RESEARCH UPDATES

MINNESOTA/WISCONSIN - New Alfalfa Pathogens Identified Deborah Samac, USDA-ARS

In April and May of 2012 alfalfa plants with severe leaf spot symptoms were observed in Rosemount and Waseca, Minnesota, and in Arlington, Tomah, and Waupaca, Wisconsin. Initial symptoms consisted of white to tan spots with a brown border, 2-3 mm in diameter, circular to oval in shape, enlarging to 5-8 mm in diameter. Large lesions often coalesced. Small, narrow, brown lesions occurred on petioles (Figure 1). Lower killed leaves remained attached to the primary stem. The fungus causing the disease was identified as *Stemphylium globuliferum*. This is the first time this fungus has been reported in the U.S. The disease was observed in spring of 2013 but was not as damaging. Symptoms are distinct from those caused by *S. botryosum*, which was previously found to be common in the Midwest.

In August 2011 and 2012 alfalfa plants with symptoms of anthracnose were found in experimental plots and breeding nurseries of experimental lines in Wisconsin. Conspicuous, straw-colored dead stems with a "shepherd's crook" wilt and large, sunken, diamond-shaped lesions with a dark border were observed (Figure 2). The pathogen was identified as race 2 of *Colletotrichum trifolii*. Previously, race 2 was reported in a limited area in the Mid-Atlantic states. Anthracnose is one of the most



serious alfalfa diseases because it causes loss of forage due to death of stems and crown rot, reducing stand life, and winter survival. Isolation of race 2 in major alfalfa growing regions in Wisconsin indicates this is more widespread than previously observed. Although most modern alfalfa cultivars have resistance to race 1, few cultivars with resistance to both races are available. The occurrence of this pathogen in the Midwest should be considered in alfalfa breeding programs when developing multi-pest resistant alfalfa cultivars.