NODE ABOVE WHITE FLOWER AS A SIGNAL OF PHYSIOLOGICAL CUTOUT: A REGIONAL REPORT

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Abstract

It is not clear how production input such as nitrogen and mepiquat chloride influence the cotton crop maintaining target development curve. The objectives of this experiment which started in 1997 were to characterize the standard fruiting growth curve and determine the stability of the curve under different environments (locations) and also management inputs, and to determine the effect of production management inputs on the nature of the fruiting curve. Experiments were conducted at four locations (Virginia, Arkansas, Georgia and Louisiana). Treatments consisted of untreated control (high N no MC), High N + MC at PHS and FF and Low N (70% of the control) and no MC. COTMAN crop monitoring records of major phenological stages (PHS, FF and NAWF = 5) was recorded. To determine flower values first position white flower at: NAWF = 7, NAWF = 6, NAWF = 5, and NAWF = 4 were tagged by placing tags on the main-stem branch. Tagged bolls were hand harvested at the end of the growing season. In Arkansas the crop fruiting curve showed delayed squaring node development with slopes similar to the target curve. Flower value for all treatments at this location increased in bolls required to produce one pound of seed cotton above NAWF = 6. At the Georgia location, the fruiting curve showed very early initiation of flowering followed by premature cutout with slopes similar to the target curve. The fruiting curve at Louisiana showed early and extended fruiting patterns with slopes flatter than the target curve for all treatments. Flower value for all treatments at the Louisiana location increased in bolls required to produce one pound of seedcotton above NAWF = 5. Number of flowers required to produce one pound of seedcotton was higher for the control treatment compared with the high and low N treatments. For Virginia, fruiting curve relative to the COTMAN's Target Development Curve showed late and extended fruiting patterns with slopes similar to the target curve for all treatments, however, when treatments were compared with Target Development Curve developed for Virginia fruit development was near at the new target curve. Flower values for all treatments for Virginia increased in bolls required to produce one pound of seedcotton above NAWF = 6. However, number of flowers required to produce one pound of seedcotton did not differ with treatments. Generally, the standard fruiting growth curve varied slightly under different environments (locations) and management inputs. The variation in the fruiting growth pattern across locations were due mainly to seasonal growing conditions (i.e. moisture, temperature). Production management inputs such as nitrogen and PIX had effected flower values at some locations. This regional research project will be continued for an additional year.