PLANTING DATE AND PLANT GROWTH REGULATOR INFLUENCES ON COTTON GROWTH AND YIELD

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Abstract

The 'standard' planting window for cotton (*Gossypium hirsutum* L.) in the Brazos Valley is early to mid- April or when the soil temperature, at six inches, is 65°F. Planting early offers the crop several advantages, but it can also lead to the possibility of stand reductions due to cold soil temperatures. With late season planting the crop may miss early season rainfall and be plagued with excessive heat at crucial stages of development, including the seedling stage. In 1998, a study was conducted on cotton variety DP&L 50 at the Texas Agricultural Experiment Station near College Station, Texas to examine the effects of planting dates and two plant growth regulator (PGR) treatments on lint yield and fruiting parameters of cotton. Planting dates were 4 March, 18 March, 1 April, 15 April, 29 April, 13 May, and 27 May. All cotton was irrigated and planted conventionally to a final population of 45 000 plants/A. PGR treatments included were as follows: an untreated check; PIX® (mepiquat chloride) applied twice (8oz/A at match-head square and early bloom); and PGR-IV® (gibberellic acid and indolebutyric acid) applied at 2 oz./A at two-leaf, pinhead square, and early bloom. Applications of Pix® and PGR-IV® tended to increase yields over the untreated check at all dates of planting, with no difference between the two PGRs. There was a curvilinear relationship between date of planting and cotton yield, with the maximum yield being achieved at 1 April. The first four planting dates were not different for yield, but were greater than the last three planting dates. Yield was affected more by later than by earlier planting in 1998. Fiber quality and characteristics were generally unaffected by PGR or planting date with the exception of 27 May. Cotton fiber quality was reduced, at 27 May, due to excessive stress from heat and lack of moisture.

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