



Response of Four Deltapine[®] Cotton Varieties to Population and Planting Configuration

2016 Learning Center Demo Report
Monsanto Learning Center at Scott, MS



BACKGROUND

- Two decisions growers must make when planting cotton are planting configuration (hill drop or drilled) and planting population.
- In addition to addressing these two concerns, this demonstration also evaluates the yield potential of Class of 2016 Deltapine[®] cotton varieties.



BACKGROUND

- Cotton growers have historically used hill drop as a way to get better stands using the “pushing power” of more than one seed per hill.
- There may be less need for this power in today’s world for many reasons, including:
 - Improved seed quality
 - Later planting due to boll weevil eradication and Bollgard® insect-protection traits. Early planting was a tactic used to evade insects in times past.
 - Better planting machinery

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STUDY GUIDELINES

- Four Deltapine® cotton varieties (DP 1555 B2RF, DP 1614 B2XF, DP 1639 B2XF, and DP 1646 B2XF) were planted on May 11, 2016 and harvested on September 13, 2016.
- All varieties were conventionally planted in 38-inch rows on clay silt loam soils.
- All varieties were planted at two populations: 41,000 seeds/acre (3 seeds/row foot) and 55,000 seeds/acre (4 seeds/row foot).

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STUDY GUIDELINES

- Drilled seed were uniformly planted down the row, resulting in:
 - 41,000 seeds/acre – 3 seeds/row foot = 1 seed per 4 inches or 1 on 4 inches
 - 55,000 seeds/acre – 4 seeds/row foot = 1 seed per 3 inches or 1 on 3 inches

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STUDY GUIDELINES

- Hill drop seed were planted in three configurations (X seed on X inches). As population/number of seed per hill changes, the spacing of the hills must change to adjust the per-acre populations.

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STUDY GUIDELINES

- **2 seed hill drop – 2 seeds/hill**
 - 41,000 seeds/acre – 2 on 8 inches
 - 55,000 seeds/acre – 2 on 6 inches
- **3 seed hill drop – 3 seeds/hill**
 - 41,000 seeds/acre – 3 on 12 inches
 - 55,000 seeds/acre – 3 on 9 inches
- **4 seed hill drop – 4 seeds/hill**
 - 41,000 seeds/acre – 4 on 16 inches
 - 55,000 seeds/acre – 4 on 12 inches

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STUDY GUIDELINES

- Data taken included average yield and emergence vs planted %.
- Beltwide lint turnouts from 2015 and 2016 were used to calculate final yields.

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RESULTS & DISCUSSION

- Few differences were observed in yield potential among the planting configurations.
- All of the configurations performed well, so growers should use the ones that suit their preference.

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RESULTS & DISCUSSION

- The three seed hill drop treatments produced higher final stands but not higher yields, clearly demonstrating the compensatory ability of cotton plants.
- This configuration could be used in fields or planting conditions when need arose to manage crops if obtaining a suitable stand is difficult, including very early planted fields and fields that have a high probability of crusting.

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RESULTS & DISCUSSION

- In three of the four varieties tested, no yield advantage was seen in planting the higher population.
- In this trial, DP 1646 B2XF tended to yield numerically higher when planted at higher populations. This is indicative of the higher yield potential that is observed in that variety across the Cotton Belt.
- We will be doing more work on this issue. Also, there is a potential growth management implication that growers should clearly understand and acknowledge when planting higher populations.

