

## **Constraints perceived and suggestions offered by the farmers in adoption of improved production technologies of tomato**

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### **ABSTRACT**

A study was conducted during 2012 in selected villages of Chikmagalur district of Karnataka state, with a sample size of 120 farmers. The data was collected personally to know the socio economic profile, constraints perceived and suggestions offered in adoption of improved production technologies of tomato. The results of the study revealed that, majority of the respondents were middle aged (64.00 %) with education up to primary to middle school (50.87 %) having small family (69.10 %) with marginal land holdings (53.33 %). The major constraints expressed by the respondents were, high wages of labor and non availability of labor, inadequate and irregular power supply, high cost of plant protection chemicals, lack of knowledge about preparation of value added products, lack of motivation from extension institution and no minimum price policy, no processing unit and constant fluctuation in market price. Distribution of seeds at subsidized cost, establishment of processing unit, regular power supply and minimum price policy were the major suggestions offered by the tomato growers to overcome the perceived constraints.

**Key Words :** Constraints, Improved production technology, Socio-economic profile, Suggestions

### **INTRODUCTION**

Tomato is the world's largest vegetable crop and known as protective food because of its special nutritive value and also it's wide spread production. Tomato is one of the most important vegetable crops cultivated for its fleshy fruits and also considered as important commercial and dietary vegetable crop. Botanical name of tomato is *Lycopersicon esculentum* and belongs to family Lycopersicaceae. Tomato is protective supplementary food. As it is short duration crop and gives high yield, it is important from economic point of view and hence area under its cultivation is increasing day by day. Tomato is used in preserved products like ketch-up, sauce, chutney, soup, paste, etc. Previously Tomatoes were grown only in season-wise, but the picture has been change, now days Tomatoes are grown round the year. Tomato is a rich source of minerals, vitamins and organic acid, essential amino acids and dietary fibers. Tomato is known as productive as well as protective food. It is a rich source of vitamin A and C. It also contains minerals like iron, phosphorus. Lycopene and Beta-carotene pigments.

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Ten most promising States of the country for tomato crop have been identified and utilized for further study on various aspects of tomato crop. Bihar State is at leading position followed by UP and Orissa in terms of area under tomato crop. The maximum production and productivity have been shown by UP followed by Karnataka, Punjab, West Bengal and Assam. About 8.3% increase has been achieved by UP followed by Assam (75%) and Karnataka (72%) in terms of the tomato production. This significant achievement in tomato production is possible due to development of high yielding varieties/hybrids, breeding for biotic and abiotic stresses and pest and disease resistant varieties. In spite of these developments farmers are facing lot of constraints in tomato cultivation. Hence there is a need to identify constraints faced by the tomato growers in tomato cultivation and elicit the suggestions to overcome those constraints. Keeping in this in view, this study was conducted with the following specific objectives :

**Objectives:**

1. To know the personal and socio-economic profile of the tomato growers
2. To identify the constraints faced by the tomato growers in adoption of improved production technologies
3. To elicit the suggestions of tomato growers to overcome the constraints.

## METHODOLOGY

The study was carried out during the year 2012 at four villages in Chikmagalur district of Karnataka Viz, Karkipete, Iyanahalli, Hiregouja and Kurichikkanahally. Thirty tomato growing farmers from each village were selected based on the random sampling techniques. Thus the total sample comprised for the study was 120 respondents. The data on profile characteristics, constraints and suggestions was collected personally from the respondents by using structured interview schedule. Collected data was tabulated and analyzed using appropriate statistical tools like frequency, percentage, mean, standard deviation.

## RESULTS AND DISCUSSION

**Personal and Socio-economic profile of the respondents :**

It is clear from table 1 that, majority (64.00 %) of the respondents belonged to middle aged category followed by old (20.83 %) and young (15.00 %) aged categories. Usually middle aged are highly enthusiastic and high risk bearing capacity, have more work efficiency than older and younger farmers.

With respect to education level, majority (50.83 %) of the respondents were educated up to primary and middle school, followed by High school (20.00 %), PUC (15.83 %), illiterates (10.00 %). Only negligible per cent (3.33 %) of the respondents were educated up to graduation level. The probable reason for this could be attributed to better awareness about the importance of education and also existence of primary and high school facilities in the villages. The results are in line with the findings obtained by Sathish (2010).

Majority (69.16 %) of the respondents belonged to small family size category followed by medium (19.16 %) and large (11.66 %) family size categories, respectively. This might be due to respondents' awareness about family planning, education level and greater exposure to mass media and Cosmo politeness in nature.

