Group : fungi

Common name : Anthracnose

Scientific name : *Colletotrichum coccodes*

Host : tomatoes

Life cycle:

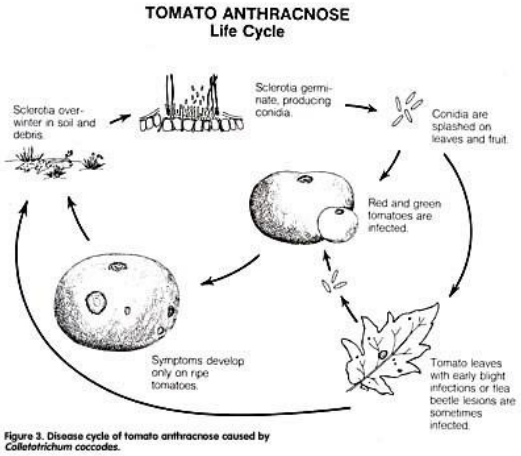


Figure 3. Disease cycle of tomato anthracnose caused by *Colletotrichum coccodes*.

This fungal disease usually starts on the leaves of a plant, in so deciduous plants in makes the leaves fall or litter. When spring comes in receives a good amount of moisture as the seeds are starting to germinate. It reproduces during germination and in wet environments it can produce for a whole year and distribute spores all over to spread with the current environmental factors.

Related environmental conditions.

Tomatoes grow in various environmental conditions, they prefer a not so hot environment neither an extremely cold temperature, they grow well in temperatures that are between 20 and 25 degrees Celsius. Moist environments enhances the development of fungus so you do not want your tomatoes to live in those conditions.

Symptoms

The symptoms can only be recognized on the ripen tomatoes and not on the leaves, the Common symptoms to look for are the black spots that appear around the tomatoes, at first they start as small black sports and as time goes by the get bigger and bigger.

Prevention and control

Tomatoes are more likely to capture diseases as they grow because of their susceptibility. This black spot disease is a soil borne disease so preventing it is not as easy as it sounds, there are several protocols to follow. Firstly, you have to consider resistant seeds and make sure you use clean and healthy seeds because once the tomato is affected by this fungus disease it cannot be treated.

Non chemical methods.

Selection of clean soils with neutral ph.

Proper irrigation system

Remove dead plants and affected plants.

Practice crop rotation.

Chemical method

Apply fungicides as soon as possible e.g bonile fungonil.

Use copper spray, they are more effective when applied before the rainfall.

Mertely and Legard, 2003, Farr et al. (2006)

Group : bacteria

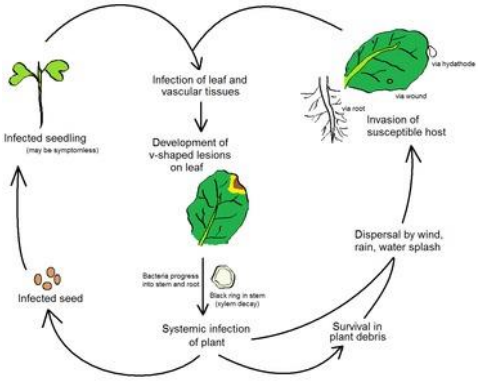
Scientific nomenclature : *Erwinia chrysanthem*

Common name : soft rot

Host : carrot

Sample.

Life cycle



The bacteria enters the root through injured cuts or wounds, this becomes easier when there are humid conditions around the plant makes it easy for the bacterial to cut through by its self and reproduce inside the root whilst spreading to the leaves for further damage. Unfortunately, if it affects you root then theres nothing you can do to stop it besides preventing for the next harvest. The bacteria takes about 6days to show its presence 3days to reproduce rapidly.

Causes and related environmental conditions.

Bacterium soft rot is more likely in hot environments it usually follows wet conditions. Poor irrigation can cause this disease because all it needs to reveal its self is highly moist conditions. If the planted area is irrigated over, then the water logging will form the bacteria that will later cause soft rot on the carrot root.

Symptoms.

This disease is characterised by soft and watery feel, black colour and slim shape that is caused by that excessive water. It is appearing to the human eye as an unappetising vegetable as well. It has a bad smell on those soft spots.

Prevention and control

Non chemical.

Advanced soil drainage must be taken into consideration before planting.

Remove the left overs or plant residues to keep the soil clean for the next plant and reducing the chances of diseases like this one.

Do not use soils that hold water

Practice crop rotation with plants like beans.

Chemical methods.

Unfortunately, once the plan is affected it cannot cure but at least it can be prevented.

The bacteria can be prevented by applying fungicides before planting, fungicides like Colonizer 440WP.

Another chemical that can be applied is Trinity gold 45WP.

J. J. Nunez, R. M. Davis 2007)

Group : nematode

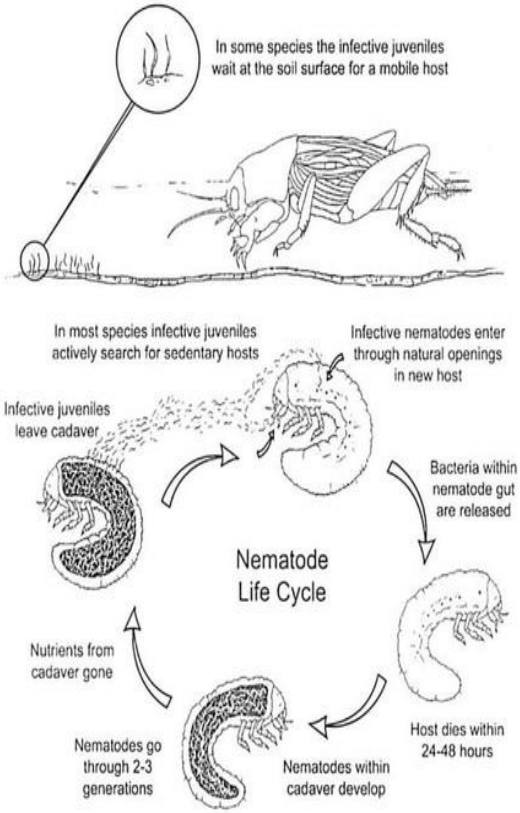
Scientific nomenclature : *Heterodera schachtii*

Common name : eelworm

Host : cabbage

Sample

Life cycle



Infective youngs look for a host, and enter into the body cavity through openings. Then a bacterium is released, which multiples and rapidly kills the host, Nematodes feed on the host. They mature into adult male or females and leave the host to look for another host to damage. Within a few days the cycle completes so basically nematodes growth all depend on the conditions inside the host.

Causes and related environmental conditions.

Under good environmental conditions the nematodes find less time to visit the plant, for an example when the temperatures are hot they become active but as soon as winter kicks in they become dormant because they cannot stay alive for long when they are exposed to cold conditions. These small insects evolved from fungi and bacteria way back.

Symptoms

Signs are usually noticeable on those affected plants it is not so difficult to tell, the change in colour first. The plant leaves become yellowish in colour and the growth of a plant appears to be restricted or stunted. The plant wilts to death until it becomes utterly dry.

Prevention and control

Non-chemical methods.

- Plant rotations is highly recommended
- Avoid soils with high temperature levels
- Shuffle the soil to expose them in winter
- Rapid irrigation

Chemical methods.

- Apply nematocide
- Cultivate the area and put in fungicides, they are effective too.
- Irrigate land first and apply heat