



FINAL REPORT 2018

Part 1 - Summary Details

CRDC ID: DU1701

Project Title: An eco-friendly treatment to improve look and handle of cotton fabric

Project Start Date: 15/07/2016

Project Completion Date: 30/5/2019

Research Program: Choose an item.

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 internet. 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.

In this project, a novel treatment was investigated to improve whiteness, brightness, softness and dye uptake of cotton yarn and fabric. It uses an eco-friendly amino acid treatment in place of highly concentrated caustic soda used in mercerization process. The treatment can be conducted in yarn package form without needing any additional or specialised equipment. The project has demonstrated through subjective assessment and spectrophotometric measurements that samples prepared by this process has higher whiteness and reduced yellowness. The treatment is flexible and desired fabric properties can be achieved by treatment at both acidic and alkali pH thereby allowing this to be extended to blends with cotton.

The influence of the treatment on the mechanical properties show that fabric strength is increased. The dye pick is significantly improved for commonly used reactive dyes as well as direct dyes. The improvement in handle was evaluated by instrumental analysis as well as subjective measurements. The increase in softness is achieved in addition to whiteness, brightness, dye pick up and without reduction in strength which is not achieved by any other chemical processing of cotton.