

Kentucky Silage Corn Hybrid Performance Report: 2010

Table I. Corn Hybrid Performance for Silage, Combined Sites (Adair and Mason counties), KY, 2010[†]

Brand	Hybrid	Tons/A ¹	Milk Yield ²		NEL ³	NEG ³	Quality, % ⁴				Disease ⁵	
		35% DM	lbs/Ton	lbs/A	Mcal/lb	Mcal/lb	CP	ADF	NDF	Lignin	GLS	Rust
Beck's	5675 HXR	22.9	3380	27000	0.81	0.55	7.4	21	37	3.3	1.6	0.6
Beck's	6733 HXR	25.2	3290	29000	0.83	0.56	7.3	20	36	3.2	1.2	0.8
Caverndale Farms	CF 868 3000GT	22.6	3350	26400	0.81	0.54	6.9	21	38	2.8	2.2	0.4
Caverndale Farms	CF 906 GT	22.6	3320	26200	0.76	0.50	7.0	24	42	3.2	0.7	0.8
Caverndale Farms	CF 926 GT	23.2	3470	28000	0.80	0.54	7.1	22	39	3.0	2.0	0.5
DeKalb	DKC 63-42	22.4	3420	26600	0.81	0.54	7.2	21	38	2.8	1.2	0.5
DeKalb	DKC 66-96	23.1	3200	25700	0.72	0.45	6.4	27	45	3.8	0.8	1.0
Dyna Gro	58V69	22.9	3340	26800	0.79	0.52	7.1	22	40	3.1	0.8	0.3
Dyna Gro	V5683VT3	22.2	3380	26300	0.79	0.52	7.0	23	40	3.4	1.2	1.5
Master's Choice	MCT-6581 GT	21.6	3300	24900	0.78	0.51	7.0	23	40	2.8	1.2	0.5
Master's Choice	SP-590 RR	23.1	3150	25400	0.79	0.52	6.7	22	39	3.1	1.0	1.0
Mycogen	F2F665	18.6	3300	21500	0.76	0.50	6.7	26	44	3.4	3.0	0.6
Mycogen	TMF2H918	25.3	3250	28800	0.76	0.49	7.1	25	43	3.9	1.0	0.0
NK Seeds	N78N-3000GT	20.4	3600	25600	0.79	0.52	7.5	23	40	3.1	2.3	0.2
NK Seeds	N82V-3000GT	23.7	3450	28600	0.76	0.50	6.8	24	42	3.1	2.5	0.8
Pioneer	31G70	21.4	3370	25000	0.80	0.53	6.9	21	39	2.7	1.2	0.6
Pioneer	PI615 HR	24.0	3200	26900	0.79	0.53	7.4	23	41	3.4	1.2	0.4
Seed Consultants	SCS 11HQ38	22.5	3380	26600	0.80	0.53	7.4	22	38	3.0	1.2	0.5
Seed Consultants	SCS 11HQ39	20.2	3500	24500	0.80	0.54	7.0	21	38	2.3	1.2	0.8
Southern States	SS775 RR2	22.0	3260	25100	0.83	0.55	6.8	19	35	2.8	1.2	0.4
Southern States	SS842 RR2 YGCB	23.2	3400	27600	0.77	0.51	7.1	24	42	3.4	1.4	0.8
Wyffels	W8681	23.3	3520	28900	0.83	0.56	7.0	20	36	2.7	1.0	0.7
Wyffels	W9121	22.9	3430	27400	0.83	0.56	7.2	20	36	2.9	0.8	1.7
	LSD (0.10)	2.3		2800								
	CV	10.0		10.2								
	Grand Mean	22.6	3350	26400	0.79	0.52	7.0	22	39	3.0	1.4	0.7

[†] Boyle County data was not included in the combined data set because of drought conditions and lower yields during the growing season.

¹ Yields adjusted to 35% dry matter; highest numerical yield is bold with gray box; bold yields are not significantly different from highest yield.

