

Background and Introduction:

Over the period from 1990 to 1993, research was carried out investigating the regrowth of Australian cotton varieties after damage by hail. The work was funded by the Cotton Research and Development Corporation and carried out in co-operation with the loss adjusters to the Australian cotton industry, Agricultural Loss Management Group.

By comparing the regrowth characteristics of Australian cotton varieties, following simulated hail damage at various stages of plant development, the aim was to test the accuracy of the loss assessment procedures currently used in cotton hail loss adjustment and determine whether it was appropriate to apply these procedures to loss adjustment for the whole range of new Australian bred varieties now grown.

No differences in regrowth were found between varieties when allowed to mature fully following simulated hail damage. Looking at the deviation of actual loss from assessed loss, there was little difference between varieties tested when loss percentages were averaged across damage dates. Hence, it was not appropriate to modify the loss assessment procedures for the Australian bred cotton varieties included in the research program.

But, it should be kept in mind that the loss calculation does not estimate the actual loss in yield but provides an estimate of the proportion of the plant lost at the time of damage.

It was identified that following damage a number of factors come into play which affect the final yield and the full affect of the hail damage and hence contributed to differences between assessed loss and actual yield loss. These factors all act post damage and are not taken into account in loss assessment.

Factors affecting the relationship of assessed loss in yield from hail damage to actual yield after hail damage include:

- a. Disease susceptibility of cotton varieties.
- b. Weather conditions following damage.
- c. Cotton Production Area.
- d. Management of cotton crops following damage.

These factors may contribute to a difference between assessed and actual yields after hail either between cotton varieties or yield recovery between fields.

Cotton varieties differ in their susceptibility to diseases such as Bacterial Blight and Verticillium Wilt. Susceptible varieties may show an increased yield loss after hail due to the development of disease within the crop when weather conditions favouring development of that disease occur following hail damage. It should be recommended that growers not plant large areas to disease susceptible varieties if producing their cotton in high hail risk areas.