RIBOSOMAL DNA STRUCTURE AND VARIATION IN COTTON

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Abstract

The organization of the nuclear encoded 18S, 5.8S and 25S ribosomal RNA genes (rDNA) was examined in Old and New World species of cotton by restriction site mapping. The rDNA genes in cotton were found to have the same general structure as those of most higher plants. rDNA repeat sizes varied slightly among species by increments of 200 bp. Repeat size was 9.4 kbp in *G. hirsutum* and *G. barbadense* and 9.6 and 9.8 kbp in *G. arboreum* and *G. herbaceum*., respectively. No intraspecific variation was detected in the spacer region of the plants under study. The presence of two SspI sites in *G. arboreum* and *G. herbaceum* (not mapped) and a single site in *G. hirsutum* and *G. barbadense* is useful in separating the Old World and New World cottons. Despite the small sample size and the small number of restriction enzymes used in this study, the paucity of genetic diversity observed in rDNA of cotton is congruent with the low level of diversity detected by previous molecular and protein data.

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