

Executive Summary

The study underlying this report was concerned with taking samples of seedcotton from the field and tracking them through the stages of ginning, spinning, and fabric production. Data on various attributes of the cotton was collected at several stages. The study has been designed from the standpoint that cotton is ultimately valued at the consumer product level, so the best way to gauge the effects of a particular factor in cotton processing is to analyze its effect on realised quality, that is, quality seen at the fabric stage.

Prediction is one of the most important parts of the results of this project. The vision is to have a historical record of various lint attributes and the resulting realised quality (particularly white speck neppiness) that will allow the prediction of the realised quality of current day lint at the gin loadout door. This would have the effect of removing much of the uncertainty in a multi-million dollar production chain that might involve several changes of ownership as well as long distances and long periods to produce a finished product.

The study supports the following conclusions:

- The instrumentation currently used to class raw cotton has the potential to be useful in predicting fabric quality at the gin load-out door;
- When combined with more advanced instrumentation currently under development, there is now a real prospect of being able to reduce the uncertainty currently involved in buying raw cotton, reducing the associated risk margin in pricing and also the incentive to substitute synthetic chemical fibres;
- For the same reasons, sellers of raw cotton will be able to know more about their cotton, and so have more scope to direct it to suitable markets according to its particular quality, for better returns;
- One year's worth of results is sufficient to answer general questions but a deeper pool of data from future years is needed to refine the numerical answers;
- Australian cotton does score lower than USA cotton (a convenient benchmark) in terms of white speck neps. The difference is not large enough to cause immediate problems, but it is clear;
- White speck neps are not currently in the customary classing regime but they are clearly in the minds of buyers. In combination with the white speck nep results of this report, this indicates a need for further research in the areas of breeding, agronomy, and processing addressed particularly at immature fibre and physical damage to fibre.