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Impact of fumigation on *Pythium* species associated with forest tree nurseries of Oregon and Washington

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Pythium species cause damping off of conifer seedlings in forest tree nurseries. Identification of the species responsible for the disease has been traditionally based on morphology. However, newer DNA-based identification methods may allow more accurate identification and assessment of soil populations. Field trials were established at three nurseries (2 in OR, 1 in WA) to assess: 1) the impact of fumigation on *Pythium* soil populations; and 2) the rapidity of species reestablishment after fumigation. Six fumigant treatments (including a conventional methyl bromide treatment and a nonfumigated control) were applied according to a randomized complete block design with four blocks at each nursery. Soil samples were collected from each treatment plot before and after fumigation and *Pythium* populations were assessed by dilution plating onto PARP, a semiselective medium for pythiaceous species. Isolates were identified on the basis of DNA sequence from the ITS region and confirmed with morphological characteristics. One month after fumigation, populations in nonfumigated control plots were greatest at nursery B (8 CFU/g soil), intermediate at nursery A (5 CFU/g soil), and least at nursery C (1 CFU/g soil). All fumigant treatments reduced soil populations by at least 68%. Three species (*Pythium macrosporum*, *P. irregulare* and *P. dissotocum*) were predominate at all three nurseries. Analyses of *Pythium* populations will continue through 2009.