



Direct seeding in the MIA

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in a nutshell

- Through MIA EnviroWise a trial has been implemented to determine the actual costs and effectiveness of direct seeding for revegetation of open and understorey areas, within existing remnant vegetation areas on farms in the MIA
- The trial has been established at four sites, two on sandy loam soils at Widgelli and two on grey clays at Gogeldrie
- Germination and establishment will be monitored for three years and results published at the end of the trial

The MIA EnviroWise program commenced a direct seeding of native vegetation trial in June 2006 to determine the economic and environmental benefits of this option for re-establishing native vegetation on irrigation properties within the MIA.

Native vegetation is an essential feature in the landscape with benefits such as intercepting groundwater recharge to lower watertables, reclaiming salinised or eroded areas, improving soil fertility, improving aesthetic values thereby increasing property values, and providing shelter and shade for livestock, particularly in the current drought conditions.

Large areas within a farm are particularly hard to plant up to seedling tube stock due to scale and cost. In recent years direct native seed application has been applied as an economic alternative in regions around the Murray and Upper Murrumbidgee catchments.

Trial to determine cost & effectiveness

Through MIA EnviroWise a trial has been implemented incorporating two soil types, sandy loams and grey clays.

Different aspects and management techniques feature at each site to determine actual costs and effectiveness of this method for revegetation of open areas and understorey species, within existing remnant areas on farms in the MIA. The properties included in the trial are owned by Terry McFarlane and Trevor Hill at Widgelli, with trial sites located on sandy loam, and by Rob Houghton and Jim Maskus at Gogeldrie, with the sites on grey clays.

The seed for the trial was sown in June 2006 prior to a forecasted rain event. The seeds from local endemic tree and shrub species were sourced from the Greening Australia seed bank in Wagga Wagga. Species included several *Acacia* (western black wattle and cooba), *Pittosporum* (butterbush), *Dodonea* (narrow leaf hopbush) and *Senna's* (punty bush). *Eucalyptus* seedlings were spot planted after seeding.

Seeding was carried out by Owen Whittaker from Natural Capital, a revegetation specialist, and was applied with a Burford seeder towed behind a four wheel drive vehicle. The seed was applied in natural spirals and curves to initiate germination in clumps along contours, for a natural look.



Figure 1: Acacia germinating within direct seeding line in sandy loam at Trevor and Gerardine Hill's property near Widgelli.



Figure 2: Acacia germination in grey clay at Rob Houghton's site at Gogeldrie.



Other benefits of direct seeding are the relatively small volume of seed per hectare required and the minimal cost of establishment, allowing larger areas to be replanted.

Germination against the odds

Four months after seeding and with the lowest winter rainfalls ever recorded for the region, a follow up visit of the sites found that germination had occurred in all four sites. At the time of the visit there had been no rainfall for 55 days and prior to that last fall (in early Spetember) there was a 45 day dry period.

Currently the landscape in the MIA is dry and sparsely vegetated. Amazingly the seed has germinated in all sites! Particularly the *acacia* and *dodonea*, with the sandy loams of Widgelli having the most success; germination has even occurred on the cracking grey clays at Gogeldrie. *How tough are these plants??!*

With intermittent falls of rain there is every chance these plants will kick along to become the beginning of the re-establishment of understorey and tree species in these landscapes. The seed bank still remaining in the soil will continue to produce, as each species awaits the optimum conditions for germination, which could occur up to three to five years after sowing.

Germination and establishment will be monitored for three years and the results will be published at the end of the trial. 🌱

Further information

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Figure 3: Landscape at Terry Hill's property highlighting direct seeding lines with weed control allowing for optimum germination of native vegetation.



Figure 4: Current landscape at Terry McFarlane's property with the scald line from the direct seeder in the foreground.