

## THE SPINNING VALUE OF AUSTRALIAN COTTONS

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This report is a summary of a partnership project, involving Australian as well as overseas cooperators, which was conducted to evaluate four Australian cotton varieties in terms of their utility value to the textile mill and their agronomic and thus economic viability on the cotton production side. The four varieties, Sicala 40, Siokra V16, Sicala V2i, and Sicot 189, were grown and ginned by Auscott Ltd., Narrabri, within the framework of a Cotton Seed Distributors Ltd. (CSD) variety trial. These varieties are representative of the bulk of Australian raw cotton production. As a result of a cooperative approach pursued by Cotton Research and Development Corporation (CRDC), two renowned German manufacturers of mill preparatory equipment and open-end spinning frames, i.e. Trützscher GmbH and Schlafhorst Autocoro GmbH, respectively, joined the consortium and conducted processing studies on a laboratory scale with sample bales that were shipped to Europe.

All four cottons were thoroughly characterized by comprehensive fibre tests involving high-volume instrumentation as well as individual laboratory instruments. Since growing location and growing conditions as well as harvesting and ginning procedures were identical for the four cottons, the distinct fibre quality characteristics can be primarily ascribed to inter-varietal differences, i.e. the intrinsic genetic attributes of those cottons. Each of the cottons was then opened, cleaned, carded, drawn, and spun into fine-count rotor yarns for knitting or weaving under high-speed conditions to fully exploit the technological potential implied by the fibre quality measurements. The yarns were evaluated in terms of physical and appearance characteristics, processing behaviour, and spin limits, and they were compared to established worldwide quality standards. Spinning a series of different yarn counts provided for analysis of the varietal responses to changes in yarn linear density.

Each of the four varieties exhibited outstanding fibre properties, particularly in terms of strength, length, and fineness. Continuing efforts to improve the present quality of Australian cotton varieties and to develop new traits and germplasm have culminated in fibre descriptions which appear most desirable for high-speed fine-count spinning - a segment which traditionally is occupied by few of the world's best cottons. Through analysis of the final yarn quality parameters and processing performance, the cottons investigated could actually be approved as excellent high-quality raw materials for present mill fibre quality needs and up-scale textile products.

Remarkable progress with respect to fibre quality has been made in Australia since the first joint variety evaluation project of this nature has been embarked on some six years ago. Considering the continuous technological and engineering advance in all segments of the textile industry and the fierce and truly global competition among textile producers, the Australian cotton community is encouraged to continue focussing on and striving for further fibre quality improvements to adjust to the future and perhaps even more challenging demands of their customers.

The comprehensive report will be presented and distributed at the Australian Cotton Conference.

