

**GROWTH PATTERN EVALUATION OF
CONTRASTING COTTON
CULTIVARS USING
COTMAN PROCEDURES
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Abstract

The development of early maturing cotton cultivars and systems to evaluate maturity patterns can prove beneficial by enhancing management practices as well as aiding in breeding systems. This study was conducted to compare fruiting and maturity patterns of contrasting cotton cultivars and then relate these patterns to timing of cutout, yield, and plant structure. Six cultivars were evaluated including two very early types: Tamcot HQ95 and Paymaster HS200; two intermediate types: Sure-Grow 125 and Deltapine 20; and two later types: Stoneville LA887 and Hyperformer HS46. This study was conducted in 1994 and 1995 over three locations in Arkansas. The evaluation of maturity was conducted by monitoring main-stem nodal development of the cultivars using SQUARMAP and nodes above white flower (NAWF) procedures. Also, an end of season COTMAP was performed for each cultivar. From these data growth curves for each cultivar were created and the number of days from planting to cutout were calculated. These results were then related to yield and plant structure. The growth curves were found to be inconsistent over years and locations, but cultivars did follow expected growth patterns in relation to each other within years and locations. Also, environmental effects (locations) on maturity were much greater than environmental genetic effects. It was also found that high yields were obtained from various fruiting patterns. Finally, maturity patterns were correlated with some plant structure variables such as the number of effective sympodia, total nodes per plant and plant height.