² Milk Yield was calculated with Milk 2000. Milk per ton of silage was rounded to the nearest ten and milk per acre was rounded to the nearest hundred.

³ Net energy for lactation (NEL) and gain (NEG).

⁴ Quality measurements based on dry weight and are calculated from composite samples at each site.

⁵ Disease ratings were taken at harvest for gray leaf spot (GLS) and common rust on the flag leaf on a scale of 0-4, with 0 being no disease and 4 being the entire leaf was covered.

Table 2. Corn Hybrid Performance for Silage, Adair County, KY, 2010

Cooperators: Jonathon and Amos Gaskins
 Planting Date: 27-May-2010
 Target Seeds/A: 31,000
 Final Plants/Acre: 27,751
 Harvest Date: 27-Aug-2010

Fertilizer
 N: 150 lbs/acre
 P₂O₅: 0 lbs/acre
 K₂O: 130 lbs/acre
 Lime: 3 tons/acre

Tillage Type: Conventional
 Soil Type: Sano silt loam
 Previous Crop: corn silage
 Study Design: randomized complete block
 Replications: 3

Brand	Hybrid	Tons/A ¹	Milk Yield ²		NEL ³	NEG ³	Quality, % ⁴				Disease ⁵	
		35% DM	lbs/Ton	lbs/A	Mcal/lb	Mcal/lb	CP	ADF	NDF	Lignin	GLS	Rust
Beck's	5675 HXR	21.2	3570	26400	0.82	0.56	7.6	21	38	3.8	2.0	0.0
Beck's	6733 HXR	25.4	3210	28500	0.81	0.55	7.5	23	40	3.4	1.5	0.5
Caverndale Farms	CF 868 3000GT	19.1	3450	23100	0.79	0.52	6.5	23	41	3.5	3.0	0.0
Caverndale Farms	CF 906 GT	21.9	3650	27900	0.77	0.51	7.0	24	42	3.4	0.7	0.7
Caverndale Farms	CF 926 GT	21.1	3730	27500	0.85	0.58	7.1	18	33	2.5	3.0	0.0
DeKalb	DKC 63-42	20.6	3680	26500	0.77	0.51	7.2	25	42	3.4	1.7	0.0
DeKalb	DKC 66-96	21.2	3480	25900	0.73	0.45	6.4	26	42	3.9	1.0	0.7
Dyna Gro	58V69	21.6	3520	26600	0.83	0.56	6.9	20	36	2.5	0.7	0.3
Dyna Gro	V5683VT3	22.0	3550	27300	0.81	0.54	7.4	21	38	3.2	1.7	0.7
Master's Choice	MCT-6581 GT	19.5	3410	23300	0.75	0.48	7.1	26	43	3.4	2.0	0.0
Master's Choice	SP-590 RR	22.1	3300	25500	0.82	0.55	6.9	20	37	2.9	0.7	0.7
Mycogen	F2F665	18.0	3640	23000	0.80	0.54	5.7	24	41	3.6	3.0	0.0
Mycogen	TMF2H918	24.9	3460	30200	0.78	0.51	6.9	23	40	3.1	1.0	0.0
NK Seeds	N78N-3000GT	18.1	3780	23900	0.77	0.51	8.1	24	42	3.0	3.0	0.0
NK Seeds	N82V-3000GT	21.9	3540	27100	0.70	0.44	6.2	29	49	3.6	3.0	1.0
Pioneer	31G70	18.4	3580	23100	0.78	0.52	7.1	24	41	3.1	2.0	0.0
Pioneer	PI615 HR	24.9	3230	28300	0.79	0.54	7.4	23	42	3.4	1.5	0.0
Seed Consultants	SCS 11HQ38	22.0	3690	28400	0.86	0.58	7.8	18	32	2.4	1.3	0.0
Seed Consultants	SCS 11HQ39	17.6	3760	23100	0.79	0.53	6.9	22	40	2.3	1.0	0.7
Southern States	SS775 RR2	21.2	3360	25000	0.81	0.54	6.4	22	37	3.0	1.0	0.0
Southern States	SS842 RR2 YGCB	24.4	3470	29700	0.72	0.46	6.6	27	46	4.2	2.5	0.0
Wyffels	W8681	24.4	3740	31900	0.88	0.61	7.2	17	30	2.2	1.7	0.0
Wyffels	W9121	22.0	3580	27600	0.85	0.58	7.2	19	34	2.5	1.3	1.7
	LSD (0.10)	4.0		5000								
	CV	12.5		12.5								
	Grand Mean	21.6	3520	26500	0.79	0.53	7.0	23	39	3.1	1.7	0.3

