



# Evaluations of the “FLEX” Characteristics of Three DEKALB® Brand Corn Products

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



## BACKGROUND

- **Study Background:**
  - Corn products can vary in their ability to develop larger ears when population is reduced.
  - The ability to flex can allow products to compensate for lower populations and can influence replant decisions.
  - The ability to compensate can be a factor in determining seeding rates for various corn products.



## BACKGROUND

- **Research Objectives:**
  - Primary goal of the demonstration was to generate information about several decision making components, including the compensatory ability of corn.
    - Compensation in corn may occur through ear size (girth and length) and the development of multiple ears/plant.

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## STUDY GUIDELINES

- **Research Site Details**
  - Location: Monsanto Learning Center at Scott, MS
  - Agronomic Practices: Local standards
  - Soil Type: Commerce silt loam
  - Previous Crop: Soybean
  - Tillage Type: Conventional
  - Planting Date: April 4, 2016
  - Three DEKALB® corn brands were planted: DKC66-97, DKC67-72, and DKC68-26
  - Harvest Date: September 13, 2016
  - Location Yield Potential: 240 bu/acre
  - Seeding Rates: 12,000 to 51,000 seeds/acre in increments of 3,000 seeds/acre. Results assume 95%+ stand establishment.
  - Harvesting: Machine harvested for yield. Ears manually harvested from 10 row feet in each plot and shelled to measure ear weights for each population and product combination.

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## STUDY GUIDELINES

- **Research Questions**
  - What is the inherent ability of DEKALB® brand corn products to compensate for lower than optimal stands caused by non-ideal weather conditions or environmental factors?

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## STUDY GUIDELINES

- **Research Questions**
  - How does compensation occur?
    - What is the relationship of ear size to population and is it different across products or when do ears reach maximum size as population decreases?
    - Can the ability to produce multiple ears/plant compensate for thin stands?
    - Replant
      - What effect should the standing population have on replant decisions?
      - When is replanting justified and what is the potential effect if the original stand is accepted?

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## RESULTS & DISCUSSION

### ■ Harvested Yield Results

- Yield potential began to drop for each of the 3 corn products at different seeding rates, demonstrating the “flex” difference in the products.

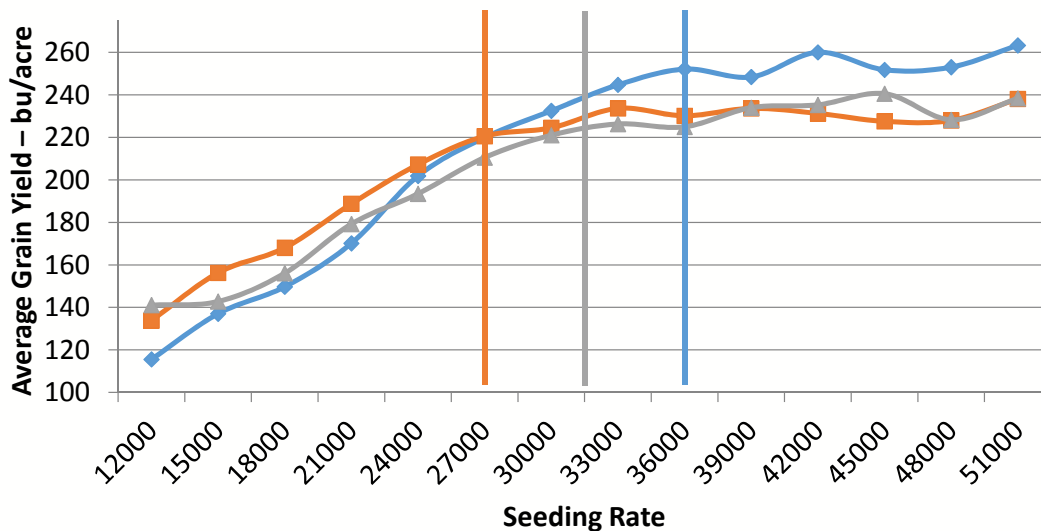
- DEKALB® DKC66-97 brand began dropping around the planting rate of 37,000 seeds/acre.
- DEKALB® DKC67-72 brand began dropping around the planting rate of 33,000 seeds/acre.
- DEKALB® DKC68-26 brand began dropping around the planting rate of 28,000 seeds/acre.

