



وزارة التعليم العالي والبحث العلمي

جامعة الانبار / كلية الزراعة

قسم وقاية النبات

(امراض خضر - Vegetable diseases)



Fourth stage

المرحلة الرابعة

Plant Protection Dept.

قسم وقاية النبات

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5-Common scab of Potato

Economic importance:

- 1- This disease spreads in dry, alkaline and high temperature soils.
- 2- The best temperature for the growth of the causative fungus is 32 °C and the most suitable pH is 8.5 PH.
- 3- The disease is more severe in dry soil and less in moist soil.
- 4- The bacteria favor higher vital tubers and infection occurs through stomata and lentils.
- 5- The spread of the disease stops on the tubers as soon as the tubers separate from the mother plant.

Symptoms:

On infected potato tubers, the symptoms of infection are:

1-Deep or pitted scab

The symptoms of superficial scabies are the appearance of rough scabies areas consisting of a cork tissue that results from the epidermal cells and the color of the rest of the tuber tissues is darker.

2- Shallow scab

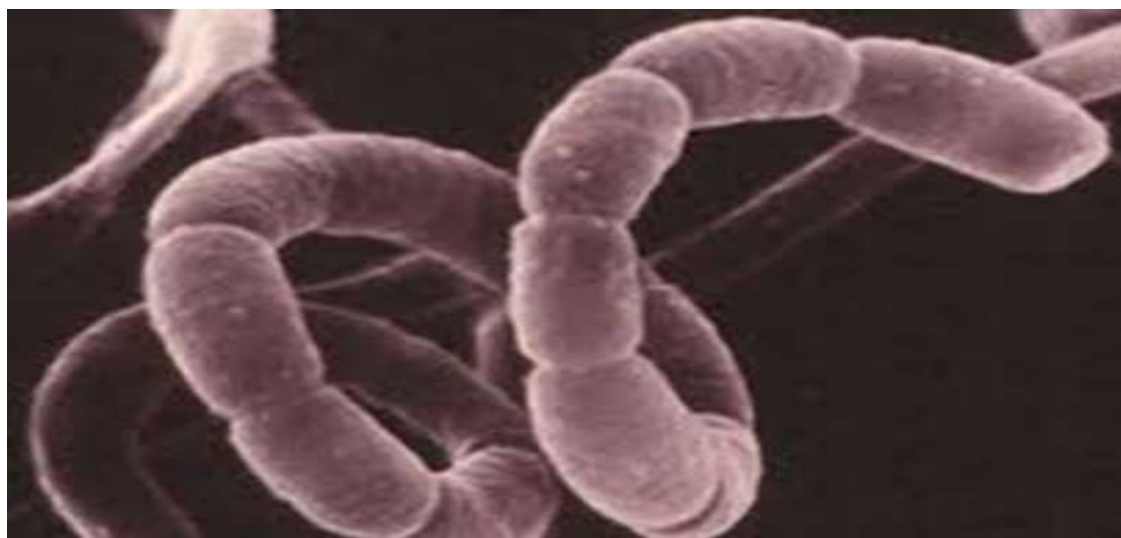
It consists of sunken areas that reach a distance of 1.3 m and are darker in color than the pustules of superficial scabies.



Symptoms of infection Common scab of Potato

Pathogen:

The disease is caused by the bacteria *Streptomyces scabies*, which belong to the group of actinomycetes. The parasite is composed of thin, branched, spiral-shaped mycelium hyphae with small transparent cylindrical sporulations, which sprout the bacterium by forming one or two tubes.



Streptomyces scabies

Control:

- 1- Cultivation of resistant varieties of potatoes and it was found that varieties with rough skin are more resistant than varieties with soft skin.
- 2- Following a long cultivation cycle in which potatoes are alternated with non-susceptible crops, as well as the removal of bushes.
- 3- Abundant irrigation at the time of tuber formation reduces the chances of infection with the disease, as this leads to a decrease in the soil temperature and thus reduces the activity of the parasite.
- 4- Reducing soil alkalinity by using fertilizers with an acidic effect such as ammonium sulfate and superphosphate.

