

EFFECTS OF MEPIQUAT PENTABORATE ON GENOTYPES OF VARYING MATURITY**Joseph T. Johnson****USDA-ARS****Stoneville, MS****Abstract**

Variation in the growth habit and maturity of cotton varieties is a complicating factor in variety testing, necessitating separate tests for early and full season genotypes. In conventional production systems, commercial varieties often have some type of chemical growth regulator applied, but the interaction of these regulators with cotton cultivars of varying maturity is not fully understood. The evaluation of cotton genotypes in variety testing situations presents challenges in choosing a management system that does not impart bias to the test. This study evaluated the use of Pentia (mepiquat pentaborate) on a group of commercially available cultivars which vary in growth and maturity. Pentia treatments were 8oz, 16oz, and an untreated check, applied twice during the season. Treatments were applied to all genotypes on the same calendar dates, regardless of developmental stage. Four early and four late maturing genotypes were evaluated in 2003 and 2004 for the effects of Pentia on yield, yield components, and fiber properties. In both years, Pentia treatments resulted in statistically significant effects for plant height, percent first pick, as well as minor effects on the HVI fiber properties length, strength, uniformity and micronaire. No significant effects were found for lint yield. When analyzed across years, no significant treatment-by-genotype interactions were found in lint yield, percent first pick, or in fiber properties. In general, genotypes were affected uniformly by Pentia applications with little interaction to be found giving one genotype an advantage over the other in terms of yield and earliness in response to this product.