

## Extending the planting season of exotic plantation species



**This fact sheet provides information to help nurseries and in-forest establishment teams deal with disruptions to planting. It has tips to extend the planting season, and to help seedlings survive when planting exotic forestry species outside normal planting times.**

### Nursery and planting disruptions during COVID-19 lockdowns

We surveyed the industry after the COVID-19 lockdowns of 2020. They reported nursery disruptions such as a lack of available supplies (for example seedlings, cuttings, plugs), and lack of access to their production sites. The main disruptions to planting were an inability to do pre-planting spraying and site preparation. Stock changes also caused disruptions.

### Ways to extend the planting season

#### Growing seedlings in containers

There are many benefits of growing seedlings in containers.

- They help extend the planting season.
- They help plantings survive, especially on poor sites.
- They're generally easier to handle and transport.
- Seedlings are less likely to be damaged.
- Having intact root plugs (the clump of dirt packed around the root ball of a

plant) when transplanting from container to the ground reduces transplant shock, and can help seedlings establish better.

You can find container recommendations for several exotic and native species in **Managing Nursery Stocks – Containerised systems**.

#### Holding nursery stock

For holding nursery stock, a range of nursery practices are recommended:

- topping (trimming the top of a plant to stop vertical growth)
- wrenching (loosening surrounding soil) in bare root crops
- ground planting (after one year in the container – to help prevent root damage)
- repotting into larger containers
- seedlings can be kept in cool storage for up to 4 weeks
- climate control
- effective nutrient and water management – the timing of this proved to be the best way to prevent excessive growth in the nursery. It also helps prepare crops for lifting, storing and planting.



**Tip:** Don't chill radiata pine seedlings for more than a few weeks. Plants are solar-powered and will slowly run out of energy without light.

### Your planting site

You can also help keep seedlings alive by:

- moving them to the planting site using refrigerated transport
- making regular deliveries with no more than 2 days of stock delivered to site
- using larger crews to speed up planting.

### Increasing survival rates

When establishing bare root crops in a dry spring, seedling roots can be dipped in a hydrogel slurry. This helps the seedlings retain water and increases survival rates.

Root dipping can:

- increase root moisture by about 50%
- increase crop survival by 13%
- increase growth by 10% compared with untreated plants (which had a 33% mortality rate)
- add benefits from micronutrients at the time of planting. For example, using Yates® Trace Element Chelates, applied at 40 ml/l at the time of planting.

The extra planning and hydrogel costs are offset by savings from having to replace fewer plants.

### Summary

It is possible to extend the planting season and make it successful by doing a few things:

- planting in containers
- using nursery practices like cool storage and nutrient and water management
- holding stock by slowing growth with topping, wrenching and repotting
- having small regular deliveries of seedlings made to site using refrigerated transport
- for bare root crops, dipping seedlings roots in a hydrogel slurry to increase survival rates.



**Tip:** We have tested a biodegradable hydrogel product that will soon be on the New Zealand market. Similar results can be achieved with hydrogels currently in the market, but many of these don't break down safely in the environment.

### Acknowledgements

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### Want more information?

Read the **technical reports at the MPI One Billion Trees Science** webpage:

- Industry survey
- Managing nursery stock – containerised systems
- Managing nursery stock – holding stock for later planting
- Managing nursery stocks – site suitability
- Managing delays in planting – the use of hydrogels
- Managing delays in planting – extending dormancy
- Understanding the physiological plasticity of tree species

Read other **One Billion Trees fact sheets**

Talk with an independent professional forestry service consultant.

### Disclaimer

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