

Canola and Mustard

Foot Rot, Crown Rot, and Wirestem

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Identification and Life Cycle

Foot rot, crown rot, and wirestem are caused by the fungus *Rhizoctonia solani*. Diseases caused by *R. solani* are associated with warm soil temperatures, excess soil moisture, and delayed seedling emergence. Wirestem develops when the fungus invades the cortical tissue and girdles young stems. Plants remain alive and continue to grow slowly, but give rise to spindly plants. *R. solani* can survive in soil as sclerotia, pathogenically on alternate hosts and weeds, and saprophytically on crop residues.

Plant Response and Damage

Foot rot causes premature ripening of plants. Infected plants are found singularly or in patches. Hard, clearly defined, brown to red lesions are found on diseased stems near the soil line. A severe infection causes a girdling and kills plants. The crown rot disease caused by *R. solani* induces necrotic lesions on leaves and eventual defoliation. Wirestem symptoms appear as reddish brown to black, sunken lesions that form on cortical tissue and stems. Large lesions may girdle the stem and kill the plant, or produce a spindly, stunted, and yellow plant.

Management Approaches

Biological Control

Deny (*Burkholderia cepacia*) is registered for protection of roots from *Fusarium*, *Rhizoctonia*, and *Pythium* spp., but its efficacy in the High Plains is unknown.

Cultural Control

Encourage rapid seed germination and vigorous growth of seedling by planting high quality seed in warm, firm, well-prepared seedbeds. Early plantings tend to be affected by crown rot more than later plantings. Provide adequate but not excessive fertilization to promote vigorous growth of seedlings. Avoid planting into cold soils, excessive irrigation, poor drainage, and compaction. Ensure crop residues from the previous crop

are thoroughly decomposed before planting. Crop rotation with non-hosts (i.e., small grains) may provide some reduction in foot rot and wirestem. Control volunteer canola, mustard, and weeds in and around fields.

Chemical Control

Fungicides are most effective when used in combination with cultural control strategies.

Product List for Foot Rot, Crown Rot, and Wirestem:

Pesticide	Rate per 100 lb seed	Application Frequency (days)	Remarks
Captan			
Captan 75	6-9 oz	Seed treatment	Broad spectrum, but weak against Pythium and Phytophthora spp.
Captan 30-DD	1.25 fl oz	Seed treatment	Broad spectrum, but weak against Pythium and Phytophthora spp.
Captan 400	1-2 fl oz	Seed treatment	Broad spectrum, but weak against Pythium and Phytophthora spp.
Captan 400-C	1-2 fl oz	Seed treatment	Broad spectrum, but weak against Pythium and Phytophthora spp.
Fludioxonil			
Maxim 4FS	0.08-0.16 fl oz	Seed treatment	Suppression of Fusarium and Rhizoctonia spp.
Thiram			
42-S Thiram	8 fl oz	Seed treatment	Broad spectrum
Thiram 50WP	8 oz	Seed treatment	Broad spectrum

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Categories: Canola and Mustard, Disease, Foot Rot, Crown Rot, Wirestem

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