Australian Government
Cotton Research and Development Corporation

FINAL REPORT 2013

Executive Summary

Part 1 - Summary Details

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

CRDC Project Number: **CMSE1303**

Project Title: Automated Gin Seed Fingers

Project Commencement Date: 1/07/2012 **Project Completion Date:** 30/06/2013

CRDC Program: Value Chain

Part 2 – Contact Details

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Part 4 – Final Report Executive Summary

Provide a one page Summary of your research that is not commercial in confidence, and that can be published on the World Wide Web. Explain the main outcomes of the research and provide contact details for more information. It is important that the Executive Summary highlights concisely the key outputs from the project and, when they are adopted, what this will mean to the cotton industry.

Seed fingers are an important part of a gin stand and are used to control the seed roll load. Yet mechanically the seed fingers are undeveloped in terms of their control and ability to be set. Recent research by CSIRO has indicated that seed roll density and the forces that the seed roll exerts on seed roll casing constantly change, yet the seed fingers are usually fixed in the same position for extended periods. Indeed, seed roll density can change significantly many times over a one minute period as material in the seed roll is charged and discharged. High seed roll loading typically means low residual lint and longer fibre length, while low loading typically means poorer lint removal and lower fibre length. However, a ginner does not alter the seed fingers for these changes, and moreover does not change the seed fingers routinely because of the inconvenience in stopping the gin stand to make adjustments. The work which has been done to date was focused on improvement of the gin productivity and fibre properties through the development of a self adjusting seed fingers system.

Aside from improved quality and efficiency in cleaning cotton for export, development of an Australian instrument and system for managing fibre quality will create community benefits in terms of post-sale support and development. Improved fibre quality, defined as achieving the minimum base leaf grade more consistently and reduced fibre damage, will create benefits in terms of increased returns (fewer discounted bales) for individual growers. The production of more consistent, less damaged (in terms of nep and SFI) bales across the industry will improve the basis paid for Australian cotton over other growths. The automated seed finger adjustment system facilitates improvements in gin efficiency, in terms of extracting higher turn-out (lint) and reducing the level of linters on seed.