
EXECUTIVE SUMMARY

Dave Anthony

Director, CRDC

The Dalby workshop provides a unique chance for two of Australia's leading field crop research & development corporations, CRDC & GRDC, to come together to share information about research needs and production challenges facing the industries.

Grains and cotton farming systems have many features in common. Most cotton growers are significant grain producers while many grain producers take opportunities to grow cotton when conditions and prices are favourable. Cotton and grains in northern NSW and Queensland are grown in the same environment, often along side one another. The interaction between cotton and grains farming systems involves weed, insect and disease management, moisture conservation, land preparation and stubble management, crop nutrition, crop modelling systems and risk management. The activities of one industry can have implications for the other, the most noteworthy being insect management.

Both industries are developing quality assurance/best management practices systems and need to maintain a strong level of communication to avoid duplication.

Research in both industries has provided huge benefits to producers; however work and investment in the areas of machinery, weeds and harvesting were not seen to have kept pace with other factors. This has been addressed in recent years with more resources directed to these areas. Good research data and effective communication are the keys to the adoption of improved farming systems by both industries.

While both industries are interested in developing farming systems, gaps in many of the individual elements of farming systems still require more work and shouldn't be overlooked. These include insect, weed and disease issues, machinery, rotation crop analysis, stubble handling and integrated pest management.

Crop and systems modelling at both the farm and catchment levels are proving useful. Significant successes have been achieved with risk assessment models using soil moisture, rotation options and economic factors as key parameters. The thrust of this work is to provide tactical analysis with "what-if" questions allowing producers to make more informed risk management decisions.

Forecasting and networking of insect data across the cotton and grain growing regions need reviewing. Insect problems in one crop or area can have important impacts on other susceptible crops and regions. Crop scouts, consultants and researchers currently collect significant field information on a day to day basis. A means of quickly collating and disseminating this data may enhance insect management decisions.

Area wide management of pests is an exciting development. While there are many challenges to such systems the potential to decrease the reliance on traditional pesticides and encourage greater adoption of cultural, host plant resistance and biotechnology solutions is enormous.

Soil and nutritional management are seen by both industries as being critical for long term sustainability. Mycorrhizal issues, nutrient strategies, erosion control and moisture conservation have widespread applicability. There are some potential technology conflicts to be addressed such as the challenge of balancing moisture conservation, conservation tillage and *Heliothis* pupae destruction.

Precision agriculture is developing rapidly and cotton and grains stand to benefit enormously from this technology. CRDC and GRDC need to coordinate their efforts to ensure the most efficient and focused use of funds and resources.

Environmental concerns, particularly pesticide movement off target, are a big issue for both industries. While the community focus on pesticides has been largely on cotton, all farmers have to realise that pesticide application and the professional use of chemicals are the responsibility of all agriculturalists. The best management practices system currently under development is one of the key vehicles for enhancing environmental performance and technology transfer. It is important that both industries are recognised by the community as having world-class and responsible agriculturalists who are focused on the stewardship of natural resources to deliver prosperity and security to regional and national Australia.