

**VARIATION IN NUMBER OF TRICHOMES
ON BRACTS OF COTTON PLANTS**
R.E. McGowen Jr., F.M. Bourland, and S.L. Latimer
University of Arkansas
Fayetteville, AR

Abstract

Trash from bracts makes up the majority of leaf trash used to assign leaf grade indices of raw cotton fiber. Recent studies revealed leaf grade index and marginal bract trichomes increased as leaf pubescence rating increased. Marginal bract trichomes may help explain the variation in leaf grade indices. Two studies were conducted in 1996 to 1) evaluate variation in number of trichomes on bracts and leaves of individual plants and 2), evaluate variation in number of marginal bract trichomes among cultivars in the 1996 Arkansas Cotton Variety Test.

Leaves and bracts of six cultivars of differing leaf pubescence rating were collected from all plant positions and measured for bract length, bract indentation, marginal bract trichomes, and leaf trichomes. Numbers of leaf trichomes were more consistent over positions than marginal bract trichomes or bract length. Bract length tended to be longest in the main-stem nodes in the middle of the plant. As the main-stem node progressed toward the top of the plant, numbers of leaf and marginal bract trichomes increased. When sampling, bracts should be collected from similar position on all plants.

Bracts from 30 cultivars from the 1996 Arkansas Cotton Variety Test at five diverse locations were collected and measured for length, indentation, and marginal bract trichomes. With the absence of any location by cultivar interaction, only one location is required to determine variation of marginal bract trichomes among cultivars. There was nearly a two-fold difference in bract trichomes among cultivars. Marginal bract trichomes and leaf pubescence rating were correlated ($r=0.51$), with hairy-leaf cultivars having more bract trichomes than smooth leaf cultivars. Leaf and bract trichomes do not appear to be pleiotrophic.