



## INDIGENOUS SPECIES - TOTARA

Indigenous species could provide a viable alternative for landowners and forest growers where radiata pine is not the species of choice. Totara can be valuable as a timber, carbon sequestration and environmental resource.

### THE DEVELOPING TIMBER RESOURCE

Indigenous species such as totara (*Podocarpus totara*), have been shown to be more productive than expected. Many of the desirable attributes of old-growth totara can be found in young trees comprised mainly of sapwood, both in natural and planted stands.

Regenerating totara on farmlands has the potential to be managed as a valuable timber resource.

Scion is developing business cases for indigenous species to help growers make comparisons with other forest species and to support their investment decisions.

**Future supply of specialty timber.** Although the current harvest of totara is low, significant areas of totara are regenerating on farmland throughout New Zealand.

On hill slopes where there is a nearby seed source, and where they are not heavily grazed or cleared regularly by landowners, totara develops into small stands of saplings within 20 years. This developing resource has the potential to be managed as a future long-term supply of specialty timber without the cost of establishment.

Most such stands range in age from 50-120 years, with average diameters of 11-25 cm and have been shown to respond to both thinning and pruning. However, plantation and second-growth regenerated totara stands can produce breast height diameters of 60 cm within 75 years. Without side shelter, stem form is likely to be poor, and a large proportion of totara will be multi-leadered if planted at low stocking.

Canopy closure for a totara plantation on a lowland North Island site established at 2 x 2 metre spacing, occurred at about 12 years. Mean annual volume increment is 10 m<sup>3</sup>/ha at 60 years, with overall volume at 80 years exceeding 1,000 m<sup>3</sup>/ha.



35-year-old totara stand after pruning and thinning



Totara bark

**Functional and decorative timber.** Farm-grown totara milled for decorative and functional purposes, produces a timber as attractive as that sourced from old-growth indigenous forest or from locally-grown and imported exotic species.

Wood from semi-mature trees is likely to have a mixture of colours and textures; the sapwood is light brown while transition wood and heartwood have pinkish tones. The range of knot sizes will also enhance its decorative potential.

**Integration with farming.** As well as providing timber and carbon sequestration benefits, regenerating stands of totara also provides substantial environmental benefits such as improved water quality and prevention, or reduction, of soil erosion.

Totara's ability to establish in a paddock and its compatibility with livestock farming highlights its truly unique potential for widespread integration into our farming systems.



## ABOUT SCION

Scion is a Crown Research Institute that specialises in research, science and technology development for the forestry, wood product and wood-derived materials and other biomaterial sectors. Scion's purpose is to create economic value and contribute to beneficial environmental and social outcomes for New Zealand.

We offer research and development services across the entire forestry value chain, including forest and climate change, forest health and biosecurity, rural fire research, forest management and tree improvement.

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