PLAIN ENGLISH SUMMARY

Project Title: Improved Cotton Management through the Application of Cropping Systems Models

Aims: To utilise the Cotton Research Unit (CRU) and the Agricultural Production Systems Research Unit (APSRU) modelling capabilities to identify where and how cotton management can be improved and to deliver these outcomes to the cotton industry.

Summary:
This project involved three major components, the first is to use the cotton crop model to undertake a detailed risk analysis for each region for key agronomic decisions such as nitrogen application, sowing date effects, use of limited irrigation water, varietal selection and row configuration. The second component was to demonstrate the value of linking crop and soil monitoring with the predictive capability of a farming systems model (APSIM) to make better decisions regarding planting options (crops), timing and fertiliser input requirements and to evaluate the effectiveness of this means of communicating information from models. A third minor component will be the derivation of parameters to enable the CERCOT crop model to more accurately simulate differences between cotton varieties (ie. between short and long season varieties). Major outcomes of the project were:

- Current significant market demand for access to cotton simulations.
- An established database of cotton model simulation output used to assess the potential yields and risks associated with different agronomic management options for many regions now available to industry on request.
- Demonstrated value in linking crop and soil monitoring with the predictive capability of a farming systems model (APSIM) to make better agronomic decisions.
- Clear direction on the most appropriate means of delivering systems simulation to industry clients resulting in the new CRDC project titled 'Delivering to industry the benefits of cropping systems models CSP98C'.
- Greater physiological understanding of the differences between long and short season cultivars leading to stable parameters for the cotton simulation model for biomass accumulation, partitioning and light interception.