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

Hwang, J.; Oak, S.W.; and Jeffers, S.N. 2008. Variation in population density and diversity of *Phytophthora* species in streams within a forest watershed. *Phytopathology* 98:S70.

Water samples from a portion of the Davidson River watershed in western North Carolina were collected and assayed to help determine the number of sample sites needed to effectively survey watersheds for *Phytophthora* species. The sampled watershed covers 32.6 km² and consists of nine sub-watersheds, each drained by an individual stream that runs into the Davidson River. Seven streams, each in a separate sub-watershed, and the drainage point at the lower end of the Davidson River were sampled twice, in Sep and Oct 2007. Samples (1 liter) from all streams were collected within a 30-min period to minimize variation that may be associated with time of day. Nine 100-ml aliquots were filtered from each sample and filters were inverted onto PARPH-V8 selective medium; colonies of *Phytophthora* spp. were counted after 3 days at 20C, and numbers of colony-forming units (cfu) were calculated. Densities of *Phytophthora* spp. were lower in the streams draining the upper sub-watersheds. In Oct, the mean density of *Phytophthora* spp. from the three upper streams was 5 cfu/liter while a mean density of 52 cfu/liter occurred in three lower streams. Six known species--*P. cinnamomi*, *P. citricola*, *P. citrophthora*, *P. gonapodyides*, *P. heveae*, and *P. pseudosyringae*--and three previously unidentified species were recovered from streams in the watershed. The diversity of species varied among streams and was greater in Oct than in Sep. In Sep, five species were detected within the watershed and three of these were recovered at the lower drainage point. In Oct, nine species were detected in the watershed and five of these were recovered at the drainage point