

## **PLAIN ENGLISH SUMMARY**

### Genetic Engineering of Cotton – CSP71C

This project was to provide the basic technical support at the molecular level for CSIRO's cotton breeding program to develop new transgenic cotton varieties with improved agronomic characteristics. During the three years of the project, which was a continuation of a previous CRDC project in the same area, the three technical staff supported by the grant carried out extensive screening of transgenic breeding lines (over 500,000 samples) containing the insecticidal INGARD gene, the CryIIA gene and the herbicide resistance gene RoundupReady and various combinations of these genes in a variety of elite backgrounds. This screening work allowed the cotton breeders at Narrabri to identify those plants containing the novel genes that could be advanced in the breeding process. This is obviously an essential component of the more conventional parts of the breeding process related to the carrying out of crosses and the evaluation of the agronomic performance of the lines and directly contributed to the release of five transgenic INGARD cultivars in 1996 and a sixth cultivar in the 1998 season. On-going screening as part of a new CRDC project will have contributed to the development of new INGARD cultivars for the next decade and the two gene Bt varieties to hopefully be released in 2000 or soon after. The same technical team has also produced many hundreds of new transgenic cotton plants containing both experimental genes aimed at improving the pest and disease tolerance of cotton and potentially new commercial traits such as tolerance to the herbicide bromoxynil that are still in the evaluation phase.