



A guide to shelter planting and costs



Southland sheep enjoying the benefits of a good shelter tree line.

Southland is situated in a global climate zone known as the roaring forties that is dominated by frequent and strong winds. Winds from the north dry out pasture and erode soils, and winds from the south bring rain, salt and cold temperatures.

A key way to reduce the negative effects of these winds is to plant shelter lines on your farm. Shelter on the farm has many benefits and values with key ones being increased pasture and crop production, improved animal welfare and creating an enjoyable and attractive working environment.

Paddock shelter lines for stock and grass or crop production should be designed as a wind filter to slow down the wind and not as a complete barrier to block it. This will provide benefits over a larger area and remove the problem of the wind rising over the shelter line to then drop back down onto the land.

For every one metre of plant height you can expect from 10-15 metres of shelter across the paddock.

There is an extensive range of shelter planting options available to achieve stock shelter and increased grass or crop production, while adding other values like bee food and landscape aesthetics. Whatever you choose, your plantings require careful consideration to improve plant survival, reduce problems in the future as plants grow and to achieve the desired outcomes.

You can choose to plant only natives, only exotics or a mix of both depending on your area and what you're trying to achieve.

Here are four examples of costings (GST and freight exclusive) calculated on a 100m length of planting. Three years of maintenance is also included.

► **Example 1: Single row – *Eucalyptus cordata***

Eucalyptus cordata can withstand cold, salt-laden winds and wet soils so is an excellent shelter tree for Southland. This tree features lower branches, trims well and has a natural compact form requiring little maintenance. It grows to seven metres in five years, and to 10 plus metres when fully mature. White flowers appear from August to September, attracting birds and bees much earlier than other flowering plants. *Eucalyptus*

cordata is evergreen so best planted in north to south lines to avoid frosting pasture.

Eucalyptus cordata will need a fenced line four metres wide, with plant spacings of three metres that are spot sprayed with Roundup. Release spraying can be carried out with Gallant and Versatill.



A shelter line of *Eucalyptus cordata* in Southland

SEASON	ACTION	
Spring 1	Spot spray 4 weeks prior to planting. Chemical and labour @ \$1.50 per tree	\$50
	33 trees @ \$2.50 each	\$83
	Planting costs for one person – 5 hrs @ \$25 hr	\$125
Spring 2	Release spraying, chemical and labour	\$50
	Replacement trees – 4 trees @ \$2.50 each	\$10
Spring 3	Release spraying, chemical and labour	\$50
Total planting and 3 years' maintenance costs for 100 metres of tree line		\$368

► Example 2: Double row – exotic and native plants

Eucalyptus subcrenulata is best planted in north to south lines, growing to 10 metres in five years to reach a height of 20 metres when mature. Side trimming and topping is an option but not necessary. *Eucalyptus subcrenulata* also has an attractive flower which attracts birds and bees from January to March. As *Eucalyptus subcrenulata* matures, it tends to drop lower branches. Planting two flax plants between each

Eucalyptus subcrenulata, low shelter for cold or hot weather will be retained.

Eucalyptus subcrenulata will need a fenced line four metres wide, with plant spacings of three metres that are spot sprayed with Roundup. Release spraying can be carried out with Gallant and Versatill. Flax will not require release spraying.



A shelter line of *Eucalyptus subcrenulata* and flax in Southland

SEASON	ACTION	
Spring 1	Spot spray 4 weeks prior to planting. Chemical and labour @ \$1.50 per tree	\$150
	33 trees @ \$2.50 each and 66 flax @ \$4.35 each	\$370
	Planting costs for one person – 10 hrs @ \$25 hr	\$250
Spring 2	Release spraying, chemical and labour	\$150
	Replacement trees – 4 trees @ \$2.50 each	\$10
Spring 3	Release spraying, chemical and labour	\$150
Total planting and 3 years' maintenance costs for 100 metres of tree line		\$1,080

► Example 3: Single row – low native plants

Toetoe (*Austroderia richardii*) can grow to two metres in height when fully mature and can be planted in any line or location as they do not shade pasture or keep areas damp. Toetoe also has an attractive flower which attracts birds and bees, and flowers from summer to autumn. Plant protectors are

not necessary for Toetoe but help to raise the survival rate and make easier to release spray with Roundup. Toetoe will need a fenced line three metres wide and plant spacings of three metres.



A Toetoe shelter line in Southland

SEASON	ACTION	
Spring 1	Spot spray 4 weeks prior to planting. Chemical and labour @ \$1.50 per plant	\$50
	33 plants @ \$2.75 each and plant protectors @ \$1.80 each	\$150
	Planting costs for one person – 4 hrs @ \$25 hr	\$100
Spring 2	Release spraying, chemical and labour	\$50
	Replacement trees – 4 trees @ \$2.75 each	\$11
Spring 3	Release spraying, chemical and labour	\$50
Total planting and 3 years' maintenance costs for 100 metres of tree line		\$411

► Example 4: Double row – exotic and native trees

Eucalyptus cordata and Chatham Island akeake (*Olearia traversiorum*) are salt tolerant and grow well in the salty, cold winds in the coastal zone. The taller growing *Eucalyptus cordata* (10m) is planted on the lee side, while the akeake (5m) is planted on the windward side. This combination creates

excellent shelter in windy and exposed sites. Plant protectors will help to raise the survival rate and make it easier to release spray. These trees will need a fenced line of four metres wide and plant spacing's of three metres.



A shelter line of exotic and native trees in Southland.

SEASON	ACTION	
Spring 1	Spot spray 4 weeks prior to planting. Chemical and labour @ \$1.50 per plant	\$50
	17 <i>Eucalyptus cordata</i> at \$2.50 each, 16 akeake @ \$ 3.50 each	\$205
	33 protectors @ \$1.80 each	\$60
	Planting and fitting protectors costs for one person – 5 hrs @ \$25 hr	\$125
Spring 2	Release spraying, chemical and labour	\$50
	Replacement trees – 4 trees @ \$3.50 each	\$14
Spring 3	Release spraying, chemical and labour	\$50
Total planting and 3 years' maintenance costs for 100 metres of tree line		\$554

More information

Environment Southland – www.es.govt.nz

MPI one billion tree programme - www.teururakau.govt.nz/funding-and-programmes/forestry/one-billion-trees-programme/

DairyNZ – www.dairynz.co.nz/environment/waterways/planting-waterways/

Beef+Lamb New Zealand - www.beeflambnz.com/knowledge-hub/PDF/trees-farm.pdf

Further assistance

For shelter planting advice to suit your specific needs and locations, call us to arrange a free visit by our land sustainability team on 0800 76 88 45.

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