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Black Point Disease of Wheat

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Symptoms, disease impact, and management of black point disease of wheat and fungicides available for its treatment.

Black point, defined as the discoloration of the embryo (germ) end and surrounding areas of the wheat kernel, occurs any time from grain filling to near harvest. Various fungi that cause black point often occur on developing kernels that do not exhibit symptoms. High humidity or frequent rainfall from milk to soft dough stage, late season irrigation and lodging often trigger infection by these seed-inhabiting fungi.

The primary fungi associated with black point are *Alternaria* spp., *Cochliobolus sativuis* and *Cladosporium* spp. These fungi do not produce toxins, but *C. sativuis* may reduce germination.

Although usually not yield-reducing, the presence of black point in harvested grain can reduce grade and quality, resulting in dockage by the elevator. Affected kernels are considered by U.S. grain standards to be damaged and only 2 percent are permitted in wheat graded as U.S. No. 1 and 4 percent in U.S. No. 2.

Figure 1. Black discoloration of the embryo end of infected kernels.

Disease Impact

Possible consequences of black point include:

- reduced test weight;
- reduced market grade and dockage by the elevator; and
- reduced germination or increased incidence of seedling blight (associated with *C. sativius*, not with *Alternaria* or *Cladosporium* species).

Symptoms

The embryo tip shows a black to brown discoloration that may extend into the crease of the kernel (*Figures 1* and *2*).

Management

Reducing the potential for black point in harvested grain: Black point may occur in dryland and irrigated fields in some years despite implementation of cultural

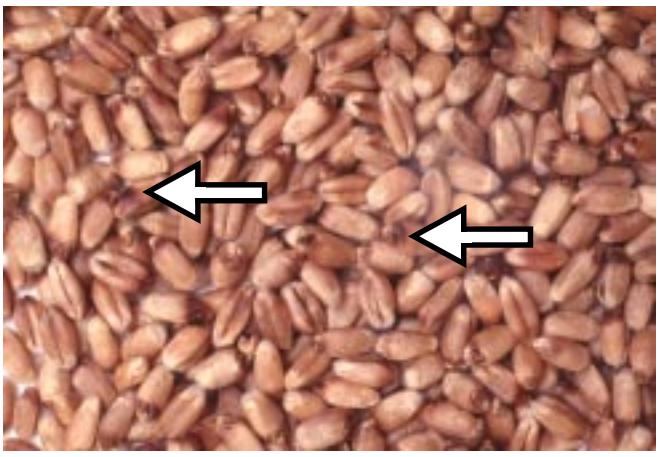

Figure 2. Wheat seed lot with black pointed kernels.

management practices. The best cultural preventive practice for irrigated wheat is reducing irrigation frequency after heading. Dryland fields are at the mercy of the weather.

Lessening the potential for reduced germination and increased seedling blight incidence in seed wheat infected with black point: If the incidence of black point is high and the cause is identified as *C. sativius,* do not use the seed for planting. If the incidence is low, the seed can be planted, provided it is treated with a fungicide that will control seedling blights. *Table I* is a partial list of seed treatment fungicides that will not only protect against seedling blight but also prevent infection by the common bunt and loose smut fungi.

Table I. A partial list of wheat seed treatments for control of seed-borne pathogens that cause seedling blight, common bunt and loose smut of wheat.*

Fungicide common name	*Some trade names*
Carboxin + Captan	Enhance
Carboxin + Maneb	Enhance Plus
Carboxin + PCNB	Vitavax - PCNB
Carboxin + Thiram	Vitavax 200
Carboxin + Imazalil + Thiabendazole	RTU Vitavax Extra
Difenoconazole + Mefenoxam	Dividend XL, Dividend XL RTA, Incentive RTA, Dividend Extreme
Tebuconazole + Metalaxyl	Raxil MD, XT
Tebuconazole + Metalaxyl + Imazalil	Raxil MD Extra
Tebuconazole + Thiram	Raxil-Thiram
Triadimenol	Baytan 30F
Triadimenol + Thiram	RTU-Baytan-Thiram

*The fungicides listed represent the best information available. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by University of Nebraska Cooperative Extension is implied.

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