

Contamination Prevention -- Striving For Zero Tolerance

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Abstract

The U.S. strives to maintain its reputation as a source of pure, contamination free cotton. Many competing cotton growths often struggle to overcome blemished images because mills' past experience with contamination from those growths. U.S. cotton growths could be branded as contaminated if emerging sources of contamination are not addressed. To prevent a sullied reputation, U.S. cotton organizations continue their efforts to stay on top of lint contamination by revisiting and expanding education programs. These outreach programs are directed at cotton growers, cotton ginners, and others that may be directly or indirectly harmed when foreign matter is discovered in seed cotton, lint, sliver, yarn, etc. In recent years, new cropping and harvesting practices resulted in new challenges when it came to keeping foreign matter out of baled cotton fiber. 2012, was also a year when some domestic cotton spinners began experimenting with advanced foreign matter detection systems at high end yarn mills. These high end spinners service yarn customers with zero tolerance for contaminated yarn.

Introduction

In early August 2012, e-mails from the National Cotton Council (NCC) to cotton gins reinforced the need for increased vigilance when searching for foreign materials during harvesting and ginning. This increased reinforcement can be traced to recent upticks in the amount of foreign materials reported in some U.S. cotton growths.

NCC's technical service staff began receiving samples and pictures of foreign materials found in cotton bales in June. A few of those materials were yellow plastics that appear to be similar to round module wrap, thin black plastic film that looks like the types of mulches used in vegetable production, PBI tags and pictures of oily bales. In some cases, spinning mills attempted to trace the foreign materials back to specific cotton gin or gins. In at least one case, it was determined that the suspect gins could not have been the source of the materials. These are some of the reasons the NCC, CI, USDA-ARS and others continue cataloging contamination incidents and increasing contamination prevention efforts.

Results and Discussion

Contamination prevention is a recurring Beltwide Cotton Conferences (BWCC) topic. For example, in 1998 Shay Simpson, the NCC staff person responsible for contamination education at that time, spoke on "Contamination: Educating the Ginner and the Grower" (Figure 1). Cotton spinners, USDA and others also encouraged a healthy dialogue about the importance of keeping foreign material out of cotton lint (Figure 2).

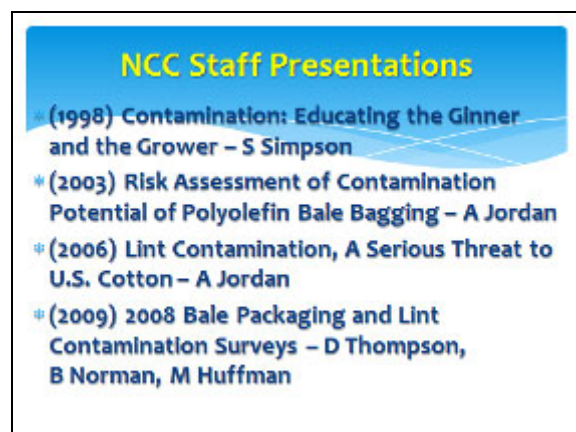


Figure 1. Staff Presentations



Figure 2. Industry Presentations

Contamination Prevention Resources

- Recent Quality Preservation Page Updates
 - Contamination Prevention Alert – Striving for Zero Tolerance
 - Link to Cotton Farming magazine's Cotton's Agenda (September 2012) column
 - Added handling of round modules (right column)
- Other useful links
 - Cotton harvest systems publications from Cotton Incorporated (right column)
 - Cotton Contamination Incident Reporting (right column)

Figure 3. Resources

The NCC and others continue providing useful education material using the internet. For example, the “Quality Preservation” web page, URL: <http://www.cotton.org/tech/quality/index.cfm>, (Figure 3) where much of the NCC’s educational materials can be found. When foreign materials are cause concerns, this page is a good place to begin searching for answers because the page has links to other useful contamination prevention materials. An example is a link on the right hand side of the page to Cotton Incorporated’s (CI) cotton harvest systems publications pages. Finally, the NCC quality preservation page provides a link to a cotton contamination incident reporting form. This form is used to carry out NCC policy that directs the organization to work with the National

Council of Textile Organizations (NCTO) and others to provide a website to report contamination incidents.