¹ Yields adjusted to 35% dry matter; highest numerical yield is bold with gray box; bold yields are not significantly different from highest yield.

² Milk Yield was calculated with Milk 2000. Milk per ton of silage was rounded to the nearest ten and milk per acre was rounded to the nearest hundred.

³ Net energy for lactation (NEL) and gain (NEG).

⁴ Quality measurements based on dry weight and are calculated from composite samples at each site.

⁵ Disease ratings were taken at harvest for gray leaf spot (GLS) and common rust on the flag leaf on a scale of 0-4, with 0 being no disease and 4 being the entire leaf was covered.

Table 3. Corn Hybrid Performance, Boyle County, KY, 2010

Cooperator:	Caverndale Farms	Fertilizer	
Planting Date:	13-May-2010	N:	250 lbs/acre
Target Seeds/A:	31,000	P ₂ O ₅ :	0 lbs/acre
Final Plants/Acre:	33,270	K ₂ O:	120 lbs/acre
Harvest Date:	16-Aug-2010	Lime:	1 ton/acre

Tillage Type:	conventional
Soil Type:	Dunning silt loam
Previous Crop:	soybean
Study Design:	randomized complete block
Replications:	3

Brand	Hybrid	Tons/A ¹ 35% DM	Grain Bu/A
Beck's	5675 HXR	19.3	156.1
Beck's	6733 HXR	16.4	97.5
Caverndale Farms	CF 868 3000GT	16.6	134.7
Caverndale Farms	CF 905 CBLL EXP	17.4	162.0
Caverndale Farms	CF 906 GT	17.9	109.0
DeKalb	DKC 63-42	17.7	152.5
DeKalb	DKC 66-96	17.2	125.4
Dyna Gro	58V69	18.6	124.8
Dyna Gro	V5683VT3	20.2	148.9
Master's Choice	MCT-6581 GT	17.6	191.2
Master's Choice	SP-590 RR	18.1	138.3
Mycogen	F2F665	16.7	125.5
Mycogen	TMF2H918	17.7	175.0
NK Seeds	N78N-3000GT	15.1	156.2
NK Seeds	N82V-3000GT	17.8	168.2
Pioneer	31G70	17.9	104.5
Pioneer	P1615 HR	19.1	148.2
Seed Consultants	SCS 11HQ38	18.8	142.0
Seed Consultants	SCS 11HQ39	17.1	136.0
Southern States	SS775 RR2	17.4	114.0
Southern States	SS842 RR2YGCB	15.3	123.4
Wyffels	W8681	17.7	179.6
Wyffels	W9121	16.6	142.2
	LSD (0.10)	4.0	23.1
	CV	12.5	12.3
	Grand Mean	17.6	141.5

¹ Yields adjusted to 35% dry matter; highest numerical yield is bold with gray box; bold yields are not significantly different from highest yield.

² Milk yield and quality was not calculated at the Boyle County site.

³ Grain yield adjusted to 15.5% moisture.

