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KNOWLEDGE OF THE FARMER TOWARDS IMPROVED TOMATO PRODUCTION PRACTICES IN VIJAYANAGARAM DISTRICT ANDHRA PRADESH

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ABSTRACT

The study was conducted in Vijayanagaram District of Andhra Pradesh to measure the knowledge of the farmer towards improved tomato production practices in Vijayanagaram district of Andhra Pradesh. A total number of 120 respondents were selected randomly from four villages under Makkuva block because most of the farmers were involved in tomato production. The data were collected through personnel interview method by using pre structured interview schedule and later appropriate statistical analysis applied to draw logical findings. The findings revealed that age, education, annual income, farming experience, mass media exposure, progressiveness and extension contact of the respondents belongs to medium level; land holding and family size of the respondents belongs to low level. Majority of the respondents' occupation was agriculture. Most of the respondents are illiterate. Age, education, occupation, land holding, family size, annual income, farming experience, mass media exposure, progressiveness and extension contact were positively and significantly correlated with Knowledge of the farmer towards improved tomato production practices at 0.01 % of probability.

KEYWORDS: *Knowledge, Tomato Production Practices*

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INTRODUCTION

India is a considered as the land of agriculture since the ancient times. Due to the presence of different agro climatic conditions, a variety of crops are being grown in different parts of the country. Agriculture and allied sectors accounted for 18.8 per cent of the GDP in 2021-2022 and provides employment to over 60 per cent of the population **(Economic survey, 2020-2021).** Though the share of agriculture and allied sectors in the country's GDP has declined in comparison to the previous years, nevertheless Indian agriculture has registered impressive growth over the last few decades. Major rivers like Ganga, Yamuna etc., in the north and Godavari, Krishna etc., in the south act as a source of irrigation by providing water throughout the year. The south-east monsoons and north-west monsoons also provide irrigation filling up the rivers, lakes and ponds. **(B. K. Gupta *et al.*,2021)** India is one of the leading producers in the world for many major crops like paddy, wheat, pulses, sugarcane, spices, vegetables and plantation crops. Rice is considered as the major staple crop of the country. Along with rice a variety of major other crops like spices, vegetables, oil seeds, horticultural crops etc., are grown in large scale and are being exported. Among these crops vegetables occupy a major place in the production. Vegetables constitute about 55 per cent of horticultural crop production in the country with a total production of 85 million tonnes which is estimated to cross 100 million tonnes

in near future. Successful cultivation of vegetables is hampered due to the incidence of several insect pests. Cultivation of hybrids, improved varieties, intensive agronomic practices, off season cultivation and indiscriminate use of insecticides has changed the pest complex in these crops. **(Ekta Kaushik *et al.*, 2019).**

India is next only to China in area and total production of vegetables with an average productivity of 15.2 tonnes / ha (APEDA 2010). It occupies prime position in the production of cauliflower, second in onion and third in cabbage in the world. However, there is huge scope to further boost the production by increasing the productivity per unit area of land with the help of improved technologies. The average productivity of cabbage, potato and tomato in India is 22.0, 19.4 and 6.7 tonnes / ha, respectively which is too low as compare to the per hectare production of cabbage 55.3 tonnes in Korea Republic, potato 44.8 tonnes in Netherlands and tomato 16.6 tonnes in France **(Gopalakrishnan, 2017).** Vegetables are typically grown in India in field conditions; the concept is opposed to the cultivation of vegetables in green houses as practiced in developed countries for high yields. The vegetables sector also suffers from lack of availability of good quality planting material and low use of hybrid seeds. **(Reddy and Tirkey 2014).** Poor farm management and manual harvesting practices also apply to the vegetables cultivation in India.

Tomato is cultivated in tropics and subtropics of the world and it is being cultivated in kitchen gardens, commercial fields under greenhouse and poly house conditions and soil less culture or hydroponic system. Tomato is one of the most popular vegetables of great commercial value and is used in various forms of salad, soup, ketchup, sauce, pickles, powder, paste, juice, whole canned fruits. It is one of the most popular salad vegetables and it is taken with great relish. Tomato has a significant role in human nutrition because it is a rich source of lycopene, minerals and vitamins such as ascorbic acid and β- carotene, which are antioxidants. Tomato juice has become an exceedingly popular appetizer and beverage. The well ripe tomato (per 100g of edible portion) contains water (94.1 %), energy (23 calories), calcium (1.0g). Magnesium (7.0 mg), Vitamin-A (1000 IU), ascorbic acid (22mg), thiamine (0.09mg), riboflavin (0.03 mg) and niacin (0.8mg) **(Jagadeeshwar 2005)**. Lycopene may help counteract the harmful effects of substances called “free radicals”, which are tough to contribute to age related processes and a number of types of cancer, including lung, stomach, pancreas, breast, cervix, colorectal, mouth and oesophagus **(Salla, *et al.*, 2017).**

RESEARCH METHODOLOGY

Descriptive research design was adopted for the study as it describes the characteristics or phenomena that are being studied. The present study was conducted in Vijayanagaram district of Andhra Pradesh. Out of 34 blocks in Vijayanagaram district, Makkuva block is selected purposively based on maximum area covered under Tomato cultivated farmers. From the selected block, eight villages were selected purposively based on the maximum area covered under production of tomatoes.

