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<http://www.apsnet.org/meetings/abstracts.asp>

**Santamaria, L. and Mmbaga, M.T. 2008. A survey for  
Phytophthora diseases in mid-Tennessee nurseries:  
Identification and characterization. Phytopathology 98:S140.**

Phytophthora diseases impact trees and shrubs in nursery production and landscape settings, but identification of species in mid-Tennessee nurseries have not been done. A survey of Tennessee nurseries was started in 2006 and results from eight nurseries sampled will be discussed. Samples of plant tissues from symptomatic plants, rhizosphere soil and water from irrigation ponds or creeks were evaluated for Phytophthora. Direct isolation of Phytophthora from plant tissues and baiting system for Phytophthora from soil and irrigation water were used in this survey. A total of 660 samples were processed using Phytophthora semi selective media (PARPH). The pathogens isolated were characterized morphologically and using DNA analysis following standard PCR protocols with universal primers ITS1/ITS4. Results of the first 100 samples DNA sequence analysis (Davis Sequencing, Davis, CA) showed that *Phytophthora* spp. was the major organisms in 37% of the samples. Other fungi isolated included *Pythium* 13%, Uncultured endophytes 9%, *Pestalotiopsis* spp. 6%, *Alternaria* 6%, *Absidia/Heterobasidion* 6%, *Fusarium* spp. 6%, *Phoma* spp. 4%, and 12% miscellaneous genera including *Botryosphaeria*, *Ampelomyces*, *Glomerella*, *Giberella*, *Paraconiothyrium* spp. and *Verticillium*. Most of the *Phytophthora* species were isolated from soil and water (36%), and only 1% was from plant tissue. 28% of *Phytophthora* spp. are unclassified *Phytophthora* according to GenBank information. Several *Phytophthora* species were often found in one nursery. Example: PC nursery had 4 species, *P. cinnamommi* and *P. cryptogea* associated with Juniper, *P. nicotianae* (Cotton Easter), and unclassified *Phytophthora* spp. from their irrigation water. Another nursery had *Phytophthora* spp., and *P. cryptogea/megasperma*. Species of *Phytophthora* in the irrigation water were different from those isolated from the soil or plant tissue. More intensive sampling is needed to determine the association of pathogens in irrigation water with disease incidence in the irrigated fields. Species in irrigation water have the potential to infect susceptible hosts during irrigation. Some of the other fungi isolated from plant tissue, soil and/or water are known

pathogens. Their pathogenicity and role in disease complexes will be evaluated.