



# Flex Characteristics of DEKALB® Brand Corn Products

2017 Learning Center Demo Report  
Monsanto Learning Center at Scott, MS



# BACKGROUND

- As new corn products enter the market, one critical piece of information that has to be defined is recommended planting population.
- This may be affected by what we refer to as the “flex” characteristic in corn products.
- “Flex” is often referred to as a single factor; however, it is a complicated multifactor response to the growing season and conditions.
- This demonstration was conducted to provide guidance to growers about what “flex” really is and how it should be considered when planting DEKALB® brand corn products. This is a long overdue conversation.



# BACKGROUND

## OBJECTIVE:

- Evaluate 5 DEKALB<sup>®</sup> brand corn products for their response to planting population. Yield, ear size, and ear number (both primary and secondary) were all captured during the season.



# STUDY GUIDELINES

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield	Planting Rate
Scott, MS	Clay Loam	Soybeans	Conventional	3/20/2017	8/20/2017	300 bu/acre	Various



# STUDY GUIDELINES

- All agronomics were per local standards.
- Emergence was in excess of 95% in all plots.
- 240 lbs/acre of actual N were applied.
- Ear numbers and weights were taken from 8 row feet of each plot.
- Plots were approximately .1 acres each or 4 rows x 260 feet long.



## RESULTS & DISCUSSION

- Yield levels were extremely high ( an increase of 20% compared to historical yields) during the 2017 growing season. This is likely due to mild conditions during the growing season.
- Corn products responded differentially to population. For this reason, flex information is critical to the success of a new corn product.
- Few plants had secondary ears at populations above 15,000 kernels planted/acre.



## RESULTS & DISCUSSION

- As population increased, ear weights decreased; however, some differences were observed between corn products.
- Little yield response was observed at populations higher than the high 30,000's kernels/acre.
- Most of the tested corn products appear to be yield optimized in the 35,000-38,000 kernels planted/acre range.





# RESULTS & DISCUSSION

- All corn products should be carefully evaluated, considering potential responses to environment prior to planting.
- “Flex” is a complicated interaction that is significantly affected by the environment.
- Reduced stands cannot be overcome with multiple ears per plant.
- 1000 plants in the field was worth an average of 6.0 bu/acre in the range of yield response. This is similar to previous results at the Monsanto Learning Center at Scott, MS.
- Consult your local DEKALB<sup>®</sup> brand representative for further information.



## What is “Flex”

- Multiple ears/plant - Driven by spacing and light
- Rows around - Determined by nitrogen (N) status and stresses at V4
- Kernels long - Determined from V4-V6/7
- Kernels pollinated - At pollination - Number formed vs. pollinated - pollen sterility, mechanical problems
- Kernels aborted - After pollination - Stresses, fertility, light - Effects on photosynthetic capacity
- Kernel depth - Fertility, heat, light, stresses
- All of these factors are interactive with the corn product, year, environment, and multiple other factors.



