

Experimental restoration of indigenous vegetation in agricultural landscapes on the Canterbury Plains, New Zealand

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Abstract

This work describes an ecological restoration project on the Canterbury Plains, South Island, New Zealand. Pasture and *Prunus*-sheltered sites were used to investigate the roles of shelter, plant spacing, mulching, and fertiliser on growth and survival of planted woody species. Minimal management (simulating the probable practices of farmers) of late-successional plant communities in open agricultural landscapes resulted in poor establishment, low survival and slow community development. Organic fertilisers (chicken waste) helped to reduce competition between planted species, although the effects of a single application were limited to less than one year. After one year, straw mulches also had reduced impacts (temperature regulation, moisture retention). Narrow-leaved woody species were the only ones which survived the open planting, while most species established and survived under the willow-plum shelter. Hot, dry *föhn* winds were the major factor limiting plant survival.

Key words: Restoration, mulch, fertiliser, seral plantings, establishment, shelter