

## Summary

The major part of this project is concerned with cotton quality. Neps are a major factor in cotton quality, and their impact on the industry has always been large. Another major factor is short fibre content. Due to recent advances in instrumentation, it is now possible on a small to medium scale to measure these attributes of raw cotton. As further advances are made, particularly in throughput, the effect of this previously absent information at time of sale is expected to be felt by the raw cotton sector.

The Australian industry has strong claims to the quality of its cotton in some respects, particularly strength, length, lack of contamination and reliability of supply. However, it is less assured in respect of neps and short fibre content, and this project came about in recognition of this.

The question of these quality factors is also recognized in cotton industries in other countries that are similarly highly mechanized and capital intensive, for example the United States of America. As a result, this research has taken place cooperatively between those two countries, with the competition between them subordinated to the need to compete with other types of fibre.

Cotton has been taken from the field all the way through its phases of processing to a finished dyed fabric. Then the data gathered along the way has been connected together and analyzed to see what it says about the manner in which cotton is processed and marketed. The data has also been used to see where Australian cotton stands in relation to the cotton of other countries.

The data suggests that Australian cotton is on a par with USA cotton in terms of neps in fabric. Australia compares less well with other countries where older, less efficient but slower equipment does less damage to cotton fibre and does less to manifest immature fibre as neps.

The project has produced data to show the effects of region, variety, ginning (*i.e.* the number of lint cleaners) on the realized quality of the cotton.

The project has also developed the expertise and linkages to industry (pre- and post- farm gate) necessary for the Australian cotton industry to carry out the basic work for this kind of research. The cooperative link to researchers in the USA that made this project possible is still the only means available to carry out the laboratory analysis of the lint and fabric. That cooperative link in any case should continue on the basis that one of the major effects of research into cotton quality is to improve the competitive position of all cotton versus synthetic fibres.