Selection of Villages

The list of villages under the selected Vizianagaram mandal was obtained from the district gazette. From the list, villages that grow tomato as a major crop have been selected with the help of the Cluster Resource Persons (CRP) working locally in that area. Among such villages eight villages i.e., Chemudu, Makkuva, Kona, Dhabbagedda, Bantu Makkuva, Pulleru Valasa, Mosuru and Mathumooru have been selected through purposive sampling as majority of the farmers grow tomato in these villages. Thus, a total of eight villages from Makkuva mandal of Vizianagaram district were selected for the present investigation.

Selection of the Respondents

The list of farmers growing tomato from each village was obtained with the help of the Cluster Resource Persons (CRP) that work locally. To maintain the uniformity of the sampling through random sampling thirteen to fifteen farmers were selected, thus a total of 120 respondents were selected from eight villages.

OBJECTIVES OF THE STUDY

- To find out the socio-economic profile of the respondents.
- To determine the knowledge of improved tomato production practices of the farmers.

RESULTS AND DISCUSSIONS

Table 1, it shows that 44.16 per cent of the respondents belong to the middle age group. In the survey we find that the 43.34 per cent of the respondents are illiterate of their education status. In terms of annual income (58.33 %) of the respondents has medium level of income in which 38.33 per cent of the respondents has 1- 2.5 acres of land holding. Find out that 46.67 per cent of the respondents are under farming. Therefore 39.17 per cent of the respondents have small family size. It is also evident that 42.50 per cent of the respondents have medium level of farm experience. It is evident that (59.17 %) of the respondents has medium level of mass media exposure and (62.51 %) of the respondents has medium level of progressiveness. Finally 40.00 per cent of the respondents have medium level of extension agent contact. Similar finding is also reported by **(Ray *et al.*, 2019)**

Table 2, it can be observed that, 60.00 per cent of respondents had full knowledge on improved varieties. Regarding the nursery preparation 49.16 per cent of respondents had fully correct knowledge; while 68.33 per cent had proper knowledge on transplanting time of tomato crop respectively. It was found that 80 per cent had fully correct knowledge on plant-to-plant distance. Meanwhile, 57.50 per cent of respondents had fully correct knowledge on propagation methods, while regarding the fertilizer management 63.33 per cent of respondents had full correct knowledge. Regarding the irrigation management 66.67 per cent of the respondents had full knowledge. As for the major diseases and their control methods among the respondents, 77.50 per cent had fully current knowledge while for major pests and their control methods 84.16 per cent respondents had full knowledge. For the pre-harvesting practices 80.00 per cent respondents have full knowledge, and for harvesting time 80.00 per cent of respondents had full knowledge. Regarding the correct harvesting procedure 85.00 per cent of respondents had full knowledge, application of suitable plant growth regulators was known to 83.33 per cent of respondents. Regarding the suitable intercrops, 74.16 per cent of respondents had full knowledge.87.70 per cent of respondents had knowledge on storage of produce after harvesting. 77.50 per cent of respondents had full knowledge on packing and disposal at short-distance market. Regarding the packing and disposal at long distance80.83 per cent of respondents had full knowledge, and also, 75.83 per cent of respondents had knowledge on marketing. Similar findings is also reported by **Kumar (2016)**

Table 3, it can be seen that more than half of the respondents had high level of knowledge regarding the recommended practices in tomato cultivation (55 %), followed by medium (29.17 %), and low (15.83 %) level of knowledge in tomato cultivation. These findings were found similar to the findings in **Harisha *et al.*, *Kumar* and Ray *et al.***

Table 4 concluded that the independent variables i.e. age, education, occupation, family size, land holding, annual income, farming experience, mass media exposure, progressiveness and extension contact were positively and significantly correlated with the knowledge level 0f improved tomato production practices at 0.01 % of probability.. Therefore, the null hypothesis was rejected for these variables.

Table 1: Socio-Economic Profile of the Respondents

S. No	Independent Variables	Category	Frequency	Percentage
1.	Age	Young (Up to 35 years)	42	35.00
		Middle(36-50 years)	53	44.16
		Old (above 50 years)	25	20.83
2.	Education	Literate	52	43.34
		Primary Education	30	25.00
		High Education	24	20.00
		Intermediate	11	9.16
		Graduate & above	3	2.50
3	Occupation	Agriculture	56	46.67
		Agriculture + allied activities	42	35.00
		Agriculture + others	22	18.33
4	Land holding	Up to 2.5 acres	46	38.33
		2 to 5 acres	43	35.84
		More than 5 acres	31	25.83
5	Family size	Small (1-3)	47	39.17
		Medium (4-6)	43	35.83
		Large (> 6)	30	25.00
6	Annual income	Rupees < 1,00,000	26	21.67
		Rs. 1,00,001- 2,00,000	70	58.33
		Rs. > 2,00,000	24	20.00
7	Farming Experience	Low (1- 15 years)	35	29.17
		Medium (15-30 years)	51	42.50
		High (>30 years)	34	28.33
8	Mass media exposure	Low	12	10.00
		Medium	71	59.17
		High	37	30.83
9	Extension agent contact	Low	32	26.67
		Medium	48	40.00
		High	40	33.33
10	Progressiveness	Low	21	17.51
		Medium	75	62.51
		High	24	20.00

