

International Journal of Agriculture Extension and Social Development

Volume 9; Issue 2; February 2026; Page No. 205-208

Received: 18-11-2025
Accepted: 20-01-2026

Indexed Journal
Peer Reviewed Journal

Knowledge level of tomato cultivation practices and post harvest technology by the farmers of Satna, district M.P.

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DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i2c.3040>

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Abstract

The present study was carried out in Satna District of Madhya Pradesh. Thus, 240 respondents were selected for the research. 30 respondents were selected in each village. The data were collected by personal interview schedule. The data were analyzed using appropriate statistical tools such as: tabulation, Frequency, percent, Mean Score and chi-square. It was observed that highest percentage of respondents from overall knowledge, highest farmer's medium knowledge level. It was observed that highest percentage of respondents partial Knowledge about Application of FYM, Improved varieties or Hybrid variety. Complete knowledge about.

Keywords: Farmers, tomato, cultivation practices, PHT and knowledge

Introduction

Agriculture, which includes everything from planting and irrigation to harvesting and advanced farming techniques like advanced farm preparation, is the science, art, and, producing, or livestock to production food, fiber, fuel, etc., which form the basis of humankind by providing food, raw materials, and economic stability. This is a vital sector, crucial for food security, employment and national economies, incorporating diverse practices ranging from traditional farming to genetically modified crops and sustainable practices. Vegetables are the edible parts of plants-like stems, roots, leaves, flowers, or even savory fruits-consumed for nutrition, providing essential vitamins, minerals, fiber, and antioxidants, crucial for a healthy diet and disease prevention, often divided by largely water content and low calories, and enjoyed raw or cooked in various culinary traditions.

Tomato is first & very imp. or widely cultivated vegetable crops in the "world". It's "Solanaceae" family. Tomato is native to South America and was later introduced to India and out of India. The tomato is sowing for its edible fruit, it's rich in Vit. (especially vitamins C & A), Minerals, antioxidants like as lycopene, and dietary fiber. Due to its largely nutritional content or versatile uses, the tomato is an important portion of the daily routine diet. Tomatoes are usually harvested when they reach the mature pink stage, depending on the variety. Harvesting begins 60-90 days after transplanting. Can be grown in different climates and agro-climatic zones. Suitable for crop rotation, intercropping, and multiple cropping systems. Value addition through processing (sauce, ketchup, puree) further enhances income opportunities. The food processing and export sectors require uniform, high-quality raw material.

This makes the topic highly relevant for research, extension, and policy formulation.

Methodology

This Chapter discusses the materials or method used for gathering the data needed in the research as well as the variables and how they were measured. There are 28 states and 8 union territories in India. Out of these, M.P. was selected for the research. The Baghelkhand region of Madhya Pradesh consists of 55 districts for the study, Satna district has been selected because this district is close to the university area. Satna District comprises a total of eight blocks, out of these two blocks namely Maihar or Amrapattan have been selected for research. Using a random sample technique, from each block, four communities were selected. Eight communities in all have been chosen from two blocks Maihar block village namely-Berma, Barhi, Itama, Ghunwara and Amarpatan - Gora, Lalpur, Magraj, Majhgawaon. Thus, 240 respondents were selected for the research. 30 respondents were selected in each village. The analysis techniques used in the study were tabulation, percent, MS and chi-square. percentage, Mean, Chi-square and Rank.

Results and Discussion

Table 1: Overall knowledge of tomato cultivation practices and post-harvest technology

S. N.	Group	F	%
1	Less (Up to 11.11)	53	22.08
2	Medium (11.11- 25.20)	130	54.17
3	High (Above 25.20)	57	23.75
	Total	240	100
Mean18.15 SD-7.04			

It's depicts from the 1. table Num., largest 54.17% fell into the medium level knowledge, 23.75% high, and 22.08% low

knowledge level about tomato cultivation practices and post harvest technology.

Table 2: Divided by the interviewee basis on knowledge of tomato crop improvement practices and post-harvest technologies

S. No.	Recommended Practices	Knowledge Level				
		CK	PK	NK	Mean Score	Rank
1.	Field preparation Summer Deep Ploughing	52 (21.67)	158 (65)	32 (13.33)	2.1	VIII
2	Application of FYM	30 (12.5)	198 (82.5)	12 (5)	2.07	IX
3	Time of sowing	58 (24.7)	172 (71.6)	10 (4.6)	2.2	VII
4	Improved varieties or Hybrid variety	50 (20.3)	178 (74.7)	12 (5)	2.15	VI
5	Recommended Seed Rate	60 (25)	169 (70.7)	11 (4.3)	2.66	I
6	Seed treatment practices with bio-fertilizer	72 (30)	151 (62.7)	17 (7.3)	2.22	IV
7	Seed treatment practices with chemicals	98 (40.3)	132 (55)	10 (4.7)	2.36	II
8	Transplanting	68 (28.3)	164 (68.4)	8 (3.3)	2.25	IV
9	Recommended Spacing	88 (36.7)	142 (59.7)	10 (4.7)	2.32	III
10	Recommended Fertilizer Application	91 (37.7)	137 (57.3)	12 (5)	2.32	III

