OFT – 06 (Plant Protection)
(Rabi 2023-24)

- **Thematic area: IPM**
- **Problem definition/Name of OFT:** Assessment of bio-intensive management practices for major pests in Tomato.

<table>
<tr><td>1.</td><td>Title of On farm Trial (OFT)</td><td>Assessment of bio-intensive management practices for major pests in Tomato.</td></tr>
<tr><td>2.</td><td>Problem diagnosed</td><td>Wilt disease and fruit borer</td></tr>
<tr><td>3.</td><td>Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)</td><td>Farmer Practice: Use of chemical pesticides Imidacloprid @1gm/liter of water at 60 DAT
TO1
• Application of Bio consortia (Soil application)
• Seed treatment by P. fluorescens@10 g/kg
• Nursery bed treatment by P. fluorescens@20 g/ m2
• Soil application P. fluorescens@5 kg/ha mixed with 500 kg vermi-compost/ha at 30 days after transplanting
• Spray of HaNPV @ 250 LE /ha
TO2
• Soil application of Bio consortia (Soil application)
• Seed treatment by Trichoderma viride @10 g/kg
• Nursery bed treatment by Trichoderma viride @50 g/ m2
• Soil application Trichoderma viride @5 kg/ha mixed with 500 kg vermi-compost/ha at 30 days after transplanting
• Spray of HaNPV@ 250 LE /ha</td></tr>
<tr><td>4.</td><td>Source of Technology (ICAR/ AICRP/SAU/other, please specify)</td><td>BAU Sabour</td></tr>
<tr><td>5.</td><td>Production system and thematic area</td><td>Integrated Pest Management</td></tr>
<tr><td>6.</td><td>Performance of the Technology with performance indicators</td><td>
<table>
<tr><th rowspan="2">Technology option</th><th rowspan="2">No of trials</th><th rowspan="2">% wilted plant in nursery</th><th colspan="2">% wilted plants</th><th colspan="2">% fruit damage through borer</th><th colspan="2">No of larvae /10 plants</th><th rowspan="2">% larvae population reduction after 2 end spray</th><th rowspan="2">Yield (q/ha)</th><th rowspan="2">Gross cost (Rs/ha)</th><th rowspan="2">Gross Return (Rs/ha)</th><th rowspan="2">Net Return (Rs/ha)</th><th rowspan="2">B:C</th></tr>
<tr><th>30 DAT</th><th>90 DAT</th><th>60 DAT</th><th>90 DAT</th><th>Before spray</th><th>10 day after II end spray</th></tr>
<tr><td>FP</td><td rowspan="3">10</td><td>9.4</td><td>10.83</td><td>12.97</td><td>16.8</td><td>27.1</td><td>5.4</td><td>8.5</td><td>0</td><td>163.83</td><td>40500</td><td>114681</td><td>74181</td><td>2.83</td></tr>
<tr><td>TO1</td><td>4.57</td><td>4.07</td><td>5.13</td><td>8.4</td><td>8.7</td><td>6.0</td><td>2.8</td><td>67.44</td><td>285.80</td><td>45800</td><td>200060</td><td>154260</td><td>4.37</td></tr>
<tr><td>TO2</td><td>3.37</td><td>6.47</td><td>8.46</td><td>8.2</td><td>11.4</td><td>5.9</td><td>4.9</td><td>44.07</td><td>246.6</td><td>46500</td><td>172620</td><td>126120</td><td>3.71</td></tr>
</table>
</td></tr>
<tr><td>7.</td><td>Final recommendation for micro level situation</td><td>On farm trial was conducted on 10 farmers' field of village Shivrajpur, Totambi, Jargatoli and Gunia during Rabi 2024 to find out suitable package of bio-intensive management practices against wilt disease and fruit borer. The data collected during the trial clearly indicated that the minimum wilted plants in 30 DAT (4.07%) and minimum fruit damage through borer 90 DAT (5.13%) was found under Technology option</td></tr>
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		TO_1 but wilted plant in nursery was found minimum (3.37%) in Technology option TO_2. In same Technology option (TO_1) maximum yield (285.80 q/ha), net income (Rs. 200060) and B:C ratio (4.37) was found. Which is significantly superior over FP and TO_2. The percent yield enhancement 74.44 and 15.89 over FP and TO_2. Hence **TO_1** i.e Application of Bio consortia (Soil application), Seed treatment by P. fluorescens@10 g/kg, Nursery bed treatment by P. fluorescens@20 g/ m2, Soil application P. fluorescens@5 kg/ha mixed with 500 kg vermi-compost/ha at 30 days after transplanting , Spray of HaNPV @ 250 LE /ha is being recommended for better management for major pests in Tomato.
8.	**Constraints identified and feedback for research**	a. Lack of awareness about commercial Tomato farming and their management practices. b. More no. of awareness cum skill training is required for better fruit harvest.
9.	**Process of farmers participation and their reaction**	c. Farmers meeting, interaction & field day d. Un-avaibility of bio inputs in local market

B. Results with Table and good quality photographs in jpg.

Thematic area	**Technology options with detailed treatments**	**Area (ha in crop)**		**Yield (q/ha)**	**Cost of cultivation (Rs./ha)**	**Gross return (Rs/ha)**	**Net return (Rs./ha)**	**BC ratio**
		Proposed	**Actual**					
IPM	**Farmers Practices**	1.0	1.0	163.83	40500	114681	74181	2.83
	TO1			285.80	45800	200060	154260	4.37
	TO2			246.60	46500	172620	126120	3.71