# RESULTS & DISCUSSION

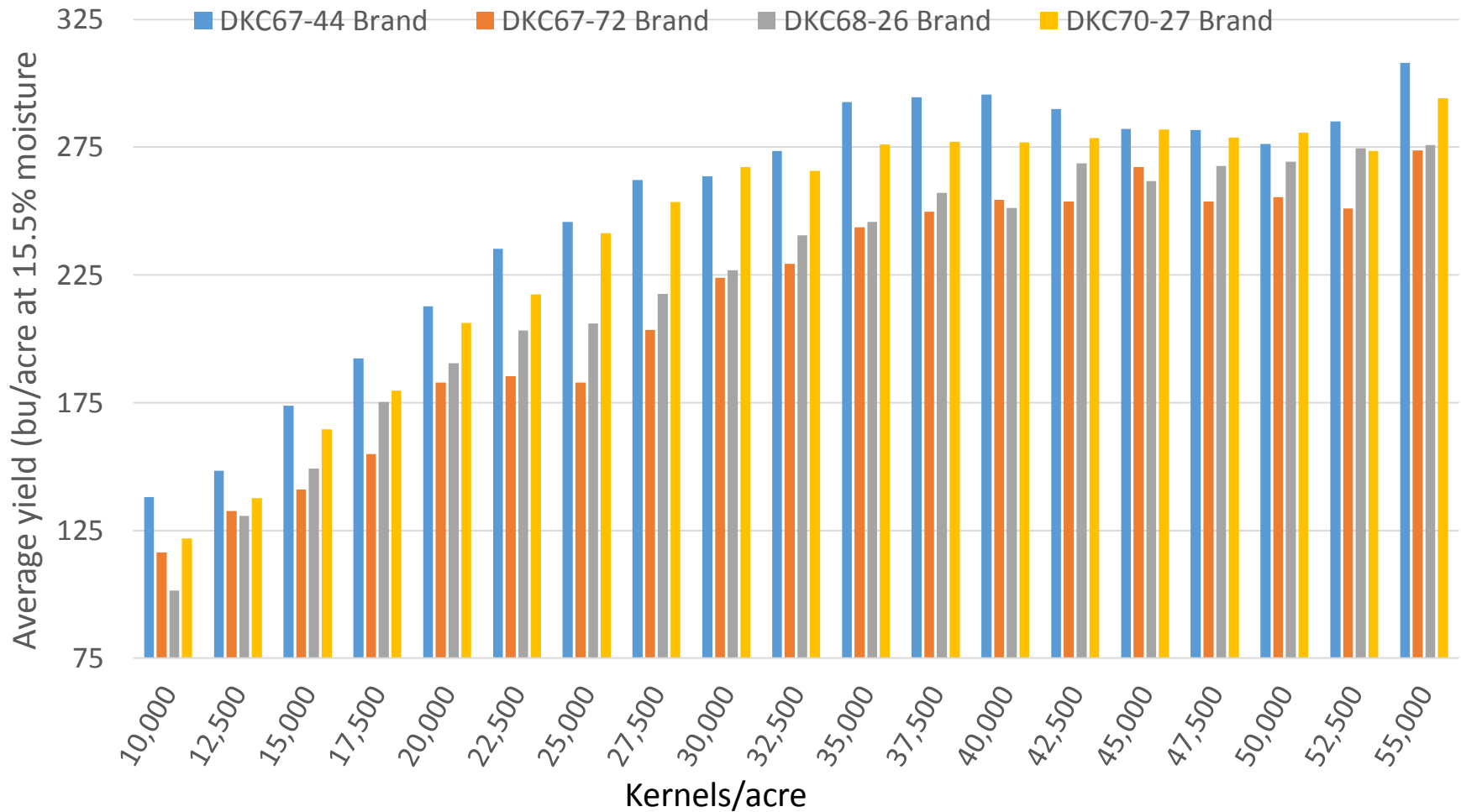


Figure 1. Average grain yield by population and corn product.



