

Kentucky Silage Hybrid Performance Report, 2014

Table 1. 2014 All Locations (Boyle, Casey and Mason Counties)

Company		Milk		Tons/A	Milk Yield		NEL	NEG	Quality %				
or Brand	Hybrid	Line	DM%	35% DM	lbs/ton	lbs/acre	Mcal/lb	Mcal/lb	IVTD	CP	ADF	NDF	TDN
DEKALB	DKC6642	0.42	38.2	26.2	3,420	31,000	0.83	0.56	84	7.1	19.8	36.1	78
NK Brand	N82V-3111	0.67	40.4	25.5	3,190	28,100	0.80	0.54	83	7.6	22.2	39.9	77
AgriGold	A6559VT2RIB	0.58	41.8	25.3	3,160	27,600	0.81	0.55	83	7.3	20.3	38.5	77
Mycogen	TMF2R737	0.75	42.8	25.3	3,200	28,000	0.81	0.55	84	7.1	20.4	38.6	78
Mycogen	TMF2H747	0.50	42.5	24.4	3,000	25,000	0.75	0.48	80	6.7	24.6	43.3	73
Augusta	AU8868VT3PROX	0.63	35.5	24.1	3,400	28,700	0.79	0.53	83	7.6	24.1	42.0	77
Dyna Gro	CX13418	0.54	34.5	24.0	3,260	27,400	0.77	0.51	80	7.8	24.3	41.6	74
Pioneer Brand	P2088AMX	0.50	35.0	24.0	3,290	27,700	0.78	0.51	81	7.3	23.5	40.3	75
Augusta	AU5566GTCBLL	0.67	34.2	23.8	3,390	28,100	0.77	0.51	81	7.5	24.0	42.1	75
NK Brand	N78S-3111	0.75	36.9	23.8	3,330	27,900	0.81	0.55	83	6.9	21.3	37.4	77
Dyna Gro	D57VP75	0.42	33.7	23.7	3,380	27,900	0.76	0.50	80	7.0	25.2	43.7	74
Beck's	6542A4	0.67	37.3	23.4	3,190	25,900	0.77	0.51	81	6.4	22.7	40.3	74
Master's Choice	MCT6753	0.67	37.1	23.3	3,250	26,500	0.79	0.52	82	7.6	22.4	40.1	75
DEKALB	DKC7001	0.67	36.4	23.3	3,000	24,100	0.75	0.49	82	7.3	25.1	43.0	73
Pioneer Brand	P1449Xr	0.67	40.6	23.1	3,250	26,000	0.80	0.54	84	7.7	23.5	43.6	78
Wyffels	W7736RIB	0.67	39.9	22.9	3,200	25,600	0.79	0.54	82	7.7	21.9	40.6	76
Caverndale Farms	CF1039VIP3110	0.42	31.6	22.7	2,950	23,500	0.68	0.41	75	7.9	28.2	48.0	68
Wyffels	W7886RIB	0.58	40.7	22.6	3,180	25,000	0.78	0.51	81	7.3	22.0	40.2	75
AgriGold	A6524VT2RIB	0.67	36.0	22.4	3,360	26,400	0.79	0.53	82	8.0	23.1	40.2	76
Beck's	6365AM	0.58	38.4	22.1	3,280	25,200	0.81	0.55	83	7.3	21.8	39.1	77
Caverndale Farms	CF909VIP3110	0.67	35.3	22.1	3,440	26,500	0.81	0.54	83	7.7	21.1	38.1	77
Check	Check	0.33	34.8	21.7	2,800	21,100	0.67	0.41	75	6.8	29.2	49.5	68
Master's Choice	MCT6894	0.75	41.9	20.6	3,090	22,200	0.79	0.52	82	7.3	21.7	39.2	75
LSD (0.10)					2.5	130	2,800						
CV					13.5	5.1	13.8						
Grand Mean		0.60	37.6	23.5	3,220	26,300	0.78	0.52	81	7.3	23.2	41.1	75

Milk line estimates starch deposition in the seed on day of harvest. Percent dry matter (DM) reflects the corn forage sample at harvest. Silage yields were adjusted to 35% DM; highest numerical yield is bold with gray box; bold yields are not significantly different from highest yield. Milk Yield was calculated through Dairy One Forage Laboratories. Milk per ton of silage was rounded to the nearest ten and milk per acre was rounded to the nearest hundred.

Net energy for lactation (NEL) and gain (NEG). In Vitro True Digestibility (IVTD) estimates digestibility from anaerobic fermentation by incubating samples in rumen fluid.

