CONSEQUENCES OF STICKINESS

AUTHOR:
RENÉ VAN DER SLUIJS
(COTTONINFO/TTS)

FACT SHEET JUNE 2026

INTRODUCTION

Cotton stickiness caused by excess sugars on cotton fibre, either from the plant itself (physiological sugars) or from insects (entomological sugars), is not common in Australia.

However, it is important for growers to be aware of the issue, as action can be taken to manage stickiness prior to harvest. This factsheet highlights how stickiness impacts the cotton production pipeline from growers, harvesters, ginners, cotton classification, and spinners and potential remedial steps.

Plant related stickiness originates from highly immature cottons and plant sap, but also from crushed seeds, seedcoat fragments and green leaf, as well as excessive levels of cotton wax.

The most common and problematic cause of stickiness are those due to excess sugars related to insect secretions, notably aphids, whitefly and mealybug, referred to as honeydew. These insects ingest plant juices, extract proteins and other nutrients and expel honeydew (sugars and other carbohydrates) which fall on leaves or lint after boll opening, leaving a sticky hygroscopic sugary deposit.

In addition, a black sooty mould can also grow on honeydew, darkening the lint and adversely affecting grade.

The costs for growers to control stickiness in the field can be extremely high due to the cost of insecticide control and the potential for reputational damage, resulting in reduced marketability, increased risk during processing, and potential price discounts.

EFFECT OF STICKINESS ON PROCESSING

For processing the main problem related to cotton stickiness is that of the sticky deposit, or residue, adhering to any machine part or surface encountered by the cotton along the processing pipeline, causing an accumulation of fibres (and even dust or grit), during processing.

- **Harvesting:** Cotton that is defoliated is less likely to harbour insects. Harvesting should be conducted timeously as harvesting late leaves the cotton exposed to insect infestation. However, if infestation is suspected it is recommended to leave cotton out in the weather for an extra week or two particularly if this coincides with a rain event. To prevent blockages/stoppages during harvesting where stickiness has been identified, regularly clean heads, spindles, and doffers to remove sticky deposits.

Consequences of stickiness

CottonInfo

- ***Ginning:*** Can distribute and remove some of the sticky cotton during the lint cleaning stages and hence the comparison between the level of sticky cotton in seed cotton and lint bales do not corelate. Nevertheless, sticky cotton can cause significant issues during the ginning process with sticky deposits clogging the saws in the saw gin & lint cleaners and disrupt the baling process due to accumulation of lint on the lint slide of the battery condenser – see Figure 1. This disruption can reduce gin production in bales/hour or even cease production completely. This will result in the gin incurring extra costs due to an increased ginning season, and additional labour to monitor and clean machinery.

Figure 1.

- ***Classification:*** Sticky deposits can cause issues during cotton classification, with deposits on the cards, combs and jaws, used in High Volume Instruments, resulting in incorrect and inaccurate fibre measurements – see Figure 2.

Figure 2.

- ***Textile Processing:*** During processing, residues will slowly build up on machine parts and rubber rollers, leading to a decrease in productivity, due to increased stoppages, slowing down of machines and increased cleaning schedules, and quality related issues – see Figures 3 & 4.

Figure 3.

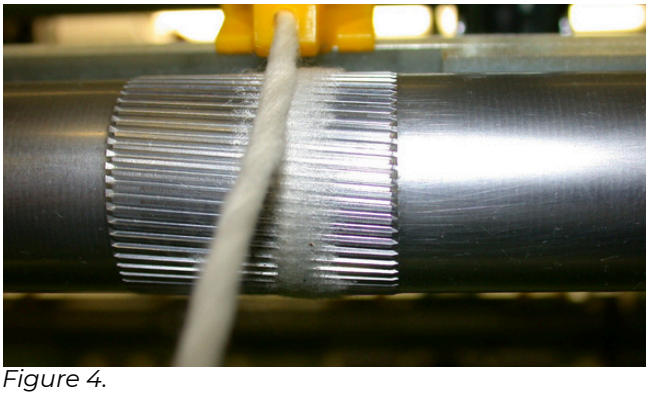

Figure 4.

Consequences of stickiness

CottonInfo

PREVENTION AND TREATMENT OF STICKINESS PROBLEMS

One of the major problems associated with the prevention and treatment of stickiness, is that, due to its isolated and random nature, it is very difficult to effectively detect sticky cottons, until the problem manifests itself during the processing of the cotton. Some remedial actions are listed below:

For growers

- Eliminate at source, i.e. during cotton growing with integrated pest management (refer to the Managing Silverleaf Whitefly in Australian Cotton publication on the CottonInfo website)
- A rain event may wash off suspected sticky deposits on the fibre.

For processors

- Reduce seedcoat fragments during ginning and ensure efficient cleaning.
- Take extra care when processing low (≤3.4) micronaire and immature cottons.
- Extended storage (4 to 9 months) of both seed cotton and lint bales can reduce the level of stickiness. This is however only applicable to for stickiness due to plant sugars and not that due to sugars from insects, the later representing the main source of stickiness.
- Where possible blend small proportions of sticky cotton with non-sticky cotton.
- Where possible apply water-based, anti-stick agents or lubricants to prevent buildup on equipment.

CottonInfo thanks the external reviewers from ACSA for their valuable input and feedback in strengthening this factsheet.

For further information:

Visit www.cottoninfo.com.au

Contact CottonInfo Fibre Quality Technical Lead **René van der Sluijs**
0408 885 211 or renevandersluijs@gmail.com