

Horses for courses: Using the best tools to manage climate risk

July 2004 – May 2007



Location: Western Australia

Principal investigator

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The need

Due to the ever increasing margin squeeze, it is vital that growers can better manage seasonal variation such that maximum profit is generated in the better percentage of years and the 'damage' is limited in the poorer percentage of years. Certain decision support tools, when combined with adequate application knowledge, may help farmers in the Northern Region of WA achieve this.



How this project fits with MCV objectives

This project addresses the MCV objectives of providing tools and services for managing climate risk, and increasing the adoption of climate risk management by farmers.

Project objectives

This project will compare several methods for managing climate variability and risk by tactically managing fertiliser application. The use of a range of the most promising tools, seasons, paddocks, grower learning styles and forecasting indices will enable participants to:

1. Learn about and evaluate the costs and benefits of using climate forecasts, with and without reference to historical climate records, to inform crop management decisions
2. Compare and evaluate different methods of climate forecasting, and their relevance to cropping systems, farms and individual paddocks
3. Compare and evaluate different methods for interpreting climate forecasts and responding with management action, on individual paddocks
4. Combine the above with characterisation of spatial variation in key soil properties, to understand and identify opportunities for site-specific (rather than whole-paddock) responses to climate. Together, this road-testing process will be used to:
5. Compare the benefits of developing a composite tool that combines the best elements of each of those tested with the production of a 'horses for courses' toolbox, designed to suit cropping farmers' needs and preferences for responding to climatic variability and risk
6. Assess the commercialisation opportunities arising from (a) improved farmer awareness of the ability to benefit from tactical risk management and (b) improved tools for informing management responses

Methods

This project will compare several methods for managing climate variability and assessing crop yield potential. The comparisons will be run on 7 selected paddocks representing different soil types and environments.

The farmers involved in the project will be members of the Mingenew-Irwin Group whose farms receive between 350-500mm annual rainfall, which is broadly representative of most of the WA wheat-belt. The farmers themselves, with the support of scientists and extension experts, will decide which tools to test and how the information will be packaged/presented. The aim is for the end user to have the final say in what is useful to them.

Desired outcomes

- › Farmers determining whether or not a range of decision support tools are useful and can lead to better management decisions
- › Tools or combinations of tools available to growers and farm advisers
- › Better management of seasonal variation

Achievements to date

- › Completed two growing seasons (2004 and 2005)
- › Selected APSIM, PYCAL and '3 year paddock WUE' yield prediction tools, and NULogic (CSBP) and SYN (DAWA) N tools
- › Selected BoM and DAWA Climate Outlooks
- › Distributed bulletin to MIG members (140 farmers) May – Sept 2004
- › Held three workshops for MIG members in 2004
- › Surveyed 25 farmers at 2004 workshop about how they manage seasonal risk (project 'entry' survey)
- › interviewed farmers (those hosting sites) at the start of 2005 to capture their thoughts and how they used the information made available
- › Replaced APSIM with 'Yield Prophet' in 2005
- › Yield Prophet and PYCAL (modified) the sole yield prediction tools
- › N and climate tools / methods as per 2004
- › Modified the bulletin based on 2004 feedback and distributed to MIG members (140 farmers)
- › Provided all MIG members with access to the 'Yield Prophet'
- › Held three workshops for MIG members during 2005
- › Gave talks at DAWA Crop Updates and at six farmer workshops across the region; had various articles published including one in Farming Ahead
- › Project team (CSIRO, DAWA, CSBP and Elders) met 23 February to determine tasks required to wrap up the project and deliver on all objectives

What is left to do?

Capture the array of project learnings and how Mingenew-Irwin Group farmers' attitudes and management have changed or otherwise as a result of this project.

MCV is a collaborative program between the Grains, Rural Industries and Sugar Research and Development Corporations; the Australian Government Natural Heritage Trust and Department of Agriculture, Fisheries and Forestry; Dairy Australia; Meat & Livestock Australia; and Land & Water Australia. The National Farmers Federation and Australian Wool Innovation Limited are associate partners.

For more information on MCV, visit <http://www.managingclimate.gov.au>
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