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## RESULTS & DISCUSSION

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Average Grain Yield@15.5%



Scott Learning Center,  
Scott, MS 2016

◆ DKC66-97 Brand    ■ DKC68-26 Brand    ▲ DKC67-72 Brand

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## RESULTS & DISCUSSION

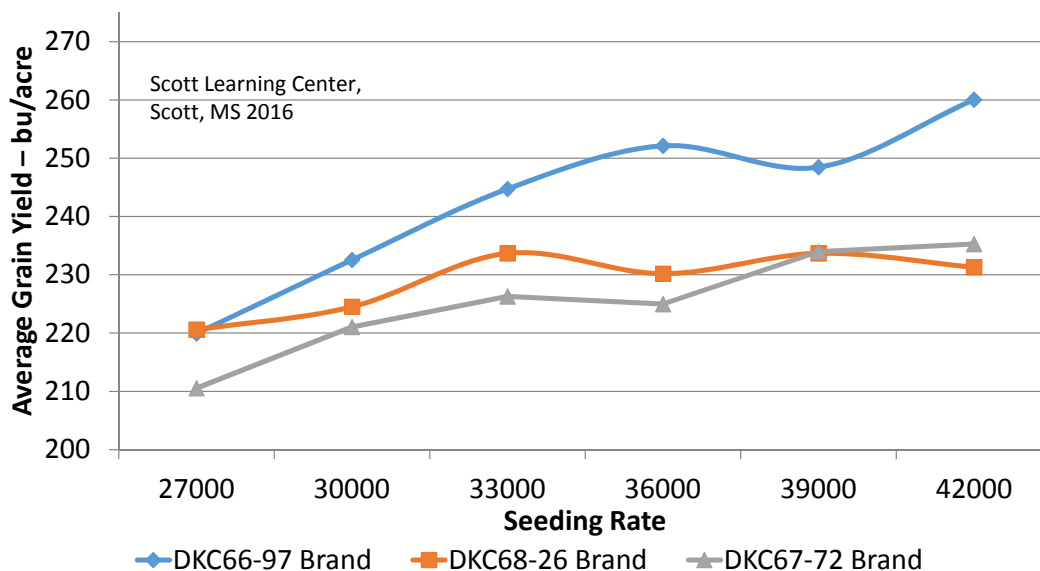
- Harvested Yield Results
  - The yield results showed one product to be more fixed (DEKALB® DKC66-97 brand), one to be intermediate (DEKALB® DKC67-72 brand), and one having greater flex (DEKALB® DKC68-26 brand), which allowed it to tolerate reduced stands and still maintain yield potential.
  - As measured in ear size, compensation stopped at similar levels to where yield began to decrease in response to decreasing populations.

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## RESULTS & DISCUSSION

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Average Grain Yield@15.5%



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## RESULTS & DISCUSSION

- Harvested Yield Results
  - As in previous work at the Monsanto Learning Center at Scott, MS, the data indicates that 1000 corn plants is worth from 4 to 6 bu/acre depending on the flex characteristics of each product.<sup>1,2</sup>
  - Few plots had any plants that made more than one ear/plant and none had secondary ears at populations higher than 15,000 plants/acre.
    - For this reason, we can assume that a thin stand cannot be compensated for by producing multiple ears/plant.

<sup>1</sup>How much do 1000 corn plants contribute to corn yield? 2014. Scott, MS. Monsanto Learning Center Demonstration.

