Australian Government
Cotton Research and Development Corporation

# TRAVEL & CONFERENCE REPORT

## *Part 1 - Summary Details*

*Please use your TAB key to complete Parts 1 & 2.*

**CRDC Project Number:** **CRDC 300**

**Project Title:** World Cotton Research Conference visit

**Project Commencement Date:** 8 Sept 2007 **Project Completion Date:** 16 Sept 2007

**Research Program:** 3 Crop Protection

## *Part 2 – Contact Details*


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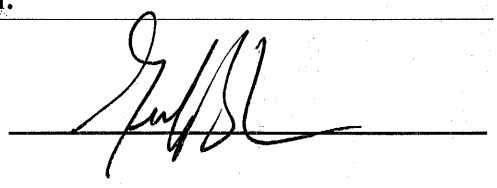
**Signature of Research Provider Representative:** 

## *Part 3 – Travel Report*

*(Maximum two pages)*

**1. A brief description of the purpose of the travel.**

Attendance at the World Cotton Research Conference in Lubbock Texas, USA September 2007.

**2. What were the:**

**a) major findings and outcomes**

Contacts were made with potential collaborators (see below). I delivered an oral paper (Cotton Entomology : General Session 2), and submitted a manuscript, entitled :
Baker, G.H. & Tann, C.R. Mating of *Helicoverpa armigera* (Lepidoptera : Noctuidae) moths in relation to their plant hosts as larvae within Australian cotton farming systems.

A copy of the manuscript is attached here (it was cleared by Ian Taylor prior to the conference). The paper was prepared in the format of Journal of Cotton Science, as requested by the WCRC organisers. I, like several other attendees, took this instruction to imply the paper would be considered for publication in J. C. S. However, it emerged at the conference that this may not be the case. Rather it may be that the papers are simply released on a CD for conference attendees. Several Australians, including myself, raised this issue with Bruce Pyke whilst at the meeting. We feel it is in both the Australian cotton industry's best interests and the careers of individual authors that the papers be published in an internationally recognised, peer reviewed journal. I have written to Mike Stephens at WCRC seeking clarification of the intent on publishing papers submitted to WCRC. Mike S has replied, saying he understands my concerns, and that there is currently a debate within the relevant WCRC committee on publication method. I hope to hear from him shortly on this matter.

**b) other highlights**

Dr Bo Wang (CSIRO PI) delivered an excellent oral paper (with C. Brubaker, J. Burdon and P. Thrall as co-authors) on : "Origin and evolution of *Fusarium oxysporum* f. sp. *vasinfectum* : a case study in Australia" in which he indicated the novelty of this variant within Australia, how it might have arisen from native origins within an agricultural context, the role of soil types and dispersive capacity in limiting this disease's incidence, and how further variants might also evolve in a similar way. The discussion got somewhat hijacked by USA pathologists getting hung up on the pros and cons of the use of alphabetic letters to classify sub-specific variants within *Fusarium*, but nonetheless the talk was, I think excellent. Reference through the talk, and discussion, to the patchy (spatial) nature of *Fusarium*, its greater incidence in wet springs, and its greatest concentration in organic residues continued to remind me of the work done previously (and that I have mentioned to CRDC before) in Europe which shows that soil invertebrates can feed selectively on soil fungi such as *Fusarium*. I continue to question if part of the reason for the pest status / patchy distribution of *Fusarium* in our cotton soils is due to a lack of such soil invertebrates – as a legacy of previous farming practices. It would be quite a worthwhile project, I believe, to map the incidence of *Fusarium* in Australian cotton fields in relation to the dynamics of key soil invertebrates and to investigate the existence of interactions between them that could be enhanced in concert with newer farming practices.

**3. Detail the persons and institutions visited, giving full title, position details, location, duration of visit and purpose of visit to these people/places. (NB:- Please provide full names of institutions, not just acronyms.)**

This visit to USA was restricted to attendance at the WCRC in Lubbock. No other institutions were visited.

**4. a) Are there any potential areas worth following up as a result of the travel?**

Several new contacts were made with researchers working in fields related to my own. Most notably :

John Adamcyk (USDA-ARS, Weslaco, Texas). John presented a paper entitled : "From pheromone traps to stable isotopes : a look back at Heliothine discoveries during the transgenic era". This work (done primarily in the Mississippi Delta, with *H. virescens* and *H. zea*) has several very close parallels with my own (e.g. use of stable isotopes to trace plant host origins, in relation to refuge efficacy; changes in Heliothine abundance in tandem with advent of Bt cotton). The work is recently published. John and I agreed to correspond further to facilitate each others research.

**b) Any relevance or possible impact on the Australian Cotton Industry?**

There was of course substantial information made available that is of relevance to the industry. Such (that interested me particularly) included reports by Indian scientists (K. Kranthi) of surprisingly high levels of Cry1Ac resistance in *H. armigera* (cf Australian records) and various accounts of new insecticidal transgenics and their efficacies.

**5. How do you intend to share the knowledge you have gained with other people in the cotton industry?**

I'll build key methodologies into my research as appropriate, and mention such in science talks to peers.