

Evaluating new legume pasture options for mallee mixed farming

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Project Title: Boosting profit and reducing risk on mixed farms in low and medium rainfall areas with novel legume pastures enabled by innovative management methods



Key Messages

- The project began in 2018 and is focused on both new pasture species options and non-conventional establishment methods that may be better suited to cropping-oriented mixed farms in medium to low rainfall areas
- Field experiment near Waikerie is evaluating establishment methods (summer, twin and autumn sowing)
- Field experiment near Lameroo is evaluating the duration of pasture benefits for cropping and regeneration after cropping

Why was the trial/project undertaken?

As national livestock prices and global demand for animal products increases, there is increasing value in establishing high quality pasture feed sources. On mixed farms there has been renewed interest in ley farming systems, particularly using new pasture species that can be integrated into farm systems with benefits to subsequent crops. A significant obstacle to the adoption of pasture species is the difficulty in successfully germinating and establishing high seed cost pastures, particularly in marginal areas. To help growers overcome these issues, systems and rotations need to be developed that provide greater flexibility in moving between crop and pasture phases. The aim of the CSIRO component of the project is to evaluate low-cost establishment methods, the productivity benefits of including legume pastures species in the cropping sequence, and to develop the capacity to model pasture-cereal systems in mallee soils.

How was the trial/project undertaken?

The 'pastures in cropping systems' experiment in Lameroo includes the legume pastures Serradella, Trigonella Balansae, Rose Clover and Medic and is testing the duration of pasture benefits to cropping and subsequent regeneration. Crop benefits will be measured in 2020 after 1 or 2 year pasture phases. Regeneration of pastures following cereal crops will be measured and compared against sown pasture establishment. The productivity of pasture systems will be compared against the control treatments including a pulse-cereal system, vetch-cereal system and continuous cereal system.

The 'establishment methods' experiment (estab. Waikerie 2018, estab. Lameroo 2019) evaluates both new pasture species options and non-conventional establishment methods that might be better suited to cropping orientated mixed farms. Establishment methods include, summer sowing where sowing of hard-seeded pasture occurs in February and hard seed breaks down to establish on the autumn break, and twin sowing, where hard seed is sown with a cereal crop, in a single pass and hard seed breaks down to establish on the break of the following season.

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