

Summary:

This project involved the purchase of equipment to measure the surface water inputs and outputs of two commercial scale cotton fields. Cotton is grown on each field in alternate years and fallowed in the off year so that it was possible to compare the hydrologic behaviour of both cropped and fallow conditions. Irrigation water and rainfall inputs and tailwater outputs were measured. Irrigation water input was measured with an open flow meter installed in the head ditch of the field containing cotton. Rainfall quantity and intensity were measured with a tipping bucket rain gauge connected to a data logger. Outflow of surface water from both fields was measured with v-notch weirs and water depth sensors coupled to data loggers. A computer program has been written to process data logger output into a form for graphing and analysis.

Several problems occurred with the equipment which limited the amount of data collected in this first year. However, the data that was recorded shows great promise of providing useful information for model development and general cotton irrigation management with little effort or cost.

While some of the results collected to-date will be immediately useful for model development and testing, the work is essentially of a long-term nature due to the small number of events measured in any one year. Several years may be required to collect an acceptable volume and range of data for some applications. The equipment purchased by this project will provide many years of service so that this data can be assembled.