



Research Article

EXTENT OF KNOWLEDGE AND ADOPTION OF TOMATO GROWERS ABOUT TOMATO PRODUCTION TECHNOLOGY

CHOUDHARY M.K.^{1*}, PATEL P.C.², SHARMA P.K.³ AND PATEL J.B.⁴

^{1,3}Krishi Vigyan Kendra, Kheda, Gujarat

²Department of Horticulture, BACA, Anand Agricultural University, Anand, Gujarat 388110, India

⁴Department of Extension Education, BACA, Anand Agricultural University, Anand, Gujarat 388110, India

*Corresponding Author: Email-mukesh.choudhary96@gmail.com

Received: April 10, 2016; Revised: April 21, 2016; Accepted: April 22, 2016; Published: July 21, 2016

Abstract- Knowledge of farmers plays an important role in adoption of any new improved agricultural technologies, without appropriate knowledge regarding particular technology knowledge directly affects the adoption rate. Likewise, adoption of any new technology is a mental process and requires certain mental stages to adopt. The present study was conducted in Matar taluka of Kheda district. Ten villages (Nandoli, Khandhali, Dethali, Heranj, Alindra, Limbasi, Machhiyel, Traj, Tranja and Khadiyarpura) were selected randomly. From each village 10 tomato growers were selected randomly. Thus, total 100 tomato growers were selected for the study.

Keywords- Knowledge level, Adoption level, Tomato Production Technology, Tomato Growers.

Citation: Choudhary M. K., et al., (2016) Extent of Knowledge and Adoption of Tomato growers about Tomato Production Technology. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 8, Issue 25, pp.-1521-1523.

Copyright: Copyright©2016 : Choudhary M. K., et al., This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Academic Editor / Reviewer: B.N. Kalsariya

Introduction

Tomato is one of the most important protective food crops of India. The estimated area and production of tomato for India are about 3,50,000 hectares and 53,00,000 tons respectively. The average productivity of tomato in our country is merely 158q/ha while its productivity in USA is 588q/ha, in Greece 498q/ha, in Italy 466q/ha and 465q/ha in Spain. The major tomato producing states are Bihar, Karnataka, Uttar Pradesh, Orissa, Andhra Pradesh, Gujarat, Maharashtra, Madhya Pradesh and West Bengal. The major factors of low productivity of tomato may be attributed to the non-availability of disease free seed of high yielding varieties, poor agronomic practices, indigenous weeding methods, lack of proper plant protection measures for the control of insect/pests and diseases, defective marketing system and lack of information. It is assumed that modern technology available at technology producing centers but not effectively transferred to the ultimately users. So, accentuation should be laid upon the most modern agricultural techniques which were possible by dissemination of agricultural information among the farmers. It was also important to note that simply the provision of information was not sufficient but also desirable that farmers must adopt the most recent varieties of tomato and other farming techniques. In the absence of sophisticated technologies, a country like India can only survive economically with the development of its agriculture into the most dynamic, efficient and productive system possible.

Objective

1. To study the profile of the Tomato growers.
2. To study the knowledge level of Tomato growers about Tomato production technology.
3. To study the adoption level of Tomato growers about Tomato production technology.
4. To study the Constraints faced by farmers in adoption of Improved

Cultivation practices of Tomato.

Materials and Methods

The present study was conducted in Matar taluka of Kheda district. Ten villages (Nandoli, Khandhali, Dethali, Heranj, Alindra, Limbasi, Machhiyel, Traj, Tranja and Khadiyarpura) were selected randomly. From each village 10 Tomato growers were selected randomly. Thus, total 100 tomato growers were selected for the study. Appropriate statistical procedures like frequency distribution and percentage was used for the analysis of the data.

Result and Discussion

Background information of the tomato growers

The respondents were categorized into different groups on the basis of their some of the important characteristics like age, education, occupation, size of land holding and animal possession were selected for the study and the findings of which have been presented in [Table-1].

Age: The data presented in [Table-1] shows that nearly half (49.00 per cent) of the Tomato growers were belonged to young age followed by 33.00 per cent and 18.00 had middle age and old age, respectively.

Education: The data presented in [Table-1] shows that slightly more than two fifth (42 per cent) of the growers were having primary level of education followed by 30.00 per cent illiterate, 24.00 per cent had education up to higher secondary and 04.00 per cent were had above higher secondary level, respectively.

Occupation: The data presented in [Table-1] shows that vast majority (94.00 per cent) of the tomato growers were engaged in the farming and animal husbandry,

whereas only 06.00 per cent of them were engaged in farming only and none of the growers were found to have engaged in job.

Size of land holding: The data presented in [Table-1] shows that nearly half (47.00 per cent) of the growers had marginal size of land holding followed by 28.00 per cent, 19.00 per cent and 06.00 per cent had small, medium and large size of land holding, respectively.

Animal possession: The data revealed that slightly more than two fifth (41.00 per cent) of the growers had up to 2 animals followed by 30.00 per cent and 21.00 per cent had 3 to 5 animals and more than 5 animals, respectively. Only 08.00 per cent of them had no animal.

