TEXAS A&M
AgriLife
EXTENSION

Department of
Soil and Crop Sciences

COTTON INCORPORATED

2016-2017 Cotton Seeding Rate Trial in the Rolling Plains of Texas

*The trial was a randomized complete block design with 4 replications

Background information

Trial location: Chillicothe, TX

Precipitation during May-Oct:

15.4" in 2016 and 12.9" in 2017

Irrigation: 6" in-season with in-furrow irrigation

Soil type: Abilene clay loam

Variety: PHY 333 WRF

Row width: 40" x 4 rows

Planting date: 6/9/2016 and 6/8/2017

Harvesting date: 11/28/2016 and 11/17/2017

Take-home message: Emerged seedlings were 80% of planted seeds for 4.4 and 5.6 seeds ft^{-1} treatments in both irrigated and dryland trials likely due to the high competition under the high seeding rates (Fig. 1). Lint yields averaged over two years in irrigated and dryland trials were 985 and 690, 1076 and 718, 1103 and 742, and 1114 and 690 lb ac^{-1} for 1.7, 3.4, 4.4, and 5.6 seeds ft^{-1}, respectively. Average turnout was 28% with use of a stripper without a burr extractor. Regardless of the differences among in-season growth characteristics (e.g., NAWF and stalk diameter), no differences were observed in lint yield and turnout. Net dollars calculated based on loan values, lint yield, and seed cost showed no differences among irrigated trial, while *net $ ac^{-1} at 1.7 seeds ft^{-1} was statistically higher than the rest of seeding rates in dryland trial (Table 1).* Potential negative aspects of using low seeding rates include increased chance of crop failure due to hail events and low germination.
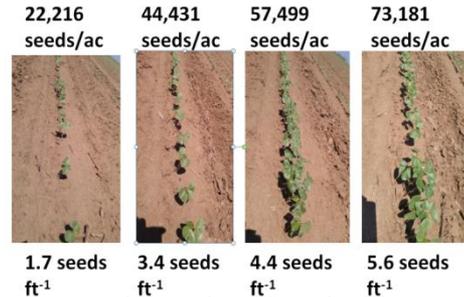

22,216 seeds/ac — 1.7 seeds ft^{-1}
44,431 seeds/ac — 3.4 seeds ft^{-1}
57,499 seeds/ac — 4.4 seeds ft^{-1}
73,181 seeds/ac — 5.6 seeds ft^{-1}

Photo 1. Stand at 14 days after planting
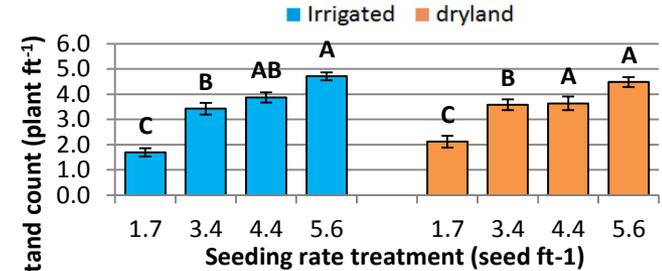
Figure 1. Stand Count
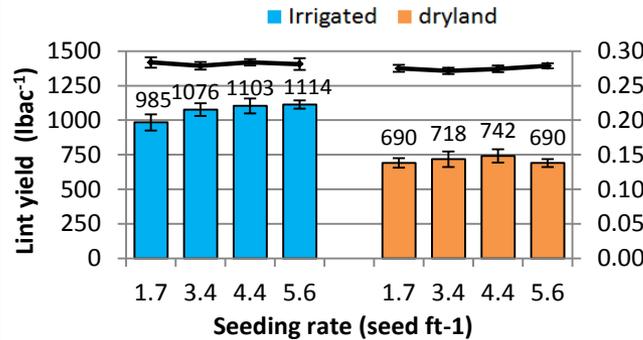
Figure 2. Lint yield and turnout

1.7 seeds/ft
3.4 seeds/ft
4.4 seeds/ft
5.6 seeds/ft

Photo 2. Stand at 131 days after planting (10/17/2017)

Table 1. Net dollars		Net $ ac^{-1}	
Seeds ft^{-1}	Seed cost ($ ac^{-1})	Irrigated	Dryland
1.7	33.8	525 A	336 A
3.4	67.6	516 A	277 BC
4.4	87.5	511 A	315 AB
5.6	111.4	500 A	255 C
P	-	0.9552	0.1187

Assumptions:

- $350/bag
- 230,000 seeds/bag
- Net $ ac^{-1} = $ ac^{-1} – seed cost
- $ ac^{-1} = loan values x yield
- Base value for the loan value was $0.52/lb.
- No management costs were included in the analyses.

Emi Kimura, Extension Agronomist, Vernon, TX| emi.kimura@ag.tamu.edu, Jonathan Ramirez, Extension Associate, Vernon, TX| JHRamirez@ag.tamu.edu