

## Technological gap in tomato cultivation

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### ABSTRACT

The research was conducted in two district of Western Maharashtra. The personal interviewing method used for data collection. The major objective of the research was to study extent of technological gap between recommended and actually adopted tomato technologies by the tomato growers from Western Maharashtra. Relationship between selected personal, social, economic, situational, communication and psychological characteristics of the tomato growers and their extent of overall technological gap was also observed. The present study revealed high technology gap in use of growth regulators, irrigation and nutrient management and plant protection so, it is suggested to organise result demonstration and field visits for minimizing technological gap by State Agricultural Department. It was observed that technological gap was decreasing with increasing education, farming experience, social participation, socio-economic status, size of land holding, area under tomato, annual income, annual income from tomato, cropping intensity, cosmopolitaness, knowledge, scientific orientation, economic motivation and marketing behaviour all these factors should be taken into consideration while disseminating tomato technology.

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### INTRODUCTION

Agriculture is an applied science. New practices, seed and machinery are coming to limelight; however, there is lapse of time and a wide gap in research outcome and extent of adoption by the farmers. It is beyond that, need-based, appropriate, timely and balanced application of the critical inputs may be the positive answer to increase the agricultural production in general and specifically production of vegetable crops. Tomato is the one of them. Tomato is well known and a very popular vegetable grown successfully throughout India. The tomato produce is available in cities almost all the year round. Introduction of high yielding varieties and other technologies in tomato is a significant landmark in the agricultural development. The efforts are also made for transfer of scientific information to potential users as quickly as possible. Nevertheless, there exist a gap between the scientific information evolved and its utilization by ultimate users. Hence, to find out the factors responsible for this are must. Keeping this view in mind, the present study was undertaken to study the extent of technological gap between recommended and actually adopted tomato technologies by the tomato growers and to find out the relationship between selected characteristics of the tomato growers and their

extent of overall technological gap.

### METHODOLOGY

This study was carried out in Nashik and Pune districts of Western Maharashtra, where maximum area under tomato cultivation was observed. From each district two tahsil were selected on the basis of maximum area under tomato cultivation. Accordingly, Niphad and Dindori tahsils from Nashik district and Junner and Ambegaon tahsils from Pune district were selected for the study. Fifteen villages from each tahsil were selected as there was the maximum area under tomato cultivation. From each village, 5 respondent tomato growers were selected randomly, so there were in all 2 districts, 4 tahsils, 60 villages and 300 respondent tomato growers for the study purpose.

### RESULTS AND DISCUSSION

The findings obtained from the present study are presented below:

#### Technological gap in tomato cultivation from Western Maharashtra:

The main objective of the investigation was to examine the extent of gap in recommended and actually adopted tomato cultivation technology by the respondent tomato growers

### Key words :

Technological gap, Respondent tomato growers, Tomato cultivation technology

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**Table 1: Practice wise technological gap in tomato cultivation from Nashik and Pune districts of Western Maharashtra**

Sr. No.	Name of practice	Max. score	Mean tech. gap score	Mean score expressed in per cent	Rank
1.	<b>Soil type</b>				
	Medium black and well drained	2	0.53	26.79	IX
2.	<b>Primary tillage practices</b>	6	0.36	18.76	XI
	Deep ploughing across slope	2	0.35	17.84	II
	2-3 harrowing	2	0.30	15.38	III
	FYM 25-30 ton./ha.	2	0.45	23.05	I
3.	<b>Varieties of tomato</b>	8	0.54	26.91	VIII
	Abhinav	2	0.61	29.41	I
	Utsav	2	0.51	25.66	III
	Namdhari 2535	2	0.56	26.42	II
	Rashmi	2	0.48	23.89	IV
4.	<b>Nursery management</b>	10	0.6	29.69	V
	Seed rate 200-300 g/ha	2	0.51	26.06	IV
	Seed treatment Thirom@3 g/kg	2	0.61	31.27	II
	Seed bed 3-5m x 1m x 15cm	2	0.68	29.58	III
	Nutrient 4-5 ghamela FYM/bed	2	0.59	25.29	V
	Spraying of 15 ml Neucron + 25 g Indofil M-45 in 10 lit water	2	0.62	32.31	I
5.	<b>Time of planting</b>	6	0.55	27.94	VI
	<i>Kharif</i> : June	2	0.43	21.73	III
	<i>Rabi</i> : Oct-Nov	2	0.59	29.99	II
	Summer-April	2	0.64	32.17	I
6.	<b>Method of planting</b>				
	Ridge and furrow method	2	0.51	25.85	X
7.	<b>Spacing</b>	6	0.53	27.12	VII
	Light: 60x45 cm	2	0.47	23.60	III
	Medium: 60x60 cm	2	0.54	27.41	II
	Heavy: 75x60 cm	2	0.60	30.35	I
8.	<b>Nutrient management</b>	8	0.67	34.24	III
	Nitrogen 300 g/plant	2	0.65	32.84	IV
	Phosphorus 150 g/plant	2	0.68	34.53	II
	Potassium 150 g/plant	2	0.66	33.57	III
	FYM 30ton/ha	2	0.71	35.46	I
9.	<b>Irrigation management</b>	6	0.76	38.47	II
	First irrigation 3-4 days after planting	2	0.74	37.52	III
	Summer (4-5 days interval)	2	0.76	38.27	II
	Winter (8-10 days interval)	2	0.79	39.77	I
10.	<b>Inter cultural operation</b>	10	0.12	5.48	XII
	Bamboo and wire framework	2	0.030	0.48	I
	Training of plant	2	0.038	1.25	IV
	Removal of side branches up to 30 cm from ground level	2	0.16	7.27	II
	Weeding : Spray of Basaline 2kg/ha + 500lit water	2	0.35	16.62	I
	Soil support 40 days after transplanting	2	0.069	1.81	III

Table 1 contd.....

