

# Potato XXII

## Blackleg

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### Identification and Life Cycle

Blackleg is caused by several species of bacteria in the genus *Erwinia*, namely *E. carotovora* subsp. *carotovora*, *E. carotovora* subsp. *atroseptica*, and *E. chrysanthemi*. These bacteria can be carried in and on seed tubers, primarily in lenticels and wounds, and are spread among seed pieces during cutting, handling, and planting. When planted, the bacteria begin to rot seed pieces. The bacteria may totally rot seed before emergence, or a sprout may emerge and bacteria may move upward in water conducting tissues and cause blackleg. Bacteria can be washed from infected seed pieces and carried in soil water to daughter tubers, where they infect them through lenticels and wounds. Movement of bacteria through stolons from diseased plants also may infect daughter tubers. Disease is most severe when warm temperatures follow planting of contaminated seed pieces in cool, wet soils. *Erwinia* spp. that cause blackleg survive between potato crops in and on tubers, crop debris, irrigation water, and pathogenically on other hosts.

### Plant Response and Damage

Blackleg symptoms may occur at any stage of plant development. As bacteria move upward on stems, small water-soaked lesions become apparent at the base of stems. Lesions can expand and extend into the upper plant canopy. Affected tissue is soft under humid conditions, but becomes shriveled under dry conditions. Vascular tissues are generally a light brown to black color above areas of visible blackleg symptoms. Plants are stunted, and have wilted, chlorotic foliage.

### Management Approaches

#### Biological Control

No biological control practices have been developed for blackleg.

#### Cultural Control

Plant well-suberized seed pieces in warm, well-drained soils. Avoid irrigation before emergence, which can greatly increase seed piece decay and blackleg development. Adjust harvest and handling-equipment to minimize tuber bruising and injury. If possible, avoid harvesting when soil temperatures are greater than 68 to 77°F. Cover trucks to prevent tuber heating during transport. In storage, promote rapid wound healing

with 95% relative humidity and temperatures of 50 to 55°F for 10 to 14 days. Tubers should be stored at less than 50°F with adequate aeration after wound healing.

## Chemical Control

Trade Name	Rate	Remarks
<b>Streptomycin</b>		
Seed Treatment for Potatoes LD	1 lb per 100 lb of seed	Apply for thorough coverage to whole or cut seed.
Agri-mycin 17	100 ppm (4 oz per 100 gal of water)	Soak cut seed pieces in streptomycin solution for several minutes.

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