

Potato XXII

Common Scab

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Identification and Life Cycle

Common scab is caused by at least three species of filamentous bacteria in the genus *Streptomyces*, and occurs in most potato production areas of the world. The pathogens resemble fungi in culture, but unlike most bacteria, produce spores. *S. scabies* is probably the most important species causing common scab in the High Plains region. Disease is initiated when soilborne or seedborne bacteria infect tubers through lenticels and produce toxins that cause excessive cell growth and death. Disease is most severe in warm, dry soils. The common scab pathogens can infect many diverse seedlings, but the role of this infection is unclear in the epidemiology of the organism. The pathogens survive between potato crops in seed tubers, soil, and perhaps pathogenically on other plants.

Plant Response and Damage

Common scab symptoms occur almost exclusively on tubers, but *Streptomyces* spp. reportedly infect stolons as well. Early disease symptoms on tubers are browning and excessive cell growth, but mature lesions are 0.2 to 0.4 inches and circular to irregular in shape. Lesions often grow together with time. At harvest, lesions may be superficial (russet scab), slightly raised (erumpent scab), or sunken (pitted scab). The types of lesions that develop are probably related to the strain of *Streptomyces*, environmental conditions, and timing of infection. Common scab does not reduce yield, but reduces tuber quality and grade.

Management Approaches

Biological Control

No biological control practices have been developed for common scab.

Cultural Control

Plant high quality seed free from common scab. A three to four year rotation to other crops provides some disease suppression, but does not eliminate the pathogens from soil. Varieties vary widely in their disease reaction, and resistant or less susceptible varieties should be planted if available. Avoid high pH soils and amendments that increase soil pH. Maintaining high soil moisture (near field capacity) for four to six weeks beginning at tuber initiation will reduce disease incidence and severity.

Chemical Control

Seed treatments provide some control of common scab.

Common/Trade Name	Rate	Remarks
Maneb		
Maneb 75 DF	1 lb per 10 gal of water	Dip whole or cut tubers, spread treated seed pieces in a cool place if held before planting.
Maneb 80 WP	1 lb per 10 gal of water	Dip whole or cut tubers, spread treated seed pieces in a cool place if held before planting.
Seed Treatment for Potatoes LD (plus Streptomycin Sulfate)	1 lb per 100 lb of seed	Apply for thorough coverage to whole or cut seed.
Mancozeb		
Dithane DF	1.25 lb per 50 gal of water	Dip whole or cut tubers, spread treated seed pieces in a cool place if held before planting.
Dithane F-45	1 qt per 50 gal of water	Dip whole or cut tubers, spread treated seed pieces in a cool place if held before planting.
Dithane M-45	1.25 lb per 50 gal of water	Dip whole or cut tubers, spread treated seed pieces in a cool place if held before planting.
Dithane WSP	1.25 lb per 50 gal of water	Dip whole or cut tubers, spread treated seed pieces in a cool place if held before planting.
Manzate 75 DF	1.25 lb per 50 gal of water	Dip whole or cut tubers, spread treated seed pieces in a cool place if held before planting.
Penncozeb 75 DF	1.25 lb per 50 gal of water	Dip whole or cut tubers, spread treated seed pieces in a cool place if held before planting.
Penncozeb 80 WP	1.25 lb per 50 gal of water	Dip whole or cut tubers, spread treated seed pieces in a cool place if held before planting.
Potato Seet Treater 6%	1-1.3 lb per 100 lb seed	Apply for thorough coverage to whole or cut seed.
Potato Seet Treater PS	1 lb per 100 lb seed	Apply for thorough coverage to whole or cut seed.

Metiram

Potato Seed Treater	1-1.5 lb per 100 lb seed	Apply for thorough coverage to whole or cut seed.
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