

THE BIOCONTROL AGENT AILANTHUS WILT CAN BE TRANSFERRED TO UNINFECTED TREE-OF-HEAVEN USING RAW INOCULUM. Rung, T.A., and A.E. Gover, Pennsylvania State University, University Park.

ABSTRACT

Tree-of-heaven (*Ailanthus altissima* (Mill.) Swingle, AILAL) is a persistent weed tree that has proven invasive in nearly all landscapes. The fungal pathogen *Verticillium nonalfalfae* (formerly *Verticillium albo-atrum*) has been identified as a potential biological control for AILAL, as collected isolates have shown virulence, and limited host range. Currently, USDA-APHIS allows movement of this pathogen within state borders where it has been isolated. Biological control may be particularly useful as an alternative control of AILAL as it has shown progressive control within infestations after introduction. This study observed the effects of moving raw inoculum from infected AILAL to un-infected stands, compared to inoculating uninfected stems with a provided purified inoculum, at Canoe Creek State Park, Hollidaysburg, PA. Transfers were conducted June 21 and July 3, 2013. Methods included placing soil from the base of infected stems to the base of uninfected stems where the roots were debarked to expose vascular tissue; making an aqueous slurry of bark, twig, and rachis tissue from infected stems and applying the filtrate to fresh stem cuts on uninfected stems; and transferring stem wedges from infected to uninfected stems. In a single growing season, target trees inoculated via filtrate application or stem wedge were observed to display symptoms of infection, and exhibited significant dieback. Subsequent observations in 2014 will verify if this method provides the same effect observed from application of cultured inoculum. If found to be effective, raw inoculum transfer of *V. nonalfalfae* could prove to be an efficient and effective means of controlling AILAL, as there several known sites in PA that can serve as raw inoculum sources.