

Spinning Brazilian Cotton

Case Study - 2

About Company

The company has an installed capacity of ~165,000 spindles, producing approximately 45 KTPA of ring-spun yarn. Its product portfolio includes ring-spun yarns made from cotton and cotton blends, covering a count range from Ne 26s to 40s.

Table 1: Key Technical Parameters

Particular	Details
Trial Quantity	12 tons, 100% Brazilian cotton
Regular Mixing	Australian: 45%, Brazilian: 33% and Greek: 22%
Yarn Counts	30s CCH
Fiber Parameters	Mic: 4.20; Length:29.90 mm; Strength: 30.60 gtex; Trash: 1.76%

Process-wise Issues and Interventions

Carding

Figure 1: Higher Kitti & Fly Deposition on Web Plate at Carding

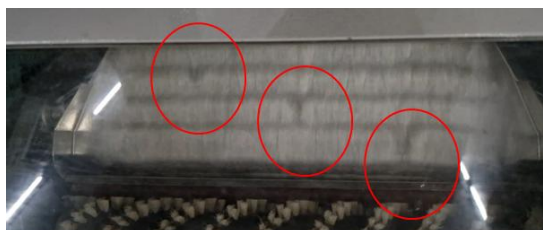


Issues	Higher kitti & fly deposition on web plate at carding
Reasons	Stickiness in fiber and kitti
Interventions	- Miracle 869 is sprayed manually on the outer surface of all Brazilian cotton bales at a rate of 1 liter of oil/ton and 1 liter of water/ton to mitigate the stickiness issue. After application, the bales undergo a 16-hour conditioning - Beater speed of CLP changed from 650 to 550 rpm
Results	Lesser kitti deposition in card and fly accumulation on the web plate

*Note: The application of fiber conditioner has also reduced fly accumulation in omega lap, comber and speed frame.

Comber

Figure 2: Higher Fleece Cuts



Issues	Higher fleece cuts
Reasons	- Higher detaching roller pressure - Stickiness in fibers
Interventions	Detaching roller pressure reduced from 5 bar to 4 bar
Results	Observed fleece cut in 9-10 heads in 16 combers in 100% Brazilian cotton against 5-6 heads in 16 combers in regular mixing

Speed frame, Ring frame and Winding

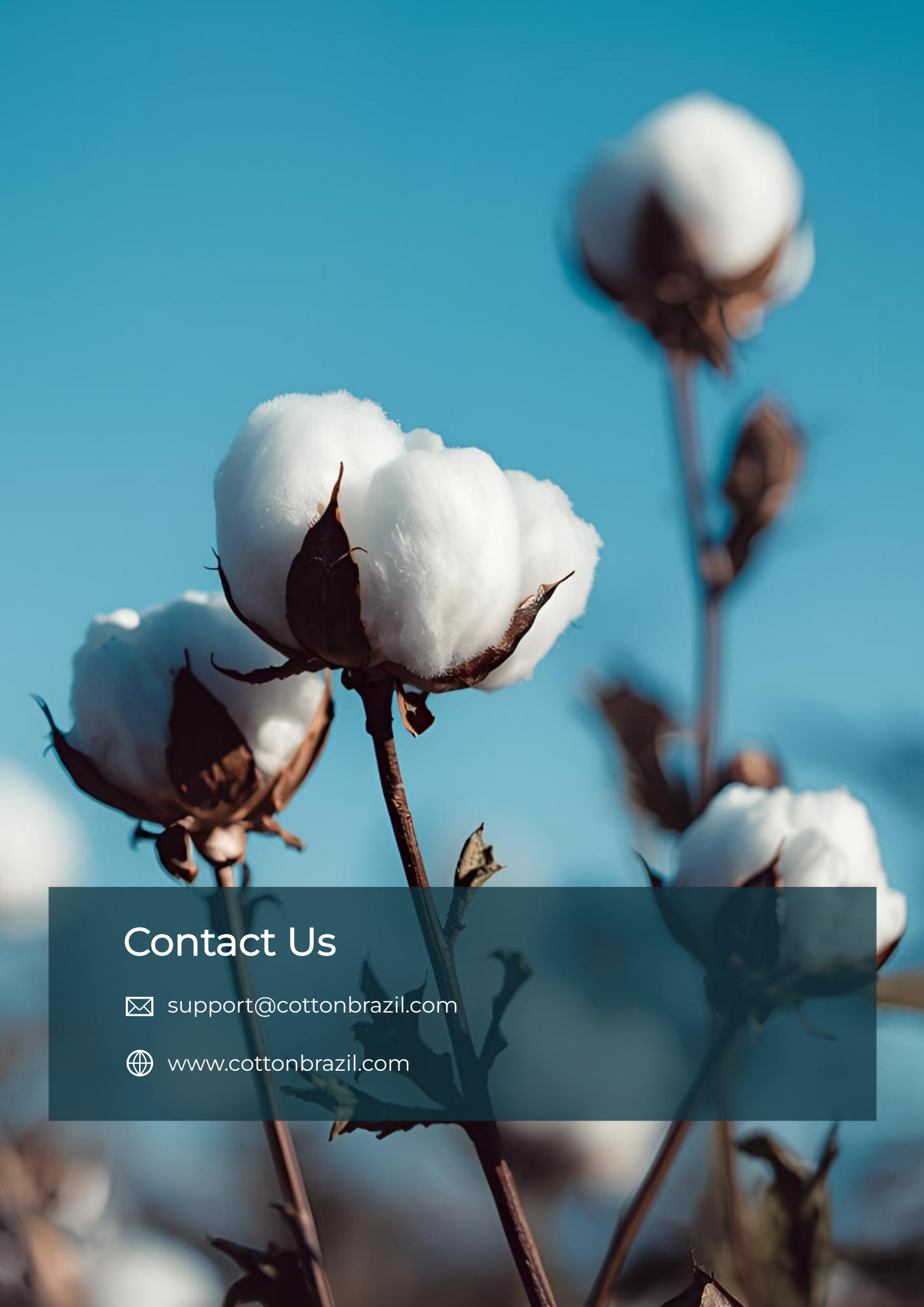
Figure 3: Fly Accumulation on Top Clearer



Issues	- Fly accumulation on top clearer at speed frame is higher as compared to regular mixing - Higher breakages in speed frame - Higher ring frame breakages
Reasons	- Lower TM in speed frame - Stickiness in fibers
Interventions	- TM can be increased up to 1.35 off 1.30 upon ensuring that no undrafted issues are observed at ring frame to reduce breakages - RH and temperature maintained at <45% and >35°C - Clean top cots at ring frame with dry cloth based on sticky deposition level
Results	- Reduced fly accumulation, minimization of speed frame breakages - Observed 2.5 breaks per 100 spindles per hour at ring frame against 1.37 per 100 spindles per hour in regular mixing

Results Achieved

- 237 GPSS was achieved in 30s CCH yarn, which was comparable to regular mixing.
- The yarn realization reached 73.5%, which can be improved further to 74% against 75% in regular mixing.
- Overall quality was found to be comparable with the running mixing.
- The resulting fabric was contamination-free.

A close-up photograph of several cotton bolls on a stem, set against a clear blue sky. The bolls are white and fluffy, with some showing the brown, dried husks. The image is used as a background for a contact information overlay.

Contact Us

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