Standability Evaluations of DEKALB® Brand Corn Products in the Midsouth

Delays in corn harvest can expose corn crops to an increased level of weather related lodging, depending on the local climate in a given growing season. Weather related lodging can result in significant yield loss and the severity can be influenced by planting population and other product characteristics[1]. This demonstration trial was conducted to evaluate the ability of DEKALB® brand corn products to stand in the field after the normal harvest window, which can aid in product placement and in-season management decisions. This measure of standability also serves as a preliminary indicator of relative standability among this group of corn products.

Study Guidelines

A corn demonstration trial was conducted at the Monsanto Learning Center at Scott, MS to evaluate the ability of DEKALB® Brand corn products to stand in the field, one month after the normal harvest time, in response to weathering. Corn product standability has an influence on population decisions at planting. Nine DEKALB® corn brands (DKC61-88, DKC62-09, DKC64-69, DKC66-86, DKC66-97, DKC67-57, DKC67-88, DKC68-05, and DKC69-29) were chosen for this demonstration. Demonstration treatments consisted of the corn products and harvest timing. The large plots, planted in an area of the farm known as the "Highway Cut" were divided with one larger portion harvested for yield. A smaller portion (150 feet X 8 rows) was used for the standability evaluation and harvested one month after the normal harvest time. Corn was planted on March 29, 2012. The first harvest date was August 26 and the second harvest was September 26, 2012. Standard agronomic practices for the region were implemented and plots were irrigated as needed. At the end of August, Hurricane Issac generously provided the rain (3+ inches over 2 days) and wind (25 mph for sustained periods) needed to properly test the response of the corn brands to weathering.

Results

Four DEKALB® corn brands (DKC62-09, DKC66-97, DKC67-57, and DKC69-29) had little or no yield loss when left in the field a month past the normal harvest time (Figure 1). The other five DEKALB® corn brands (DKC61-88, DKC64-69, DKC66-86, DKC67-88, and DKC68-05) experienced yield losses of 18% or higher when harvested one month late. DEKALB® corn brands DKC67-88 and DKC68-05 showed the highest yield losses of 72.6% and 39.4% from the delayed harvest.

