

One Billion Trees Fund

Growing native seedlings at scale — and more sustainably

New Zealand's native trees play a valuable role in sequestering carbon, improving biodiversity and contributing to the social wellbeing of all New Zealanders. Through the One Billion Trees Programme, Te Uru Rākau – New Zealand Forest Service has partnered with Scion to trial innovative techniques to accelerate the production of native seedlings.



Good root growth in trial grown seedlings

Native seedlings are slower to produce than many exotic species, and the quality often varies between different plants. This project explores new ways to ramp up seedling production – delivering a greater supply of affordable plants to the market and of a consistent standard.

Several alternative growing methods are being tested through a series of experiments, including research into the type, size and material of seedling containers.

The experiments include trialling mechanised production of seedlings in degradable paper pot containers – through a partnership with Ellepot, a Danish company making paper pot machines. A machine is used to form and fill paper pots that are then planted in the ground along with the seedling without disturbing their roots.

Plastic plant containers are used in nurseries across the country but are difficult to recycle and cannot always be reused since they often break. Paper pot containers are a more sustainable alternative which also have the benefit of simplifying the planting process and reducing costs.

The trials are showing promising results for the seedlings grown and planted using this paper pot method:

- Seedlings have faster root development with larger, more fibrous root systems
- An excellent standard of plants is produced
- Smaller containers mean shorter growing times – more efficient and profitable to produce but also with good plant survival
- “Transplant shock” is eliminated at harvest
- Planting labour is more efficient, with no need to remove the plant container
- Mechanisation creates skilled work opportunities alongside savings in running costs
- Plant sorting, handling, and transport to site is made easier
- Costs are lower than they are for plastic pots

Six field trials are running in the Rotorua district and nearly 20,000 seedlings were planted in winter 2020 alone. The growth rates and root quality of the seedlings grown in the

paper containers have been impressive.

There is growing interest from the nursery industry to adopt the techniques demonstrated through this project. The seedlings produced are also in high demand.

This project has had strong support from forestry, iwi, and regional groups across the Bay of Plenty. Results will be available to the nursery industry throughout the country in late 2021.

Te Uru Rākau – New Zealand Forest Service is proud to be supporting this project as it works toward the goal of making native planting more efficient, affordable, and sustainable.

For more information

www.mpi.govt.nz/forestry/funding-tree-planting-research/one-billion-trees-programme/



Native seedling grown in a plastic container for two years (left) alongside seedling grown in a paper pot container for nine months (right).