

**BASIS AND DESCRIPTION OF A
LEAF PUBESCENCE RATING
SYSTEM FOR COTTON**

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Abstract

Leaves of several recently developed cotton cultivars have pubescence intermediate between “smooth leaf” and “hairy.” The objectives of this study were to develop a rating system for quickly accessing the degree of pubescence on cotton cultivars, to use the system to describe the pubescence of several cultivars grown at multiple locations, and to determine the effect of reduced leaf pubescence on leaf grade index of lint samples. The leaf pubescence rating system generated included: 0 (glabrous stem and leaves, e.g. Paymaster HS200), 2 (glabrous leaves with light hair on stem, e.g. Deltapine 50), 4 (short, uniform hair on leaves with hairy stems, e.g. Sure-Grow 501), 6 (medium, relatively dense hair on leaves and stems, e.g. Hartz H1330), 8 (dense hair on leaves and stems, e.g. Stoneville 474), and 9 (very dense hair on leaves and stems, e.g. pilose genotypes). In 1995, trichome number was counted on leaves having grades 2 through 8 at Keiser, AR. Leaf pubescence of 16 cultivars were rated at four Arkansas locations and at Stoneville, MS in 1995. Leaf grade indices for the same 16 cultivars were determined from lint samples taken from two tests in both 1993 and 1994 at Stoneville, MS. Number of trichomes on leaves increased geometrically as leaf pubescence grade increase. Ratings of the cultivars at the five locations (ratings by five different individuals) were highly correlated, indicating that the rating system is transferable. Generally, cultivars having less lower pubescence ratings had lower leaf grade index. A large increase in leaf grade occurred as pubescence grade increased above 5. The negative effect of leaf pubescence on leaf grade was only slight for cultivars having reduced leaf pubescence.