

4) Whole farm economic modelling to quantify the impact on profit by:

- Integrating data from programs 1-3 into paddock-scale and farm models.
- Exploring optimum combinations of enterprises, prices, soil type, labour requirements over a range of seasons.
- Mapping the best fit for each pasture to maximise whole farm profit and/or reduce risk.

5) Extension activities will directly interact with at least 3,500 growers, and increase plantings of new legumes by more than 1,000 growers nationally through:

- Participatory on-farm research that ensures technologies meet farmer needs.
- Demonstrations to quantify animal production and welfare, and benefits to crops.
- Field days, workshops, case studies and other activities with grower groups; providing relevant information for publications, including YouTube videos.
- This program will also coordinate project management and evaluation.

PROJECT STEERING COMMITTEE:

John Bennett (Vic farmer), Andy Duncan (WA farmer), David Vandenberghe (WA farmer), Ed Hunt (SA farmer), Stephen Loss (GRDC), Julia Easton (GRDC), Melissa McAulay (AWI), Doug McNicholl (MLA), John Howieson (Murdoch University), Ron Yates (DPIRD), Ross Ballard (SARDI)

PROJECT PARTNERS:

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The research partners include the South Australian Research and Development Institute, Murdoch University, the Commonwealth Scientific and Industrial Research Organisation, the WA Department of Primary Industries and Regional Development, and Charles Sturt University, as well as grower groups: Mingenew Irwin Group, Corrigin Farm Improvement Group, Asheep Esperance, Eyre Peninsula Agricultural Research Foundation, Upper North Farming Systems, Mallee Sustainable Farming, Lower Eyre Ag Development Association, Birchip Cropping Group, Farmlink, Central West Farming Systems.

FOR MORE INFORMATION CONTACT

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DRYLAND LEGUME PASTURE SYSTEMS

BOOSTING PROFIT AND REDUCING RISK
IN MEDIUM AND LOW RAINFALL AREAS





DLPS Field Tour Group @ Guydon Boyle's, York WA



DLPS Field Tour @ Northam, WA

WHY?

Over the past three decades there has been a shift from integrated crop-livestock production to intensive cropping in dry areas, which has significantly reduced the resilience of farms. Intensive cropping is prone to herbicide resistant weeds, large nitrogen fertiliser requirements, and major financial shocks due to frost, drought or low grain prices.

A pilot project with MLA and AWI in WA and southern NSW has demonstrated how novel pasture legumes such as serradella, biserrula and bladder clover can improve livestock production while reducing nitrogen requirements, weeds and diseases for following crops.

An \$18M project (2017-2022) led by GRDC and supported by DAWR, MLA and AWI is working with Murdoch University, SARDI, CSIRO, DPIRD and CSU to develop novel pasture legumes for mixed farms in dry areas. In south-eastern Australia the novel pasture legumes will be compared with new medic cultivars offering improved production and disease resistance.

This project will develop recently discovered pasture legumes together with innovative management techniques that benefit animal and crop production and farm logistics, and promote their adoption on mixed farms over one million hectares in the low and medium rainfall areas of WA, SA, Victoria and southern NSW. The project is also aiming to halve financial risk for mixed farmers.

THERE ARE FIVE INTEGRATED PROGRAMS OF WORK:

1) Development of annual pasture legumes that are:

- Well adapted to major soils in dry regions; fix abundant nitrogen; produce quality stock feed to fill gaps.
- Harvestable with conventional machinery to minimise seed costs.
- Of suitable seed dormancy to enable summer sowing or natural regeneration after crops.
- Tolerate cropping herbicides, legume diseases and pests.

2) Cropping systems research to maximise benefits to crops through:

- Cheap pasture sowing/regeneration practices that easily integrate with crops.
- Flexibility to change crop/pasture mix according to seasonal conditions and prices.
- Enhanced nitrogen fixation and soil fertility; reduced fertilizer inputs.
- Decreased weed herbicide resistance, diseases and pests.

3) Animal systems research to deliver:

- Increased growth and reproduction by extending the period of quality feed; reduced supplementary feeding.
- More meat achieving 'grass fed' premiums; more wool.
- Understanding anti-nutritional factors and 'duty of care' for new species.
- Grazing of weeds in preference to legumes.