A new *Colletotrichum trifolii* race identified in Ohio.

Jennifer J. Ariss[1,2] and Landon H. Rhodes[1]
[1]Department of Plant Pathology, The Ohio State University, Columbus, OH 43210
[2]Author's present address, USDA-ARS, Vegetable and Forage Crops Research Unit, Prosser, WA 99350

Anthracnose of alfalfa was identified as a potential economic problem on alfalfa in the US in the late 1960's. *Colletotrichum trifolii*, the causal agent of anthracnose of alfalfa, exists in the US as two distinct races, race 1 and race 2. Anthracnose disease management relies on solely on the employment of resistant cultivars with resistance being conferred by two separate genetic mechanisms. Two separate dominant genes, designated An_1 and An_2, are attributed to anthracnose resistance. Presence of the An_1 gene confers resistance to race 1 while An_2 confers resistance to races 1 and 2 but may mask the presence of the An1 gene. The purpose of the present study was to investigate an isolate of *C. trifolii* (isolate OH-WA-520) found in Columbus, Ohio, atypical of either race 1 or 2. Macroscopic and microscopic morphological characters were evaluated and compared to known race 1 and race 2 isolates. Experiments were undertaken to determine the race identity of *C. trifolii* isolate OH-WA-520 and relative levels of resistance in the standard check cultivars, Arc, Saranac AR, and Saranac to this isolate. Results of these studies revealed a reaction inconsistent with either *C. trifolii* race 1 or race 2. *C. trifolii* OH-WA-520 proved virulent on cultivars Saranac and Saranac AR but avirulent on Arc (fig. 1). These results are consistent with *C. trifolii* race 4 previously known only from Australia. To our knowledge, this is the first report in the US of an isolate consistent in reaction with *Colletotrichum trifolii* race 4 in the US.

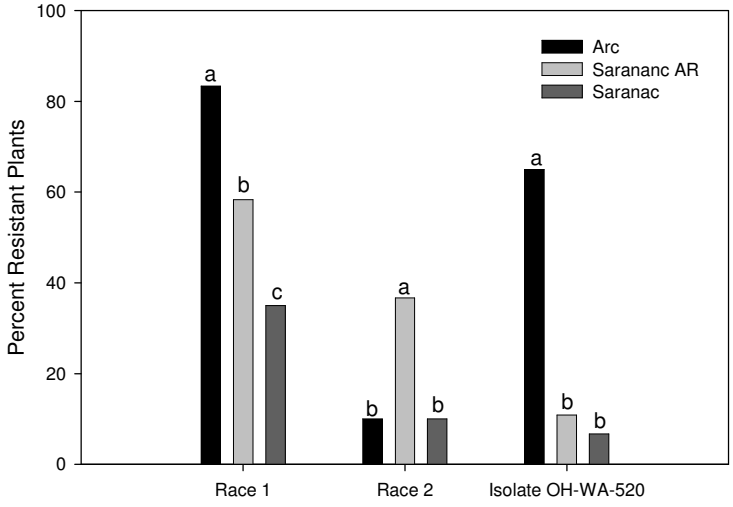

Figure 1. Percent resistant plants for cultivars Arc, Saranac AR, and Saranac when inoculated with *C. trifolii* isolates of race 1 (Re1), race 2 (SB2) and OH-WA-520. Cultivar means represented by bars with different letters, within isolate, are significantly different from one another by LSD at $P = 0.05$.

References

Campbell, T. A., J. A. Schillenger, and C. H. Hanson. 1974. Inheritance of resistance to anthracnose in alfalfa. Crop Science. 14:667-668.

Elgin, J. H., Jr., and S. A. Ostazeski. 1985. Inheritance of resistance to race 1 and race 2 anthracnose in Arc and Saranac AR alfalfa. Crop Science. 25:861-865.

Mackie, J. M. and J. A. G. Irwin. 1998. Genetics and race variability of lucerne-*Colletotrichum trifolii* pathosystem in Australia. Australian Journal of Agricultural Research. 49: 713-722.

O'Neill, N. R. 1996. Pathogenic variability and host resistance in the *Colletotrichum trifolii/Medicago sativa* pathosystem. Plant Disease. 80:450-7.