Crop Sequencing Initiative in Southern Australia

INFORMATION

Nigel Wilhelm and Geoff Thomas
GRDC funded Low Rainfall Collaboration Project

Background

In low rainfall regions of south-eastern Australia broad-leaf crops make up only a very small proportion of the total area of sown crops. In the Victorian, South Australian and New South Wales Mallee regions with <350 mm of annual rainfall, less than 5% of farmers grew grain legumes or oilseeds. Although pulse and canola cropping has declined, 65-70% of grain producers in the southern region still grow pastures in rotation with crops. Many of these pastures tend to have variable and low legume contents, are currently dominated by annual species (grasses and weeds), may be of little benefit to following crops and can support many major cereal diseases.

Farmers have increasingly adopted continuous cereal cropping strategies as non-cereal crops are perceived as riskier than cereals due to greater yield and price fluctuations. Generally higher input costs have reduced all cropping gross margins. Reduced profitability and interest in livestock enterprises have also increased cropping intensities. There is a need for non-cereal crop and pasture options to provide profitable rotational crops, disease breaks and weed control opportunities for cereal production. The current alternative to cereals, poor performing volunteer annual grass dominant pastures, are havens for cereal pests and disease and often seen as having a negative impact on subsequent cereal yields and quality.

GRDC have recognised that there are many paddocks throughout the cropping zone of Australia which must be rotated away from cereals for a sustainable industry, but viable alternatives are not clear in many environments. GRDC want to improve on-farm crop sequencing decisions across the grain belt through a combination of tactical and strategic farming systems RD&E.

The two key objectives of this program are:

1. To achieve quantitative and measurable improvements in crop production, farm profitability and resource condition by appropriate crop sequencing within five years.
2. To facilitate capacity building and empowerment of the agricultural community across the region to participate in RD&E, access information and training and benefit from the full spectrum of GRDC-supported research.

The GRDC is looking to invest up to $9 million over the next 5 years in projects under this initiative, targeted at identifying the specific farming systems questions associated with managing complex crop sequencing regimes and aligning the focus of the RD&E work to address and support the associated decision making process. This program of new activities will commence in mid 2010 and the program will operate for five years (some projects however may be of shorter duration).

The GRDC will manage its investments as a suite of integrated projects, and project teams will be required to meet regularly to share skills, data and ideas and to present and discuss their findings. Seven projects are now being developed up across the nation to address this issue. A coordinating position will also be funded to facilitate the development of strong and effective linkages between all projects and integrate findings for the benefit of all regions, not just those under direct investigation.

The Low Rainfall Collaboration project submitted one of these successful proposals for investigations across the low rainfall zone. The project will be managed by the low rainfall collaborative project but will be a collaborative effort between all Low Rainfall Farming System groups. The outcome from the successful conduct of this proposal will be more reliable and more productive low rainfall farming systems through the increased use of less risky broad leaved break phases. This will be achieved through the promotion of the following outputs from the proposal in low rainfall regions of south eastern Australia:

1. More reliable management strategies for the production of broad leaved phases.
2. Identification of more reliable break phase options.
3. Guidelines to identify trigger points for when, for how long and which break phases to use for improved farming systems outcomes.
4. Reliable estimation of risks with break phases as well as their total impacts on following cereal crops.

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