

Progress report on Nectria research 24 February 2005

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Pruned stub trial

- Summer second lift pruning and treatments (inoculum and fungicide application) carried out 21-23 Feb. Assessments will be done by 25 Feb. Whorl and tree heights will be measured, along with fluting assessments.

Regional incidence survey

- All data from four of the six forest companies have been received. Half of the Ernslaw data were received on 16 February 2005. About 4-5 days' work in the Ernslaw estate remains. A report on the audit results was written in November 2004. It concluded that survey methods and definitions can be improved and it is recommended that one surveyor, with the assistance of a recorder, reassess existing plots in younger stands. A revised method of assessing trees will reduce the time taken to carry out assessments and result in a better estimate of disease incidence and severity in the region. It also found that at the overall regional level, disease incidence calculated from the original assessments conformed reasonably well with the audit results. However, at the plot level significant errors were found and the original data are not suitable for detailed analysis.
- A revised assessment method was developed and sent to the surveyor on 28 January 2005. Assessments of the one remaining forest company's estate will commence in early March. The fate of data collected by forest staff has yet to be determined, and a final decision on whether stands should be reassessed has to be made. Until then, no detailed analysis of the data will take place.

National survey

- All South Island regions done.
- Half of North Island regions done, survey of the remaining areas underway
- Over 150 stands assessed
- No Nectria found – northernmost find remains just north of Geraldine

Delimiting survey

- Delayed by audit of the regional survey results, assessment of the pruned stub trial and the genetic trial, and completion of the regional incidence survey
- Delimiting survey due to start in March, in conjunction with the regional incidence survey of Blackley Pacific's estate.

Ecology

- Pat Crane started on 17 January 2005.
- The affected region was visited in February 2005, discussions held with forest staff and lab facilities at Otago University were inspected.
- An expanded literature review has been completed.
- Isolations and preliminary work on the three spore stages started.
- Some morphological and DNA work on isolates has been undertaken

Genetic trials

- One trial assessed, with promising results. Heritability was satisfactory.
- Two other trials have been identified and will be assessed.
- A native population trial has been identified and may be assessed if disease is present

Resistance and susceptibility

- Glasshouse trials testing susceptibility of cutting and seedlings set up.
- Inoculations were carried out to herbicide-killed side branches and to cut tops (simulating topping operation) of *P. radiata* cuttings and seedlings and to Douglas fir seedlings.
- *Nectria* was not recovered from any of the side branches or stems killed with herbicide. A mix of saprophytic fungi was obtained.
- Although there was no apparent infection or damage to the stems inoculated at the cut top, *Nectria* was recovered from the majority of the plants.

- A second round of inoculations of this material is under way. Two spore concentrations (both lower than the initial rate) have been used, and in a further treatment to test the competitive ability of *Nectria* it has been inoculated in a mix with one of the fungi that is a common saprophyte of radiata pine.
- Inoculation of a clonal field trial in Southland done and assessments are continuing. *Pinus radiata* and *Cupressus macrocarpa* were inoculated. Other conifers, including indigenous conifers if possible, will be tested in the field trial.