With regard to extension participation, majority (58.33 %) of the respondents belonged to medium extension participation category followed by high (25.83 %) and low (15.83 %) category. The results are in conformity with the results obtained by Sathish (2010).

CONSTRAINTS PERCEIVED & SUGGESTIONS OFFERED BY THE FARMERS

As depicted in Table 1, 42.50 per cent of the respondents belonged to medium category with respect to mass media utilization followed by high (29.17 %) and low (28.33 %) categories, respectively.

With regard to risk orientation, 38.33 per cent of the respondents belonged to medium risk orientation category followed by low (34.17 %) and high (27.50 %) categories, respectively. The uncertainty of agro climatic situation blended with price fluctuation and unstable market price might have favoured the existing situation. The results are in conformity with the findings of Shashidhara (2003).

Majority (60.33 %) of the respondents belonged to medium scientific orientation category,

<b>Table 1 Personal and socio-economic profile of the respondents (N-120)</b>			
Sr. No.	Particulars	Number	Percentage
1.	<b>Age</b>		
	Young ( Up to 30 years)	18	15.00
	Middle (31 to 50 years)	77	64.00
	Old (Above 50 years)	25	20.83
2.	<b>Educational qualification</b>		
	Illiterates	12	10.00
	Primary and middle school (1 to 7 <sup>th</sup> std)	61	50.83
	High school (8 to 10 <sup>th</sup> std.)	24	20.00
	PUC	19	15.83
	Graduation	4	3.33
3.	<b>Family size</b>		
	Small (1 to 6 members)	83	69.16
	Medium (7 to 10 members)	23	19.16
	Large (10 members and above)	14	11.66
4.	<b>Land holding</b>		
	Marginal farmers (< 2.5 acres)	64	53.33
	Small farmers (2.5 to 5.0 acres)	43	35.83
	Big farmers (> 5.0 acres)	13	10.83
5.	<b>Extension participation</b>		
	Low (Mean – 0.425*SD)	19	15.83
	Medium (Mean + 0.425*SD)	70	58.33
	High (Mean + 0.425*SD)	31	25.83
6.	<b>Mass media utilization</b>		
	Low (Mean – 0.425*SD)	34	28.33
	Medium (Mean + 0.425*SD)	51	42.50
	High (Mean + 0.425*SD)	35	29.17
7.	<b>Risk orientation</b>		
	Low (Mean – 0.425*SD)	41	34.17
	Medium (Mean + 0.425*SD)	46	38.33
	High (Mean + 0.425*SD)	33	27.50
8.	<b>Scientific orientation</b>		
	Low (Mean – 0.425*SD)	22	18.33
	Medium (Mean + 0.425*SD)	73	60.33
	High (Mean + 0.425*SD)	25	20.83

followed by 20.83 and 18.33 per cent high and low scientific orientation categories, respectively.

### Constraints faced by the tomato growers:

#### Supply constraints:

It is evident from the Table 2 that, with respect to supply constraints high wages and non availability of labor and inadequate and irregular power supply were the constraints expressed by the cent per cent of the respondents followed by non availability of certified seeds (76.66 %), insufficient irrigation water (68.33 %) and non availability sufficient quantity of seeds (63.33 %). Timely non

<b>Table 2 : Distribution of respondents according to constraints faced (N-120)</b>			
Sr. No.	Constraints	Frequency	Percentage
1.	<b>Supply constraints</b>		
	Non availability of certified seeds	92	76.66
	Non availability sufficient quantity of seeds	76	63.33
	High wages and non availability of labor	120	100
	Inadequate and irregular power supply	120	100
	Insufficient irrigation water	82	68.33
2.	<b>Economic constraints</b>		
	High cost of seeds	108	90.00
	High cost of manures and fertilizers	120	100
	Lack of credit facilities	76	63.33
	High cost of plant protection chemicals	120	100
	High transportation cost	83	69.16
	Poor economic status of farmers	105	87.50
3.	<b>Technical constraints</b>		
	Lack of knowledge about HYV	62	51.66
	Lack of knowledge about preparation of value added products	120	100
	Lack of knowledge about recommended dosage of plant protection chemicals	110	91.66
	Lack of technical knowledge about recommended dosage of chemical fertilizer	90	75.00
	Lack of knowledge about seedling treatment	108	90.00
	Lack of knowledge about seed rate and spacing	45	37.50
4.	<b>Extension constraints</b>		
	Lack of proper training	78	65.00
	Lack of extension participation	66	55.00
	Lack of extension contact	45	37.50
	Lack of print media subscription	34	28.33
	Lack of electronic media participation	28	23.33
	Lack of motivation from extension institution / personnel	89	74.16
5.	<b>Marketing constraints</b>		
	No minimum price policy	120	100
	No proper cold storage facilities	96	80.00
	No processing unit	120	100
	Constant fluctuation in market price	120	100
	Intervention of middlemen	110	91.66

Multiple responses

availability of the laborers is the major problem faced by the most of the farmers in the rural area. This might be due to migration of rural youths to the nearest towns and cities for seeking employment. The findings are in line with the results obtained by Jeewan (2012).

