

ASSESSMENT OF PINE RIDGE TREE NURSERY CONTAINER GROWTH MEDIUM
FOR DAMPING OFF PATHOGENS

by

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BACKGROUND

I was requested by Mr. C. McDonald, Superintendent of Pine Ridge Tree Nursery, to assess samples of their growth medium used for containerized stock for damping-off pathogens. In particular, the nursery was interested if Fusarium, Pythium, Phytophthora, and Cylindrocladium species were present in the containerized stock growth medium. These pathogens have caused severe losses in other nurseries in North America.

METHODS

Three bulked samples of growth medium were collected by Pine Ridge tree Nursery personnel as the media was being prepared and containers filled (Feb. 6-14). The samples were kept cool in a refrigerator until shipped to Northern Forestry Center (NoFC). The samples were labelled 1c, 2c, and 3c. All samples were examined for the presence of Pythium spp., Phytophthora spp., Fusarium spp., Cylindrocladium spp., and Rhizoctonia sp. using standard phytopathological isolation and baiting methodology. Most methods were replicated twice.

RESULTS

The results from the isolation and baiting experiments are summarized in Table 1. No damping-off or root rot pathogens were found. However, significant numbers of the mould Trichoderma spp. were present. This genera of fungi is known to be antagonistic to damping off and root rot pathogens. It should be pointed out that Trichoderma spp. are very "fast growing" in culture and so can obscure the presence of other fungi.

SUMMARY

The results indicate that damping off fungi were not found in the media at a detectable level. I have, however, isolated some of these fungi from peat moss before and a Pythium sp. was found in some containerized seedlings from Pine Ridge Tree Nursery last summer. It therefore, would be advisable to check the growing media again at a future date.

Table 1. Summary of Damping-off and Root Rot Pathogens Found in Pine Ridge Tree Nursery Containerized Growing Medium Collected Feb. 6-14)

Pathogen	Media Sample No.		
	1c	2c	3c
<u>Pythium</u> spp.			
bait	nil	nil	nil
dilution plate method	nil	nil	nil
<u>Phytophthora</u> spp.			
bait (pine needles)	nil	nil	nil
bait (apples)	nil	nil	nil
dilution plate method	nil	nil	nil
<u>Fusarium</u> sp.			
dilution plate method	nil	nil	nil
<u>Cylindrocladium</u> sp.			
dilution plate method	nil	nil	nil
<u>Rhizoctonia</u> sp.			
	nil	nil	nil