



MAJOR CAPITAL ITEM REPORT 2017

Part 1 - Summary Details

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

CRDC Project Number: CGA1703

Project Title: Capital Item: Planter Bar

Project Commencement Date: 01/09/2016 **Project Completion Date:** 30/10/2107

CRDC Research Program: 1 Farmers


Part 2 – Contact Details

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Date Submitted: 08 March 2018

Part 2 – Capital Item Final Report

1. Background

Achieving reliable, even crop establishment has been identified through the DCRA project meetings as one of the major concerns dryland cotton growers face. This issue has gained significant importance with the current commercial varieties available which typically have poorer seed vigour than their predecessors due to the small seed size. Planting, particularly in marginal moisture conditions, is therefore a crucial process in dryland cotton production.

There are various manufacturers producing cotton planters incorporating a range of styles from older style tine planters to single and double disc planters. The goal behind this construction project was to mount different styles of commercial cotton planting units onto a single bar so that the establishment achieved under different moisture conditions and in different soil types could be assessed through planting into exactly the same conditions at the same time.

2. How does the Capital Item meet expectations and specifications?

The planter bar has been engineered to house six planting units based on one metre spacings, however, the units can be moved to accommodate different wheel track widths. The system connects to a range of tractors through three-point linkage. The units mounted on the planter bar are listed in Table 1 below:

Table 1. Planter units mounted on the planter bar

Manufacturer	Unit type	Seed Placement System
Various components	Double disc	PSS hydraulic downforce
Excel Agriculture	Double disc	PSS hydraulic downforce
Norseman	Double Disc	PSS hydraulic downforce
Boss Agriculture	Single disc undercut	Spring assisted
NDF	Single disc	Air Assisted
Janke Australia	Tyne	Spring assisted

Each unit has an electronic seed metering system (V drive). The machine has been designed to be interchangeable with regards to units accommodate new technology as it become available



Excel double disc



Norseman double disc



Boss single disc



NDF single disc



Janke tyne



Various Components double disc



L to R Paul Slack (grower), Dale Foster NDF, Dan Ryan and Warren Anderson Boss Agriculture

3. How is the Capital Item being utilised to support your research or intended application?

From 2018, the planter bar will be available to dryland cotton growers to evaluate the establishment the planting units can achieve in their own regions, soil types and moisture conditions. There are four main production areas of dryland cotton – the warmer Darling Downs/Goondiwindi area, the Eastern region East of the Newell Highway with more reliable rainfall, the opportunistic dryer western region around Walgett, and the cooler southern region of the Liverpool and Breeza Plains. A database of information will be collated by DCRA on establishment achieved by the various units in the regions identified.

The planter bar will be demonstrated at regional field days, for example, the Tullooona field day on 15 March 2018. An initial field day was held at Belvedere, East of Moree, on 12 Dec 2017. The field day attracted 50 attendees and feedback from this field day was very positive.

The planter bar is also intended to be used in conjunction with technology innovations such as UHP water cutting technology for planting into heavy crop residues and nutrient application

4. Describe the benefits of this Capital Item in supporting your research?

The planter bar is a unique, custom engineered piece of equipment that will be used to answer questions around achieving the most successful establishment of dryland cotton in marginal and variable moisture conditions. The bar has been designed so that the units are interchangeable to take advantage of new technology as it becomes available.

The planter bar will be used in conjunction with other pieces of innovative technology such as the UHP water cutting equipment for planting into crop residues.

5. Are there any Extension/Communications opportunities?

The planter bar was demonstrated at a field day at Belvedere, Moree on 12 Dec 2017. It will be further demonstrated at the Tullooona field day on 15 March 2018. The planter bar is available to any dryland cotton growers to use on farm. The equipment will be available for hire to projects where planting and establishment is a key area of interest.



Growers examining seed placement at the “Belvedere” Moree field day after the initial demonstration 12 Dec 17.



Planter bar attached to JD tractor

Part 3 – Capital Item Final Report Executive Summary

Achieving even crop establishment, particularly in marginal moisture conditions, is one of the biggest issues dryland cotton growers face. There are various styles of cotton planters available on the market from the older style tyne units to single and double disc units. Being able to compare planting and establishment from a range of planters at the same time provides a very useful tool for dryland cotton growers to determine what works best in their soil types and moisture conditions.

A planter bar with six different units mounted on it based on one metre spacings was engineered. The units are interchangeable to accommodate new technology as it becomes available. The current units included are double disc units from Excel Agriculture, Norseman and one with various components, single disc units from Boss and NDF, and a tyne unit from Janke. All units have a V drive metered seeding system. Seed placement systems use hydraulic downforce or are spring or air assisted.

The planter bar will be demonstrated at field days and is available to dryland cotton growers to use on farm to evaluate planting under their own conditions. It will also be used in conjunction with new technology such as UHP water cutting, for planting into heavy crop residues.