

## LAND MANAGEMENT

### CONSERVATION TREES

#### *Poplar Timber*

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##### ***What is poplar timber used for?***

Poplar is a common timber tree in the northern hemisphere, and for many years in New Zealand it has been used for fence battens, rails and gates.

Out of the ground, treated poplar is very long lasting. Poplar is suitable for construction, but the pieces must be about a third larger than radiata pine to achieve the same strength. Poplar timber has been used for furniture, panelling and packaging. Future premium markets may be in moulding, industrial fibre and plywood veneer.

##### ***What qualities does poplar timber have?***

Poplar wood is tough rather than strong, and takes a lot of punishment before splitting, for example as truck decking. Its light colour is attractive to manufacturers because it can be modified to suit tastes.

Weight for weight, poplar has about the same strength as radiata pine, however it is about a third less dense. Paper made from poplar is 25% stronger than that made from radiata pine.

Poplar timber is not ground durable and some clones, particularly those with a high percentage of black heart, take up preservative treatment unevenly. However, careful selection of wood for treatment and avoiding round wood can give very good results.

##### ***How much timber can be expected from a poplar plantation?***

Poplar plantations on suitable sites will yield 200 to 250 cubic metres of sawlogs timber per hectare at 15 to 18 years of age at a final spacing of 100 stems per hectare.

##### ***How much grazing will be left under the poplar trees?***

At agroforestry spacings of about 100 trees per hectare, pasture yield under poplars will be about three quarters of that in open pasture when the canopy closes over in about year 10. There will also be significant fodder from pruned branches and fallen leaves, particularly during droughts.

##### ***What will the poplar timber be worth?***

A farmer near the Waipawa River in Hawke's Bay harvested 22 year old unpruned poplars in 1993. These trees yielded 438 cubic metres of sawlog timber per hectare, and the farmer received a net return at the wharf of \$39 per cubic metre, which equates to \$17,000 a hectare. It is anticipated prices will improve as an export industry develops and supplies become assured.

##### ***Which are the best poplars to plant for timber?***

Many poplar species are likely to yield useable timber, however several more recently bred clones are both disease free and have very good growth rates.

Recommended clones include Eridano which has no black heart; Kawa which is one of the highest density poplars; Veronese which may have one of the fastest diameter growth rates; and Tasman which is a proven tree with high growth rates on moist alluvial soils.

***Where is the best place to grow poplars for timber***

Poplars perform best on moist valley floors and lower hill slopes. This complements radiata pine which grows well on steep drier slopes. Poplars fill two main niches in the landscape between the radiata country and pastoral or cropping land. These are:

- lower hill slopes and valley floors where intensive grazing is possible but soil slipping and gully erosion will reduce long term production,
- and as a low risk crop on floodable alluvial soils.

As a general rule, possum resistant clones are prone to wind damage on exposed sites and wind tolerant clones are more palatable to possums. Trees grown in sheltered areas with at least 4-5 metres between trees are less likely to suffer from tension wood. This can be a major problem of closely grown poplars in shelterbelts and on exposed sites.

***What 's the best way to look after the poplars?***

*A poplar and willow planting guide is available from the Hawke's Bay Regional Council Land Management staff. To maximise returns from*

each tree, a pruning regime similar to that for a pine plantation should be followed. However, poplars are likely to sprout new shoots after pruning some clones less than others. Pruning in dry weather during January, February and March reduces this effect and reduces the chance of silverleaf fungus disease infection. Maintenance pruning to control regrowth is recommended every two years. As a pruning guide, at least 50% of the tree height should be retained as green crown to maintain growth rates.

Production thinning may be possible on the best sites which also have a high potential for pasture production. But final tree stocking rates will depend on the desired balance of livestock and timber production.

On harder sites, tree growth rates will be more variable so initial stocking should be up to 20% higher to give more selection. As a guide, final stocking for agroforestry should be about 100 stems per hectare (10 x 10 metres) and where timber production is given priority, about 200 stems per hectare (10 x 5 metres).

***For further information***

For information on planting poplars or willows, ask for the other titles in this series or contact Land Management staff at Hawke's Bay Regional Council for advice:

**Wairoa** 0-61838 8527  
**Guppy Road, Napier** 0-68442495  
**Waipukurau** 0-68588636  
**TOLL FREE** 0800108838

Poplar clones suitable for timber production

	<b>Basic Density kg/m<sup>3</sup></b>	<b>Bacterial BlackHeart</b>	<b>Possum Resistance</b>	<b>Other Notes</b>
<b>Eridano</b>	330-340	0-4	High	Brittle on exposed sites
<b>Kawa</b>	360	4	Mod - High	Brittle on exposed sites
<b>Tasman</b>	330	N/A	Low	Good form, wind resistant
<b>Veronese</b>	340	30	Moderate	As Tasman, but hardier