6-Tomato mosaic disease

Symptoms:

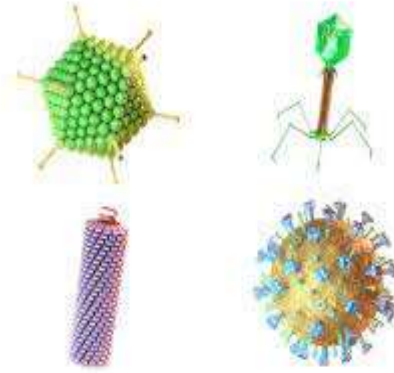
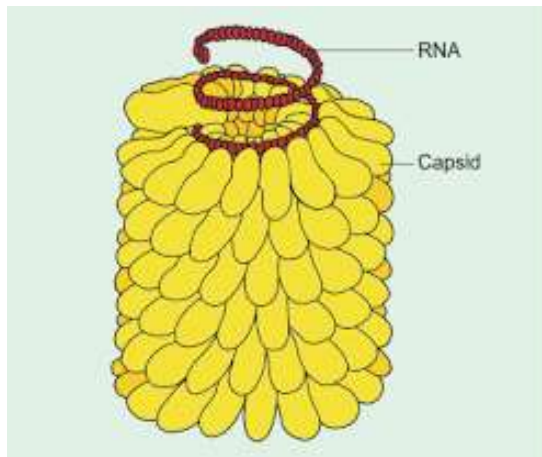
- 1- Symptoms appear in the form of pale green areas surrounded by dark green areas, and the green areas recede upward, giving the affected part a rough appearance.
- 2- Infection of seedlings leads to the death of modern plants or severe stunting of plants.



Symptoms of tomato mosaic disease

Pathogen:

- 1-Tomato mosaic virus is caused by Tobacco Mosaic Virus (TMV).
- 2- The virus is found in the seed coat, and the infection rate in the seed may reach more than 94%. The virus loses its effectiveness in tomato juice after 10 minutes at a temperature of 93.
- 3- The virus maintains its vitality for more than 50 years in infected or dried tobacco leaves



TMV

Control:

- 1- Cultivation of resistant tomato varieties.
- 2-Using healthy seeds from the virus. The virus carried outside and inside the seeds can be removed by heat treatment of dry seeds for a period of 2-4 days at a temperature of 70 °C without damaging the vitality of the seeds.
- 3- Immersion of seeds or seeds in a dilute solution of tri-sodium phosphate at a concentration of 10% for 20 minutes produces an alkaline environment that inhibits the activity of the virus.

7- Sun scald disease

Symptoms:

- 1- Symptoms appear on leaves and fruits with yellow areas on hot, sunny days.
- 2- Tomato fruits are infected at maturity as a result of falling leaves and lose
- 3- The water affected part of the fruit shrinks and turns into gray spots in green fruits



Sun scald disease

Cause:

Caused by the intense heat of the sun and the dryness of the atmosphere surrounding the plant leads to a rise in temperature.

Control:

- 1- Cover the fruits with a thin layer of straw during hot, dry weather.
- 2- Combating diseases that result in plant leaf fall.
- 3- Avoid planting varieties whose leaves fall naturally in areas prone to disease.

8- Blossom end rot

Affects Tomatoes and Peppers.

Symptoms:

- 1- The disease begins in the form of water spots around the flower tip area of the fruit.
- 2- The spot takes a black color and expands rapidly until it covers half the size of the fruit or more. The affected tissue shrinks and becomes a low, black grit.



Symptoms of syphilis mold disease

Cause:

- 1- Cultivation of tomato and pepper plants in light sandy soils.
- 2- Increasing the rate of nitrogen fertilizers such as sodium nitrate and ammonium nitrate.
- 3- Calcium deficiency leads to the death of the growth areas in plants, including the top of the fruits.

Control:

- 1- Breeding and cultivating resistant varieties.
- 2- Adding fertilizers rich in superphosphate to reduce the incidence of disease.

3- Cover plants in periods of heat and drought.

References

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