# RESULTS & DISCUSSION

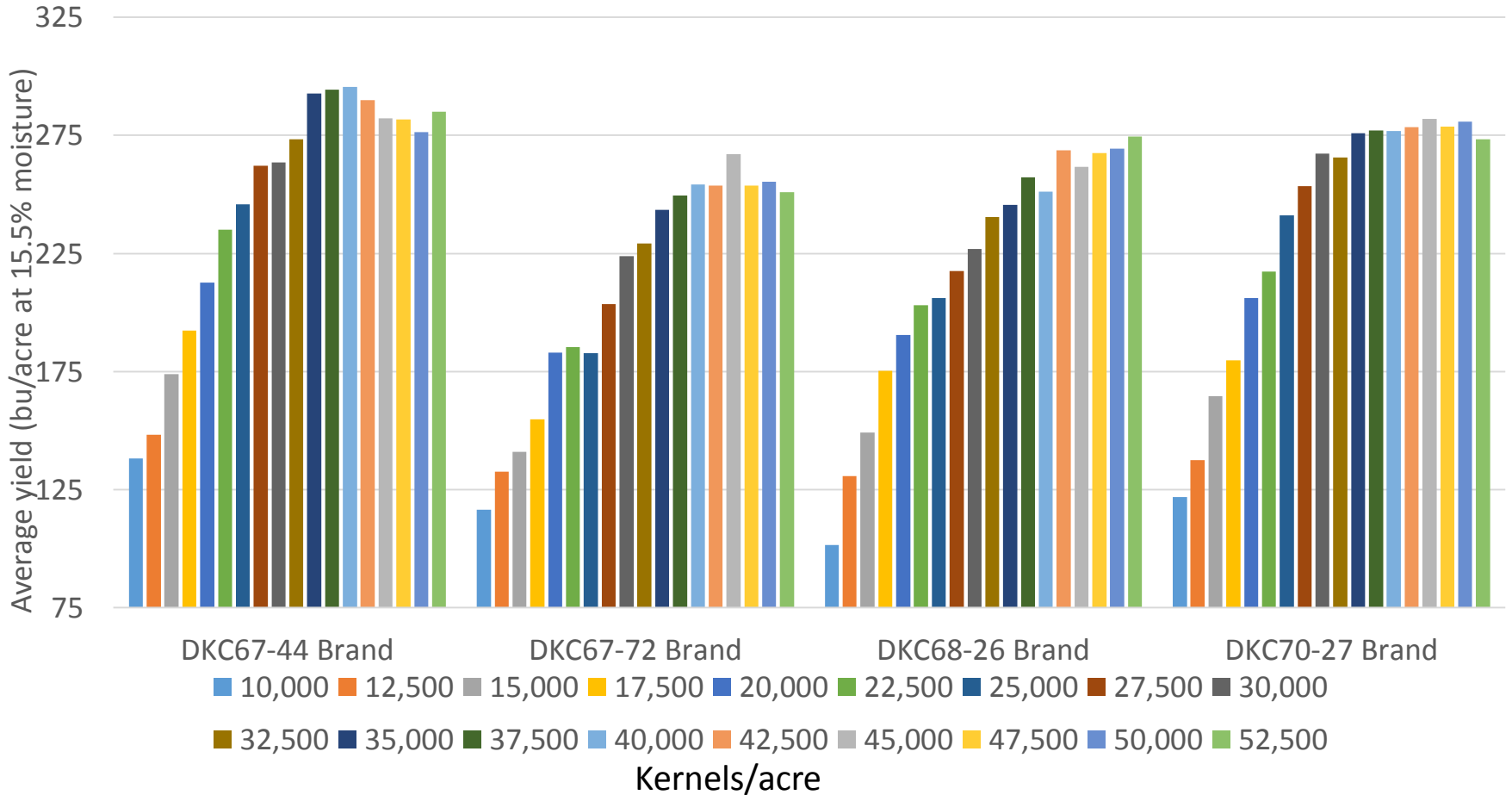


Figure 2. Average grain yield by corn product and population.