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RESULTS & DISCUSSION

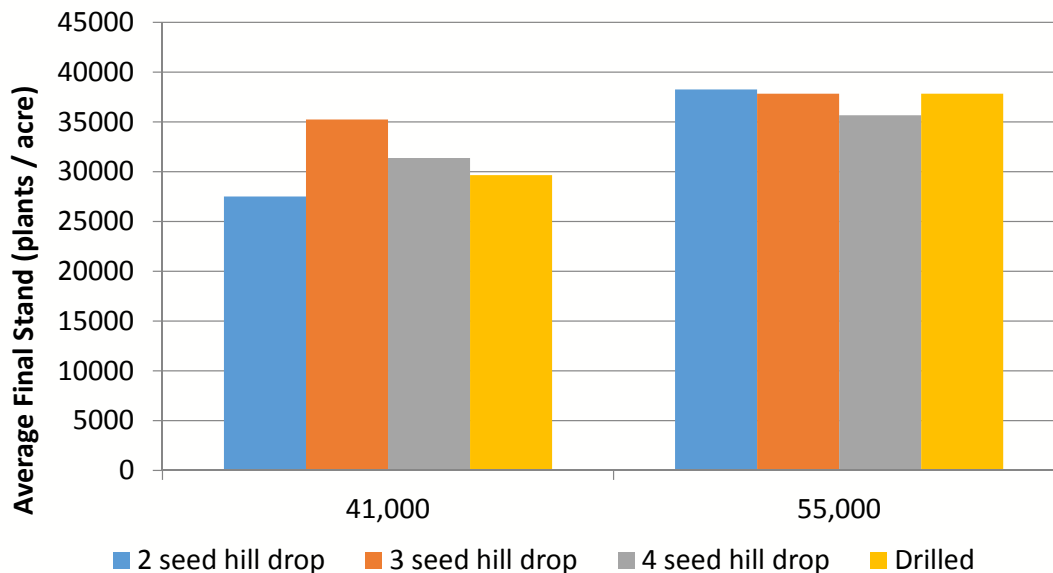


Figure 1. Response of four Deltapine® cotton varieties to population and planting configuration across varieties, final stand, and plants/acre.

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RESULTS & DISCUSSION

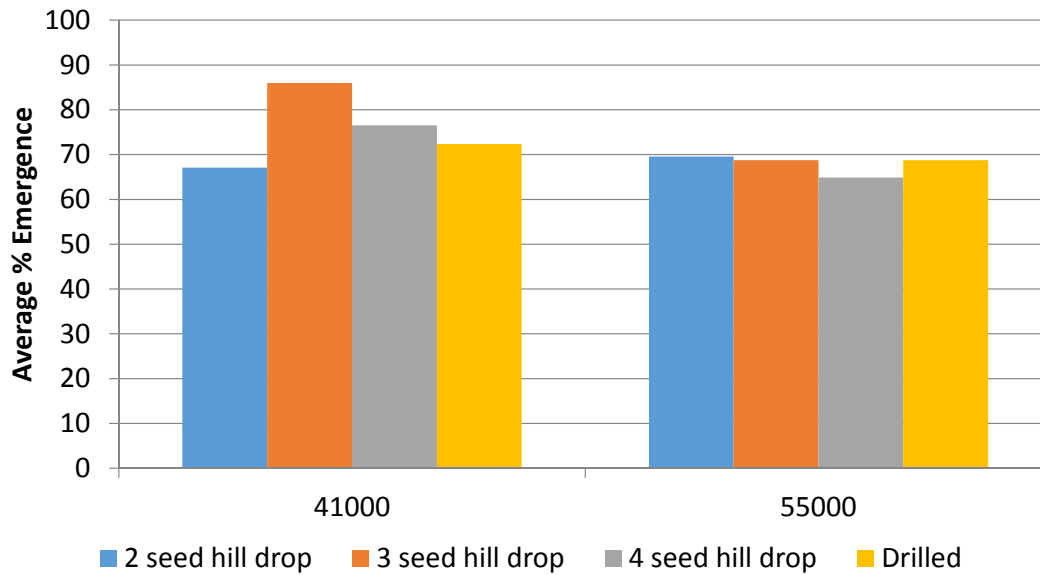


Figure 2. Response of four Deltapine® cotton varieties to population and planting configuration across varieties and % emergence.

Response of Four Deltapine® Cotton Varieties to Population and Planting Configuration



