



# Scion's research nursery

Scion's research, development and expertise in nursery operations, propagation and mass production of a diverse range of species supports sustainable forestry that delivers economic and environmental benefits to all of New Zealand.



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Scion's research nursery focuses on modern nursery practices and facilities to propagate specialist planted forestry and indigenous species.

Sustainable practices are increasingly being integrated into the nursery operation. We are concentrating on replacing single use plastic and reducing the amount of chemicals used.

Specialist facilities available include tissue culture, physical containment areas, disease-free growing sheds and tunnels, and access to pest and pathogen specialists and databases.

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## Propagation

Scion has developed specialist mass propagation technologies. We are one of the few tissue culture laboratories worldwide that specialises in conifers. This ability to carry out mass clonal forestry can be used to rapidly transfer selected materials from tree breeding programmes into improved treestocks for industry.

The propagation techniques applied to planted forest species are also being used to propagate and preserve indigenous species. These plants are being used in both commercial and non-commercial re-planting programmes.

Scion staff are also experts in generative and vegetative propagation technologies for niche solutions, including new and difficult to grow species, endangered species, and disease and pest resistant species.



## Nursery operations

The Scion Nursery is working on refining and developing its operations to increase its output of healthy plants that thrive in the field. This includes:

- Improving germination rate and rooting success, and extending the growing and planting seasons
- Reducing early losses through improved crop and disease management
- Researching the benefits of reducing fungicide and fertiliser use, and the importance of the soil microbiome.

Ways to improve ergonomics and general working conditions by redesigning plant beds and automation are also being explored.

## Sustainability

The nursery is eliminating single-use and non-recyclable plastics from its operations, with biobased and biodegradable containers increasingly being used. The growing media is also from renewable sources.



Sustainability is being increased through integrated management aimed at a large reduction or elimination of chemical use in commercial-scale plant production.

In the future, the nursery aims to capture and recycle water and nutrients.

## Nursery facilities

Our 10 hectare nursery is a practicing research facility that supports the development and transfer of propagation and growing technologies at a commercial scale. The site on the edge of Rotorua's Whakarewarewa Forest has been a forest tree nursery since the late 1890s.

The nursery supplies a wide range of species for research trials and commercial and indigenous forest establishment. On-site facilities include shadehouses, controlled climate propagation facilities, commercial bare-root operations, a large purpose-built container growing operation and open beds.

As part of Scion, the nursery has access to analytical services for soil, foliage and other testing; forest health services for pest and disease identification and management along with a variety of other skills and capabilities to speed up and streamline the innovation process.



## Consultancy services

We offer advice and consultancy services to forest owners, growers and other parties in New Zealand and internationally on:

- Nursery management
- Propagation and grafting
- Propagation problem solving
- Feasibility studies for nursery projects from greenfields start-up to realignment

- Sustainable nursery systems
- Tree breeding programmes, including access to genetic analysis, plant breeding trial design and establishment, and advice on species.

Our expert nursery staff are specialists in their fields. They are backed by a diverse team of scientists in forest genetics, tissue culture, forest management and protection, forest environment and economics, and supply chain optimisation.



*Indigenous plant seed germination and propagation at the Scion Nursery.*

## Contact information

### **Craig Ford**

Nursery Research Scientist  
Email [craig.ford@scionresearch.com](mailto:craig.ford@scionresearch.com)  
Telephone +64 27 601 0421

or

### **Paul Keech**

Nursery Operations Leader  
Email [paul.keech@scionresearch.com](mailto:paul.keech@scionresearch.com)  
Telephone +64 27 385 0954

## About Scion

Scion is a New Zealand Crown research institute that specialises in research, science and technology development for forestry, wood and wood-derived materials, and other bio-material sectors.

Scion's purpose is to create economic value across the entire forestry value chain, and contribute to beneficial environmental and social outcomes for New Zealand.



Te Papa Tipu Innovation Park,  
49 Sala Street, Rotorua  
Private Bag 3020, Rotorua 3046,  
New Zealand

Telephone +64 7 343 5899  
Facsimile +64 7 348 0952  
Email [enquiries@scionresearch.com](mailto:enquiries@scionresearch.com)  
[www.scionresearch.com](http://www.scionresearch.com)

**Prosperity from trees** *Mai i te ngahere oranga*