



# TRAVEL, CONFERENCE or SCIENTIFIC EXCHANGE REPORT 2019

## Part 1 - Summary Details

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

**CRDC Project Number: CLW1901**

**Project Title: ICAC plenary meeting Cote d'Ivoire.**

**Project Commencement Date: December 2nd 2018    Project Completion Date: December 8<sup>th</sup> 2018**

**CRDC Research Program: 2 Industry**

## Part 2 – Contact Details

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Signature of Research Provider Representative: \_\_\_\_\_

Date Submitted: \_\_\_\_\_07/06/2019\_\_\_\_\_

## Part 3 – Travel, Conference or Scientific Exchange Report

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(Maximum two pages)

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

To attend the 77th Plenary meeting of the International Cotton Advisory Committee in the Ivory Coast representing the Australian experience with managing resistance and to demonstrate best practice.

### 2. What were the:

#### a) major findings and outcomes

I presented the Australian experience managing resistance in a special technical seminar and this was reflected in the final statement as:

#### Technical Seminar: Combating Pest Resistance to Biotech Cotton and Pesticides:

Insect resistance to Bt cotton and weed resistance to herbicides have emerged as challenges to the efficacy of biotech cotton across the world. The phenomenon of resistance is currently being countered by adding more and more new genes to develop new biotech varieties. However, the addition of new genes takes time and indirectly increases production costs. As such, the emergence of Bt resistant bollworms poses a new challenge to cotton crop production systems, whilst the recent instances of pink bollworm resistance to Cry1Ac and Cry2Ab proteins will have serious consequences. Insecticide resistant whiteflies not only cause severe crop damage, but also transmit the cotton leaf curl virus. Bollworms, whiteflies and cotton leaf curl virus can cause debilitating effects on cotton production. The Committee noted the presentations and their recommendations to endorse a rigorous pest resistance management strategy together with growers and the industry.

#### b) other highlights

Also identified as key areas in the final report was climate change and the development of a Bt toxin targeting the boll weevil in South America.

**Combating the Effects of Climate Change on Cotton:** The Intergovernmental Panel on Climate Change (IPCC) projected that climate change will result in a substantial loss in agricultural productivity. About 56% of the global cotton area is dependent on rain, and water stress can lead to significant reduction in yields. Climate change may introduce heat waves, increasing risks of enhanced insect pest problems, also bollworms with reduced weight and poor boll retention, thereby leading to yield losses and deterioration in fibre quality. The Committee was informed that increased levels of atmospheric CO<sub>2</sub> may lead to higher yields. The Committee urged governments to encourage the development of climate resilient cultivars with high water use efficiency, high nutrient use efficiency and with potential to adapt and withstand unpredictable drought, changes in heat, waterlogging, increased insect pests and diseases.

**Biotechnology:** The Committee was informed that new biotechnology tools (NBTs) are being used to enhance the performance of commercial cotton varieties. Scientists in Latin America are using these new tools in the form of Cry10Aa to protect cotton from the boll weevil, thereby promising a dramatic reduction in insecticide use.

### 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.)

4. a) Are there any potential areas worth following up as a result of the travel?
  - b) Any relevance or possible impact on the Australian Cotton Industry?
    - a) I have followed up with a number of the people I met around collecting samples for analysis (*Helicoverpa armigera* and *Spodoptera frugiperda*) though at the moment we are limited by the time taken to gain the appropriate permits.
    - b) This could be relevant to the Industry in that it will aid with biosecurity preparedness and our knowledge of the affect of *Spodoptera frugiperda* in Africa could be important in the Australian context, particularly in the expanding cotton area in the north.
5. How do you intend to share the knowledge you have gained with other people in the cotton industry?

Through personal communication with the CRDC and this report. The final Summary statement from the meeting is available at the link below.

[https://icac.org/Content/EventDocuments/PdfFilesdacbf868\\_c86f\\_488e\\_b36f\\_1877d762ae7e/E\\_Final\\_Statement1.pdf](https://icac.org/Content/EventDocuments/PdfFilesdacbf868_c86f_488e_b36f_1877d762ae7e/E_Final_Statement1.pdf)