

Potato XXII

Black Scurf

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Identification and Life Cycle

Black scurf is caused by certain strains of the fungus *Rhizoctonia solani*, and occurs wherever potatoes are grown. *R. solani* has a very broad host range, but the strains that attack potato (mainly AG-3) generally do not attack other hosts. Disease is initiated from soil-borne or seed-borne sources that infect developing sprouts, stolons, and roots. Infection may occur any time during the season, but young tissues are most susceptible and are most severely infected when emergence is delayed in cool soils. The pathogen can survive several years as mycelium or dormant resting structures (sclerotia) in soils, organic matter, and crop debris. Soilborne and seedborne inoculum can both be important in the black scurf development.

Plant Response and Damage

Black scurf appears on tubers as dark brown to black, irregularly-shaped sclerotia on the surface of tubers that resemble soil that will not wash off. Sclerotia range in size from small to large, and may be flat to slightly raised, but do not penetrate the periderm. Black scurf reduces tuber marketability, seed quality, and may also reduce yield. The black scurf pathogen also causes *Rhizoctonia* stem canker.

Management Approaches

Biological Control

No biological control practices have been developed for black scurf.

Cultural Control

Plant high quality seed free from the black scurf pathogen in warm, well prepared soils that promote rapid germination. If soils are cool (below 46°F), shallow planting (2 inches from the surface) will reduce time to emergence and sprout infection, but not root and stolon infection. Crop rotations of at least 2 years between potatoes will reduce soilborne inoculum, but longer rotations may be necessary in cool, wet production areas. Potato varieties vary somewhat in their reaction to black scurf; highly susceptible varieties should be avoided if possible.

Chemical Control

Fungicides applied as broadcast, in-furrow, or seed treatments reduce black scurf severity, but are most effective when combined with cultural practices that reduce seed and soil-borne inoculum.

Common/Trade Name	Rate	Remarks
Fludioxonil		
Maxim	0.5 lb per 100 lb seed	Also controls Fusarium dry rot, and seed-borne Helminthosporium solani (Silver scurf); Does not control bacterial diseases; Resistance is possible.
Maxim MZ	0.08 – 0.16 fl.oz per 100 lb seed	Also controls Fusarium dry rot, and seed-borne Helminthosporium solani (Silver scurf); Does not control bacterial diseases; Resistance is possible.
Maxim 4FS	0.08 – 0.16 fl.oz per 100 lb seed	Also controls Fusarium dry rot, and seed-borne Helminthosporium solani (Silver scurf); Does not control bacterial diseases; Resistance is possible.
Maneb		
Seed Treatment for Potatoes LD (plus Streptomycin Sulfate)	1 lb per 100 lb of seed	Also controls Fusarium dry rot and blackleg; Apply for thorough coverage to whole or cut seed.
Thiophanate-methyl		
TOPS 2.5D	1 lb per 100 lb of cut seed	Also controls Fusarium dry rot; Treat cut seed; resistance of some organisms is possible.
TOPS 5	0.5 lb per 100 lb of cut seed	Also controls Fusarium dry rot; Treat cut seed; resistance of some organisms is possible.
TOPS MZ (plus Mancozeb)	0.75-1.0 lb per 100 lb of cut seed	Also controls Fusarium dry rot and seedborne silver scurf and late blight; Treat cut seed; TOPS MZ is not efficacious against systemic seed-piece infections or airborne (secondary inoculum. Resistance is possible.

In-furrow fungicides

PCNB

Blocker 10G and 4F	Apply as in-furrow granular 1.65 lb/1000 linear ft. of row (25 lb/A) in 8.5" bands or as in-furrow. Spray 5.2-10.4 fl.oz/1000 linear ft. of row (5 – 10 pt/A) in 8.5" band. Cover during hilling. Use 10 – 2- gal water carrier.	Do not harvest within 45 days of application
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Azoxystrobin

Quadris	Apply 0.4 – 0.8 fl.oz/1000 linear feet of row in 5–15 gallons of water in 6-7" band. Cover during hilling.
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Categories: Potato, Disease, Black Scurf

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