

## 2006 Project Summary

**Title:** Evaluation of Variable-Rate Seeding for Cotton

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### Results:

The goal of this project is to evaluate opportunities for increased yield or profits through variable-rate seeding. The following statements provide results for the 2006 growing season.

1. The actual populations, with the exception of one (35K in the non-irrigated field), were all significantly lower than the target seeding rate in both the irrigated and non-irrigated fields.
2. Within the non-irrigated field (Field 1) there were not any differences determined in lint yield between the four seeding rates. Yield differences did exist in the irrigated field. The highest seeding rate (80K) was significantly higher than the 50K and 65K seeding rates. However, there was no significant difference in yield between the lowest seeding rate (35K) and the three higher seeding rates.
3. As expected, irrigated cotton yields were significantly higher than dryland cotton yields. Irrigated yields were around 51% or higher for the various treatments.
4. In the non-irrigated field, the only quality characteristic to have a significant difference was Leaf Grade, with the lowest seeding rate (35K) having a significantly lower value than the higher treatments. In the irrigated field, significant quality differences existed between Micronaire, Strength, and Uniformity, while Leaf Grade and Length had no significant difference between seeding rates.

The 2006 growing season completed the 2<sup>nd</sup> year of this study and plans are to continue and conclude this study during the 2007 growing season.

### Field 1 Results – Non-Irrigated.

Treatment (Seeds/ac)	Actual (Seeds/ac) <sup>1</sup>	Yield (lbs lint per acre)*	Mic. <sup>1</sup>	Color	Leaf Grade <sup>1</sup>	Length (in.) <sup>1</sup>	Strength (g.Tex) <sup>1</sup>	Uniformity (%) <sup>1</sup>
35,000	33,251 d	660 c	4.83 a	75% 42's; 25% 41's	1.5 b	108 a	29.7 a	82.1 a
50,000	40,874 c	621 c	4.78 a	100% 41's	3.0 a	107 a	28.9 a	81.6 a
65,000	54,813 b	624 c	4.85 a	75% 41's; 25% 42's	2.5 a	108 a	29.2 a	81.6 a
80,000	62,944 a	645 c	4.78 a	75% 41's; 12.5% 42's; 12.5% 32's	2.4 a	108 a	29.1 a	81.4 a

### Field 2 Results – Irrigated.

Treatment (Seeds/ac)	Actual (Seeds/ac) <sup>2</sup>	Yield (lbs lint per acre)*	Mic. <sup>2</sup>	Color	Leaf Grade <sup>2</sup>	Length (in.) <sup>2</sup>	Strength (g.Tex) <sup>2</sup>	Uniformity (%) <sup>2</sup>
35,000	26,455 d	1383 ab	4.37 a	100% 31's	1.1 a	107 a	27.1 bc	81.9 b
50,000	37,679 c	1093 b	4.26 b	91% 31's; 9% 21's	1.3 a	109 a	27.0 c	82.0 ab
65,000	47,335 b	1171 b	4.29 b	91% 31's; 9% 21's	1.3 a	108 a	27.6 ab	82.5 a
80,000	52,199 a	1592 a	4.22 b	91% 31's; 9% 21's	1.3 a	108 a	27.9 a	82.0 ab

<sup>1</sup> Means with similar letters in this column for field 1 indicates they are not statistically different at the 90% confidence level.

<sup>2</sup> Means with similar letters in this column for field 2 indicates they are not statistically different at the 90% confidence level.

\* Mean lint yields with similar letters in each column for fields 1 and 2 indicates they are not statistically different at the 90% confidence level.