

# Poplars

**Poplars for  
the Farm**

**Specially bred clones  
for New Zealand  
conditions**



# Poplar Cultivars

Poplars grow quickly and are effective for soil conservation, stock shelter, shade, fodder and they are used as ornamental trees in cities and rural settings and make a good source of timber.

## Soil Conservation

Poplars planted for soil conservation are best planted at 10 to 15 metres apart (40 to 100 stems per hectare), depending on moisture availability, topography and assessment of risk. Thinning to 15 to 20 metres apart should not be done until after trees reach 30 cm diameter.

## Shelter and Shade

Poplars work well for shelter and shade when widely spaced and as shelter-belts. Before planting it is important to decide how large the shelter-belt needs to be and how it will be managed, whether as a pure planting for both high and low protection or pruned for timber with an inter-planted shrub species for low protection. All poplars will provide good shade for stock.

## Fodder

Summer poplar prunings are an excellent feed source in times of drought. Poplars can also be managed for size and fodder by pollarding every three to four years.

## Agroforestry

Poplars are ideal for drying out large seepage areas on farm land or within pine plantations. They dry areas and suppress rusts and this allows better grass growth. The valley floors of the hill country, prone to getting wet in winter, benefit from the presence of poplars.

## Timber

If choosing poplars for timber keep in mind other uses for the trees as they grow such as drying out wet areas or as fodder. Poplars, when employed in waste water or effluent nutrient management schemes, can be managed for timber production. In several countries poplars are a major source of timber. They are more resilient than pine, due to their longer fibres, and this makes them ideal for farm gates. Poplars have been successfully used on farms for truck and trailer decking, stockyards, battens and, when treated, for fence posts. Their lack of resins and gums make them suitable for interior wood, food packaging and gift packs. Overseas poplar is used for pulp and paper products, furniture making, as a packaging material and in veneers and plywood.

## Choosing a cultivar

### Drier sites

Argyle, Crowsnest, Fraser, Pecam, Veronese, Weraiti

### Lower slopes

All clones except Kawa and Toa

### Moist area

Geyles, Kawa, Mapiu, Rotorangi, Toa

### Possum Resistance

Kawa, Maxi-nigra clones, Shinsei or Toa

### Windy exposed slopes

Use either Argyle, Fraser, Veronese or Weraiti

### Wet, sheltered valley systems

Plant Kawa or Toa

### Shelter

Crowsnest, Kaimai, Pecam or Tasman

*Consult your local regional council (website or land management staff) or commercial nursery for further advice on clone selection for particular sites or purposes*

**Poplar clones regionally available and not pictured in the brochure are:**

Margarita  
Shinsei  
Tasman  
Trichocarpa

A Crowsnest shelterbelt. This variety is suited to horticultural shelter-belts as it is small growing and requires little side trimming.



A forestry block of pines where the low lying area that gets very wet at times was replanted in Kawa

## Management of Poplars

### Delivery of poles

If possible order poles early and arrange delivery just in time for planting. To ensure your choice of cultivars, place orders before the harvesting season of June-August.

Try to plant as soon as possible. If poles are not to be planted immediately do not let them dry out. Store with one end in clean water for not more than three to four days, or on the shady side of a shelter belt or shed in a single layer in the wet grass, this way they will still take up water.

### Pole planting

Three metre poles are the standard size for planting where there are cattle and sheep, but best results are achieved if cattle are excluded for the first two years. This is because any cattle rubbing can disturb and loosen the poles. You need to check for loose poles after a wetter period and before the dry period sets in. Loose poles must be rammed firm.

Poles can be planted by digging, drilling or ramming. Ramming should only be used if the ground is soft enough to the full depth required. Poles should be planted to the following depths:

- 3 metre poles to 600-700mm
- 2.5 metre poles to 500mm
- 2 metre poles to 400-500mm.

Poles of 3.5 or 4 metres can be used where there are large cattle or deer. We recommend that larger poles be planted to a depth of 700mm with appropriate protection.

The ground around poles needs to be grazed or sprayed regularly to prevent long rank grass stealing the available moisture. Choose areas where maximum moisture will be available to the tree.

### Protecting poles

Protection can be provided by the two sleeve types available, either Netlon or Dynex sleeves. For large poles in the presence of deer we suggest a wrap of chain mesh that can be let out over the years as the trees grow. Anchor with staples and secure with staples that can be pulled each time you slacken the mesh. Used Dynex sleeves may be recycled through your regional council.

### Pruning

This is best done in summer (January-March), less regrowth will occur if pruning is done at this time, plus the wounds dry off and heal over at this time of year. If timber is a consideration regular summer pruning should be carried out at least every second year before the branches get too big. When pruning, leave as small a wound as possible. Start pruning of poles as soon as you have a dominant leader, this will give the pole a greater chance of survival as it will not have a large root system at this stage. This should be in the first or second growing season.

