

**COTTON RESPONSE TO IN-FURROW STARTER
FERTILIZER WITH AMISORB, ASSET,
OR PGR-IV
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Abstract

Many products marketed for use in-furrow at planting have the potential to increase lint yield by improving early season plant development. These products include but are not limited to AmiSorb, a nutrient absorption enhancer marketed by AmiLar International, Asset, a fertilizer additive marketed by Helena Chemical Company, and PGR-IV, a plant growth regulator marketed by Micro Flo Company. AmiSorb and Asset when used at planting are recommended for use with a starter fertilizer such as 11-37-0, while PGR-IV, not promoted for use in this manner, is sometimes used with a starter fertilizer. Research has been conducted demonstrating the effects of AmiSorb and Asset on cotton grown in controlled environments; however, field testing of these products is limited. This study was conducted to evaluate the effects of AmiSorb, Asset, or PGR-IV used with a starter fertilizer on emergence, growth and development, and lint yield of cotton. A one-year study conducted in 1997 consisting of five treatments, 1) control (UTC), 2) 11-37-0 (1.5 gal/ac) (S), 3) S plus Asset (5.3 oz/ac) (S+As), 4) S plus AmiSorb (2.0 qt/ac) (S+Am), and 5) S plus PGR-IV (2.0 oz/ac) (S+IV), was replicated in strips eight rows wide in production fields in Desha, Crittenden, and Clay counties of Arkansas. In-season management of the study sites was consistent with that of the producer's standard practices on their farm. An once-over harvest utilizing the producer's picker was used at each location. Seedcotton weights were collected using a boll buggy equipped with load cells. Seedcotton samples were collected for percent lint and fiber quality determinations from each plot. Stand counts collected as plants were beginning to emerge and after all plants had emerged did not reveal any differences in emergence compared to the control. Plant mapping at early bloom indicated that plants treated with S+Am produced 1.3 to 1.4 more nodes than any other treatment with the exception of the S+IV-treated plants and produced 1.1 to 2.3 more bolls than did any other treatment in Desha County. In Clay County, plants treated with S+As produced 1.4 to 4.4 more squares at early bloom than any other treatment while the S and S+IV-treated plants produced 1.6 to 3.0 more squares than did the UTC and S+Am treated plants. No significant differences were observed in Crittenden County at early bloom. Plant mapping at 50 percent open revealed that maturity as measured by percent open bolls was delayed by 15 to 28

percent in the S and S+IV-treated plots compared to all others in Clay county. Lint yields did not differ significantly; however, the UTC plots numerically out-yielded all other in-furrow treatments at each of the three locations. In-furrow treatments resulted in numerical yield reductions of 39 to 53 lbs lint/ac (S+Am 39 lbs/ac, S+IV 40 lbs/ac, S 42 lbs/ac, and S+As 53 lbs/ac) compared to the UTC which averaged 1277 lbs lint/ac across three locations. In-furrow treatments used in combination with 11-37-0 did not enhance emergence, had little impact on plant growth and fruiting parameters, and did not improve lint yield in this one-year study. Micro Flo Company does not promote PGR-IV for use with a starter fertilizer. These results support that lack of support. More field-testing is needed to better evaluate how Asset and AmiSorb may best be used.