Table 2: Knowledge of the Respondents about Recommended Improved Tomato Production Practices N=120

S. No.	Particulars	Response		
		FULLY correct	Partially Correct	Not Correct
1	Improved varieties	72 (60.00)	28 (23.33)	20 (16.66)
2	Nursery preparation	59 (49.16)	38 (31.67)	23 (19.16)
3	Transplanting time of tomato	82 (68.33)	22 (18.34)	16 (13.33)
4	Plant to plant distance	96 (80)	16 (13.33)	8 (6.67)
5	Propagation methods	69 (57.50)	32 (26.67)	19 (15.83)
6	Row to row and plant to plant distance	93 (77.50)	21 (17.50)	6 (5.00)
7	Fertilizer management	76 (63.33)	32 (26.67)	12 (10.00)
8	Irrigation Management	80 (66.67)	29 (24.16)	11 (9.16)
9	Major diseases and their control methods	93 (77.50)	19 (15.83)	8 (6.67)
10	Major insect-pest and their control methods	101 (84.16)	12 (10.00)	7 (5.84)
11	Pre-Harvesting time	96 (80.00)	19 (15.83)	5 (4.16)
12	Harvesting time	96 (80.00)	16 (13.33)	8 (6.67)
13	Correct harvesting procedure	102 (85.00)	10 (8.33)	8 (6.67)
14	Application of plant growth regulators	100 (83.33)	8 (6.67)	12 (10)
15	Suitable intercrops	89 (74.16)	18 (15.00)	13 (10.83)
16	Storages of produce after harvesting	107 (87.70)	9 (7.50)	4 (3.34)
17	Packing and disposal at short distance market	93 (77.50)	21 (17.50)	6 (5.00)
18	Packing and disposal at long distance	97 (80.83)	15 (12.50)	8 (6.67)
19	Marketing (Local/ Mandi/ Long distance)	91 (75.83)	19 (15.83)	10 (8.19)

Table 3: Overall Knowledge Level of Respondents about Recommended Practices in Tomato Cultivation N=120

S. No.	Over-All Knowledge Level	Frequency	Percentage
1	Low ( )	19	15.83
2	Medium ( )	35	29.17
3	High ( )	66	55.00
	Total	120	100.00

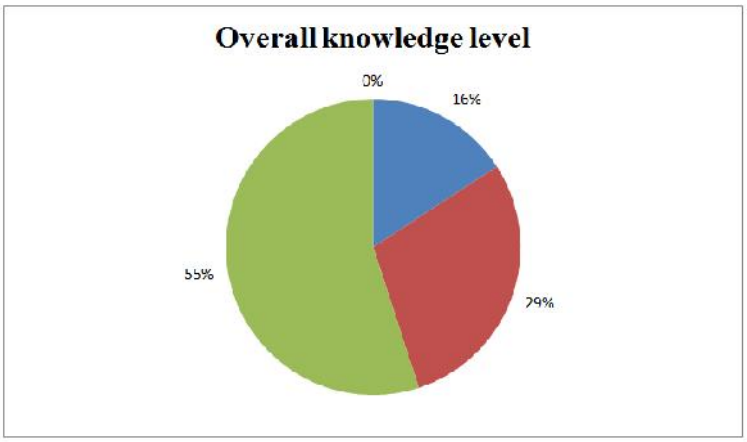

Figure 1: Overall Knowledge Level of Respondents about Recommended Practices in Tomato Cultivation.

Table 4: Association between Selected Independent Variables with Household Activities

S. No.	Variables	Correlation Coefficient ®
1	Age	0.650*
2	Education	0.597*
3	Occupation	0.382*
4	Land holding	0.484*
5	Family size	0.208*
6	Annual income	0.214*
7	Farming experience	0.636*
8	Mass media exposure	0.950*
9	Progressiveness	0.701*
10	Extension contact	0.728*

*= Significant at 0.1 % of probability.

CONCLUSIONS

It is concluded that majority of the respondents have medium levels of Age, annual income, farming experience, mass media, extension agent contact and progressiveness. The overall knowledge level of the respondent has high level of knowledge. The independent variables of the respondents' age, education, occupation, family size, land holding, annual income, farming experience, mass media exposure, progressiveness and extension contact were positively significantly correlated with the knowledge of improved tomato production practices at 0.01 % of probability. The farmers suggested that the quality and quantity of the planting material should be improved.

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