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Delayed planting may increase rust and yellow dwarf in oats

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Abstract

Oats in Iowa suffer from two major diseases, crown rust and barley yellow dwarf virus. **Crown rust** appears as orange leaf pustules and also causes yellowing and death of the leaves. Severely affected plants are stunted and produce little grain. The disease usually first appears in late May and can remain active throughout the rest of the season. Spores can be windblown long distances, but in Iowa some initial infections are the result of spread from local buckthorn shrubs. Buckthorn is the alternate host of the crown rust fungus *Puccinia coronata*.

Keywords

Plant Pathology

Disciplines

Agricultural Science | Agriculture | Plant Pathology



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Oats in Iowa suffer from two major diseases, crown rust and barley yellow dwarf virus. **Crown rust** appears as orange leaf pustules and also causes yellowing and death of the leaves. Severely affected plants are stunted and produce little grain. The disease usually first appears in late May and can remain active throughout the rest of the season. Spores can be windblown long distances, but in Iowa some initial infections are the result of spread from local buckthorn shrubs. Buckthorn is the alternate host of the crown rust fungus *Puccinia coronata*. Once the disease has spread into an oat field it can move quickly from plant to plant. Under wet conditions, this disease can reduce yields severely. Yield loss due to rust is affected by planting date. When oats are planted late, they are smaller when first infected, and the disease has a longer period of time to develop and spread to more plants.

Barley yellow dwarf virus causes extreme stunting and discoloration of the leaves. Leaf blotches that are yellow, orange, or red develop until entire leaves are discolored. Plants along the edges of fields are usually affected first. Severely affected plants produce little or no grain. The virus can infect all cereal grains, corn, and grass weeds. This disease is spread by several species of aphids, which are active under warm conditions in the late spring and summer. Plants infected in the seedling stage are the most severely damaged. Early planted oats typically suffer less yield loss than late-planted oats because they are older during the period of greatest aphid activity.

Average planting date for oats in Iowa is April 20, but planting before April 15 is recommended. This year, only 4 percent of the oats were planted as of April 15. The later planting this year will result in a greater risk for losses from crown rust and yellow dwarf. Some oat cultivars also have resistance to crown rust and yellow dwarf, and it is advisable to plant these cultivars in Iowa because both diseases are potentially severe each year. For rust, some previously resistant cultivars are now susceptible, but there are still some that are considered resistant (IN09201, Blaze, Classic, Jay, Belle, Killdeer, and Paul) or moderately resistant. For barley yellow dwarf, no cultivars are highly resistant, but several have adequate resistance. In the ISU 1999 Oat Performance Test, the variety Classic demonstrated the best resistance. See the [Iowa State University Crop Performance Test - Oat and Barley \[1\]](#) for further information on resistance ratings to both diseases.



Yellow dwarf virus of oats.

[Enlarge](#) [2]



Crown Rust.

[Enlarge](#) [3]

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[1] <http://www.public.iastate.edu/~jjannink/VarietyTrials.htm>

[2] <http://www.ent.iastate.edu/imagegal/plantpath/oats/ydvirus/mnkv1355.70ydwarf.html>

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