RESULTS & DISCUSSION

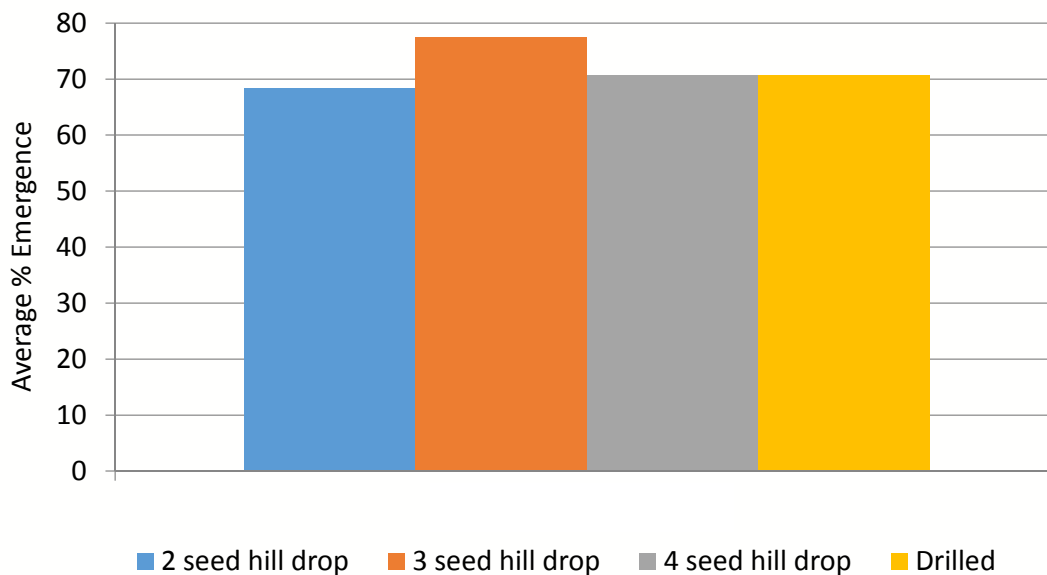


Figure 3. Response of four Deltapine® cotton varieties to population and planting configuration across populations, varieties, and % emergence.

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RESULTS & DISCUSSION

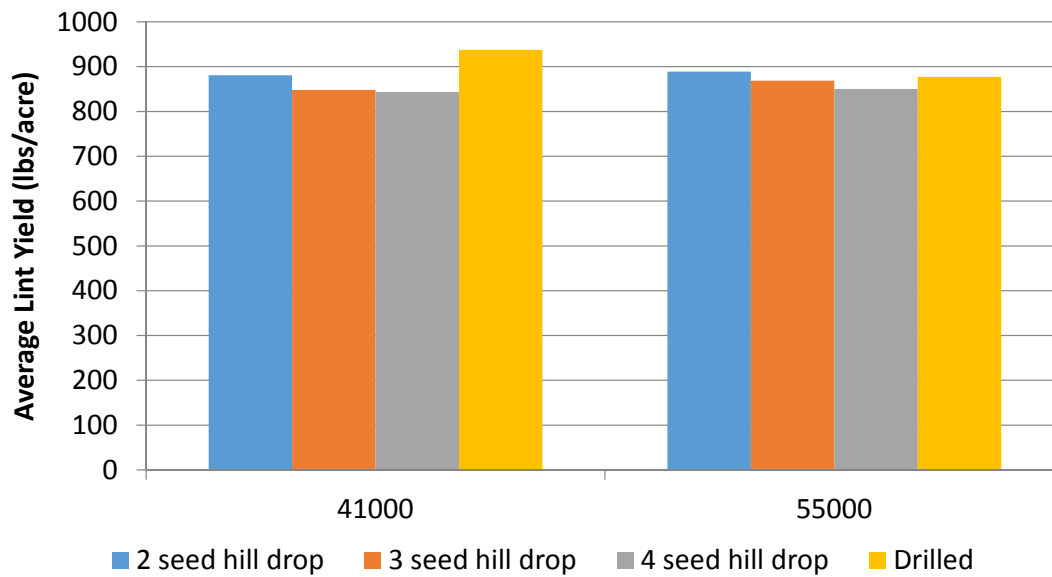


Figure 4. Response of four Deltapine® cotton varieties to population and planting configuration across varieties. (Yield = Lint lbs/acre).

