

Title: Evidence for additional races of *Aphanomyces euteiches*

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*Aphanomyces euteiches* is an oomycete root rot pathogen endemic to much of the Midwestern United States. This pathogen infects many leguminous plants, and is most notably the causal agent of *Aphanomyces* root rot in alfalfa (*Medicago sativa*). Variation in disease severity in isolates of *A. euteiches* across varieties of alfalfa can be attributed to the different races of the pathogen. Currently, two races of the pathogen are recognized based on differences in disease severity across alfalfa varieties. Alfalfa varieties known to be resistant to Race 2 of *A. euteiches* have been observed with severe disease attributed to *A. euteiches*. Isolates of *A. euteiches* have been collected from several of these fields. Bioassays completed with Race 2 resistant alfalfa varieties using these isolates suggest there may be additional races of the pathogen. Bioassays were performed using known Race 2 resistant varieties of alfalfa and a mycelial inoculation procedure. The varieties tested had varying levels of resistance or susceptibility, as seen by Disease Severity Index (DSI) scoring, with these new isolates. Using standard procedures for differentiating races of a pathogen based on isolate aggressiveness to various varieties of alfalfa, results indicate that these isolates of *A. euteiches* may belong to Races 3, 4 and 5.