# RESULTS & DISCUSSION

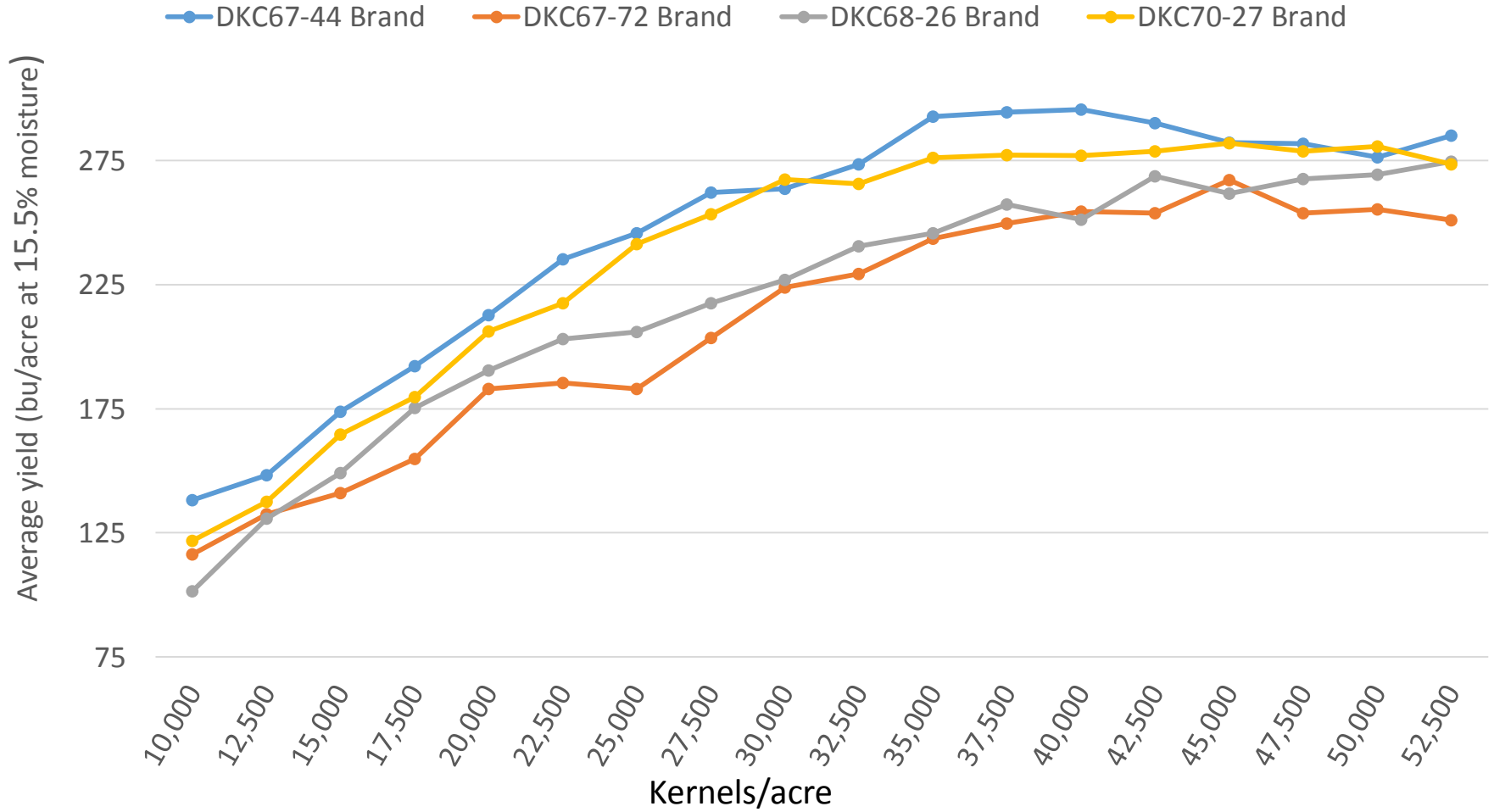


Figure 3. Effect of planting population on yield by corn product.