Contd..... Table 1

11.	<b>Use of growth regulator</b>	6	0.8	40.53	I
	For early and proper germination: Soaking of seed in 20 ppm G.A. solution for 1 hour	2	0.78	39.60	III
	Less seed formation in flowering stage Spray of 10-20 or 30 ppm G.A. solution	2	0.84	42.26	I
	For higher yield in fruiting stage: Spraying of 100 ppm G.A.	2	0.76	39.74	II
12.	<b>Plant protection</b>	20	0.65	33.16	IV
	Fruit borer: Spraying of 15 ml Endosulphan or 5 ml Cypermethrin+10 lit water	2	0.33	16.87	IX
	Thrips : Application of Thimathion in nursery and field	2	0.21	10.72	X
	White fly: Spraying of 20 ml Endosulphan + 10 lit water or 10 ml Dimethoate + 10 lit water	2	0.81	41.09	II
	Nematodes : Plantation of resistant variety	2	0.92	46.29	I
	Blight: Spraying of Indofil M-45 25gm + 10 lit water	2	0.71	35.98	VI
	Powdery mildew :Spray 30 g soluble Sulphur + 10 lit. water or Spray 4 ml Calixin + 10 lit. water	2	0.66	33.46	VIII
	Damping off of seedling: Seed treatment Thirom 3-4 g/kg	2	0.72	36.40	V
	Bacterial wilt: Crop rotation	2	0.76	38.46	III
	Spotted wilt: Spraying of 15 ml Endosulphan or Neucron in 10 lit. water	2	0.70	35.43	VII
	Leaf curl: Control of white fly	2	0.73	36.94	IV

from Western Maharashtra. Data with respect of technological gap were collected, analyzed and presented in Table 1.

Technological gap table revealed that 40.53 per cent gap was observed in use of growth regulators and ranked first position in overall practices, whereas 42.26 per cent of gap in spray of 10-20 ppm G.A. solution for less seed formation. Irrigation management obtained 38.47 per cent of gap and irrigation management in winter season had 39.77 per cent of gap. However, 34.24 per cent of gap observed in nutrient management, under that 35.46 per cent of gap was observed in application of FYM in tomato cultivation. In plant protection, 33.16 per cent of gap observed, whereas 46.29 per cent of gap in the control of nematodes. Followed by, 29.69 per cent of gap observed in tomato nursery management, under that. 32.31 per cent of gap in Spraying of Neucron + Dithane M-45 in the nursery. Further, it was observed that 27.94 per cent, 27.12 per cent, 26.91 per cent, 26.79 per cent and 25.85 per cent gap were noticed in recommended practices viz., time of planting, spacing, selection of tomato varieties, soil type and method of planting, respectively.

#### Relationship between selected characteristics of the tomato growers and their extent of overall technological gap:

In the present study, an attempt made to study

**Table 2: Relationship between selected characteristics of the tomato growers and their extent of overall technological gap**

Sr. No.	Independent variables	'r' value
1.	Age	-0.058 <sup>NS</sup>
2.	Education level	-0.255**
3.	Size of family	0.214**
4.	Farming experience	-0.371**
5.	Social participation	-0.276**
6.	Socio-economics status	-0.224**
7.	Land holding	-0.248**
8.	Area under tomato cultivation	-0.427**
9.	Annual income	-0.320**
10.	Annual income from tomato	-0.333**
11.	Cropping intensity	-0.534**
12.	Irrigation facility	-0.355**
13.	Cosmopolitanness	-0.251**
14.	Sources of information	-0.501**
15.	Participation in training	-0.045 <sup>NS</sup>
16.	Knowledge	-0.239**
17.	Risk orientation	0.041 <sup>NS</sup>
18.	Scientific orientation	-0.516**
19.	Economic motivation	-0.144*
20.	Marketing behaviour	-0.601**

\* and \*\* indicate significance of values at P=0.05 and P=0.01, respectively  
NS = non significant

the coefficient of correlation between selected characteristics of the tomato growers and their extent of overall technological gap was worked out and presented in Table 2.

It is seen from Table 2 that, size of family is significantly correlated with technological gap at 1 per cent level of significant. Characteristics education, farming experience, social participation, socio-economic status, land holding, area under tomato cultivation, annual income, annual income from tomato, cropping intensity, irrigation facility, cosmopolitaness, sources of information, knowledge, scientific orientation and marketing behaviour were found to have negative relationship with technological gap at 1 per cent level of significant. While economic motivation had negative relationship with technological gap at 5 per cent level of significant. Maghade (2007) reported similar finding in the case of education level of the respondents of onion tomato growers. Bhat (2005) coated similar finding regarding size of family as it was found in this present study. Finding of social participation is in line with the finding of Tyagi *et al.* (2003).

### **Conclusion:**

A majority of respondents had medium level of knowledge about recommended cultivation practices. The present study revealed high technology gap in use of growth regulators, irrigation and nutrient management and plant protection. It was observed that technological gap

was decreasing with increasing education, farming experience, social participation, socio-economic status, size of land holding, area under tomato, annual income, annual income from tomato, cropping intensity, cosmopolitaness, knowledge, scientific orientation, economic motivation and marketing behaviour all these factors should be taken into consideration while disseminating tomato technology.

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