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The Effect of Harvesting Procedures on Fiber and Yarn Quality of Ultra-Narrow-Row Cotton

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The ultra-narrow-row (UNR) cotton system is defined as planting a cotton field with closely spaced rows (typically less than 38.1 centimeters). Because this narrow-row spacing provides the potential for increased yield, it has caught the attention of U.S. cotton producers, ginners, and textile mills. While these three groups share an interest in UNR cotton, they do not share the same opinion on its merits. Producers favor UNR because of the potential for increased yield, a shorter growing season, and lower equipment costs. Conversely, cotton ginners, buyers, and spinners are wary of UNR cotton because of perceived increased levels of non-lint material. For gins not prepared to handle UNR stripper-harvested cotton, increased non-lint content can reduce the cleaning efficiency of the gin and increase wear on ginning equipment. Spinners are wary of UNR cotton because studies have shown that increased non-lint content in cotton fiber can cause an increased number of ends-down in spinning, increased waste in the card room, and reduced yarn and fabric quality. Little research has been conducted on the impact of UNR cotton in the textile plant. This study focuses on the impact of harvesting methods on waste, percentage efficiency, and processing and yarn quality, which are important factors to the yarn spinner. The results indicate that an alternative harvesting method could make UNR an attractive planting choice, particularly in marginal fields.