

Diseases and Pests

Disease of Chilli and Eggplant

FUNGAL DISEASES:

- Fusarium wilt

- Powdery mildew
- Anthracnose
- Root rot
- Damping-off
- Leaf spot

BACTERIAL DISEASES:

- Bacterial wilt
- Bacterial spot

VIRAL DISEASES:

- Tobacco mosaic virus
- Cucumber mosaic virus
- Tomato spotted wilt virus

DISEASES OF OKRA

FUNGAL DISEASES:

- Fusarium wilt
- Powdery mildew
- Leaf spot
- Damping-off

BACTERIAL DISEASES:

- Bacterial wilt
- **VIRAL DISEASES:**
- Okra Leaf Curl Virus

CONDITIONS CONDUCIVE TO INFECTION

FUNGI AND BACTERIA

Favoured by high temperature and high humidity following periods of wind and rain

VIRUS

Favoured by the population of its vector around the plants

FUNGAL DISEASE: FUSARIUM WILT

Fungi: Fusarium oxysporum

Symptoms:

- Yellowing of leaves at the edges and eventually spread to lamina
- 2) The leaves dry up and eventually wilt

The vascular system is blocked by fungal spore and cause water and nutrient stress and eventually wilting occur and followed by death





POWDERY MILDEW

Fungi: Erysiphe cichoracearum and Sphaerotheca fuliginea

Symptoms:

1) Blotches of small and white powdery coatings on surface of the leaves and sometimes on the stem.

2) The powders enlarge rapidly until it covers almost all the leaves surface

3) Eventually, the infected leaves turns yellow, then turns dry and brown.

The white powder is composed of spores of the fungi that can be blown by winds to the vicinity of the infected plants.





ANTHRACNOSE

Fungi: Colletotrichum species

Symptoms:

- I) Usually infects the fruits instead of the leaves
- 2) A small, water-soaked and circular spot
- 3) This spot increase in size
- 4) Over time, the centre of the lesion turn black
- 5) Infected fruits have a very short storage life





LEAF SPOT



Fungi: Cercospora species

Symptoms:

I) Usually affects older leaves first

2) Small, water- soaked circular spot which surrounded

by dark brown margins

- 3) The centre of the spot eventually turns grey
- 4) The spots will spread upwards and infect younger les
- 5) Lastly, the leaves turns yellow to brown and slow



BACTERIAL DISEASE: BACTERIAL WILT



Bacteria: Ralstonia solanacearum

Symptoms:

I) The upper leaves will wilt first followed by the lower leaves

2) No yellowing of leaves

3) The vascular browning will occur along the stem and into the large petioles of the leaves



VIRAL DISEASES: MOSAIC VIRUS

- Virus: Tobacco mosaic virus
- Vector: Aphids, whiteflies, flea beetle and thrips
- Symptoms:
- I) It mostly affects the leaves
- 2) Chlorotic pale yellow appear along the veins of the leaves



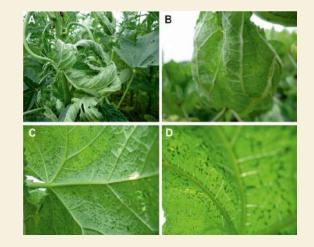
ENATION LEAF CURL

Virus: Leaf Curl Virus

Vector:Whiteflies

Symptoms:

- I) Blisters are seen on both young and mature leaves
- 2) Curling of leaves in an adaxial direction
- 3) Size of leaf become reduced
- 4) Fruits produced on the infected plants are few and deformed



CONTROL OF FUNGAL AND BACTERIAL DISEASE

- I) Use of disease-resistant varieties
- 2) Avoid watering directly to the leaves as fungi grows best in moist condition (drip irrigation is preferred than spray irrigation)
- 3) Monitor the crops regularly
- 4) As the symptom of disease become apparent, remove the infected part immediately
- 5) Avoid any unnecessary movements of agriculture tools from infected to healthy plant/area
- 6) Apply appropriate fungicides

Control of viral disease

- I) Use of disease-resistant varieties
- 2) Control insects population as they are the common vector for virus
- 3) Apply appropriate insecticides
- 4) Put netting around the plant

Pests



Aphids

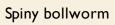


Whiteflies



Armyworm







Thrips



Leafhopper

Fruit borer





Mealy bugs



Leafroller

Okra white grubs



Cotton worm



Flea beetle



Chili thrip

HOW TO CONTROL PEST ATTACK?

Inorganic way:

I) Application of insecticides (easiest and faster)

Organic way:

I) Crop rotation – the practice of growing different types of crops at different time and at the same area of land

- Best to rotate with any green vegetables and legumes
- Hint: Rotate with different family from chilli, eggplant and okra
- Okra (Malvaceae), Chilli (Solanaceae) and egg
- 2) Netting



FUNGICIDES APPLICATION

Disease: Powdery mildew

Fungicide: Daconil

How to prepare:

Fill the tank to half full with clean water. For IOL of water - add 20g and mix well For a IOOOL (hectare of land) – add 2kg and mix well

When to apply:

When the symptoms already apparent.

Apply directly to both upper and lower side of the leaves. Do not apply to the newly grown seedlings If disease is persisted, apply a different fungicides for these diseases other than Daconil to prevent fungicides resistant.



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Disease: Damping-off **Fungicides**: Monceren 25 WP

How to prepare:

Fill the tank to half full with clean water 10L of water (for 1 hectare) - add 10g and mix well 500L of water – add 500g and mix well.

When to apply:

When the symptoms already apparent.

Apply directly to both upper and lower side of the leaves. Apply every 7 days interval when necessary

If disease is persisted, apply a different fungicides for these

diseases other than Monceren 25 WP to prevent fungicides resistant.



Disease: Leaf spot Fungicides: Dithane NT How to prepare:

Fill the tank to half full with clean water IOL of water - add 20g and mix well 900L of water – add I.8kg and mix well.

When to apply:

When the symptoms already apparent.

Apply directly to both upper and lower side of the leaves. If disease is persisted, apply a different fungicides for these diseases other Dithane NT to prevent fungicides resistant.



INSECTICIDES APPLICATIO

Insect: Armyworm

Insecticides: Glamer

How to prepare:

Fill the tank to half full with clean water 10L of water - add 10ml and mix well 500L of water – 500ml and mix well.

When to apply:

When the symptoms already apparent.

Apply directly to both upper and lower side of the leaves. If disease is persisted, apply a different fungicides for these diseases other Dithane NT to prevent fungicides resistant.









For insect: Spiny bollworms





For insect: Aphid, thrips and whiteflies







For insect: Leaf roller

