Alfalfa disease resistance

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Alfalfa disease resistance

Abstract
Producers may be anxious to get in new seedings of alfalfa, but the wet soils may result in seedling disease problems this spring. The most important fungi attacking alfalfa seedlings are *Aphanomyces euteiches*, *Phytophthora medicaginis*, and several species of *Pythium*. Seedling diseases should be suspected when emergence is poor or there are stunted, discolored, or dead seedlings. Like seedling diseases of other crops, alfalfa seedling diseases are more severe in wet conditions. Although cold soils also promote seedling diseases in general, alfalfa seedlings are more cold-tolerant than other crop seedlings, so soil temperature is not a major concern for alfalfa seedling diseases.

Keywords
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![Aphanomyces symptoms on a susceptible variety (right). A resistant variety is on the left.](image)

Genetic resistance is the best way to avoid seedling diseases or any other alfalfa disease. The Iowa State University Crop Performance Test report shows disease resistance for all the varieties entered in the test. This report is available at county extension offices or from the Extension Distribution Center on campus. For seedling disease protection, it is best to plant varieties with an R or HR resistance rating to both *Phytophthora* and *Aphanomyces*. Recently, some seed companies have begun to market varieties with resistance to races 1 and 2 of *A. euteiches*. In the future, all *Aphanomyces*-resistant varieties probably will be identified according to race. If a resistant variety does not have a race designation, it is safe to assume it has only race 1 resistance. Resistance to race 1 is beneficial, but in Iowa race 2 appears to be common. If a problem with *Aphanomyces* is anticipated, it is best to find a variety with race 2 resistance.

To protect against *Pythium*, a fungicidal seed treatment is needed. Allegiance and Apron XL seed treatments are effective against *Pythium* and *Phytophthora*, but there are no registered seed treatments effective against *Aphanomyces*. Ridomil Gold is a soil fungicide registered for use in establishing alfalfa. Ridomil Gold contains mefenoxam, the same active ingredient as Apron XL. Some studies have shown that a soil fungicide applied at seeding can be beneficial, but seed treatment appears to be a more cost-effective way to control *Pythium* and *Phytophthora*.

If an alfalfa seeding fails, it is usually safe to replant alfalfa because compounds thought to cause autotoxicity do not accumulate in seedlings. A *Phytophthora*- and *Aphanomyces*-resistant variety (treated with Apron XL) is recommended for replanting failed seedings.
However, the timing is a factor because alfalfa seedings that are done too late in the spring may fail because of inadequate moisture.

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