

Close planting improves returns for growing apples

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Dryland farming with trees 6 metres apart on the square is the traditional method of growing apples in the Stanthorpe district of Queensland. Costs have risen rapidly during recent years and in years of low prices, returns to apple growers are poor. Close planting of trees can improve these returns through higher yields and lower pruning, spraying, and harvesting costs.

The average yield for a traditional wide spaced orchard under good management is 900 (18 kg) cartons per hectare. Close planting trials have yielded 4 000 cartons per hectare in the fifth year after planting while growers have attained yields of 3 000 cartons per hectare for mature close planted orchards. A hedgerow of trees is obtained with close planting and most of the harvesting and pruning is done from the ground.

Establishment costs are higher for close planting but this is compensated by earlier returns with early cropping. Cropping commences in the fourth year after planting compared to the seventh year for wide spacing.

TABLE 1. Comparisons between wide spacing and close planting apples

	Wide spacing	Close spacing
Tree spacing (m x m)	6 x 6	5 x 2
Average yield (cartons/ha)	900	3 000
Pruning cost (cents/carton)	13	2
Spraying cost (cents/carton)	36	19
Harvesting cost (cents/carton)	20	11
Gross margin (\$/carton)	0.85	1.37
Establishment period (years)	6	3
Establishment cost (\$/ha)	1 255	4 634
Year of repayment (break even)	13	7

New land is preferred for close planting but when replant land is used, good preplanting management is required. This includes spelling the land for several years, cover cropping, liming, and fumigating. Irrigation and chemical weed control along the row are essential.

Management of close planting has been a major research project at the Granite Belt Horticultural Research Station for 8 years. The semi-dwarfing, precocious rootstock, MM 106, has yielded higher than the standard rootstocks for wide spacing, Seedling and Merton 778. Central leader is the best training system for close planting and the recommended planting distance is 2 metres between the trees and 5 metres between the rows.

Wide spaced orchards can be replaced by smaller close planted areas with similar yields but with better returns.