14.16
Total		120	100.00

Mean: 29.10 SD: 3.46

Relationship between the selected profile characteristics and the level of knowledge of tomato growers on recommended tomato cultivation practices

In order to study the relationship between the selected profile characteristics and the level of knowledge of tomato growers on recommended tomato cultivation practices correlation coefficients (r) were computed and the values were presented in Table 2.

Knowledge Vs Age

From the Table 2 it is evident that the computed coefficient of correlation ($r = -0.200$) was found negatively and significantly related with the knowledge level of tomato growers on recommended cultivation practices. It was noticed that there was a negatively significant relationship between age of the tomato growers and their knowledge level. As such, the null hypothesis was rejected and empirical hypothesis was accepted. This might be due to the reason that old age farmers having poor contacts with extension agents like mandal horticulture officers, agricultural extension officers and mass media channels.

Knowledge Vs Education

From the Table 2 it is evident that computed coefficient of correlation value ($r = 0.725$) was found positively and significantly related with the knowledge level of the respondents about the recommended cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between education and knowledge level of the clientele about recommended tomato cultivation practices. The probable reason for this trend might be that education widens horizons of the individuals. Educated farmers with more information seeking habits had better access to farm information sources such as farm magazines, farm bulletins, books on agriculture etc. and possess better capacity to grasp things and analyse and interpret them in proper ways. Educated people have more exposure to extension agencies, scientists and research stations etc., which also contribute to their increased knowledge. This finding is in agreement with the findings of Ramu (2005)

Knowledge Vs Farming Experience

From the Table 2 it is evident that the computed coefficient of correlation value ($r = -0.273$) was found negatively and significantly related with the knowledge level of the respondents about the recommended tomato cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be confirmed that there was negative and significant relationship between farming experience and knowledge level of the clientele about recommended tomato cultivation practices. The possible reason for this could be that as experience increases the farmers become well acquainted with the practices by doing rather than by seeing or hearing. Information acquired by 'doing' will be better remembered and will persist for long period. This result has support from conclusion of Gattu (2001)

Knowledge Vs Farm Size

From the Table 2 it is evident indicated that computed coefficient of correlation value ($r = 0.285$) was found positively and significantly related with the knowledge level of the respondents about the

recommended tomato cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between farm size and knowledge level of the clientele about recommended tomato cultivation practices. This might be due to the fact that large farms with availability of sufficient resources allow farmers to try new innovations for which they will seek more information from various sources leading to increase in the knowledge level. This finding is in concurrence with that of Sivanandhan (2002).

Knowledge Vs Annual income

From the Table 2 it is evident that computed coefficient of correlation value ($r=0.274$) was found positively and significantly related with the knowledge level of the respondents about the recommended tomato cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between annual income and knowledge level of the clientele about recommended tomato cultivation practices.

Knowledge Vs Extension contact

From the Table 2 it is evident indicated that computed coefficient of correlation value ($r=0.715$) was found positively and significantly related with the knowledge level of the respondents about the recommended tomato cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between extension contact and knowledge level of the clientele about recommended tomato cultivation practices. Extension agencies are the best and reliable sources of information for the respondents. Hence respondents who have got more contact with extension agencies will have more knowledge about the development programmes. This trend is supported by Obaiyah (2004).

Knowledge Vs Mass media exposure

From the Table 2 it is evident that computed coefficient of correlation value ($r=0.693$) was found positively and significantly related with the knowledge level of the respondents about the recommended tomato cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between mass media exposure and knowledge level of the clientele about recommended tomato cultivation practices. The finding supports a general view that mass media exposure enhances the farmers knowledge as these serve as the accelerators for diffusion of agricultural innovations. Farmers who are in constant touch with mass media are likely to have better knowledge. This might be the reason for the relationship. Similar findings were observed by Subhadeep Roy (2007).

Knowledge Vs Marketing facilities

From the Table 2 it is evident that computed coefficient of correlation value ($r= -0.018$) was found negatively and non-significantly related with the knowledge level of the respondents about the recommended cultivation practices of tomato. As such, the null hypothesis was accepted and empirical hypothesis was rejected. Therefore it could be reported that there was negative and non significant relationship between marketing facilities and knowledge of the clientele about recommended tomato cultivation practices.

Knowledge Vs Scientific Orientation

From the Table2 it is evident indicated that computed coefficient of correlation value ($r=0.559$) was found positively and significantly related with the knowledge level of the respondents about the recommended cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between scientific orientation and knowledge level of the clientele about recommended tomato cultivation practices. Generally, those with good scientific orientation will prefer to know about the innovative technologies. Here also farmers were likely to show keen interest in trying to know the latest cultivation practices. Hence the above trend was noticed. This result has support from the conclusions of Sajith Kumar (2004)

Knowledge Vs Risk orientation

From the Table2 it is evident that computed coefficient of correlation value ($r=0.590$) was found positively and significantly related with the knowledge level of the respondents about the recommended tomato cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between risk orientation and knowledge level of the clientele about recommended tomato cultivation practices. The probable reason might be that a farmer who wants to take risk in cultivating crops will try to develop his knowledge with regard to the crop and its cultivation practices. Similar result was observed by Hemanth Kumar (2002).

Knowledge Vs Credit Orientation

From the Table2 it is evident indicated that the computed coefficient of correlation value ($r= -0.150$) was found negatively and non-significantly related with the knowledge level of the respondents about the

recommended tomato cultivation practices. As such, the null hypothesis was accepted and empirical hypothesis was rejected. Therefore it could be reported that there was negative and non-significant relationship between credit orientation and knowledge level of the clientele about recommended tomato cultivation practices.