**Economic constraints:**

High cost of manures and fertilizers and high cost of plant protection chemicals were the major economic constraints expressed by cent per cent of respondents followed by high cost of seeds (90.00 %), poor economic status of farmers (87.50 %), high transportation cost (69.16 %) and lack of credit facilities (63.33 %). The above problems faced by the tomato growers might be due to lack of supply of sufficient quantity of fertilizers and chemicals at subsidized rates by the government departments and co-operatives. Similar results were reported by Jeewan (2012).

**Technical constraints :**

Among technical constraints, lack of knowledge about preparation of value added products was the major constraint expressed by cent per cent of the respondents. Around 91 per cent of them expressed the problem of lack of knowledge about recommended dosage of plant protection chemicals followed by lack of knowledge about seedling treatment (90.00 %), lack of technical knowledge about recommended dosage of chemical fertilizer (75.00 %), lack of knowledge about HYV (51.66 %) and lack of knowledge about seed rate and spacing (37.50 %). The probable reasons for the above results could be most of the tomato growers were educated up to primary to middle school, limited participation in extension activities and limited exposure to print and electronic media.

**Extension constraints:**

Lack of motivation from extension institution/personnel was the major constraint faced by 74.16 per cent of respondents followed by lack of proper training (65.00 %), lack of extension participation (55.00 %), lack of extension contact (37.50 %), lack of print media subscription (28.33 %) and lack of electronic media participation (23.33 %). This might be due to less participation of respondents in extension activities and less contact of extension personnel of the developmental department and universities.

**Marketing constraints:**

Cent per cent of the respondents expressed the problems of no minimum price policy, no

Sr. No.	Suggestions	Frequency	Percentage
1.	Development of pest disease resistant varieties	110	91.66
2.	Frequent training on production and protection technology	88	73.33
3.	Minimum price policy	120	100
4.	Establishment of processing unit	120	100
5.	Improvement of transportation	56	46.66
6.	Improvement in marketing infrastructure	98	81.66
7.	Avoidance of middlemen	110	91.66
8.	Refresher training before the crop	77	64.16
9.	Distribution of seeds at subsidized cost	120	100
10.	Frequent follow up visit by extension personnel	96	80.00
11.	Regular power supply	120	100

Multiple responses

processing unit in the area and constant fluctuation in market price, followed by intervention of middlemen (91.66 %) and no proper cold storage facilities (80.00 %). The probable reasons for the above results might be due to lack of awareness about the regulated market, commodity groups, farmers interest groups and limited contact with the developmental departments and other institutions involved in the extension activities, lack of technical knowledge about the preservation and non availability of the storage facilities in nearby villages. The results are in line with the findings obtained by Jeewan (2012).

#### **Suggestions offered to overcome perceived constraints:**

It is evident from the Table 3 that, minimum price policy, establishment of processing unit, distribution of seeds at subsidized cost and regular power supply were the major suggestions offered by the cent per cent of the tomato growers to overcome the constraints expressed in adoption of improved tomato production technologies, followed by development of pest disease resistant varieties (91.66 %), avoidance of middlemen (91.66 %), improvement in marketing infrastructure (81.66 %), frequent follow up visit by extension personnel (80.00 %), frequent training on production and protection technology (73.33 %), refresher training before the crop (64.16 %) and improvement of transportation (46.66 %).

#### **Conclusion:**

It could be concluded from the results that, high wages and non availability of labor, inadequate and irregular power supply, High cost of manures and fertilizers and high cost of plant protection chemicals, lack of knowledge about preparation of value added products, lack of motivation from extension institution, no minimum price policy, no processing unit in the area and constant fluctuation in market price are the major constraints expressed by the tomato growers. Hence, policy makers and administrators of developmental departments, agricultural universities and other organizations involved in the rural development and extension activities have to formulate suitable extension programmes to overcome the constraints expressed by the tomato growers in adoption of improved production technologies.

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