2012, will be known as a year when the NCC and others began to receive reports of a different profile of foreign materials. Some yarn spinners and cotton merchandising firms sent pictures and samples of the foreign materials they were finding in cotton to NCC staff or other groups. This interaction quickly turned into a renewed emphasis on contamination prevention as the cotton harvest approached. An email in the form of a contamination free cotton bulletins to ginners, ginner organizations and others was distributed by the NCC in mid-August. An article in Cotton Farming Magazine by NCC President Mark Lange followed and reinforced the importance of striving for zero contamination. A third effort was the reproduction and distribution of a color English and Spanish poster that described John Deere’s module wrap cutting recommendations. At this year’s Beltwide Cotton Conferences educational outreach took the form of “Contamination Prevention – Keep It Clean and Pure” exhibit (Figure 4).

CONTAMINATION FREE COTTON - KEEP IT CLEAN AND PURE

Contamination Free Cotton Bulletin
 You may have read the “Striving for Zero Tolerance” article in Cotton Farming magazine (September 2012) or a contamination prevention alert that was sent to joint Cotton Industry Sale Packaging Committee (CISPC) members and others on August 23. Links to both pieces are on the NCC Quality Preservation web page. <http://www.cotton.org/tech/quality/index.cfm>. The referenced web page contains links to materials designed for one purpose: to help focus cotton industry resources on the importance of preventing lint contamination. Everyone who works with cotton has a stake in contamination prevention.

Guidelines for Cotton Growers

- Pre-Harvest:**
 - Create a suitable foreign materials watch list.
 - Review list, materials, and compliance check items and plan.
 - Provide alerts to marketing, legal, and other stakeholders.
 - Check for early moisture.
 - Check for damaged seed but don't let it get into the bin.
 - Inspect bins for moisture that could be picked up by harvesting equipment and remove them.
 - Thoroughly clean and sanitize your machinery before harvest.
- Harvest:**
 - Cotton harvest areas and other fields must understand the requirements of allowing harvesting equipment to pick up foreign material from foreign materials watch list.
 - Inspect harvesting equipment daily to ensure that the equipment is not an inadvertent source of foreign material. Use the foreign materials watch list to make sure that items on the watch list are not picked up or spread to other fields.
 - Do not use any field material in planting an adjacent field.
 - Use a method to identify material that is not required for planting of seed areas.

Guidelines for Cotton Gins

- Pre-Harvest:**
 - Inspect arrivals for foreign materials and remove any.
 - Clean areas in and around module stacks of all debris from the previous ginning season and all season results.
 - Provide module storage yards to ensure that they are not inadvertent sources of potential contaminants.
 - Check for areas on site susceptible for nesting and inspecting module stacks and areas.
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- Harvest:**
 - Make sure module storage yards are regularly cleaned prior to ginning.
 - Thoroughly inspect the area around the module stacks before the ginning process.
 - Remove any material that may result in the introduction of new foreign materials into the bin stream.
 - Make sure all areas are clean, well-maintained and well-lit and that areas are not cluttered.
 - Make sure the equipment is well-maintained and inspected for and repaired for foreign materials in seed areas and the bin stream.

Guidelines for Cotton Warehouses

- Pre-Harvest:**
 - Make sure all storage buildings, sheds and receptacles that are used to store or work with cotton are clean and free of foreign materials in, on, or around the building.
 - Make sure the buildings are clean and free of any debris that is not proper working order in the field, bin, or storage.
- Harvest:**
 - Inspect bins on arrival and do not allow when questionable foreign materials are found in an area.
 - Use carefully, weighing, loading and handling equipment that do not result in damage to bin walls or other parts of the building.
 - Inspect a facility that is clean and well-maintained that is well-lit and in a proper state of repair before the facility is accepted for use.
 - Refer to “Code for Cotton Sale Standards” for additional information on meeting generally acceptable bin standards.