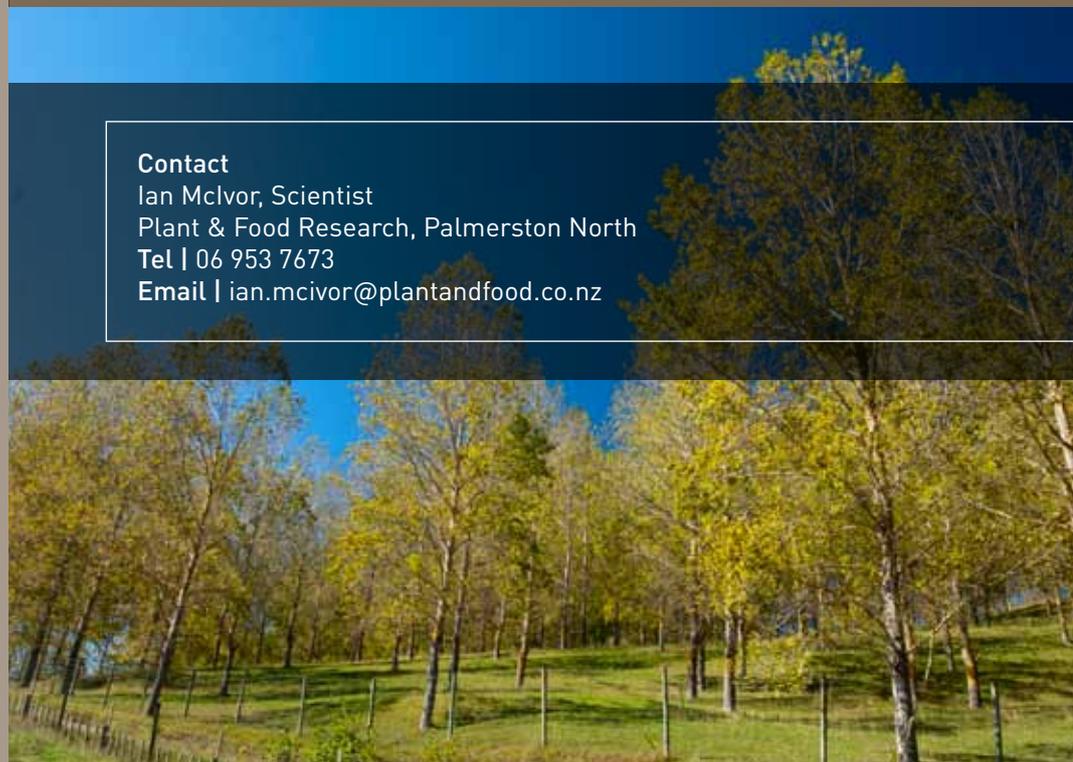
### Possum

We have a number of possum resistant varieties available. It can help to plant a sacrificial tree, or a possum palatable hybrid every 10 or 20 poles. Ensure all poles are pruned to a single leader as soon as possible to prevent possums nesting in the growth at the top of the pole.

*Consult your local regional council website or land management officer for further advice on the management of poplars on farm.*

### Contact

Ian McIvor, Scientist  
Plant & Food Research, Palmerston North  
Tel | 06 953 7673  
Email | [ian.mcivor@plantandfood.co.nz](mailto:ian.mcivor@plantandfood.co.nz)



# Cultivars

## *P. maximowiczii* × *nigra* clones

These clones have a narrow crown, dark green leaves, light branching, straight trunks with low incidence of double leaders and show high rust resistance. They are frost tolerant and reasonably wind tolerant. They are well suited for moist sites and higher humidity zones, and will stress in coastal (with the possible exception of Pecam) and drier sites. They leaf earlier than most other clones, and root readily from planting material. Rough bark takes longer to develop than in the *P. x euramericana* clones. Growth rates in national trials were generally higher than for *x euramericana* clones, except in the coastal site. Wood densities were measured for 12 year old plantation trees in Gisborne (c.f. Kawa at 345 kg/m<sup>3</sup>).

*Poplars are ideal as a conservation tree, for stock shelter, shade and fodder and also for timber...*



NEW

### Geyles

*P. maximowiczii* × *nigra*

Geyles is a straight-stemmed tree with a narrow crown, light branching and is strongly rust-resistant. It leafs early in spring and growth rates are excellent with adequate moisture. Geyles had a wood density of 336 kg/m<sup>3</sup> and performs well in most environments except for coastal sites.



NEW

### Hororata

*P. maximowiczii* × *nigra*

Hororata is less vigorous than Geyles and Mapiu and performed best at more sheltered sites. Hororata has rougher bark than the other *P. maximowiczii nigra* clones. It has high rust resistance and narrow form and had a much lower wood density in trials, 287 kg/m<sup>3</sup>.

NEW

### Mapiu

*P. maximowiczii* × *nigra*

Mapiu is similar to Geyles in form and performed consistently well in a range of sites. It is better suited to windy sites than Geyles and is not as vigorous as Geyles. It has high rust resistance and a high frost tolerance so is suitable for moist and cold climates. Wood density of 313 kg/m<sup>3</sup> was in the lower range.