# RESULTS & DISCUSSION

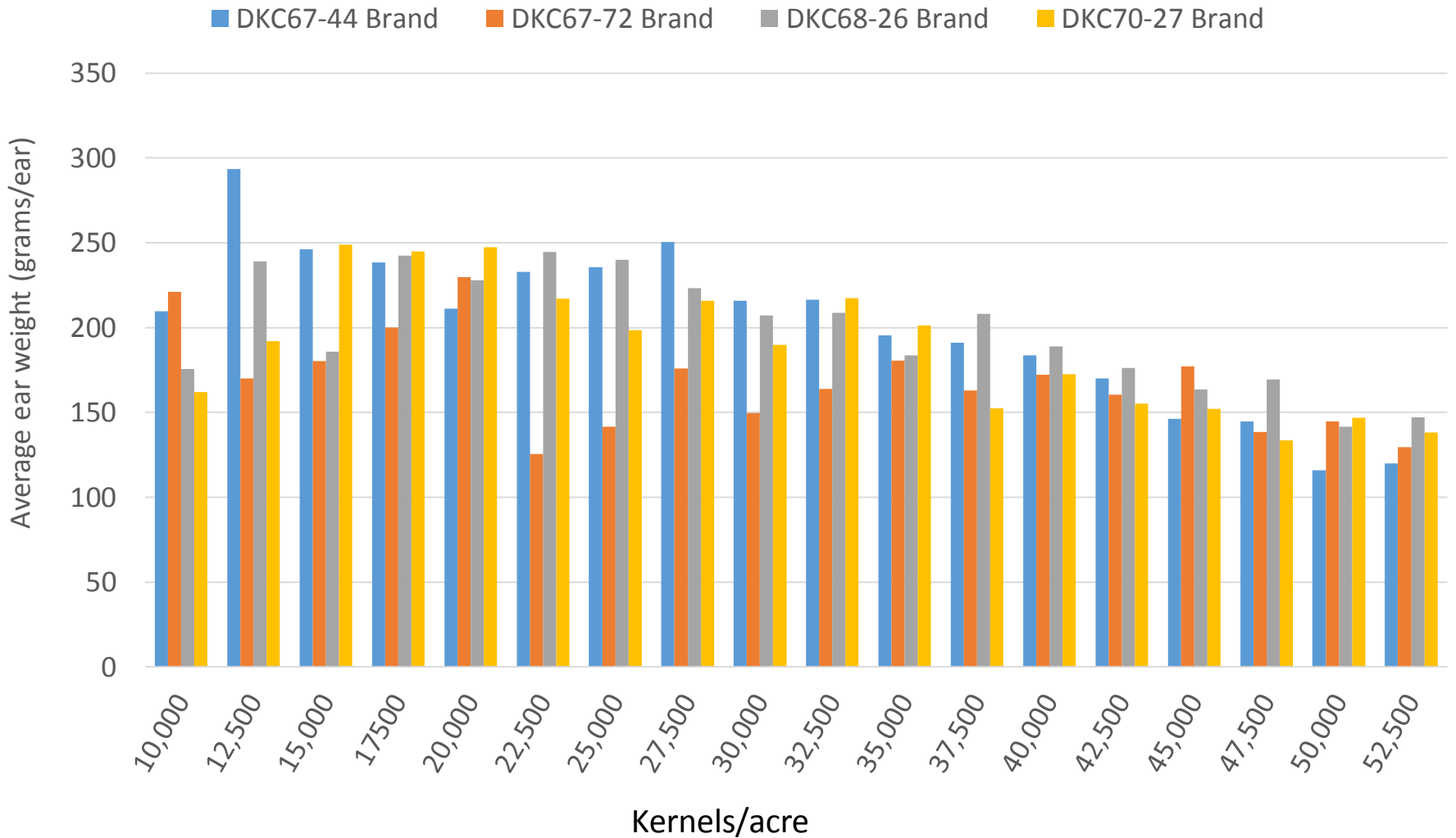


Figure 4. Average primary ear weight (grams/ear) by corn product and population.