Table 2 shows that the highest 65% partial knowledge, 21.67% complete and 13.33% no knowledge for Field preparation Summer Deep Ploughing Mean Score 2.1 with Rank VIII. Largest per cent 82.5 “partial knowledge, 12.5% “complete, and only 5% no knowledge for Application of FYM Mean Score 2.1 with Rank IX. Highest 71.6% partial knowledge, 24.7% complete and 4.6% no knowledge for Time of sowing. Mean Score 2.2 with Rank VII. Highest 74.7% partial knowledge, 20.3% “complete” and 5% “no knowledge” for improved varieties or Hybrid variety. Mean Score 2.15 with Rank VI. Highest 70.7% partial knowledge, 25% “C” & 4.3% ‘no knowledge’ for Recommended Seed Rate. Mean Score 2.66 with Rank I. Highest 62.7% partial

knowledge, 30% complete and 7.3% no knowledge for Seed treatment practices with bio-fertilizer. Mean Score 2.22 with Rank V. Highest 55% partial knowledge, 40.3%, ‘complete’ and 4.7%, ‘no knowledge’ for “Seed treatment practices with chemicals”. MS 2.36 (Rank II). Highest 68.4% partial knowledge, 28.3% complete and 3.3% no knowledge for Transplanting. Mean Score 2.25 with Rank IV. Highest 59.7% partial knowledge, 36.7% ‘complete’ & 4.7% ‘no knowledge’ for Recommended Spacing. Mean Score 2.32 with Rank III. Highest 57.3% partial knowledge, 37.7% complete and 5% no knowledge for Recommended Fertilizer Application. Mean Score 2.32 with Rank III.

Table 3: Divided by the interviewee basis on knowledge of tomato crop mgt. practices and post-harvest technologies

S. No.	Recommended Practices	Knowledge Level				
		CK	PK	NK	Mean Score	Rank
1.	Gap filling	58 (24.7)	172 (71.6)	10 (4.6)	2.2	VI
2	Earthing up	66 (27.5)	168 (70)	6 (2.5)	2.25	III
3	Manual Weeding	78 (32.5)	156 (65)	6 (2.5)	2.3	I
4	Weedicide application	72 (30)	162 (66.7)	8 (3.3)	2.28	II
5	Surface Irrigation	60 (25)	158 (65.3)	22 (9.7)	2.15	V
6	Top Dressing	66 (27.5)	150 (62.5)	24 (10)	2.17	IV

Table 3 stated that the highest 71.6% partial knowledge, 24.7% ‘complete’ and 4.6% ‘no knowledge’ for Gap filling. Mean Score 2.2 with Rank VI. largest 70% partial knowledge, 27.5% complete and 2.5% no knowledge for Earthing up. Mean Score 2.25 with Rank III. Highest 65% partial knowledge, 32.5% complete and 2.5% no knowledge for Manual Weeding. Mean Score 2.3 with Rank I. Highest

66.7% partial knowledge, 30% complete and 3.3% no knowledge for Weedicide application. Mean Score 2.28 with Rank II. Highest 65.3% partial knowledge, 25% ‘complete’ and 9.7% ‘no knowledge’ for Surface Irrigation. Mean Score 2.15 with Rank V. Highest 62.5% partial knowledge, 27.5% complete and 10% no knowledge for Top Dressing. Mean Score 2.17 with Rank IV.

Table 4: Divided by the interviewee basis on knowledge of tomato plant protection practices and post-harvest technologies

S. No.	Recommended Practices	Knowledge Level				
		CK	PK	NK	Mean score	Rank
1.	Fruit borer and control measure	87 (36.25)	129 (53.75)	24 (10)	2.26	I
2	Thrips and control Measure	80 (33.33)	120 (50)	40 (16.7)	2.16	IV
3	White fly and control measure	87 (36.5)	126 (52.5)	24 (10)	2.23	II
4	Damping off and control measure	78 (32.5)	132 (55)	30 (12.5)	2.2	VI
5	Leaf spot and control measure	96 (40)	112 (46.7)	26 (10.3)	2.24	III
6	Tomato early blight and control measure	37 (15.7)	179 (74.3)	24 (10)	2.05	VII
7	Leaf curl and control measure	47 (19.3)	144 (60)	49 (20.7)	1.99	VIII
8	Tomato spotted wilt control measure	65 (27.3)	144 (60)	31 (12.7)	2.14	V

