



Seed Treatments help hedge against our extreme variable weather patterns, that can turn wet or dry before our stand is established or prior to the plant going into dormancy. Seed treatments have become an important part to wheat production in Kansas and help improve yield potential.

See trials below or contact you Garden City Agronomist for more information on seed treatments that fit your operation!



Plot located near Lyons, Ks. Show the added benefit below and above ground of using a seed treatment.

WR II is a Fungicide & Insecticide Seed Treatment

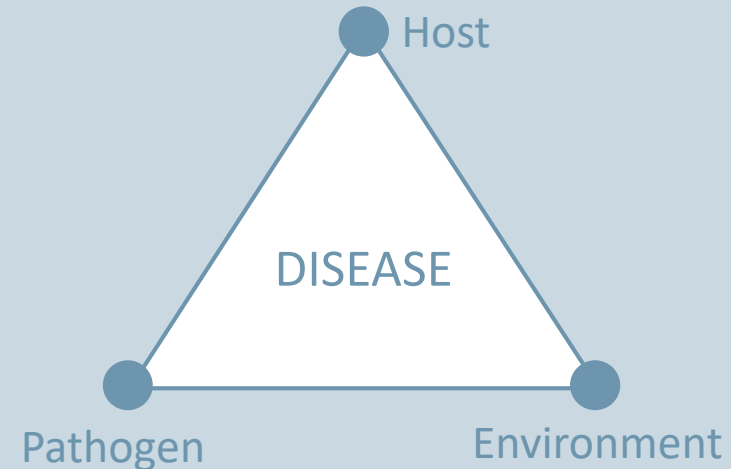
HR +Asc- Fungicide & Insecticide Seed Treatment with a Plant Growth Regulator

CEREAL DISEASES



Diseases affecting cereals can cause major crop and economic losses in agriculture. However, Warden® seed treatments help protect seeds from hazardous seed and seedling diseases and set the stage for optimum yield potential.

The disease triangle illustrates the three components needed for disease development: a susceptible host, a virulent pathogen and a favorable environment for disease development. Plant diseases can be prevented by eliminating any one of these components.



- Fusarium
- Rhizoctonia
- Pythium



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○ FUSARIUM

- Chronic soil-borne pathogen that attacks the outside of the seed and the embryo
- Causes seedling damping-off and damage at multiple growth stages
- Results in low seed germination, seedling death and spotty or uneven stands
- Problematic in loose, dry soils



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○ RHIZOCTONIA

- One of the most prominent soil-borne pathogens in the US
- Causes pre- and post-emergence damping-off, stem breakage, seed decay and root rot
- Results in stunted crops, stand reduction up to 50% and 20-40% yield loss
- Problematic in warm, wet soils after seed and seedling water absorption



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○ PYTHIUM

- Soil-borne pathogen prevalent in almost all cultivated soils, usually misdiagnosed as water injury
- Causes early-season damping-off, seed and seedling decay and brown root tips
- Results in slowed emergence, pale and stunted plants, reduced vigor and significant yield loss
- Problematic in cool, wet to saturated soils

CEREAL SEEDLING INSECTS





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○ APHIDS (Bird Cherry-Oat, English Grain, Greenbug, Russian Wheat)

- Most common pest of small grains, particularly wheat
- Problematic early April – early July and late August – mid October
- Causes stunted plants, red or yellow curled leaves, long, light-colored stripes on leaves; serves as vector of Barley Yellow Dwarf Virus

Results in leaf and root death and yield reductions

**Seed Treatment Recommendation:
Warden® Cereals 360, HR, WR II**



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○ GRASSHOPPERS

- Feed on winter wheat in large densities
- Problematic after first hard freeze
- Causes wheat to be clipped back completely, white heads and ragged stem damage
- Results in stand loss in field margins
- **Seed Treatment Recommendation:**
Warden® Cereals HR (early season)



©Scott Bauer, USDA Agricultural Research Service

○ HESSIAN FLY

- Serious threat to wheat, barley and rye
- Problematic early September – late October
- Causes damage to seedlings and plants
- Results in broken stems, stunted, dark plants and yield reductions
- **Seed Treatment Recommendation:**
Warden® Cereals HR (early season suppression)



©David Cappaert

○ WHITE GRUBS (European Chafer, Japanese Beetle, Northern Masked Chafer)

- Immature form of beetles
- Problematic in fall or spring
- Causes seedling root pruning and mesocotyl destruction
- Results in wilted, discolored or dead seedlings
- **Seed Treatment Recommendation:**
Warden® Cereals HR (early season)



©Dale Ireland, Syngenta

○ WIREWORM

- Among the most damaging soil-infesting insects in wheat
- Problematic early April – June
- Causes damage to germinating seeds, young seedlings and roots

Results in thin crop stands and low yields

Seed Treatment Recommendation:

Warden® Cereals 360, HR (*suppression*), **WR11**