

**CHARACTERISTICS OF A WAXY PHENOTYPE
OF COTTON (*G. HIRSUTUM*) DERIVED
FROM A TRISPECIES HYBRID ($A_1 \times D_{2-1} \times AD_1$)**

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Abstract

Cotton genotypes with higher photosynthetic rates per unit leaf area are needed for genetic improvement. We observed genetic variations in photosynthesis among progeny from a trispecies hybrid. This study was initiated to determine some of the characteristics of a selection that had a waxy texture, apparently thicker leaves, and a high photosynthetic rate in preliminary observations. The waxy parent, the reference parent cultivar Ark-8518, and the resulting F1 were grown in field plots in a randomized complete block design with 5 replications. The factors measured were wax per unit area of leaf, leaf thickness, chlorophyll per unit area, and photosynthesis. The waxy phenotype had a thicker leaf, however, the leaf thickness was not due to a heavy wax cuticle. The waxy phenotype had the highest photosynthetic rate per unit leaf area, and this was probably related to a higher chlorophyll level per unit area. The higher chlorophyll level may be related, in part, to more leaf volume per unit surface area.