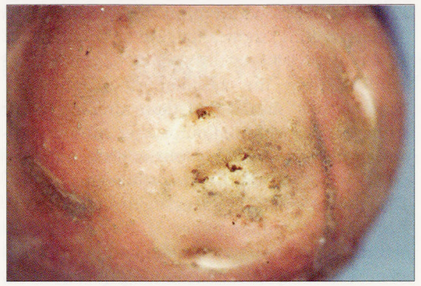


5. Recently harvested tubers showing black sprout initials in the eyes, killed by brown rot bacteria. (Photo PRI)

6. Recently harvested tubers, a number of which with 'dirty eyes' due to brown rot. (Photo PRI)

a strong multiplication of the pathogen. The bacteria spread to all parts of the plant. Neighbouring plants can become infected when diseased roots start leaking bacterial slime. Soil contaminated in this way can lead to a large number of infected tubers during harvest. The great quantity of slime excreted through the eyes of affected tubers is a striking phenomenon. In turn, this bacterial slime is an important source of infection for other tubers during harvest and storage.

Crop rotation rapidly reduces the pathogen in the soil, but it is hard to eradicate it completely. The bacteria prove to be rather persistent in watercourses. They are found to multiply in the roots of bitter sweet (*Solanum dulcamara*) that hang freely in water. Bitter sweet is a carrier without symptoms.

7. Vascular ring affected by brown rot and 'brown' rot penetrating from the outside. (Photo S&C)

Prevention/control

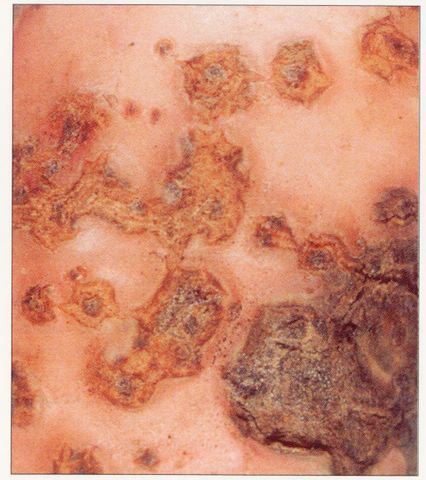
The use of disinfectants for seed and soil does not offer a solution. Brown rot is a disease that is subject to plant quarantine legislation. Prevent the introduction of brown rot on farms by using only healthy not contaminated seed potatoes. The best approach is to use certified seed from a reliable provider. It is advisable to use water for irrigation and spraying only from a reliable source. Do not use non-disinfected surface water for these purposes.

L.J. Turkensteen

COMMON SCAB

General

Common scab is caused by three *Streptomyces* species, (*Streptomyces scabies, S. europaeiscabiei* and *S. stelliscabiei*). It is a frequently occurring skin defect of tubers grown in most soil types. The pathogen has morphological characteristics of both fungi and bacteria in common. It belongs to a separate group of organisms known as *Actinomycetes*. At present, this group is classified as belonging to the bacteria. Unlike netted scab, common scab does not affect yield quantitatively, but it does negatively affect quality. The sensitivity of potato varieties for common scab varies enormously.



2. Fairly deep common scab. (Photo S&C)

Symptoms

Symptoms may vary greatly, depending on potato variety and pathogen population. Different types of common scab can be distinguished i.e. superficial scab, both a russet type and star shaped type (Photo 1), deep pitted scab (Photo 2), and raised scab (Photo 3). The symptoms may be confused with those of netted scab, powdery scab, root-knot nematode, scab-like symptoms caused by *Rhizoctonia solani* and some viruses (potato mop top, ABC disease). The most common symptom is the formation of roughly star-shaped (Photo 4), superficial, sometimes crater-like lesions with diameters of 0.5-1.5 cm. The disease usually starts as an infection of lenticels, being formed on young tubers. The lesions expand by infection of adjacent epidermis and underlying cortical tissues, followed by separation of healthy and diseased tissues through formation of a cork layer. When the tuber expands the cork layer tears, healthy tissues become infected and new local cork layers are formed. This process is repeated several times, ultimately resulting in star-shaped and russet type of patterns in the skin (Photo 5). Unlike that of powdery scab, this corky tissue cannot be removed without damaging the underlying tissues.

If potatoes are harvested when the soil is still moist, a thin, whitish-grey layer of spores may often still be seen on the lesions, which disintegrates rapidly when the tuber surface dries. Severe attack may cause a considerable reduction in the number of sprouts.

1. Severe, superficial common scab on a tuber. (Photo S&C)

Life cycle

The pathogen causes damage in many crops (sugar beet, radish, black radish, carrot and parsnip); grass and cereals greatly increase the population. That is why common scab cannot be controlled by crop rotation. In areas with a history of common scab, its presence on seed potatoes