

## Analysis of the Fiber Quality of Upland Cotton in China from 2005 to 2007

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Upper-half-mean length (Len), uniformity index (UI), breaking tenacity (Str), and micronaire value (Mic) are the key quality parameters of cotton fiber. In this study, 182 upland cotton varieties examined and approved by The National or Provincial Committees for the Examination and Approval of Crop from 2005 to 2007 were selected as materials. These varieties were the most popular varieties planted in China. The result indicated that the distribution of fiber length was very limited. The fiber length of 145 varieties was concentrated from 28 mm to 30 mm, which was nearly 80% of the varieties. The fiber UI of varieties were very good, almost 98% varieties reached or exceeded 83%. Most varieties (91%) had 28 cN · tex<sup>-1</sup> or higher fiber Str. As for Mic, more than 76.4% of the varieties were distributed from 4.3 to 4.9, 14.3% up to 5.0, and only 7.7% were within 3.7 to 4.2, the best Mic range. According to the Chinese Agricultural Standard of Evaluation methods for the quality of cotton fiber (NY/T 14262007), 160 (87.9%) of the 182 varieties, were high-quality cotton. From 2005 to 2007, the Ministry of Agricultural organized selective examinations for cotton fiber quality in producing areas every year. 732 upland cotton samples were examined during the 3 years. Distribution of the 4 main cotton fiber quality parameters was as follows. Of the 732 samples, 78% had fiber length of 28 mm to 30 mm. The fiber UI of samples was a little lower than that of the varieties mentioned above (70%), and 83% reached or exceeded to those values. Of the 732 samples, 75% had 28 cN · tex<sup>-1</sup> or higher fiber Str. For Mic, there were more than 54% between 4.3 and 4.9, 25.8% were up to 5.0, and 15.6% samples were within 3.7 to 4.2. In addition, some samples had very high (6.0) or very low (3.0) Mic. According to NY/T 14262007, 55.5% samples were high-quality cotton. In spite of the varieties or samples, there were no notable changes for the fiber quality parameters through years. High-quality cotton varieties of AAA grade are still very few. The quality of samples collected from production areas were lower than that of the varieties potential, which implies that the good traits of the varieties not realized in cotton production. We should make great efforts, by means of genomic innovation, new varieties breeding, and other related technologies to improve cotton quality.