

Breeding for Resistance to New Races of Anthracnose.

Rodgers, C., D. Witte, J. Ferrell, H. Deery, and M. McCaslin.

Forage Genetics International, N5292 Gills Coulee S, West Salem, WI 54669

Anthracnose (*Colletotrichum trifolii*, (Bain.)) is a major disease of alfalfa in the United States and around the world. Anthracnose typically occurs in warm humid weather and affects the stems and crowns of the alfalfa plant. There are currently two races of anthracnose commonly recognized within the United States. "Saranac" is susceptible to both race 1 and 2. "Arc" is resistant to race 1, but susceptible to race 2, and "Saranac AR" is resistant both to race 1 and 2. Other races of anthracnose have been reported in Oklahoma (race3); and Australia and Ohio (race 4), but are not believed to be widespread. During the growing months in 2012 and 2014 in Southwest Wisconsin, a high level of anthracnose was observed in the field on varieties that are typically resistant to races 1 and 2 of anthracnose. Isolates were collected from alfalfa stems harvested from the field in both 2012 and 2014. Subsequent inoculations, including Saranac AR, revealed that all varieties and experimentals rated as susceptible, which were previously resistant to races 1 and 2. The 2012 and 2014 isolates were sent to an independent lab and the same reactions were observed indicating a new race of anthracnose. Breeding for resistance to the 2012 and 2014 isolates of anthracnose was initiated in the fall of 2014. Two cycles of recurrent selection have resulted in experimentals that display resistance to the 2012 and 2014 isolates.