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RESULTS & DISCUSSION

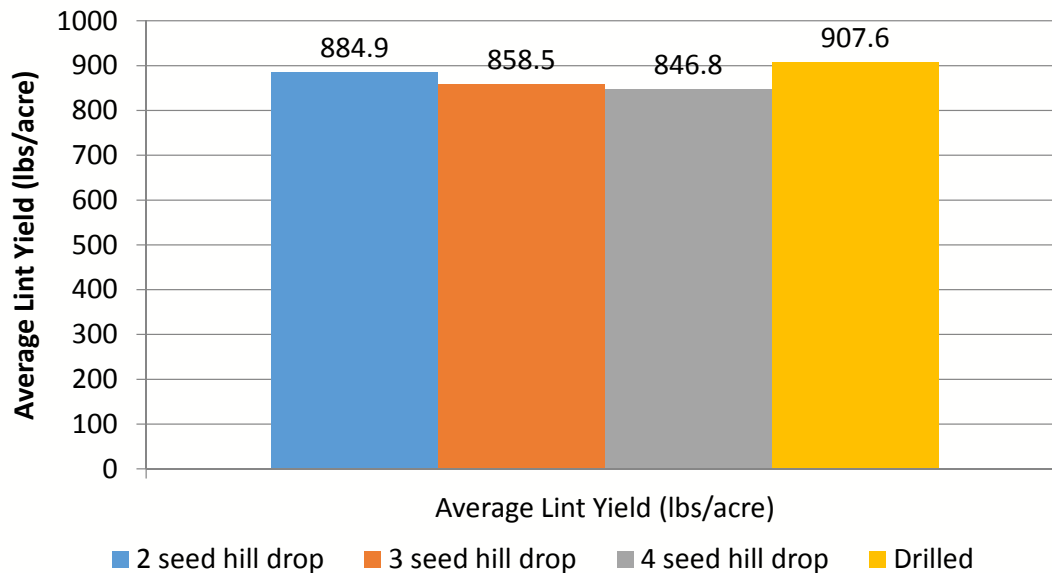


Figure 5. Response of four Deltapine® cotton varieties to population and planting configuration across varieties. (Yield = Lint lbs/acre).

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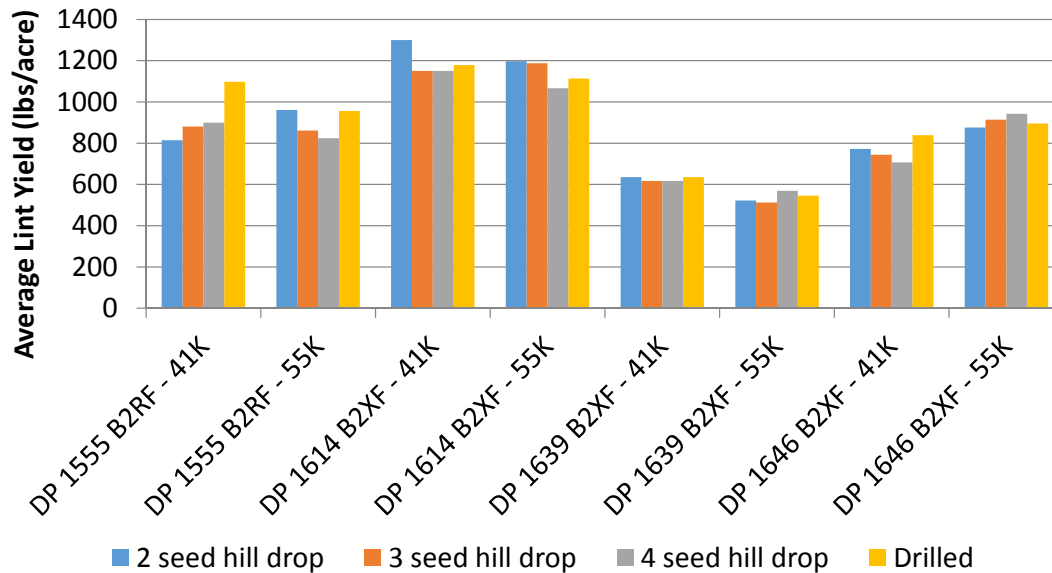


Figure 6. Response of four Deltapine® cotton varieties to population and planting configuration across varieties. (Yield = Lint lbs/acre).

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- Use the planting configuration that fits your operation.
- This study suggests that, if hill drop is selected, use either the two seed or three seed option. If improving population is the intent, use the three seed hill drop.
- In this study, yield potential remains acceptable in all configurations.
- Variety placement and management remains a critical concern regardless of the planting configuration or population planted.

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LEGAL STATEMENTS

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Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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