

## Researchers Offer Rebuttal

In response to the recently published article entitled "Restoring Fiber Moisture" (*Cotton Farming*, mid-February, 2002), some misleading statements were made concerning the effects of moisture restoration to cotton fiber quality at the lint slide.

Adding moisture prior to bale packing has been practiced by ginners for quite some time, and is done so for several reasons. The first and most obvious reason is to increase fiber weight, thus adding more pounds and value to the bale. The second is to reduce compaction pressure required at the bale press, thus saving energy. The third is to reduce static electricity at the lint slide in order to improve cotton flow into the bale press. All of these factors can benefit the producer and ginner.

However, care must be taken when applying moisture to cotton at the lint slide. Some people think that if a little moisture is good, more is better. That is not the case. The recommended fiber moisture content of 6 to 7 percent at ginning is based on process rates as well as fiber quality aspects.

Studies conducted at the USDA-ARS Cotton Ginning Laboratory in Stoneville, Miss., since the 1950s have shown that moisture content over 8 percent will cause color degradation of the fiber during storage.

In a 2001 study, bales stored for 116 days between 8 to 9 percent lint moisture with an initial color grade of 31 ( Middling) resulted in a color grade of 41 (Strict Low Middling) after storage. Bales stored at moistures greater than 10 percent resulted in a 43 (Strict Low Middling Spotted) color grade. In addition, sections of the bale stored at over 10 percent moisture had obvious dark discolorations due to microbial growth.

There are many ways to add moisture to cotton fiber. Humid air can be blown through the batt at the lint slide, providing rapid and uniform moisture distribution. Lint can be transported to the battery condenser with humidified air. Humidified air also can be added at the battery condenser. In any of these three methods, moisture in the humidified air is absorbed by the cotton fiber.

On the other hand, systems that

spray water droplets on top of the batt do not encourage absorption of the moisture by the fiber. The moisture is not inherently bound with the fiber, but is on the surface of the fiber. Water sprayed on top of the fiber does not penetrate the depth of the batt, thus leading to a sandwich of moisture between layers of fiber. Moisture migrates very slowly in universal density bales, taking months to equilibrate. Non-uniform water distribution can cause wet spots in the bale.

While it is true that moisture content in the fiber will result in higher strength, length and micronaire readings, these higher values return to their normal levels when the samples are properly conditioned for the classification testing done by the USDA with the High Volume Instrument system. Therefore, the primary reasons for adding moisture at the gin lint slide are those mentioned in the second paragraph of this letter. The USDA studies noted above did not find any significant improvement in fiber quality in contrast to the recently published article in *Cotton Farming* on restoring fiber moisture.

Extreme care must be exercised by cotton ginners to avoid adding too much moisture to the cotton before baling. In addition to the potential fiber degradation, which may cause the bale to be a different grade when opened at the textile mill, weight loss may occur as the cotton reaches equilibrium with the environment. These factors will have an adverse impact on the cotton industry, including producers, ginners and end users of the cotton fiber.

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## Healthy Competition

In today's trying times for agriculture we must all work together in order to survive. In their travels and writings, *Cotton Farming's* editors know, more than I, that our industry