

Section 4 Abstracts: Ecology and Genetics of the Chestnut Blight Fungus

Sporulation of Artificially Established Virulent *Cryphonectria parasitica* Cankers After Interaction with Sources of Virulent or Hypovirulent Inoculum on American Chestnut Stems. M.L. Double,¹ D.H. Hobbins,² W.L. MacDonald¹ and C.R. Sypolt³. ¹Department of Plant Pathology and Environmental Microbiology, West Virginia University, Morgantown, WV 26506-6057; ²Division of Natural and Behavioral Sciences, University of Maine at Fort Kent, Fort Kent, ME 04743; and, ³Department of Land Resources, Glenville State College, Glenville, WV 26351, USA

The conversion of virulent chestnut blight cankers to hypovirulent cankers can be influenced by the vegetative compatibility (v-c) of the interacting strains and the period of exposure to hypovirulent inoculum. In this experiment virulent cankers were exposed to vegetatively compatible and incompatible virulent and hypovirulent inoculum for 52-wk to evaluate the influence of different inoculum sources on canker sporulation. Four virulent cankers were established on each of 60 American chestnut trees using brown pigmented isolates of *Cryphonectria parasitica*; twenty-four trees were inoculated with a brown isolate representing v-c group A and 36 with a brown isolate from v-c group B. These virulent cankers were exposed to virulent or hypovirulent sources of inoculum that were either compatible or incompatible with the

canker so that all possible combinations were represented. After 52-wk, cankers were rated for sexual and asexual sporulation. The virulent-incompatible treatment produced the greatest number of stromata/cm² and had the highest perithecia rating. The fewest stromata/cm² and the lowest perithecia rating occurred with the hypovirulent-compatible treatment. Conidia were single-spored to determine if cankers exposed to hypovirulent inoculum produced hypovirulent conidia. Morphology, pigmentation and a phenol-chloroform extraction for dsRNA were used to confirm whether colonies resulting from single conidia were virulent or hypovirulent. The highest proportion of hypovirulent cultures were from the hypovirulent-compatible treatment. These data indicate that when virulent cankers are converted to hypovirulent by hypovirulent inoculum, sexual and asexual sporulation are reduced, and converted cankers are capable of producing hypovirulent conidia.