

**COTTON GENOTYPES EXHIBITING
CLUSTER-LIKE FRUITING MORPHOLOGY
AND THEIR RESPONSE TO 30-INCH ROWS**

**J.J. Heitholt
USDA-ARS
Stoneville, MS
J.McD. Stewart
U. Arkansas
Fayetteville, AR**

Abstract

Cotton (*Gossypium hirsutum* L.) genotypes that are specifically adapted to narrow rows may be necessary if yield increases are to be obtained in some environments. For several years, physiologists and breeders have proposed that genotypes with cluster fruiting morphology or short fruiting branches would yield higher if grown in narrow rows. The objectives of this research were to examine the performance of several genotypes with cluster-like morphology and short fruiting branches in narrow rows and to characterize the fruiting branch lengths of these genotypes. Field experiments were conducted near Stoneville, MS in 1996, 1997, and 1998 using both 30" and 40" rows. Five genotypes exhibiting varying degrees of short branch and cluster morphology were used. Two genotypes (MDH 94 CL0 and STV 504 CL0) were derived from crosses of MDH 94 and STV 504 onto a short fruiting branch plant occurring in a segregating trispecies hybrid swarm ($A_1 \times D_{2-1} \times AD_1$) at Fayetteville, AR. CL 2525, Auburn 56, Suregrow 125 were also included. The distance between the main stem and fruiting position 1 (FP1), the distance between FP1 and FP2 at main stem node 10, and yield were determined in selected years. In only one environment (1997) did a short fruiting branch genotype (CL 2525) exhibit increased yield in narrow rows compared to conventional rows. MDH 94 CL0, STV 504 CL0, and CL 2525 produced a greater percentage of plants with short fruiting branches than Suregrow 125 and Auburn 56. However, there was considerable variability in fruiting branch length in all genotypes, possibly due to heterozygosity of the populations for genes controlling fruiting branch morphology. Thus, the potential for increased yield for uniformly clustered genotypes in narrow rows can not be totally discounted in these experiments.