Table 4. Corn Hybrid Performance for Silage, Mason County, KY, 2010

Cooperator: Ronnie and Jerry Lowe	Fertilizer	Tillage Type: No-Till
Planting Date: 28-May-2010	N: 161 lbs/acre (as 46-0-0)	Soil Type: Faywood-Lowell silt loams
Target Seeds/A: 32,097	P ₂ O ₅ : 0 lbs/acre	Previous Crop: corn silage, wheat cover crop
Final Plants/Acre: 32,600	K ₂ O: 0 lbs/acre	Study Design: randomized complete block
Harvest Date: 7-Sep-2010	Lime: 1.5 tons/acre	Replications: 3

Brand	Hybrid	Tons/A ¹	Milk Yield ²		NEL ³	NEG ³	Quality, % ⁴				Disease ⁵	
		35% DM	lbs/Ton	lbs/A	Mcal/lb	Mcal/lb	CP	ADF	NDF	Lignin	GLS	Rust
Beck's	5675 HXR	24.0	3250	27400	0.81	0.55	7.3	21	37	2.9	1.3	1.0
Beck's	6733 HXR	25.1	3340	29400	0.84	0.56	7.1	18	34	3.0	1.0	1.0
Caverndale Farms	CF 868 3000GT	24.9	3290	28600	0.83	0.56	7.1	20	36	2.3	1.7	0.7
Caverndale Farms	CF 906 GT	23.3	3000	24400	0.75	0.49	7.0	24	42	3.0	0.7	1.0
Caverndale Farms	CF 926 GT	25.3	3200	28400	0.75	0.49	7.0	26	45	3.4	1.0	1.0
DeKalb	DKC 63-42	24.1	3160	26700	0.84	0.56	7.1	18	33	2.1	0.7	1.0
DeKalb	DKC 66-96	25.0	2910	25500	0.71	0.45	6.4	28	48	3.7	0.7	1.3
Dyna Gro	58V69	24.3	3170	27000	0.75	0.48	7.2	25	44	3.6	1.0	0.3
Dyna Gro	V5683VT3	22.4	3210	25200	0.77	0.5	6.6	24	42	3.5	0.7	2.3
Master's Choice	MCT-6581 GT	23.7	3180	26500	0.81	0.54	6.9	20	37	2.2	0.3	1.0
Master's Choice	SP-590 RR	24.0	3000	25200	0.76	0.49	6.5	24	41	3.2	1.3	1.3
Mycogen	F2F665	19.0	3080	20500	0.74	0.48	7.3	27	46	3.3	3.0	1.0
Mycogen	TMF2H918	25.6	3110	27800	0.74	0.48	7.2	27	45	4.5	1.0	0.0
NK Seeds	N78N-3000GT	22.8	3420	27300	0.8	0.53	6.9	21	38	3.1	1.7	0.3
NK Seeds	N82V-3000GT	25.5	3370	30100	0.82	0.55	7.4	20	36	2.5	2.0	0.7
Pioneer	31G70	23.4	3220	26300	0.81	0.54	6.7	20	37	2.5	0.7	1.0
Pioneer	PI615 HR	23.3	3170	25900	0.79	0.52	7.4	23	40	3.4	1.0	0.7
Seed Consultants	SCS 11HQ38	23.0	3070	24700	0.74	0.47	7.0	26	44	3.6	1.0	1.0
Seed Consultants	SCS 11HQ39	22.8	3240	25800	0.81	0.54	7.0	21	37	2.2	1.3	1.0
Southern States	SS775 RR2	22.5	3190	25100	0.84	0.56	7.0	18	34	2.6	1.3	0.7
Southern States	SS842 RR2 YGCB	22.4	3350	26300	0.81	0.55	7.5	22	39	2.8	0.7	1.3
Wyffels	W8681	22.3	3300	25800	0.78	0.51	6.7	23	41	3.2	0.3	1.3
Wyffels	W9121	23.8	3270	27200	0.8	0.53	7.2	21	38	3.3	0.3	1.7
	LSD (0.10)	4.9		2800								
	CV	7.9		7.8								
	Grand Mean	23.5	3190	26300	0.79	0.52	7.0	22	39	3.0	1.08	0.99

¹ Yields adjusted to 35% dry matter; highest numerical yield is bold with gray box; bold yields are not significantly different from highest yield.