Table-1 Distribution of farmers according to their characteristics n=100

No	Category	Frequency	Percent (%)
1	Age		
	Young (Up to 30 years)	49	49.00
	Middle age (31 to 55 years)	33	33.00
	Old age (above 55 years)	18	18.00
2	Education		
	Illiterate	30	30.00
	Primary level	42	42.00
	High school and Higher secondary	24	24.00
	Above Higher secondary	04	04.00
3	Occupation		
	Farming	06	06.00
	Farming + Animal husbandry	94	94.00
	Farming + service	00	00.00
4	Size of land holding		
	Marginal (up to 1.00 ha)	47	47.00
	Small (1.1 ha to 2.00 ha)	28	28.00
	Medium (2.1 ha to 4.00 ha)	19	19.00
	Large (above to 4.00 ha)	06	06.00
5	Animal possession		
	No animal	08	08.00
	Up to 2 animal	41	41.00
	3 to 5 animal	30	30.00
	Above 5 animal	21	21.00

Overall Knowledge of tomato growers about tomato production technology

It is obvious that good knowledgeable tomato growers are more oriented towards maximization of profit from tomato cultivation as they place relatively more value on economic ends. The data in regards of knowledge of tomato growers shown in [Table-2].

Table-2 Distribution of tomato growers according to their knowledge level n=100

Sr. No.	Category of Knowledge	Frequency	Per cent (%)
1	Very low (up to 20 %)	07	07.00
2	Low (21 % to 40 %)	32	32.00
3	Medium (41 % to 60 %)	26	26.00
4	High (61 % to 80 %)	24	24.00
5	Very high (more than 80 %)	11	11.00
	Total	100	100.00

Overall Adoption of tomato growers about tomato production technology

Adoption is not an instant decision. An individual passes through several mental stages in adopting certain idea. Adoption is a process through which an individual passes from first hearing of an innovation to its final adoption. The findings in regards of adoption are presented in [Table-3].

The data presented in [Table-3] revealed that nearly two fifth (39.00 per cent) of the tomato growers of the selected area had low level of adoption followed by 32.00 per cent, 11.00 per cent, 10.00 per cent and 08.00 per cent had medium, very low, high and very high level of adoption, respectively.

Constraints faced by tomato growers in adoption of improved cultivation practices of tomato

Table-3 Distribution of tomato growers according to their adoption level n=100

Sr. No.	Category of Knowledge	Frequency	Per cent (%)
1	Very low (up to 20 %)	11	11.00
2	Low (21 % to 40 %)	39	39.00
3	Medium (41 % to 60 %)	32	32.00
4	High (61 % to 80 %)	10	10.00
5	Very high (more than 80 %)	08	08.00
	Total	100	100.00

An effort has been made to identify the constraints perceived by the tomato growers. The constraints were divided into five sub component and the findings are presented in [Table-4].

Table-4 Overall constraints perceived by the tomato growers in adoption of improved cultivation practices of tomato n=100

Sr. No	Constraints	Total	
		MPS	Rank
1	Input Constraints	57.33	V
2	Financial Constraints	74.60	II
3	Marketing Constraints	80.25	I
4	Technical Constraints	70.20	III
5	General Constraints	59.00	IV

From the [Table-4] we can say that the constraints perceived by the tomato growers in adoption of improved cultivation practices of tomato was marketing constraint (80.25 per cent) rank 1st followed by financial (74.60 per cent), technical (70.20 per cent), general (59.00 per cent) and input constraint (57.33 per cent) ranks 2nd, 3rd, 4th and 5th, respectively.

Table-5 Constraints related to inputs as perceived by the Tomato growers in adoption of Improved Cultivation Practices of Tomato n=100

S. No	Constraints	Frequency	Percentage	Rank
1	Unavailability of improved varieties	69	69.00	I
2	More requirement of fertilizers and manures	64	64.00	II
3	Unavailability of recommended chemicals	58	58.00	III
4	Unavailability of inputs in time	53	53.00	IV
5	Lack of irrigation water	47	47.00	V
6	Unavailability of labour	53	53.00	IV

From the [Table-5] we can conclude that constraints related to inputs were unavailability of improved varieties (69.00 per cent) rank 1st followed by more requirement of fertilizers and manures (64.00 per cent) 2nd, unavailability of recommended chemicals (58.00 per cent) ranks 3rd, unavailability of inputs in time (53.00 per cent) and unavailability of labour (53.00 per cent) combine ranks 4th and lack of irrigation water (47.00 per cent) ranks 5th, respectively.

Table-6 Financial constraints perceived by the Tomato growers in adoption of Improved Cultivation Practices of Tomato n=100

S. No.	Constraints	Frequency	Percentage	Rank
1	Lack of proper marketing facilities	72	72.00	II
2	Malpractices of merchants in the mandies	71	71.00	III
3	High fluctuation in market prices	65	65.00	IV
4	MSP is not declared before sowing season	100	100.00	I
5	Lack of export marketing in the area	65	65.00	IV

From the data presented in [Table-6] we can revealed that constraints related to finance were MSP is not declared before sowing season (100.00 per cent) ranks 1st followed by lack of proper marketing facilities (72.00 per cent), malpractices of merchants in the mandies (71.00 per cent) ranks 2nd and 3rd, respectively. Whereas high fluctuation in market prices and lack of export marketing in the area

jointly ranks 4th with 65.00 per cent.