NEW

### Pecam

*P. maximowiczii* × *nigra*

Pecam is a slower growing tree with a straight growth form and has shown higher tolerance to coastal and cold conditions. It is suited to situations where vigour is not desirable, such as shelterbelts. Pecam has smoother bark than other *P. maximowiczii nigra* clones and had a wood density of 360 kg/m<sup>3</sup>.





### Argyle

*P. deltooides x nigra*

Argyle has early, rough bark development, is a broad, open crowned tree that can develop heavy branches in the crown like Flevo. It will produce a lighter crown if grown on a harder site.



### Crowsnest

*P. x euramericana x nigra*

Crowsnest is a smaller growing tree with upright branches that do get heavier with age. It can be used as a conservation tree particularly in eastern drier regions where minimal shade is required. It is suited to horticultural shelter as the stems are lighter than Tasman and require little side trimming.



### Pakaraka

*P. deltooides x nigra*

Pakaraka performs well in northern and eastern areas of the North Island.



### Selwyn

*P. deltooides x nigra*

Selwyn is a narrow, more open crowned tree. It requires more sheltered valley sites than Weraiti and Otahuao both of which have been planted in greater numbers at this stage.



### Fraser

*P. deltooides x nigra*

Fraser is a very narrow tree with a light open canopy and good as a conservation tree where minimal shade is required. Its lighter stem makes it prone to breakage on exposed sites.



### Otahuao

*P. deltooides x nigra*

This clone has an upright crown and a heavier stem than the narrow stemmed crowns of trees like Fraser. Otahuao also has fewer heavy limbs than Argyle and as a young tree has a smooth bark. It grows well in eastern North Island areas.



### Veronese

*P. deltooides x nigra*

Veronese is an imported *P. x euramericana* hybrid black poplar, and is a straight-stemmed, narrow crowned tree. It has good drought and wind tolerance. Veronese makes a good conservation tree where minimal shade is required. It is prone to rust in areas of high humidity and heavy dews in western areas.



### Weraiti

*P. deltooides x nigra*

Weraiti has a good shaped crown with a heavier stem than most previously covered *P. deltooides x nigra* hybrids. It will produce a few heavier branches but not to the extent of Argyle. Weraiti performs well in eastern North Island areas.

# Cultivars

## *P. deltooides* × *ciliata* clones

These Eurasian clones (the parent *P. ciliata* is known as the Himalayan poplar) do not grow as quickly as the × *euramericana* hybrids and are more slender with straight trunks. They have demonstrated good rooting ability as nursery cuttings. They leaf later in the season and their branching habit varies as does rust susceptibility. In trials, they have grown well in wetter sites and reasonably in drier sites and in a range of soils. Wood densities were measured for 14 year old trees at Palmerston North (c.f Kawa at 423 kg/m<sup>3</sup>).



NEW

## Rotorangi

*P. deltooides* × *ciliata*

This clone does not grow as tall as San Rosa, though it has performed as well in higher rainfall, rust prone regions because of its greater rust resistance. It carries a full canopy to later in the autumn. It has good form with a narrow branch angle and straight trunk. Its form makes it a good option in windy environments. Rotorangi had a wood density of 358 kg/m<sup>3</sup>.



NEW

## Kaimai

*P. deltooides* × *ciliata*

Kaimai is best suited to drier regions and it has a narrow growth form with light branching and an open canopy. It has rust resistance similar to Veronese, is slower growing than San Rosa or Rotorangi and is also suitable for shelterbelts. Of the three *P. deltooides ciliata* clones Kaimai has performed best closer to the coast. This clone had a wood density of 353 kg/m<sup>3</sup>.



NEW

## San Rosa

*P. deltooides* × *ciliata*

San Rosa has heavier branches than Kaimai and with similar rust resistance. It is a vigorous clone. It is best suited to drier regions but has performed well in higher rainfall regions despite rust susceptibility. It can produce double leaders which need to be removed early. It has a slightly wider crown than Kaimai or Rotorangi. San Rosa had a wood density of 359 kg/m<sup>3</sup>.



## Kawa

*P. deltooides* × *yunnanensis*

Kawa is an excellent conservation tree on moist slopes that don't get excessive wind. New leaf emerges late September with greenish/bronze leaves. Kawa is one of the densest poplars at up to 360kg per cubic metre making it the leading timber producing poplar. Kawa keeps its foliage longer than the × *euamericana* hybrids, and has stunning autumn colouration.

## Toa

*P. x euramericana* × *yunnanensis*

Toa is a narrow tree but is heavier in the trunk and broader tree than Kawa. It is also an excellent conservation tree in inland areas with good moisture. The leaves of Toa are like those of × *euramericana* hybrids, but of a darker green and form a denser canopy.

## The Chinese poplar

*P. yunnanensis*

Yunnanensis is slower growing than its two hybrids Kawa and Toa. It has dark glossy green leaves and holds on to them well into winter.

[www.plantandfood.co.nz](http://www.plantandfood.co.nz)

**Contact**

Ian McIvor, Scientist Plant & Food Research, Palmerston North

Tel | 06 953 7673

Email | [ian.mcivor@plantandfood.co.nz](mailto:ian.mcivor@plantandfood.co.nz)