

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* and 12 genetically modified *Picea abies* planted at the contained field site. One genetically engineered *Pinus radiata* has been destroyed due to poor growth (Plant number 93). Along with the transgenic plants, there are 5 *Pinus radiata* non-transgenic controls and 4 *Picea abies* non-transgenic controls.

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

Cuttings were taken from existing *Pinus radiata* trees, and planted in small containers (Total of 201). Most cuttings (a total of 193) remain on the field trial site, however they are not planted in the ground. They are kept as a reserve in case of any damage to the existing trees, and for a new experiment planned in collaboration with Hortresearch (see below). Some cuttings (a total of 8) have been shifted to the GMO containment house because they started to show signs of male catkin development in late winter this year. They have subsequently produced pollen which has been collected (bagging of cuttings) and is now available for analysis in the P2 laboratory. The cuttings have not produced any further male structures but remain in the GMO containment house.

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 been an issue during the year and they have severely affected small *Picea abies* plants. A poisoning program has been successful and there do not appear to be any more rabbits present. Note that rabbits cannot leave the area because of the fence buried to a depth of 1.5 meters.
- 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 may include:

- Soil sampling for horizontal gene transfer evaluations and analysis of the microbial soil population (continued research in collaboration with Agresearch Lincoln)
- 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)
- Continued monitoring of growth, particularly bud-growth (reproductive structures)

A new experiment is at the stage of planning (in collaboration with Hortresearch, Auckland and Agresearch, Lincoln). This involves some of the cuttings mentioned above which will be planted in a currently vacant area on the field trial site. Researchers will use this plot for insect feeding studies and at the same time for studies characterising the microbial soil population under the trees.

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 checked all trees for the development of reproductive structures, independent from the monitoring regime mentioned above.

A small number of *Pinus radiata* cuttings have developed male catkins and have therefore been removed from the trial site (see above under 1.)

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