AGRI MAGAZINE
(International E-Magazine for Agricultural Articles)
Volume: 03, Issue: 05 (May, 2026)
Available online at http://www.agrimagazine.in

Bacterial Wilt of Tomato and Its Control

*Dr. Meghaa Sharma and S. Shaikshavali
Jagannath University, Jaipur, India
*Corresponding Author's email: candychandu773@gmail.com

Bacterial wilt is a serious soil-borne disease of tomato that causes sudden wilting and heavy yield loss, especially in warm and humid regions. It can affect plants at any growth stage and spreads quickly under favorable conditions.

Causal Organism

The disease is caused by *Ralstonia solanacearum*, a soil-borne bacterium that survives in soil, water, and plant debris. It infects crops like tomato, potato, chilli, and brinjal.

Symptoms

Sudden wilting of leaves without yellowing
Temporary recovery at night (early stage)
Complete and permanent wilting later
Brown discoloration of vascular tissues inside stem
Milky white bacterial ooze seen when cut stem is placed in water

Favorable Conditions

Temperature: 25°C–35°C
High soil moisture and poor drainage
Continuous cultivation of susceptible crops

Disease Cycle

The bacterium survives in soil and enters plants through roots. It multiplies in xylem vessels, blocking water movement and causing wilting. It spreads through irrigation water, tools, and infected seedlings.

Management and Control

1. Cultural Practices

Practice crop rotation with non-host crops
Use healthy, disease-free seedlings
Remove and destroy infected plants
Ensure good drainage and avoid waterlogging
Grow crops on raised beds

2. Resistant Varieties

Use wilt-resistant or tolerant tomato varieties
Grafting on resistant rootstocks is effective

3. Biological Control

Apply Pseudomonas fluorescens and Bacillus subtilis
These reduce pathogen activity and improve plant resistance

4. Chemical Control

Limited effectiveness
Soil treatment with bleaching powder or copper compounds may help

Conclusion

Bacterial wilt of tomato is difficult to control once established. Therefore, preventive measures like crop rotation, resistant varieties, good drainage, and biological control are essential. An integrated approach ensures better disease management and improved yield.