Ginning a Cotton with a Fragile Seed Coat

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Seed coat fragments that remain in the lint after ginning cause problems during the spinning process and affect the quality of finished goods. A new cotton strain (*Gossypium hirsutum* L.) has been developed that contains a fragile seed coat that breaks easily. An experiment was conducted to determine the effects of saw and roller ginning on this experimental cotton strain with the fragile seed coats. Three ginning treatments, standard saw gin stand, experimental saw gin stand with auxiliary rib guides, and standard roller gin stand, were investigated. The treatments were applied to a commercial Upland cotton used as a control and an experimental Upland strain that contained fragile seed coats. Lint samples collected from the roller gin stand exhibited better fiber properties with respect to color grade, length, uniformity, nep count, short fiber content, and turnout than the saw gin stand configurations. The experimental saw gin stand with attached rib guides did not impact any fiber properties compared with the unmodified saw gin. The experimental cotton cultivar with fragile seed coats had superior fiber quality than the control cultivar, including cottonseed grade, short fiber content, immature fiber content, nep count, micronaire, strength, uniformity, and turnout. Seed coat nep count in the experimental cotton was about three times higher than the control cotton.

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