

## Potato XXII

# Fusarium Dry Rot

*Howard F. Schwartz and David H. Gent*

### Identification and Life Cycle

Fusarium dry rot is an important postharvest disease of potato worldwide. Fusarium dry rot can be caused by several different Fusarium spp, including *F. solani*, *F. sambucinum*, *F. avenaceum*, *F. culmorum*, and *F. oxysporum*, but *F. solani* appears to be the most aggressive and important. Dry rot Fusarium spp. originate from contaminated seed or infested soils, infecting tubers through wounds in the periderm that are common after potato cutting and handling practices. Fusarium spp. introduced into soils by contaminated seed can persist for years. Soilborne inoculum can infect tubers through wounds caused by other pathogens, insects, or during harvest and handling.

### Plant Response and Damage

Fusarium dry rot symptoms appear as small brown areas that develop about 1 month after harvest. The affected area enlarges in all directions, causing sinking and wrinkling of the periderm over the lesion. Fungal mycelium and spores often line dry rot cavities, and may emerge from the dead periderm. Tubers may completely rot, shrivel, and become mummified after long periods of time in storage. The disease reduces yield, marketability, and seed quality. Direct yield losses range from 6 to 25%, but may be as high as 60% with severe infections.

### Management Approaches

#### Biological Control

No biological control practices have been developed for Fusarium dry rot.

#### Cultural Control

Plant high quality seed free from Fusarium dry rot pathogens into soils without a history of Fusarium dry rot. Varieties vary in their reaction to dry rot, and highly susceptible varieties should be avoided. Harvest tubers at least 14 days after vine kill to promote good skin set and reduce skinning injury that can increase storage dry rot. Avoid harvesting cold tubers that are more susceptible to injury. Provide conditions that promote rapid wound healing early in storage, including high humidity, good aeration, and temperatures of 55 to 64°F for 14 to 21 days. Since Fusarium dry rot increases with length in storage, short-term storage is advisable for fields where severe infection is expected.

## Chemical Control

Post-harvest fungicide applications can reduce Fusarium dry rot losses, but strains of *F. solani* and *F. sambucinum* resistant to benzimidazole fungicides are widespread.

Trade Name	Target Pathogen	Rate	Remarks
<b>Chloroine</b>			
Agclor 310	Decay causing organisms	10-15 fl oz per 100 gal water	For treating potatoes in a pit system use a concentration of 100 to 15 ppm Cl <sub>2</sub> .
<b>Thiabendazole</b>			
Decco Salt No. 19	Fusarium Tuber rot	5.67 per 2000 lb of potatoes	Seed potatoes should be treated before cutting.
Mertect 340-F	Fusarium Tuber rot	Conveyer line: 0.42 fl oz per 2000 lb of potatoes; Dipping: 0.42 fl oz per 1 gal water, dip tubers for 20 sec.	Seed potatoes should be treated before

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