From the data presented in [Table-7] it can be seen that constraints related to marketing was lack of financial agencies and unavailability of credit of marginal interest (100.00 per cent) jointly ranks 1st followed by high cost of inputs (67.00 per cent) and high charges of electricity (54.00 per cent) ranks 2nd and 3rd, respectively.

Table-7 Marketing constraints perceived by the Tomato growers in adoption of Improved Cultivation Practices of Tomato

n=100

S. No	Constraints	Frequency	Percentage	Rank
1	High cost of inputs	67	67.00	II
2	High charges of electricity	54	54.00	III
3	Lack of financial agencies	100	100.00	I
4	Unavailability of credit of marginal interest	100	100.00	I

Table-8 Technical constraints perceived by the Tomato growers in adoption of Improved Cultivation Practices of Tomato

n=100

S. No	Constraints	Frequency	Percentage	Rank
1	Lack of knowledge about nursery raising	68	68.00	III
2	Lack of skill for seed and soil treatment	65	65.00	IV
3	Lack of need based training	68	68.00	III
4	Lack of knowledge and skill about weed management	72	72.00	II
5	Lack of knowledge about export quality produce	78	78.00	I

From the data presented in [Table-8] it could be revealed that in case of technical constraints lack of knowledge about export quality produce (78.00 per cent) ranks 1st, lack of knowledge and skill about weed management (72.00 per cent) ranks 2nd. Whereas lack of need based training (68.00 per cent) and lack of knowledge about nursery raising (68.00 per cent) jointly ranks 3rd and lack of skill for seed and soil treatment (65.00 per cent) ranks 4th.

Table-9 General constraints perceived by the Tomato growers in adoption of Improved Cultivation Practices of Tomato

n=100

S. No	Constraints	Frequency	Percentage	Rank
1	High temperature during nursery period	52	52.00	V
2	Timely availability of electricity	60	60.00	II
3	Unavailability of suitable equipment for weeding	55	55.00	IV
4	Cloudy weather at the time of flowering stage	57	57.00	III
5	More labour requirement	71	71.00	I

[Table-9] shows that in general constraints more labour requirement (71.00 per cent) ranks 1st followed by timely availability of electricity (60.00 per cent), Cloudy weather at the time of flowering stage (57.00 per cent), unavailability of suitable equipment for weeding (55.00 per cent) and high temperature during nursery period (52.00 per cent) ranks 2nd, 3rd, 4th, and 5th, respectively.

Conclusion

From the above discussion, it can be concluded that still there is a need of creating proper awareness regarding improved tomato production practices in some area for fetching higher production per unit area, which leads to better economic gain, and also in improvement of social and economical status of the farmers and subsequently countries economic condition. Great majority (82.00 per cent) of the growers possess low to high level of knowledge regarding improved tomato production technology and vast majority (92.00 per cent) of them had low to very high level of adoption rate regarding improved tomato production technology. In case of constraints, major constraints faced by the tomato growers were marketing constraints, financial constraints and technical constraints. So we

can say that still there is a need for the various institution of the particular area like SAU's, Farmers Training Centers, Krishi Vigyaan Kendra and also other private agencies, NGO's to make their fully efforts in transfer of technologies of recommended tomato production technologies at grass root level by making proper awareness to improve their knowledge level at whole by involving the farmers of selected area for the better adoption of different tomato production technologies for the better gain and for fetching more economic benefit.

Conflict of Interest: None declared

References

- [1] Anonymous (2005) *Access to modern technology for farming*. NSS 59th Round, Jan.-Dec 2005.
- [2] Anonymous (2012) *Annual report on vegetable production*. Ministry of Agriculture, India.
- [3] Khushk A.M. and Memon A. (2004) Impact of devolution on farm extension system. "Daily Dawn" November 1-7, 2004. pp III.
- [4] Muhammad S. and Garforth C. (1999) *Int. J. Agri. Biol.*, 1(4), 222-226.
- [5] Oakley P. and C. Garforth (1985) *Guide to Extension Training*. FAO, Rome, Italy.
- [6] Parewa B.L. (1992) Analysis of constraints in the adoption of vegetable crops by the farmers of panchayat samiti Sambhar lake, district Jaipur (Raj.). M.Sc. (Ag.) Thesis (Unpub.) RAU, Bikaner, campus Jobner.
- [7] Tripathi S.K., Mishra B. and Singh P. (2006) *Indian Res.J.Ext. Edu.*, 6(3), 1-3.
- [8] Yadav B.S. (2004) Knowledge and adoption of improved cultivation practices of cauliflower by the farmers of Govindgarh panchayat samiti of Jaipur district of Rajasthan. M.Sc. (Ag.) Thesis (Unpub.) RAU, Bikaner, campus- Jobner.