# RESULTS & DISCUSSION

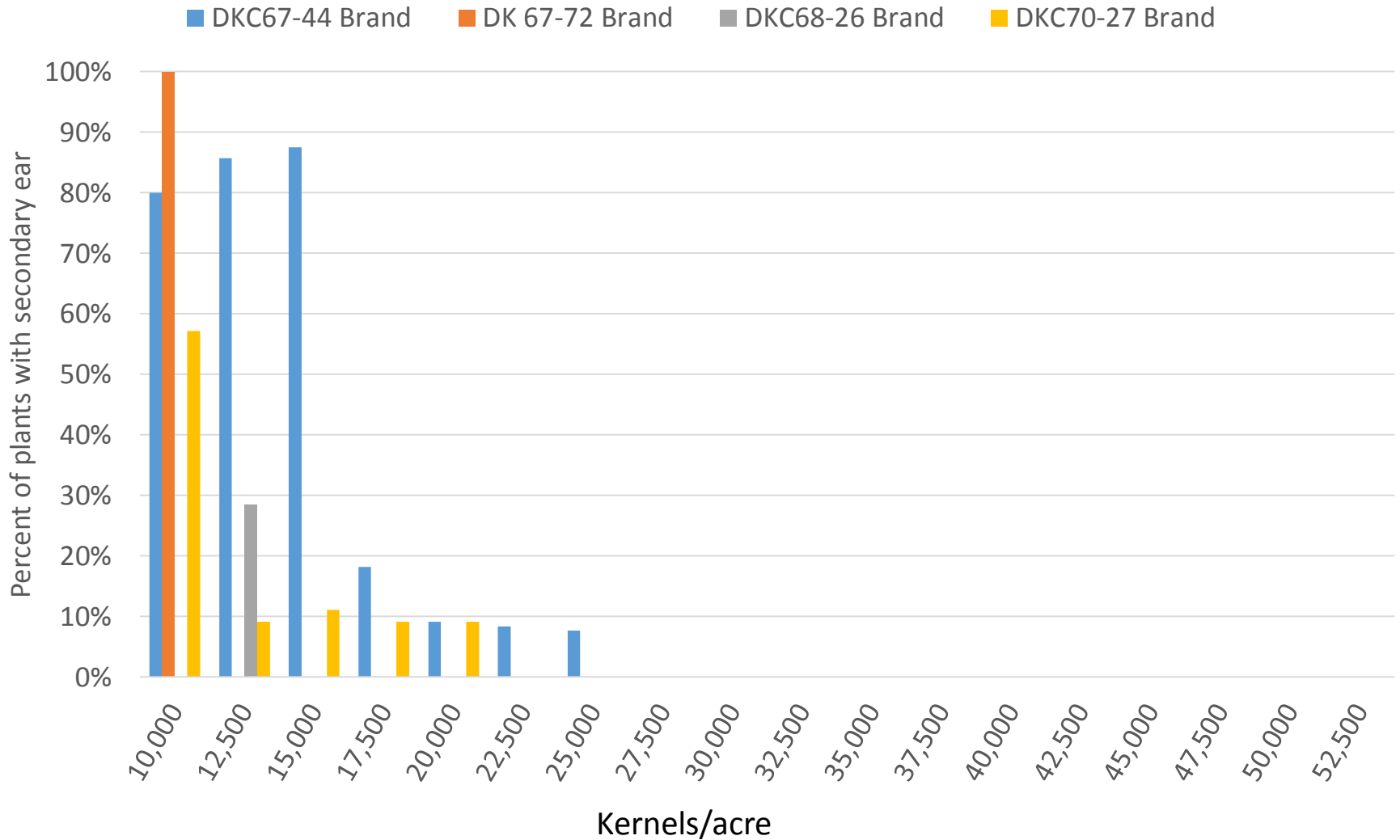


Figure 5. Percent of plants with secondary ear.



# LEGAL STATEMENTS

*The information discussed in this report is from a single site, non-replicated demonstration. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.*

**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.

**Always read and follow IRM where applicable, grain marketing, and all other stewardship practices and pesticide label directions.** Asgrow and the A Design<sup>®</sup>, Asgrow<sup>®</sup>, DEKALB and Design<sup>®</sup> and DEKALB<sup>®</sup> are registered trademarks of Monsanto Technology LLC. Deltapine<sup>®</sup> is a registered trademark of Monsanto Company. All other trademarks are the property of their respective owners. ©2017 Monsanto Company. All Rights Reserved. 171128084546 120817JEH.





## THANK YOU

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.

