



AGRI MAGAZINE

(International E-Magazine for Agricultural Articles)

Volume: 01, Issue: 05 (December, 2024)

Available online at <http://www.agrimagazine.in>

© Agri Magazine, ISSN: 3048-8656

A Significant Disease of Tomato Crop: Early Blight (*Alternaria solani*)

(*Manju Kumari)

Assistant Professor, Plant Pathology, College of Agriculture, Nagaur

(Agriculture University, Jodhpur-341001, Rajasthan, India)

*Corresponding Author's email: manjupawanda44@gmail.com

Tomato is the most agriculturally important vegetable crop known to be affected by a very important disease early blight that is occur by pathogen *Alternaria solani*. This disease is very devastating for tomato growing farmers. Although other members of family Solanaceae and members of other plant families (Cucurbitaceae, Scrophulariaceae) can be affectedly this pathogen.

Host part Affect: All aerial part affected (stem, fruit and leaves)

Symptoms

- ✓ It is appear in early stage of crops.
- ✓ This is a common disease of tomato occurring on the foliage at any stage of the growth.
- ✓ The fungus attacks the foliage causing characteristic leaf spots and blight.
- ✓ Early blight is first observed on the plants as small, black lesions mostly on the older foliage.
- ✓ Spots enlarge, and by the time they are one-fourth inch in diameter or larger, “concentric rings” in a bull's eye pattern can be seen in the center of the diseased area. Tissue surrounding the spots may turn yellow. This symptom also known as “Target Board effect”.
- ✓ Lower leaves become infected when they come into contact with contaminated soil, either through direct contact or when raindrops splash soil onto the leaves.
- Spores (reproductive structures) can germinate between 47° and 90° F and need free water or relative humidity of 90% or greater.
- Spores infect plants and form leaf spots as small as 1/8 inch in diameter in as little as five days.
- ✓ Spores can be spread throughout a field by wind, human contact or equipment, resulting in many reinfection opportunities throughout a growing season.



Pathogen: *Alternaria solani* (Seed, Soil and Air borne)

Epidemiology

Disease develops at moderate to warm (59 to 80 F) temperatures; 82 to 86 F is its optimum temperature range. The pathogen is most likely to spread with wet weather or heavy dew, or when relative humidity is 90% or greater.

Management: “Use healthy seed and Soil”

1. Use of Resistant varieties.

2. Cultural Practices

- ✓ Cover the soil under the plants with mulch, such as fabric, straw, plastic mulch, or dried leaves.
- ✓ Use proper irrigation system for avoiding water lodging condition.
- ✓ Increase airflow by staking or trellising, removing weeds, and spacing plants adequately apart.
- ✓ Pruning the bottom leaves can also prevent early blight spores from splashing up from the soil onto leaves.
- ✓ Let two years pass before you plant tomatoes or peppers in the same location.
- ✓ Maintain field sanitation.
- ✓ Avoid dense planting.
- ✓ Balanced use of nitrogenous fertilizers.
- ✓ Use of raised furrow for planting.

3. Physical Practices

- ✓ Remove leaves with leaf spots and bury or burn them.
- ✓ If you touch infected leaves, wash your hands well before working in healthy tomato plants. If you use pruning tools, wash and sanitize them after touching infected plants.
- ✓ It is okay to remove up to one-third of the plant's leaves if you catch the disease early. Do not remove more than one-third of the plant's leaves.
- ✓ Keep leaves dry to reduce the spreading of disease.

4. Use of fungicides

- ✓ Most home gardeners don't need to treat tomatoes with a fungicide. Tomato plants can tolerate a lot of early blight without reducing the number of tomatoes they produce.
- ✓ In large field conditions, use of contact fungicides in minimal dose for a fix intervals.