² Milk Yield was calculated with Milk 2000. Milk per ton of silage was rounded to the nearest ten and milk per acre was rounded to the nearest hundred.

³ Net energy for lactation (NEL) and gain (NEG).

⁴ Quality measurements based on dry weight and are calculated from composite samples at each site.

⁵ Disease ratings were taken at harvest for gray leaf spot (GLS) and common rust on the flag leaf on a scale of 0-4, with 0 being no disease and 4 being the entire leaf was covered.

Procedures for the 2010 Kentucky Silage Corn Hybrid Performance Report



Objective:

The objective of the Silage Corn Hybrid Performance Test is to provide unbiased forage yield and quality data for corn hybrids commonly grown for silage in Kentucky.

General Procedures:

Hybrids were evaluated for silage performance on cooperating farms in Adair County, Boyle County and Mason County.

Representatives from seed companies submitted hybrids of their choosing. Total study size was kept to about 20 hybrids.

University of Kentucky personnel or third-party contractors planted the hybrid seeds. Farmers applied the soil fertility and pest management. University of Kentucky personnel harvested, weighed, chopped and packaged corn for quality analysis. University personnel conducted the statistical analyses and final reporting of hybrid performance.

Every effort was made to conduct the tests in an unbiased manner according to accepted agronomic practices. Hybrids were arranged in a randomized complete block design with three replications at each

farm. Hybrid seed was planted with standard planters at a target seeding rate near 30,000 seeds per acre. Fields were monitored for pests.

When most hybrids were near 35% dry matter (65% moisture), two 10-ft sections of each hybrid were harvested by hand from each plot. The entire harvested corn sample was weighed. Five to six whole plants from each hybrid were chopped through a silage chopper and a subsample was collected.

Forage quality analyses and dry matter determination were from composite samples of each hybrid at each location and were analyzed by Dairy One Forage Lab, who also calculated milk yield.

Hybrid performance reported here includes silage yield adjusted to 35% moisture, milk yield per ton and per acre, net energy for gain and for lactation, crude protein, acid detergent fiber, neutral detergent fiber, and lignin.

Yield was separated using the Least Significant Difference (or LSD). The LSD is a method of separating hybrid performance from field variability. Hybrids with yields within one LSD of each other have a very good chance of performing similar to each other next year.

Explanation of Terms:

- CP – crude protein
- ADF – acid detergent fiber
- NDF – neutral detergent fiber: higher NDF generally indicates lower forage intake and lower animal performance.
- NE lact – net energy for lactation: Main energy value for dairy ration balancing
- Lignin – indigestible fiber.
- Milk Yield – calculated with Milk 2000 (Univ. of Wisconsin)

Specific Location Information

The Boyle County site was much drier than the other two locations. Whole plants were harvested at about 42% dry matter (58% moisture) instead of 35% dry matter (65% moisture). Because of the late harvest, no forage analysis was conducted at this site. In addition, because of the low yields, this site was not included in the combined location analysis.

Gray leaf spot and common rust were evaluated at Adair County and Mason County. Hybrids were ranked from 0 (no disease on the ear leaf) to 4 (ear leaf completely covered with disease). Hybrids with a ranking of 3 in the combined data may have had reduced yields from the disease.

Research conducted by:

County Extension Agents for Agriculture:

ANR Agent	County	
Nick Roy	Adair	test site
Jerry Little	Boyle	test site
Tad Campbell	Mason	test site
David Appelman	Bracken	
Will Stallard	Casey	
Jeff Smith	Fleming	
Jay Hettmansperger	Garrard	
Philip Konopka	Lewis	
Dan Grigson	Lincoln	
Linda McClanahan	Mercer	
Tom Mills	Rockcastle	

Plant & Soil Sciences Department:

Chad Lee, Kathleen Russell, Welington Zanni, and Maria Julia Santoro.

Available online at:

<http://www.uky.edu/Ag/GrainCrops/varietytesting.htm>