# Result Demonstration/Applied Research Report

2004 Tom Green County
Chaperone Field Test
Cooperator: Chris Bubenik

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**Summary**

Three rates of Chaperone were applied to Stoneville ST5599 BG/RR cotton on July 19 to determine the impact of the product on cotton yield. There was no significant difference in lint yield or seed yield at the 0.05 level. Numerically there is a 294 pound lint difference between the check and the 20 ounce application rate of Chaperone. However, due to the variability between the three replications, to state there is a difference is incorrect.

**Problem**

A new product called Chaperone is manufactured in Japan by the Asahi Chemical Company and distributed worldwide by Arysta LifeScience Company of Tokyo, Japan. In the United States Chaperone sales are overseen by Agrivert, Inc. (a wholly owned subsidiary company of Arysta LifeScience). The company is promoting Chaperone as a unique product containing three nitrophenols. Nitrophenols are known to increase photosynthetic electron transport, improve and protect membrane integrity, act as a part of lignin bio-synthesis, increase fruit retention and increase enzyme/protein production within plants.

Since no test work has been conducted in West Central Texas with this product applied research activities were needed to provide producers with information concerning the usefulness of the product for our region.

## Objective

Through the use of a field test: 1) determine the benefit of Chaperone in cotton production in West Central Texas, 2) provide producers the opportunity of observing what impact Chaperone has on cotton plant development, and 3) determine the economic feasibility of using Chaperone.

## Materials and Methods

Cooperating County Producer: Chris Bubenik
Location: 7 miles north of Wall, Texas

Application Information:

| | |
|---|---|
| Date Applied: | July 19, 2004 |
| Time of Application: | 9:00 a.m. - 10:00 a.m. |
| Wind Speed: | 2 to 4 miles per hour |
| Wind Direction: | South |
| Air Temperature: | 74 to $80^0$ Fahrenheit |
| Relative Humidity: | 85 to 90% |
| Spray Volume | 11.5 gallons per acre |
| Pressure: | 32 p.s.i. |
| Application Device: | Self Propelled Spray Rig |
| Ground Speed: | 3.5 m.p.h. |
| Nozzle: | 11002 Air Induction Flat Fan on 20 inch centers |
| Boom Height: | 32 inches |
| Plot Size: | 13.33 feet wide by 70 feet long |
| Test Design: | Randomized complete block design with three replications |
| Cotton: | 24 inches tall and unstressed |
| Cotton variety: | Stoneville ST 5599 BG/RR |

**Results and Discussion**

The purpose of this test was to determine if Chaperone applied to cotton grown in West Central Texas would result in an increase in lint and seed production. Applications of Chaperone at 5, 10 and 20 ounces per acre were applied and compared to an untreated check.

Visibly there were no difference between plots. If the plot had not been staked it would have been impossible to harvest this plot to collect production data. Numerically there is a difference in lint yield between the untreated check and the treatments where Chaperone was applied. Statistically there was too much variability between the three replications to varify a difference. Using Duncan's Multiple Range mean separation test there is no difference between treatments at the 0.05 level. Data collected from the plot at the end of the production season is reported in Table 1.

Table 1. Data collected from Chris Bubenik's Chaperone Field Test (Tom Green County, 2004)

| Treatment | Cost of Chaperone Per Acre | Percent Seed Turnout | Seed Yield Per Acre (pounds) | Percent Lint Turnout | Lint Yield Per Acre (pounds) |
|---|---|---|---|---|---|
| Untreated Check | $0.00 | 49.2 | 3664 | 28.0 | 2086 |
| 5 ounces of Chaperone per acre | $4.00 | 48.7 | 3509 | 32.7 | 2356 |
| 10 ounces of Chaperone per acre | $8.00 | 49.3 | 3669 | 27.7 | 2061 |
| 20 ounces of Chaperone per acre | $16.00 | 51.8 | 3681 | 33.5 | 2380 |

Economics

Since there is no statistical difference in yield then additional income from applying the Chaperone didn't occur. If you were selling the product you would point out the 294 pound per acre difference in lint and ignore the science behind statistical analysis of replicated plots. Either way, additional testing will be needed to satisfy all interested individuals.

**Acknowledgments**

I want to take this opportunity to thank Chris Bubenik for his help in plot establishment and management.

I would also like to thank Agrivert, Inc. for providing Chaperone for this test.