SUMMARY

The St George Heliothis Monitoring Project operated very successfully during the 1992/93 season. The appointment of a full-time technical assistant with a vehicle ensured reliable data collection through the entire season.

Egg collection data shows that St George *Helicoverpa armigera* have the highest insecticide resistance frequency in the Australian cotton industry. This applies to the three insecticide groups tested, synthetic pyrethroids, endosulfan and pyrethroid plus piperonyl butoxide (PBO). The results of this program have enabled growers to manage their insecticide use to avoid spray failures and is contributing to investigations of the source of the resistance problem.

In order to source the cause of our high resistance, we first need to know where *H.armigera* originate from during Stage II. Analysis of the spatial distribution of *H.armigera* abundance in egg collections revealed a trend for lower abundance outside of the St George Irrigation Area. This suggests that local conditions within the Irrigation Area (for example, permanent channel systems) are providing a harbour for *H.armigera*. Extra ecology work is required in the area to test this theory.

Light trap and pheromone trap data collected through the season supplemented the egg collection data. Light traps provided reliable estimates of species abundance in the field, but this data is not analysed until after the season. Pheromone trap data has proven inconsistent with egg collection data. All moth trapping will be discontinued in this district due to the high cost and dubious local benefits.

Thrips sampling indicated low numbers in the St George district. This was probably due to high organophosphate use in the area, rather than a regional effect. It would be desirable to pursue this research, however funding restrictions will not enable this in the short term.

The communication of project results to industry has been a major success with this project. These results are effectively used by growers and consultants in making spray decisions. The Bug Bulletin newsletter is sent out by fax-modem, which is a very efficient method of communication. The Balonne Cotton Advisory Committee (BCAC) plays an active role in the implementation of outcomes from this project. BCAC is actively pursuing ways to track the source of the resistance problem in the district.