Table 4 stated that the highest 53.75% partial knowledge, 36.25% complete and only 10% no knowledge for Fruit borer and control measure. Mean Score 2.26 with Rank I. Highest 50% partial knowledge, 33.33% full and 16.7% nil knowledge for Thrips and control Measure. Mean Score 2.16 with Rank IV. Highest 52.5% partial knowledge, 36.5% complete and 10% no knowledge for White fly and control measure. Mean Score 2.23 with Rank II. Highest 55% partial knowledge, 32.5% fully and 12.5% 'no knowledge' for Damping off and control measure. Mean Score 2.2 with Rank VI. Highest 46.7% partial knowledge,

40% complete and 10.3% no knowledge for Leaf spot and control measure. Mean Score 2.24 with Rank III. Highest 74.3% partial knowledge, 15.7% complete and 10% no knowledge for Tomato early blight and control measure. Mean Score 2.05 with Rank VII. Highest 60% partial knowledge, 20.7 5% no knowledge and 19.3% complete for Leaf curl and control measure. Mean Score 1.99 with Rank VIII. Highest 60% partial knowledge, 27.3%, 'complete' and 12.7%, 'no knowledge', for Tomato spotted wilt control measure. Mean Score 2.14 with Rank V.

Table 5: Divided by the interviewee basis on knowledge of tomato Physiological disorders Practices and post-harvest technologies

S. No.	Recommended Practices	Knowledge Level				
		CK	PK	NK	Mean Score	Rank
1	Sunscald	49 (20.7)	167 (69.3)	24 (10)	2.10	III
2	Fruit Cracking	68 (28.3)	144 (60)	28 (11.7)	2.16	I
3	Cat facing	48 (20)	171 (71.25)	21 (8.75)	2.11	IV
	Blossom end rot	64 (26.7)	144 (60)	32 (13.3)	2.13	II

Table 5 shows that the highest 69.3% partial knowledge, 20.7% complete and 10% no knowledge for Sunscald. Mean Score 2.10 with Rank III. Highest 60% partial knowledge, 28.3%, 'complete' and 11.7% 'no knowledge', for Fruit Cracking. Mean Score 2.16 with Rank I. Highest 71.25%

partial knowledge, 20% complete and 8.75% no knowledge for Cat facing. Mean Score 2.11 with Rank IV. Highest 60% partial knowledge, 26.7% complete and 13.3% no knowledge for Blossom end rot. Mean Score 2.13 with Rank II.

Table 6: Divided by the interviewee basis on knowledge of tomato post-harvest technologies

S. No.	Recommended Practices	Knowledge Level				
		CK	PK	NK	Mean Score	Rank
1	Cleaning of tomato	76 (31.7)	144 (60)	20 (10.3)	2.22	VI
2	Sorting of tomato	64 (26.7)	156 (65)	20 (8.33)	2.18	VII
3	Grading	67 (27.7)	168 (70)	5 (2.3)	2.25	IV
4	Packaging	87 (36.25)	123 (51.25)	30 (12.5)	2.23	V
5	Precooling	98 (40.3)	132 (55)	10 (4.7)	2.36	I
6	Storage	80 (33.33)	148 (61.7)	12 (5)	2.28	II
7	Mode of transport by vehicles	60 (25)	160 (66.7)	20 (10.3)	2.16	VIII
8	Distribution and Marketing in Local Market or City Market	74 (30.33)	156 (65)	10 (4.7)	2.26	III

Table 6 stated that the Highest 60% partial knowledge, 31.7% 'complete' and 10.3% 'no knowledge' for Cleaning of tomato. Mean Score 2.22 with Rank VI. Highest 65% partial knowledge, 26.7% 'complete' and 8.33% 'no knowledge' for Sorting of tomato. Mean Score 2.18 with Rank VII. largest 70% partial knowledge, 27.7% complete and 2.3% 'no knowledge' for Grading. Mean Score 2.25 with Rank IV. Highest 51.25% partial knowledge, 36.25% complete and 12.5% no knowledge for Packaging. Mean Score 2.23 with Rank V. Highest 55% partial knowledge, 40.3%, "complete" and 4.7%, "no knowledge" for Precooling. Mean Score 2.36 with Rank I. Highest 61.7% partial knowledge, 33.33% complete and 5% no knowledge for Storage. Mean Score 2.28 with Rank II. Highest 66.7% partial knowledge, 25% 'complete' and 10.3% 'no knowledge' for Mode of transport by vehicles. Mean Score 2.16 with Rank VIII. Highest 65% partial knowledge, 30.33%, 'complete' and 4.7%, 'no knowledge' for Distribution and Marketing in Local Market or City Market. Mean Score 2.26 with Rank III.

Conclusion

It observed that the majority of the interviewee is observed from the overall knowledge for tomato cultivation practices

and post harvest technology, the highest farmer's medium knowledge level. Where the highest%age of respondents partial Knowledge about Application of FYM, Improved varieties or Hybrid variety and knowledge about post harvest technology the largest%age of interviewee for partial knowledge about sorting for tomato.

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