



FINAL REPORT 2015

For Public Release

Part 1 - Summary Details

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

CRDC Project Number: CGA 1501

Project Title: Cotton Planter Development

Project Commencement Date: 31/7/14 **Project Completion Date:** 31/3/15

CRDC Research Program: 1 Farmers

Part 2 – Contact Details

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Signature of Research Provider Representative: _____

Date Submitted: _____

Part 3 – Final Report

(The points below are to be used as a guideline when completing your final report.)

Background

1. Outline the background to the project.

The Dryland cotton industry is often disadvantaged by not being able to plant within the limited time available under the planting window. The ideal planting conditions do not necessarily match with the planting window timeframe meaning often crops are forced to be planted in less than ideal conditions.

Our aim is to find out what growers are using now to overcome issues of planting in less than optimal conditions. We also aim to document what equipment is available from manufacturers here and overseas which may be applicable to our conditions.

This information is likely to not only be suitable for dryland but also for irrigated cotton

Objectives

2. List the project objectives and the extent to which these have been achieved.

To establish the current methods being used by farmers to plant cotton in less than ideal conditions which we achieved through the use of a survey to a group of 15 growers.

To conduct a desktop review of current implement available to growers which would overcome some of the deficiencies currently experienced. Pat Hulme was engaged to carry out this research and his report is attached.

Methods

3. Detail the methodology and justify the methodology used. Include any discoveries in methods that may benefit other related research.

Grower examples and experiences were researched through the use of a telephone survey of a cross section of growers known to be using innovative equipment. Photos of modifications were in many instances sent through and included in the report.

The desktop review was conducted by Pat Hulme of Sustainable Soils Management (SSM) who has extensive experience in Dryland cropping and soils.

Results

4. Detail and discuss the results for each objective including the statistical analysis of results.

Through the grower survey we now have a very good idea of many of the ways growers are modifying existing equipment to overcome the difficulties of planting into less than ideal conditions. We know which are working and why as well as what didn't work. This information will now be widely available.

The desktop research has been valuable because we now know what is available to purchase of the shelf and the reality is that not much of that equipment will be suitable. A couple of machines are worth working with further as they do appear to have some potential. Pat also detailed a lot about soil structure and how this is affecting seedling performance and possible ways to remediate. Kinze crack was identified by many growers as a problem and few realised this was due mainly in part to poor structure of the soil.

Through this research we know that there is not a machine already available to use and we also have confirmed that it does not appear any growers have solved the problem already.

Outcomes

5. Describe how the project's outputs will contribute to the planned outcomes identified in the project application. Describe the planned outcomes achieved to date.

The project has been completed with 2 reports generated and a field day held. A much better understanding of soil and equipment being used and available now gives growers a clearer path forward.

We held a field day East of Bellata to showcase the results and for Pat to explain his report.

6. Please describe any:-

- a) technical advances achieved (eg commercially significant developments, patents applied for or granted licenses, etc.);**
- b) other information developed from research (eg discoveries in methodology, equipment design, etc.); and**
- c) required changes to the Intellectual Property register.**

Conclusion

7. Provide an assessment of the likely impact of the results and conclusions of the research project for the cotton industry. What are the take home messages?

The Dryland grower Network has already talked about developing some machinery to add to a toolbar to trial some different planting setups. NDF Planters have given a small trial run with a setup they had developed and although not achieving the desired outcome still showed enough promise to investigate further.

Take home messages are that a great many growers are having issues with planting into difficult conditions. No-one has the ideal machine. The ideal machine cannot be purchased off the shelf. Soil health needs to be better understood so that we may remedy some of the issues with poor outcomes.

Extension Opportunities

8. Detail a plan for the activities or other steps that may be taken:

- (a) to further develop or to exploit the project technology.** The group now plans to take this information to a number of manufacturers with the knowledge that there is demand and there is not a current machine in the market.
- (b) for the future presentation and dissemination of the project outcomes.**
- (c) for future research.** The report from Pat Hulme certainly shows that further research into soil amendments and strategic tillage is well worth exploring. Examining the difference between strip tillage and no-till farming is also an area of future research.

9. A. List the publications arising from the research project and/or a publication plan. (NB: Where possible, please provide a copy of any publication/s)

2 reports have been generated and copies made which will be fully available to growers as well as CRDC.

B. Have you developed any online resources and what is the website address?

We are more than happy to add to the Cottoninfo website if possible

Part 4 – Final Report Executive Summary

The project was commissioned to look into overcoming the difficulties associated with planting cotton into soil conditions which are less than ideal mainly due to a lack of moisture and the need to plant in a predetermined 2 month planting window. We wanted to establish if cotton growers throughout different regions were also experiencing these same issues and if so had some growers somewhere solved the issues, or was there in fact a machine which could be purchased which would overcome these problems.

The first part of the project we commissioned a phone survey to be carried out with a list of innovative growers who we were provided by Consultants and Growers. This survey had the same set of questions and we tried to cover a number of the known growing areas for Dryland Cotton. The report which was generated consists of many pictures of current machinery being used and modifications which have been made to overcome issues associated with planting cotton on their farms. More importantly we were able to establish those modifications which did not work and why.

The second part of the project involved the contracting of Pat Hulme from Sustainable Soils Management (SSM) to conduct a desktop study on what machines are currently available which may allow better establishment of cotton when the conditions are not ideal. Further to that Pat was able to explain the processes in play when soil becomes 'cheesy' or 'blocky' or when the 'Kinze crack' occurs. This report identified that there are a couple of machines which do show some potential there is no machine currently on the market which would solve the problems now being encountered by many growers planting cotton in Dryland situations.