Knowledge Vs Management Orientation

From the Table2 it is evident that the computed coefficient of correlation value ($r=0.709$) was found positively and significantly related with the knowledge level of the respondents about the recommended tomato cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between management orientation and knowledge level of the clientele about recommended tomato cultivation practices.

Farmers being good in management orientation with regard to planning, production and marketing will try to gather maximum information about the cultivation and marketing aspects of the crop. This naturally leads to increased level of knowledge. This might be the reason for the positive and significant relationship between the management orientation and knowledge level of the tomato growers. Similar observations were made by Vinoth Kumar (2002).

Knowledge Vs Innovativeness

From the Table 2 it is evident that the computed coefficient of correlation value ($r=0.720$) was found positively and significantly related with the knowledge level of the respondents about the recommended tomato cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between innovativeness and knowledge level of the clientele about recommended tomato cultivation practices.

An individual with high innovativeness desires to seek changes in farming and practice the latest technologies. For this, he has to acquire knowledge about the new developments in the crop which he is growing. Hence, the above trend was observed. This result was in accordance with the results of Rajendhra Kumar (2002).

Knowledge Vs Achievement Motivation

From the Table2 it is evident that computed coefficient of correlation value ($r=0.626$) was found positively and significantly related with the knowledge level of the respondents about the recommended tomato cultivation practices. As such, the null hypothesis was rejected and empirical hypothesis was accepted. Therefore it could be reported that there was positive and significant relationship between achievement motivation and knowledge level of the clientele about recommended tomato cultivation practices. The reason for this might be that achievement motivation forces an individual to work constantly towards reaching a goal, which he carves for himself and in this process he acquires great amount of knowledge. This result has support from the conclusions of Sajith Kumar (2004)

Table2. Correlation coefficients between the selected profile characteristics with the knowledge level of the tomato growers (n=120)

Variable No.	Independent Variables	Correlation co-efficients ('r' values)
X ₁	Age	-0.200*
X ₂	Education	0.725**
X ₃	Farming experience	-0.273**
X ₄	Farm size	0.285**
X ₅	Annual income	0.274**
X ₆	Extension contact	0.715**
X ₇	Mass media exposure	0.693**
X ₈	Marketing facilities	-0.018NS
X ₉	Scientific orientation	0.559**
X ₁₀	Risk orientation	0.590**
X ₁₁	Credit orientation	-0.150NS
X ₁₂	Management orientation	0.709**
X ₁₃	Innovativeness	0.720**
X ₁₄	Achievement motivation	0.626**

* :Significant at 0.05 level of probability

** : Significant at 0.01 level of probability

NS : Non significant

Further, in order to study the combined effect of all the independent variables in explaining variation in knowledge level of the tomato growers on recommended cultivation practices, Multiple Linear Regression (MLR) analysis was carried out. The computed co-efficient of determination (R^2) value and

partial regression co-efficient (b) values with their corresponding values were presented in Table 3. The R² and 'b' values were tested statistically for their significance.

Table3. Multiple Linear Regression analysis of the selected independent variables with the knowledge level of the tomato growers

S.No.	Variable Number	Independent variables	Partial regression coefficients (b)	Computed 't' values
1.	X ₁	Age	-0.018	-0.288 ^{NS}
2.	X ₂	Education	0.020	0.166 ^{NS}
3.	X ₃	Farming experience	-1.228	-0.744 ^{NS}
4.	X ₄	Farm size	1.714	3.503 ^{**}
5.	X ₅	Annual income	0.294	1.242 ^{NS}
6.	X ₆	Extension contact	0.189	3.194 ^{**}
7.	X ₇	Mass media exposure	-0.003	-0.841 ^{NS}
8.	X ₈	Marketing facilities	-0.107	0.340 ^{NS}
9.	X ₉	Scientific orientation	0.097	0.420 ^{NS}
10.	X ₁₀	Risk orientation	0.828	2.830 ^{**}
11.	X ₁₁	Credit orientation	0.308	1.277 ^{NS}
12.	X ₁₂	Management orientation	0.593	1.984 [*]
13.	X ₁₃	Innovativeness	0.258	1.897 ^{NS}
14.	X ₁₄	Achievement motivation	0.333	1.966 [*]

R² = 0.665

* : Significant at 5% level of probability

** : Significant at 1% level of probability

NS : Non significant

The 'R²' value of 0.665 depicted that all the selected fourteen independent variables put together explained about 66.50 per cent variation in the level of knowledge of tomato growers about recommended cultivation practices. The partial regression coefficients presented in Table 4.21 further reveals that the independent variables viz. farm size, extension contact, risk orientation, management orientation and achievement motivation were found positively significant as evident from their significant 't' values. This implied that farm size, extension contact, risk orientation, management orientation and achievement motivation contributed to most of the variation in the knowledge level of tomato farmers.

CONCLUSION

Target oriented training programme have to be formulated to enhance the level of knowledge of recommended tomato cultivation practices. Extension agencies have to be more active in providing several exposures to the tomato growers regarding precision farming of tomato.

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CITATION OF THIS ARTICLE

K.Madhuri, V.Sailaja, P.V.Sathya Gopal and D. Subramanyam Factors Influencing The Knowledge Level of The Tomato Growers on Recommended Cultivation Practices. *Bull. Env. Pharmacol. Life Sci.*, Vol 6 Special issue 2, 2017: 42-47