Post-harvest Guidelines for All Groups

- Review contamination prevention programs and determine if acceptable results were achieved.
- If deficiencies are revealed during the review, determine what actions are needed to strengthen contamination prevention programs in the future.
- Update foreign materials watch list.

These are just a few of the steps we can take to prevent concerns over potential contamination events. The battle to prevent contamination never ends and that is why consistent efforts are needed by everyone with a stake in contamination free cotton. Those efforts are warranted in order to satisfy U.S. cotton's mill customers need for pure lint and to maintain U.S. cotton's global reputation for contamination-free lint.

IMPORTANT!
 When harvest commences, the cotton ginners should be notified of any foreign materials found in the field. This information is critical to the success of the harvest and the quality of the cotton. The cotton ginners should be notified of any foreign materials found in the field. This information is critical to the success of the harvest and the quality of the cotton.

Flow Chart: A flow chart showing the process from field to gin to warehouse, with steps for contamination prevention at each stage.

Photo Grid: A grid of four photos showing cotton samples with foreign materials. The photos are labeled: 'Raw Cotton', 'Raw Fiber', 'Fiber', and 'Raw Fiber'. The 'Raw Cotton' and 'Raw Fiber' photos show cotton with dark spots, while the 'Fiber' and 'Raw Fiber' photos show clean cotton.

Figure 4. Contamination Free Exhibit

Following are some slides from this year's presentation highlighting some of the foreign materials found on or in U.S. cotton bales by yarn spinners.



Figure 5. Close Up of Contaminated Knits

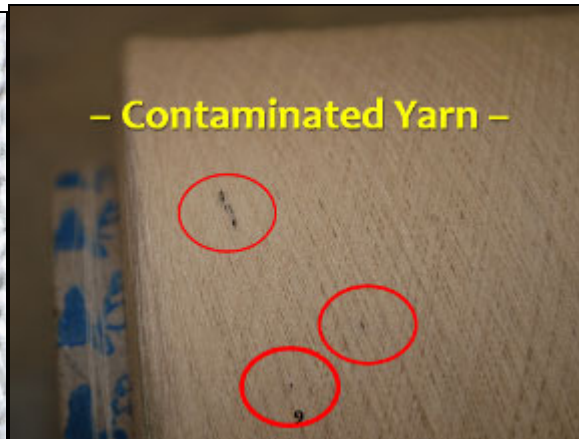


Figure 6. Contaminated Yarn



Figure 7. Contaminated Sliver



Figure 8. FM Found Using Advanced Technology

As the saying goes, a picture is worth a thousand words. Regarding Figure 8, Foreign Material Found Using Advanced Detection Technology, it should be knotted that this is one example of the kind of mater found in a single laydown during one twelve hour shift that included approximately sixty bales of cotton. The figure shows several kinds of foreign material were gleaned and sorted from the mixed materials, After these and other materials were found in cotton, this high end yarn mill elected to invest in a foreign matter detection system that is capable of finding and removing these and other kinds of foreign materials from the lint stream during processing.

Summary

At the end of the day, we can still say that we believe U.S. cotton from all regions of the cottonbelt to be relatively free of non-lint foreign material. However, when battling other cotton growths for market share in a competitive world cotton market, we can ill afford to jeopardize our reputation as a source of contamination free cotton. The message remains the same today and the rewards are twofold: satisfied domestic customers and protection of U.S. cotton's global reputation for contamination-free lint. These goals can only be achieved by striving for zero tolerance when unwanted foreign materials are present in cotton fields, at cotton gins or anywhere potential contaminants can get inside or on the surface of cotton bales.