



# Poplars and Willows



## *Poplars - future drought proofing*



*Poplars are an ideal multi-purpose tree providing soil conservation, stock shade and shelter, fodder in a drought and also timber.*



**P**oplars have been planted in New Zealand for well over 150 years and are now an integral part of the rural landscape. Historically, poplars have been planted for soil conservation, as wide spaced trees on hillsides, or as close spaced gully plantings or shelter belts. Most people are familiar with the narrow columnar appearance of Lombardy Poplar, or the more spreading crown of Frimley, both of which were imported clones from Europe.

The arrival of poplar rust in 1973, causing early leaf fall, made them unsuitable for continued use. We recommend *Populus "Chiba"* as a worthy replacement species. A major consideration is the degree of resistance to poplar rusts and leaf spot. Other useful characteristics are such things as drought tolerance; improved timber qualities (e.g. wood density); reduced incidence of blackheart; low epicormic production following pruning; and high leaf biomass production for livestock fodder.

The effectiveness of poplars in soil conservation is due to the roots acting as a vast mechanical anchor, along with the tree's ability to draw up water from the soil, reducing water pressure in the soil pores and thereby lessening the risk of large scale soil movement.

Poplars are an ideal shade and shelter tree, with farmers having survived droughts by cutting poplar foliage for their livestock. A positive aspect of this fodder is its ability to minimise internal parasite burdens and boost reproduction performance in livestock.

## POPLAR FOR TIMBER PRODUCTION AND AGROFORESTRY

Poplar is a major timber species in various countries. Two varieties with timber potential are Kawa and Veronese, which have been tested by Forest Research for wood density as well as sawing, seasoning and machining properties. Poplars are ideal for large wet seepage areas in plantations and farmland. They will dry out such areas, suppressing rushes and allowing grass to grow.

When you decide to plant poplars it is important to consider what you want the trees for – conservation,

shelter, fodder or timber. Your end use will determine the shape of the tree you need. This information and the level of moisture at the site will help determine the number of trees and which clone you choose to use. For soil conservation they are ideally planted at 40-80 stems per hectare depending on moisture availability, wind exposure and ongoing management. For shelter and shade it is important to decide how large a shelter belt you require and how you intend to manage it. All poplars provide good shade for stock. As fodder, the summer pruning of poplars in a drought can be extremely valuable.

### WILLOWS AND DAIRY EFFLUENT

A willow block is useful for absorbing effluent at peak times when sumps and storage ponds are full, and spraying on pasture may cause harmful runoff.

### FODDER BLOCKS

A study by Professor Tom Barry, of Massey University, looked at the effects of supplementing the feed of ewes grazing drought pasture with willow and poplar over the 10 weeks of late summer and autumn, including the mating season. The ewes consumed willow or poplar leaves and stems 3-5mm thick. On average, over three seasons the improvement in the reproductive rate was about 20%.

By developing browse blocks on rush infected wet areas, these largely unproductive areas have been dried and volunteer pasture has grown under the trees.



*Which poplar clone for your site?*

Drier Sites  
*Veronese, Tasman, Yunnanensis,*

Moist Sites  
*Kawa, Trichocarpa*

Wind Exposed Sites  
*Veronese*

Possum Resistance  
*Kawa, Yunnanensis*

Shelter  
*Chiba, Crow's Nest, Tasman, Veronese*

