

**FRUITING CHARACTERISTICS OF  
SELECTED U.S. AND ACSI CULTIVARS AND  
THEIR HYBRIDS**

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**Abstract**

Field experiments were conducted in 1997 and 1998 at the Plant Science Research Center, Mississippi State, MS to determine the fruiting characteristics of seven cultivars of cotton, *Gossypium hirsutum* L. Three cultivars (Deltapine 50, Sure-Grow 125 and Sure-Grow 501) developed in the U.S. and four cultivars (FiberMax 832, FiberMax 963, FiberMax 975, FiberMax 989) developed by AgrEvo Cotton Seed International (ACSI), which differed in maturity, were chosen for this experiment. The experiment was conducted as a randomized complete block with six replicates. In-season plant mappings and a final box mapping (end-of-season mappings) were conducted for both years. FiberMax 963 yielded more seed cotton both years than all other cultivars, and also produced more bolls than all other cultivars. FiberMax 963 had a significantly higher lint percentage in 1997 than all other cultivars, except FiberMax 975. FiberMax 989 had significantly larger bolls than all other cultivars in 1997. There were no significant differences among the cultivars for boll size in 1998. Cotton F<sub>2</sub> hybrids could provide a means to combine beneficial traits of high yielding adapted cultivars (U.S.) with those of high quality fiber cultivars (ACSI). An experiment was designed in 1999 with hybrids of seven cultivars. These F<sub>2</sub> hybrids were produced following a Diallel design-mating scheme involving parents (FiberMax 963, FiberMax 989, Deltapine 90, Deltapine 50, Sure-Grow 501, Paymaster 1560, Stoneville 474). These hybrids were grown in two locations in 1999. Yield, yield components and fiber data were collected at harvest on all parents and hybrids. Several F<sub>2</sub> hybrids yielded higher than the parents. General combining ability (GCA) effects for various parents differed significantly for fiber traits. Suregrow 501 gave significant, positive GCA effects for all fiber traits studied except for micronaire. Significant, positive specific combining ability (SCA) effects were smaller and less significant than GCA effects for fiber traits. These results suggest that high yielding F<sub>2</sub> cotton hybrids or cultivars that contain improved fiber quality and yield can be developed.