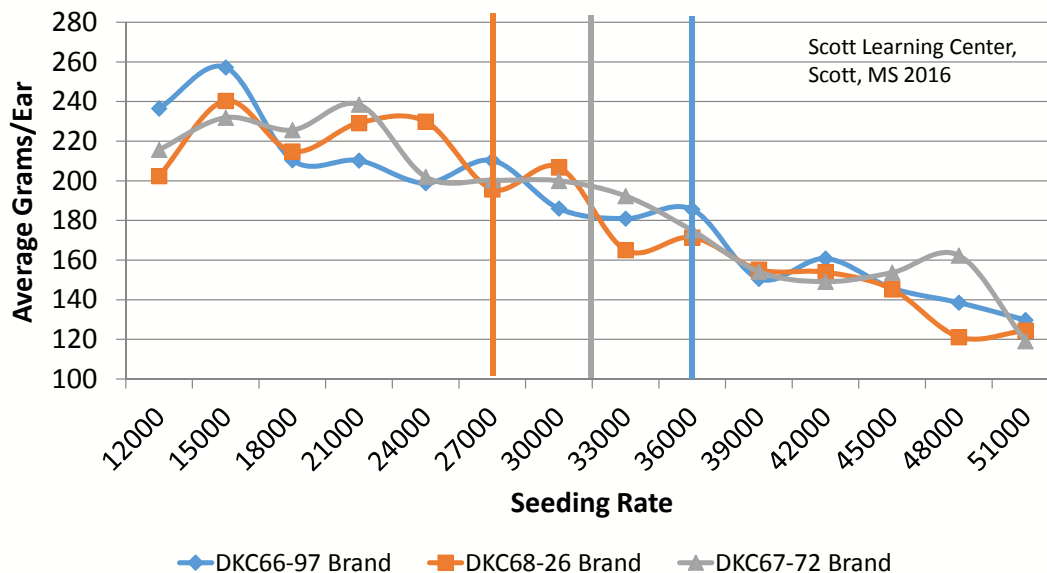
<sup>2</sup>Influence of planting population on ear number and size in midsouthern corn production. 2015. Scott, MS. Monsanto Learning Center Demonstration.

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## RESULTS & DISCUSSION

### Evaluations of the "Flex" Characteristics of DEKALB® Brand Corn Products Primary Ear Size

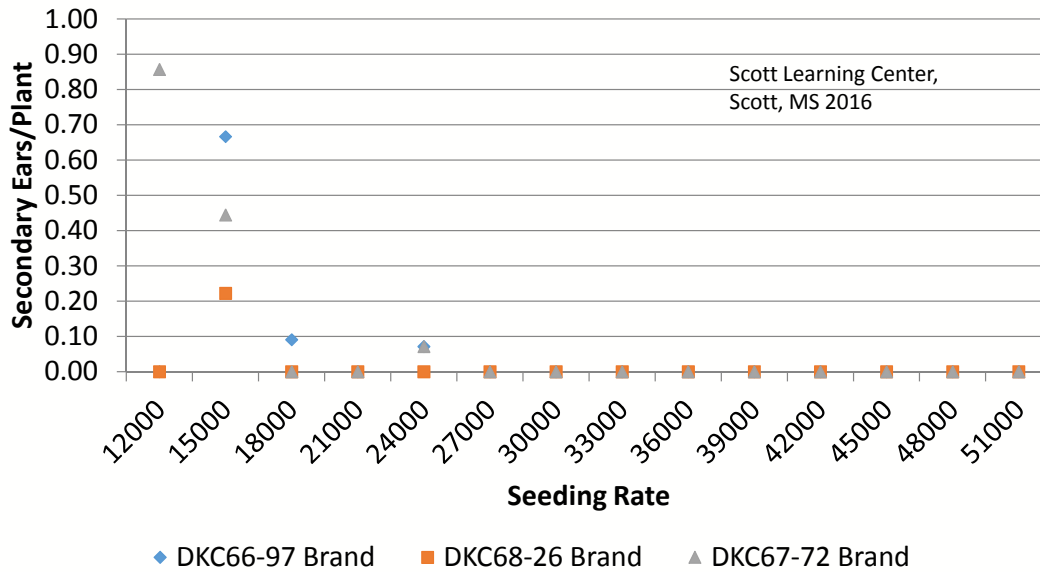


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## RESULTS & DISCUSSION

### Evaluations of the “Flex” Characteristics of DEKALB® Brand Corn Products Secondary Ears/Plant



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## RESULTS & DISCUSSION

#### Sources:

<sup>1</sup>How much do 1000 corn plants contribute to corn yield? 2014. Scott, MS. Monsanto Learning Center Demonstration. <http://www.monsanto.com/products/documents/learning-center-research/2014/slc-lc-how-much-do-1000-corn-plants-contribute-to-corn-yield.pdf>

<sup>2</sup>Influence of planting population on ear number and size in midsouthern corn production. 2015. Scott, MS. Monsanto Learning Center Demonstration. <http://www.monsanto.com/products/documents/learning-center-research/2015/influence%20of%20planting%20population%20on%20ear%20number%20and%20size%20in%20midsouthern%20corn%20production%20-%20slc.pdf>




# LEGAL STATEMENTS

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