

**YIELD OF TWO OKRA-LEAF TYPE COTTONS
ON DIFFERENT SOIL TYPES**

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Abstract

The okra- and normal-leaf isolines from two cotton (*Gossypium hirsutum* L.) genotypes were grown on three soil types in the Mississippi Delta near Stoneville, MS from 1989 to 1996. There were 15 tests for DES 24-8ne and seven tests for MD 51ne. Soil types included a Bosket fine sandy loam, a Dundee silty clay loam, and a Beulah fine sandy loam. For the DES 24-8ne background, yields of okra-leaf were 5 to 41% greater than normal-leaf types (e.g. 1060 vs 1010 lbs/acre and 554 vs 393 lbs/acre) when the site was a Bosket fine sandy loam. Similar results were found for MD 51ne. In contrast to the Bosket site, yields of DES 24-8ne and MD 51ne normal-leaf were either equal to or greater than okra-leaf on the other two sites. Environments (site-years) were ranked based on yield of the normal-leaf isolate with 1 equal to the lowest yield. The percentage of okra-leaf advantage (or disadvantage) was plotted against these rankings. For DES 24-8ne and MD 51ne the correlations were negative ($r = -0.68^*$, $n=15$ and $r = -0.62$ ns, $n=7$, respectively). The results indicate that an okra-leaf advantage may have occurred not because it exhibits a high yield potential, but because the yield of the normal-leaf was depressed by an unidentified factor. Among the suspected factors are excess N, excess water, and high tarnished plant bug (*Lygus lineolaris*) populations, (two of which are naturally occurring) that are common to several Mississippi Delta cotton growing sites. In such environments, okra-leaf appears to have a relative advantage over normal-leaf in at least two isogenic lines.