SURVIVAL OF *NEONECTRIA FUCKELIANA* IN WOODY MATERIAL

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In southern New Zealand, *Neonectria fuckeliana* is associated with a stem flute canker of *Pinus radiata*, which can result in severe stem malformation and growth loss. This research, consisting of three distinct experiments, aimed to determine pathogen survival in processed and unprocessed wood and woody debris. In the first experiment, the survival of the pathogen in living trees was examined by sampling trees infected with *N. fuckeliana* in 6 different years. In the second experiment, the survival of the pathogen in woody debris was examined using 36 infected logs in a range of size-classes. The logs were left on the forest floor in shaded and unshaded conditions and sampled for *N. fuckeliana* after 4 and 9 months. The third experiment examined the survival of the pathogen in processed wood. Boards cut from infected trees were tested in six standard timber drying treatments. Boards were sampled before and after drying to determine the presence of living *N. fuckeliana*. *Neonectria fuckeliana* was successfully isolated from trees at all infection times tested. The fungus was also successfully isolated from 81% of logs after 9 months on the forest floor. There was no significant difference between shaded and unshaded treatments. *Neonectria fuckeliana* was not found in any boards following kiln-drying, but was successfully isolated from 69% of infected boards subjected to the two standard air-drying treatments for 9 weeks.

HOST VARIATION IN *PINUS RADIATA* IN RESPONSE TO INOCULATION WITH *NEONECTRIA FUCKELIANA*

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Neonectria fuckeliana causes a stem canker (Nectria flute canker) of plantation-grown *Pinus radiata* in southern regions of the South Island of New Zealand. Initiation of disease is primarily associated with pruning operations and modification of pruning regimes has led to a reduction in disease incidence. Factors that influence establishment of infection and symptom expression are being examined. In one trial, in which 50 trees were challenged with three different conidial concentrations, individual trees varied markedly in their response to inoculation. Twenty-two percent of controls (wounds inoculated with sterile water) developed depressions that resembled small cankers. Six percent of the trees did not develop cankers at any concentration when inoculated with conidiospore solutions. Forty-eight percent responded with increasing canker length with increasing dose, and in 26% of trees severe cankering developed at all inoculum concentrations. Perithecial formation on the cankers was correlated with canker severity. Host genotype is being examined further with the goal of identifying families that contribute to susceptibility to canker formation.