

Alfalfa X-20

Damping-Off and Seedling Blight

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Identification and Life Cycle

Many pathogens can cause damping-off and seedling blight of alfalfa seedlings in the High Plains region, including *Pythium* spp., *Phytophthora* spp., and *Rhizoctonia* spp. Other fungi that cause alfalfa damping-off such as *Cylindrocladium crotalariae* and *Mycleptodiscus terrestris* seldom are found in the High Plains region. Damping-off is associated with cool (*Pythium* and *Phytophthora* spp.) to warm (*Rhizoctonia* spp.) soil temperatures and excess soil moisture. Pathogens associated with damping-off are common soil inhabitants and can survive in soil as dormant oospores or sclerotia, pathogenically on alternate hosts and weeds, and saprophytically on crop residues.

Plant Response and Damage

Damping-off can occur before or after alfalfa emergence. Pre-emergence damping-off results in a brown, gelatinous rotting within the seed coat. Radicles and cotyledons may become brown and soft after germination, but fail to emerge. Water-soaked, greasy lesions may also form on hypocotyls and roots after emergence when seedlings are infected with *Pythium* or *Phytophthora* spp., causing plants to collapse and wither. Post-emergence damping-off caused by *Rhizoctonia* spp. begins as elliptically-shaped, brick-red sunken cankers on roots and hypocotyls. Plants eventually become flaccid and die.

Management Approaches

Biological Control

Kodiak (*Bacillus subtilis* strain GBO3) is registered for suppression of *Fusarium*, *Rhizoctonia*, and *Pythium* spp., but its efficacy in the High Plains is unknown.

Cultural Control

Plant high quality alfalfa seed in a firm, well-prepared seedbed at optimum pH, soil temperature, and fertility level for rapid germination and growth. Avoid compaction, poorly drained fields, and excess irrigation that can favor damping-off pathogens. High seeding rates can partially compensate for stand losses when disease is present.

Chemical Control

Chemical controls are most effective when combined with sound cultural practices.

Product List for Damping-Off and Seedling Blight:

Pesticide	Rate per 100 lb seed (ai oz)	Application Frequency (days)	Remarks
Captan			
Captan 30-DD	6.5 fl oz (1.9)	Seed treatment	Seed treatment
Captan 400	5-8 fl oz (1.9-3)	Seed treatment	Seed treatment
Captan 400-C	5-8 fl oz (1.9-3)	Seed treatment	Seed treatment
Nu-Grow Captan 4000	5-8 fl oz (1.9-3.0)	Seed treatment	Seed treatment
Metalaxyl/Mefenoxam			
Apron XL LS	0.64 fl oz (0.5)	Seed treatment	Suppression of <i>Pythium</i> and <i>Phytophthora</i> spp.
Allegiance-FL	0.75-1.5 fl oz(0.2-0.4)	Seed treatment	Suppression of <i>Pythium</i> and <i>Phytophthora</i> spp.
Allegiance LS	1.2-2.4 fl oz(0.2-0.4)	Seed treatment	
Ridomil Gold EC	¼ to ½ pint (1.9 to 3.8)	Pre-emergence soil drench	Suppression of <i>Pythium</i> and <i>Phytophthora</i> spp.
Thiram			
42-S Thiram	8 fl oz (3.4)	Seed treatment	Seed treatment
Thiram 50WP	8 oz (4)	Seed treatment	Seed treatment

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Categories: Alfalfa, Disease, Damping Off, Seedling Blight

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