

## Study on Effect of Three Wild Species for Improving Fiber Quality in Upland Cotton (*Gossypium hirsutum* L)

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**Abstract:** Researches on introgression of super quality fiber properties from *Gossypium anomalum*, *G. armourianum* and *G. raimondii* to *G. hirsutum* was carried out to expand genetic basis and to compare the effect of species for improving fiber quality in upland cotton. The fiber quality of progenies from interspecific hybridization in HVICC standard is far superior to commercial island and upland cottons. The average fiber strengths, lengths and micronair readings are  $34.43 \text{ cN} \cdot \text{tex}^{-1}$  (27.3 ~ 40.1), 32.29 mm (29.0 ~ 35.3), 4.37 (3.2 ~ 5.6) in 47 lines

from *G. raimondii*;  $35.50 \text{ cN} \cdot \text{tex}^{-1}$  in 49 lines from *G. armourianum*; (30.2 ~ 41.1), 33.16 mm (29.0 ~ 35.5), 4.29 (3.1 ~ 5.0)  $38.15 \text{ cN} \cdot \text{tex}^{-1}$  (30.2 ~ 50.2), 33.35 mm (29.7 ~ 36.7), 4.11 (3.0 ~ 5.1) in 101 lines from *G. anomalum*;  $29.76 \text{ cN} \cdot \text{tex}^{-1}$  (25.8 ~ 34.0), 29.76 mm (27.8 ~ 31.6), 5.51 (4.6 ~ 6.0) and  $35.08 \text{ cN} \cdot \text{tex}^{-1}$  (33.8 ~ 36.3), 34.56 mm (33.7 ~ 35.6), 3.50 (3.0 ~ 3.9) are in 14 elite upland and 5 elite island cotton cultivars, respectively.

Therefore, these three wild species are very useful for cotton fiber improvement, and *G. anomalum* is the best one. However, it is very hard to improve fiber quality only through intraspecific crosses.

**Key words:** upland cotton; wild species; fiber quality; genetic effect