

**SEED TREATMENT WITH PLANT GROWTH  
REGULATORS TO ENHANCE EMERGENCE  
AND SEEDLING GROWTH**

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Germination and seedling establishment are dependent upon favorable soil and climatic conditions. In some areas of the U.S. Cotton Belt, cotton (*Gossypium hirsutum* L.) is often planted into cool, wet soils that can adversely affect germination, emergence and early seedling growth. Preplant seed treatments with PGRs have been shown to improve seedling emergence and stand establishment, insuring subsequent vigorous growth and development. The objective of this study was to evaluate various commercially available plant growth regulators as seed treatments and in-furrow applications at planting for effect on early season growth in field-grown cotton. Treatments consisted of an untreated control, Amisorb applied in-furrow, Arise applied as a seed treatment, Early Harvest applied in-furrow, and Asset, Atonik and PGR-IV applied as a seed treatment and in-furrow. Amisorb is not classified as a plant growth regulator. Measurements included percent emergence at six and eleven days after planting (DAP), plant height and number of main-stem nodes at 28 and 73 days after planting, and number of squares and bolls at 73 days after planting. At six DAP, Arise seed treatment promoted germination and emergence better than in-furrow applications of Amisorb and PGR-IV or seed treatment with Asset. At 11 DAP, seedling emergence was greater than 20% in all treatments, except in the Amisorb treatment, the Asset seed treatment, and the PGR-IV in-furrow treatment. At 28 DAP, there were no significant differences ( $P=0.05$ ) among treatments for plant height or number of main-stem nodes. At one week after first flower (73 DAP), plant height was significantly higher in the Atonik seed treatment when compared with the control, Asset seed treatment and the Early Harvest and PGR-IV in-furrow applications. Square number was significantly greater in the Amisorb in-furrow treatment than all other treatments. This may be partially attributed to Amisorb being a nutrient absorption enhancer. This study provides data to show that seedling emergence can be improved with plant growth regulators and differences exist between in-furrow and seed treatments within the same plant growth regulator. This study will be repeated in a controlled environment in order to evaluate plant growth regulator performance under adverse soil and climatic conditions.