

Project Title: Weed mapping within paddocks for targeted weed control.

S0607R Final Report

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Executive Summary

Weed management challenges have become increasingly difficult with the escalation of herbicide resistance and rising input costs. The advent of Precision Agriculture (PA) adoption in Australia and the results from overseas research suggest that there are potential economic and environmental gains from Site Specific Weed Management (SSWM). This project aimed to assemble equipment, techniques and knowledge to build the critical intellectual and technical capacity needed to undertake research into SSWM. The capacity built during this project was a major determinant in GRDC's decision to fund a three-year SSWM project based with SARDI (Dr John Heap; 2008-2011). The GRDC project has now begun and is heavily reliant on the outcomes from this SAGIT project.

This project developed and demonstrated field techniques for biomass mapping using ground and airborne sensing systems, and refined computer-based procedures to analyse airborne imagery. Field experiments found that wheat and pea stubble did not effect NDVI (plant biomass) measurements, but that as little as 1.5mm of simulated rainfall did. The knowledge and techniques arising from this project will continue to be applied to research into SSWM for annual ryegrass and wild oats within the new GRDC SSWM project.