

**COTTON RESPONSE TO CHELATED FERTILIZER FORMULATIONS IN A SEMI-ARID ENVIRONMENT****Kristie L. Keys****Mark S. Kelley****Katie Lewis****Texas A&M AgriLife Extension Service****Lubbock, TX****Abstract**

A newly released in-furrow fertilizer additive, Levesol, exclusively from West Central is a ortho-ortho EDDHA chelating agent used to increase the uptake of micronutrients such as zinc, iron, copper, and manganese by preventing the binding of phosphorus and keeping micronutrients in soluble form. This chelating agent is found in other West Central proprietary products, Soygreen and Redline. A farm study was conducted in Anton, Texas to observe crop response to the in-furrow additions and their impacts on boll retention, plant tissue analysis and lint yield. In this study, we had five treatments: 1) Check, 2) Redline 28L/ha + 18L H<sub>2</sub>O/ha 3) Levesol 14L/ha + 42L H<sub>2</sub>O/ha, 4) Soygreen 6L/ha + 28L H<sub>2</sub>O/ha, and 5) Soygreen 2L/ha + 37L H<sub>2</sub>O/ha. The trial was planted on 1-June at 98,842seeds/ha with row lengths being roughly 1,500ft and four replications. Leaf and petiole samples were taken on 17-Jul and sent to Ward Laboratories, Inc. for nutrient analysis. Soil samples were taken by plot on 3-Jul and sent to Ward Laboratories, Inc. for detailed nutrient analysis. Boll retention counts were performed on 22-Sep by plot. At harvest, individual plots were weighed using a West Texas Lee weigh wagon with integral digital scales to determine lint and seed yield on a per acre basis. Resulting lint samples were submitted to the TTU Fiber and Bio-polymer Research Institute (FBRI) for high volume instrumentation (HVI) analysis. Plots were arranged in a randomized complete block design. Data were analyzed using PROC GLM ANOVA and differences were determined using Fischer's protected LSD in SAS 9.3. Results from the 17-Jul tissue analysis of leaf and petiole zinc, indicated no significant differences among treatments and significant differences were observed among treatments for nitrate-nitrogen soil availability only. Redline 28L/ha resulted in higher nitrate-nitrogen availability. The reason for which is unclear. No other differences were observed. Significant differences were observed for lint and seed yield. For lint yield, the check and redline was significantly greater than both Soygreen treatments. Also, the Levesol treatment was greater than the Soygreen at 2L/ha only. Seed yield results were similar to lint yield results with check and Redline treatments having significantly higher yields than both Soygreen treatments. However, the Levesol treatment did not result in higher seed yields than the Soygreen treatments. No significant differences among treatments for the HVI fiber quality parameters of micronaire, staple, uniformity, and strength. Abnormal rainfall amounts could have reduced the efficacy of these products as compared to the check. More data is needed to determine the efficacy of these products in terms of increased lint yield as a result of higher boll retention