

## Various Pests and Diseases of Vegetables

Vijay Kumar<sup>1</sup>, Chanchal<sup>2</sup>, Kedar Mahadev Gheware<sup>3</sup>

<sup>1</sup>Ph.D. Scholar, Division of Agronomy, <sup>2</sup>Ph.D. Scholar, Division of Agricultural Extension and Education,

<sup>3</sup>Ph.D. Scholar, Division of Floriculture and Landscaping, Sher-e-Kashmir University of Agricultural Sciences and Technology-Jammu

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### ABSTRACT

Vegetable crops are planted to produce edible fruits, leaves, succulent shoots, and roots. The veggies include okra, tomatoes, brinjal, potato, chilies, cucurbits, amaranth, onion, carrot, peas, and capsicum. Insect pests are insects that kill or injure crop plants. Diseases are states of local or systemic aberrant physiological functioning in plants induced by continuous, protracted 'irritation' by phytopathogenic organisms (infectious or biotic disease agents). They have an influence on both the crop's overall health and output. They harm plants by cutting their roots, stems, and leaves. Pests and diseases can have a widespread impact on vegetable crops. Home gardeners may find them inconvenient, but professional vegetable producers may find them disastrous. Various insects and pests can harm garden vegetables at any stage of growth. Vegetable diseases derive their energy from the plants in which they grow. Diseases, like pests, have the potential to do extensive damage. Insect pest and disease infestations and damage can limit vegetable yield in agricultural systems. Shoot and fruit borer, beetles, leaf hopper,

thrips, white fly, cut worms, fruit borer, weevils, caterpillars, and aphids are some of the most common vegetable insect pests. The most common vegetable diseases are damping off, Alternaria leaf spot, late blight, early blight, bacterial leaf spot, bacterial wilt, anthracnose, and downy mildew.

### Major Pests of Vegetable Crops and their symptoms:

#### 1. Shoot and Fruit Borer:

- ❖ Withering of terminal shoots/dead hearts.
- ❖ Bore holes on shoots and fruits plugged with excreta.
- ❖ Shedding of flower buds.
- ❖ Withering and drying of leaves.



#### 2. Spotted beetle:

- ❖ Scragging of chlorophyll.
- ❖ Skeletonization and drying of leaves.



**3. Brown leaf hopper:**

- ❖ Reduction in size of leaves.
- ❖ Shortened petioles.
- ❖ Excessive growth of branches general stunting of plants.
- ❖ Conversion of floral parts into leafy structures.
- ❖ Plants become bushy.
- ❖ Fruiting is rare.
- ❖ Vector of diseases (little leaf of brinjal).

**4. Fruit Borer:**

- ❖ Young larvae feed on tender foliage.
- ❖ Mature larvae bore circular holes.
- ❖ Thrust only a part of its body into fruit and eat the inner content.

**5. White Fly:**

- ❖ Chlorotic spots.
- ❖ Yellowing.
- ❖ Downward curling and drying of leaves.
- ❖ Vector of diseases (Tomato leaf curl disease).

**6. Thrips:**

- ❖ Silvery streaks on leaf surface.
- ❖ Pre-mature dropping of flowers.
- ❖ Bud necrosis.
- ❖ Vector of diseases (Tomato spotted wilt virus).

**7. Aphids:**

- ❖ Clusters on the tips of the shoots.
- ❖ Sucking the sap from the plant.
- ❖ Reduces plant vigour.
- ❖ Spread viruses which can severely reduce yields and quality.

**8. Caterpillars:**

- ❖ Attack leaves, stems, flowers, fruits and roots.
- ❖ Severely damage the leaves of Brassica family crops.
- ❖ Some caterpillars will mine leaves and then bore into tubers, fruits.

**9. Cutworms:**

- ❖ Cutworms hide in the soil by day and attack plants at night.
- ❖ Damage the stem of young seedlings at the base.
- ❖ Causing the plant to collapse.

**10. Weevils:**

- ❖ Weevils mostly attack the stems and leaves of vegetables at night.
- ❖ They may bore into fruits and tubers.
- ❖ Plants are more susceptible when water stressed.



## Major Diseases of Vegetable crops and their symptoms:

### 1. Damping off:

- ❖ Sudden collapsing of the seedlings occur in the seed bed.
- ❖ Firstly complete rotting of seedlings occur and then infected tissues become soft and watery.
- ❖ The seedlings are attacked at the collar region and the attacked seedlings are toppled down.
- ❖ The disease spreads through fungi present in the soil.



### 2. Alternaria leaf spot:

- ❖ Cracks appearing in leaf spot.
- ❖ The two species of *Alternaria* occur commonly, causing the characteristic leaf spots with concentric rings.
- ❖ The spots are mostly irregular, 4-8 mm in diameter and may coalesce to cover large areas of the leaf blade.
- ❖ Severely affected leaves may drop off prematurely.

### 3. Early blight:

- ❖ Brown spots with concentric rings in a bull's eye pattern with yellow margin.
- ❖ Fruits gets infected through calyx or stem attachment.
- ❖ Brown concentric rings on fruits.



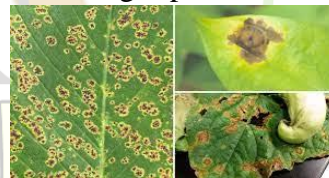
### 4. Late blight:

- ❖ Water-soaked black lesions on leaves and stems.
- ❖ Lesions expand rapidly and the entire leaf becomes necrotic.
- ❖ White sporulation (sporangia and sporangiophores) on leaves.



### 5. Anthracnose:

- ❖ Dark streaks on under-leaf surface.
- ❖ Dark brown and sunken lesions that may girdle the stem.
- ❖ Slightly sunken spots form on the pods, which if severe may distort the pod.
- ❖ Dark brown fruiting bodies from which oozes an exudates of pink to orange spores.



### 6. Bacterial leaf spot:

- ❖ Spots developed on leaves at the base of the plant.
- ❖ Spots are soft when tissue is wet, but sunken and brittle when leaves are dry.
- ❖ The bacterium can move from the leaf through petiole into the stem, resulting in canker.



### 7. Bacterial wilt:

- ❖ Wilting.
- ❖ Yellowing.



- ❖ Stunting.
- ❖ Die-back of plants.



## 8. Downy mildew:

- ❖ Leaves prematurely yellow and fall from plants.
- ❖ Black speckling might be visible, which may later be surrounded by patches of yellow.
- ❖ If the infection becomes systemic, black to grey flecking or streaking may be present in the stems.



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