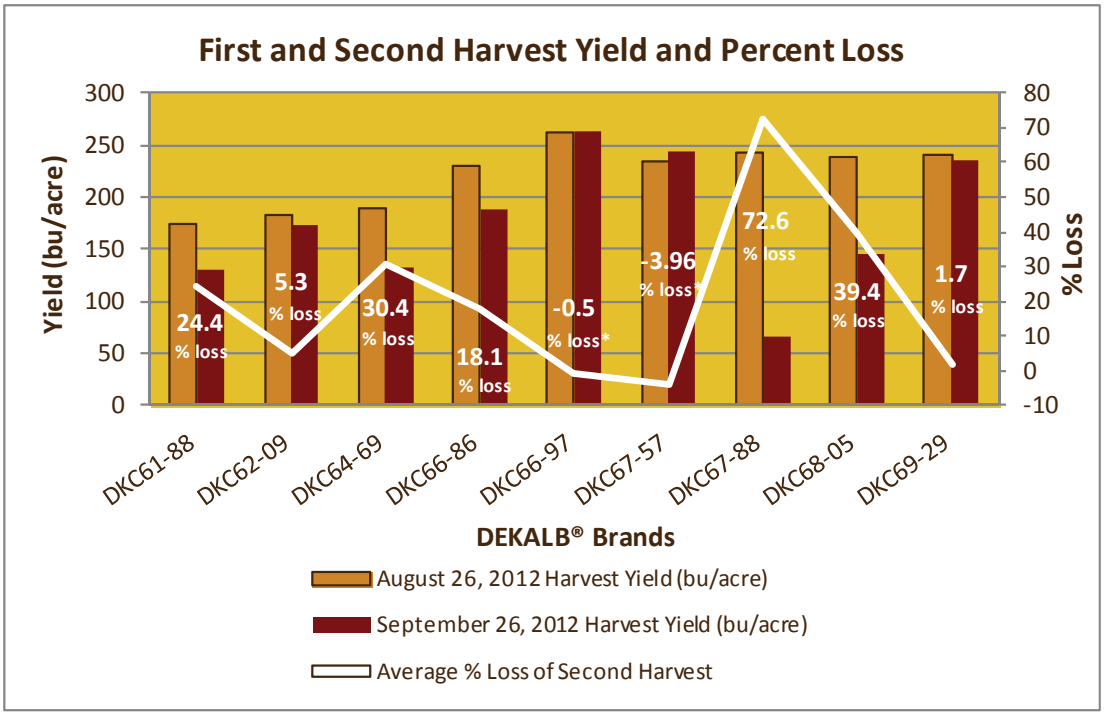

Figure 1. Average first and second yield and % loss of second harvest for nine DEKALB® Brand corn products. *Negative losses are due to differences in yield potential between the ends of the field harvested in the demonstration. The "second harvest" plots came from the higher yielding end of the field.

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Summary Comments

Table 1 lists the percent yield loss found between the first and the second harvest as well as corn product characteristics from the 2012 Scott Learning Center Demonstration Trial titled, "Evaluation of DEKALB® Brand Corn Products to Planting Density". The data from Table 1 shows that product characteristics influence the standability of the corn brands. The results indicate that some DEKALB® corn brands (DKC62-09, DKC66-97, DKC67-57, and DKC69-29) offer the opportunity to plant at higher populations (≥ 36,000 kernels per acre) to help maximize yield potential, without greatly increasing the risk of potential yield loss due to lodging.

On the contrary, some DEKALB® corn brands (DKC61-88, DKC64-69, DKC67-88, and DKC68-05) should not be planted at higher populations (> 31,000-35,000 kernels per acre) due to their potential risk of lodging at these higher populations. In the event that taller corn brands with high ear placement are planted, the following steps can help manage weather related risks:

– Establish yield goals and provide fertility to maximize stalk quality and grain yield

– Plant low to mid populations (31,000-34,000 kernels per acre)

– Plant these corn brands first

– Manage for earliness

– Harvest these corn brands first

The information discussed in this report is from a single site, non-replicated, one-year 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.

Table 1. DEKALB® Brand Data from two 2012 Scott Learning Center Demonstration Trials.

Brands	2012 Scott Learning Center Demonstration Trials			
	Standability Evaluations of DEKALB® Brand Corn Products in the Mid South	Evaluation of DEKALB® Brand Corn Products to Planting Density (reported at 36,000 plants per acre[2])		
	Percent Loss Between 1st and 2nd Harvest (%)	Average Ear Height (inches from the ground)	Average Ear Weight (grams)	Average Ear Height by Ear Weight (inches X grams)
DKC61-88	24.4	39.5	201.3	7950.2
DKC62-09	5.3	40.4	227.4	9167.6
DKC64-69	30.4	42.1	222.3	9364.5
DKC66-86	18.1	39.9	218.1	8709.1
DKC66-97	-0.5	37.9	221.9	8404.0
DKC67-57	-3.96	40.2	244.6	9825.0
DKC67-88	72.6	49.3	243.2	11975.9
DKC68-05	39.4	Data Not Taken	Data Not Taken	Data Not Taken
DKC69-29	1.7	37.5	248.1	9292.6

***Negative losses are due to differences in yield potential between the ends of the field harvested in the demonstration. The "second harvest" plots came from the higher yielding end of the field.**

Sources: [1] Thomison, P.R., et al. 2011. Corn response to harvest date as affected by plant population and hybrid. Agron. J. 103:1765-1772 (2011); [2] Evaluation of DEKALB® Brand corn products to planting density. Scott Learning Center Demonstration Report 2012; Additional sources used to create this Learning Center Summary: Erickson, B. and Valentin, L. September 2008. Evaluating corn harvest timing. Purdue University. Top Farmer Crop Workshop Newsletter.