

Annual Report to ERMA

Date: 15/12/2005

Field test GMF99001 and GMF99005

This report relates to control 7.4 in the field test approval for GMF99001 and 99005.

1. The continued viability of the project.

Currently there are 51 genetically modified *Pinus radiata* planted at the contained field site. Along with the transgenic plants, there are 5 *Pinus radiata* non-transgenic controls.

Also, 17 genetically engineered radiata pine and 2 non-engineered controls were moved from the GMO glasshouse to the field test site, but have not yet been planted. These plants are modified for additional copies of the radiata pine *Leafy*-like gene, a gene involved in reproductive development.

Further, cuttings have been taken from field test plants and they are now growing in small containers in a shade area within the field trial enclosure. There are a total of 186 cuttings at present.

A field test of 16 *Picea abies* trees has come to an end during the year and the trees have been destroyed by autoclaving.

Plants in the field test are being used for gene expression experiments and as source material for environmental impact studies.

Cuttings present on the site are planned to be used for a new experiment in collaboration with HortResearch (details see below).

Six-monthly audits conducted by MAF have not identified any problems with the trials.

The project continues to be viable.

2. Interference with the trial

- Rabbits have again been an issue during the year and they have usually targeted small *Picea abies* plants and occasionally small radiata pine cuttings. Regular destruction of rabbits has kept any damage to a minimum and at present there is no evidence for any more rabbits present on the site. Note that rabbits cannot leave the area because of the fence buried to a depth of 1.5 meters.
- There has been a demonstration against the trial, and outside the fenced area, in January 2005. Around 40 protesters walked around the fenced area but were prevented from entering the area, by security personnel. There has been no human interference with the trial or any of

the security equipment. The integrity of the fence is electronically monitored and any breach of the structure is logged and leads to an alarm reported to a security company online.

3. Plan of activities for the coming year

Experiments for the coming year will include:

- Sampling of needle material for studies on the impact of genetically engineered trees on non-target organisms (continued research in collaboration with HortResearch Auckland)
- Sampling of total protein from GE plants for studies on continued gene expression for the duration of the trial (in-house experiments)
- Development of a new trial with three replicate plots within the site, using radiata pine cuttings. This trial, in collaboration with HortResearch, Mt. Albert, Auckland, will assess the development of native insect populations associated with radiata pine.
- Continued sampling of soil in regular intervals for studies of impacts of genetically modified pine trees on microbial populations (in collaboration with AgResearch, Lincoln).
- Development of a new trial using 17 genetically modified and 2 control radiata pine trees recently transferred to the trial site from the Scion GMO glasshouse. These trees have additional copies of a *Pinus radiata* gene involved in reproductive development and they will be assessed for growth characteristics and gene expression.
- Continued monitoring of growth, particularly bud-growth (focus on reproductive structures)

4. Records on any precocious reproductive structures found.

The trial site was monitored over the year in weekly intervals. An experienced staff member checked every tree for the appearance of vegetative or reproductive buds. No reproductive buds were found on any of the field planted *Picea abies* and *Pinus radiata* trees. The development of reproductive structures is unlikely for *Picea abies* since this species does not flower before year 15 (earliest), however, this is possible for *Pinus radiata*. No precocious reproductive structures were recorded this year. As an additional precaution, the principal investigator of the trial has regularly checked all trees for the development of reproductive structures, independent from the monitoring regime mentioned above.

A similar weekly monitoring scheme was applied to cuttings on the field test site. None of the *Pinus radiata* cuttings have developed reproductive structures.

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