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EFFECTS OF AUXIGRO WP ON CALIFORNIA COTTON YIELD & QUALITY

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Abstract

Field experiments were conducted to determine the effects of AuxiGro WP on yield and quality of California grown cottons. Rate and timing trials were conducted in the San Joaquin Valley, Sacramento Valley, and Imperial Valley of southern California. AuxiGro treatments were applied at first bloom, first boll development and 14 days after first boll development. AuxiGro rates were 1.0, 2.0, 4.0 and 8.0 ounces per acre in combination with a foliar fertilizer. AuxiGro was also evaluated as a stand alone treatment. AuxiGro was evaluated on pima, California acala's and Delta type cottons. Results varied by variety and test location. AuxiGro alone yielded better than the untreated, however, the best AuxiGro performance was at the 4 oz/acre rate plus a foliar fertilizer applied at first boll development (about 21 days after first flower). The highest yields were reported on pima cotton grown in the SJV. Yield results on the California Acala type cottons varied by variety and location. Preliminary results show that AuxiGro has a positive affect on boll retention and boll maturity based on plant mapping data collected from select locations. Trials conducted in the desert have shown quality improvement for strength, uniformity and micronaire.

New Developments from Industry

The key to AuxiGro is gamma aminobutyric acid (GABA). GABA is a non-protein amino acid found in all living organisms where its primary role relates to regulating ion (mineral) movement between cells. Utilizing this compound, enhanced nutrient uptake and movement within plants can be optimized. Greater nutrient availability means that now plants can approach their genetic potential for growth, vigor and yield. Additionally, crop quality or grade is often enhanced from the use of AuxiGro.

During the 2001 season, cotton trials evaluated the rates of AuxiGro application and if foliar fertilizer had a synergy with the AuxiGro treatment. All treatments were applied at initial boll formation based on prior trials identifying this as the optimal application timing. The results obtained indicated a synergy of AuxiGro with the fertilizer and the best rate that season was typically 2 oz/Acre.

In 2002, Michael Rethwich of the University of California Extension service evaluated the combination of AuxiGro and a foliar fertilizer called Cal-Max produced 96 more pounds of lint per acre then the untreated control. Additionally, the value of the lint produced was increased because of greater strength and longer fibers.

For the 2003 season, Emerald Bio evaluated AuxiGro applications on Pima, Acala, and Upland types of cotton. Rates of application as well as combinations with a calcium foliar fertilizer were tested. Of special interest in these trials was the exceptionally hot growing condition during later season growth. Plant mapping of the cotton in the plots prior to the extreme heat evidenced a positive impact of AuxiGro on boll position (more 1st position bolls) and the number of fruiting branches. AuxiGro treated plants appeared to exhibit enhanced maturity with boll opening sooner and more completely than shown by the untreated plants. Key observations are as follows:

- Optimal Application Timing – Initial Boll development
- Optimal Rate of application – 2-3 oz/Acre
- Positive results for Pima, Acala, & Upland varieties
- Applications enhanced from use of Calcium fertilizer
- Lint quality maintained or improved with AuxiGro treatments.
- Positive impact on plant physiology – boll retention, boll maturity, and boll position.

Emerald Bio intends to continue similar research in California cotton during the 2005 growing season to confirm these results and prepare information for product registration within California upon the receipt of additional

positive results.