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

Table 2. 2014 Boyle County, Kentucky

Company or Brand	Hybrid	Milk		Tons/A 35% DM	Milk Yield		NEL Mcal/lb	NEG Mcal/lb	IVTD	Quality %			
		Line	DM%		lbs/ton	lbs/acre				CP	ADF	NDF	TDN
AgriGold	A6559VT2RIB	1.00	48.9	29.9	2,960	30,900	0.83	0.56	83	7.1	16.5	34.9	78
Pioneer Brand	P2088AMX	0.75	38.5	28.3	3,430	33,900	0.82	0.55	83	6.9	23.1	39.8	78
NK Brand	N82V-3111	0.75	45.1	27.7	2,960	28,700	0.80	0.54	82	7.4	21.7	39.6	77
Mycogen	TMF2H747	0.75	48.1	27.6	2,790	27,000	0.75	0.49	81	6.8	24.3	44.4	74
Master's Choice	MCT6753	1.00	41.2	27.2	3,300	31,400	0.84	0.57	86	7.3	19.2	34.9	79
Caverndale Farms	CF1039VIP3110	0.75	32.1	26.8	3,070	28,900	0.69	0.41	75	8.6	26.7	43.8	67
Pioneer Brand	P1449Xr	1.00	48.3	26.7	3,150	29,500	0.82	0.57	85	7.4	22.1	41.8	79
Augusta	AU8868VT3PROX	0.75	36.8	26.4	3,570	32,900	0.84	0.57	84	7.8	20.9	36.6	79
Dyna Gro	CX13418	0.75	35.6	26.2	3,500	32,100	0.80	0.54	81	7.9	23.8	39.5	76
Wyffels	W7736RIB	0.75	42.7	25.8	3,110	28,100	0.79	0.56	82	7.7	23.9	43.0	77
DEKALB	DKC7001	0.75	39.9	25.5	3,080	27,500	0.75	0.50	79	7.3	25.4	44.2	74
Dyna Gro	D57VP75	0.50	34.7	25.2	3,210	28,300	0.72	0.47	77	7.2	28.7	49.6	72
Augusta	AU5566GTCBLL	0.75	34.2	24.9	3,340	29,100	0.76	0.50	80	8.1	25.1	44.1	74
Check	Check	0.75	37.0	24.7	2,700	23,300	0.66	0.38	74	7.9	29.1	47.8	65
AgriGold	A6524VT2RIB	0.75	35.8	24.6	3,270	28,100	0.76	0.50	80	8.6	25.5	44.1	74
Mycogen	TMF2R737	0.75	47.1	24.6	2,950	25,300	0.81	0.54	83	7.0	20.6	38.0	77
DEKALB	DKC6642	0.50	35.1	24.0	3,450	29,000	0.79	0.53	81	7.5	22.6	40.2	76
NK Brand	N78S-3111	0.75	35.6	23.9	3,350	28,000	0.76	0.51	80	7.5	26.2	45.2	75
Caverndale Farms	CF909VIP3110	0.75	35.7	23.7	3,410	28,300	0.79	0.52	82	7.6	22.7	40.1	76
Beck's	6365AM	0.75	36.9	22.7	3,410	27,100	0.79	0.54	82	7.8	24.1	41.8	77
Wyffels	W7886RIB	0.75	40.7	22.4	3,280	25,700	0.83	0.54	83	8.1	19.2	36.5	78
Beck's	6542A4	0.75	37.2	22.2	3,360	26,000	0.79	0.53	81	7.4	23.4	40.9	76
Master's Choice	MCT6894	1.00	49.1	22.1	2,840	22,000	0.78	0.51	81	7.6	22.0	39.0	75
LSD (0.10)				4.0	4,300								
CV				11.1	13.8								
Grand Mean		0.77	39.8	25.3	3,200	28,300	0.78	0.52	81	7.6	23.3	41.3	75

Milk line estimates starch deposition in the seed on day of harvest. Percent dry matter (DM) reflects the corn forage sample at harvest. Silage yields were adjusted to 35% DM; highest numerical yield is bold with gray box; bold yields are not significantly different from highest yield. Milk Yield was calculated through Dairy One Forage Laboratories. Milk per ton of silage was rounded to the nearest ten and milk per acre was rounded to the nearest hundred.

Net energy for lactation (NEL) and gain (NEG). In Vitro True Digestibility (IVTD) estimates digestibility from anaerobic fermentation by incubating samples in rumen fluid.

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

Table 3. 2014 Casey County, Kentucky

Company or Brand	Hybrid	Milk		Tons/A 35% DM	Milk Yield		NEL Mcal/lb	NEG Mcal/lb	IVTD	Quality %			
		Line	DM%		lbs/ton	lbs/acre				CP	ADF	NDF	TDN
Augusta	AU8868VT3PROX	0.13	28.8	22.6	3,550	28,000	0.80	0.54	83	7.6	22.8	40.9	77
DEKALB	DKC6642	0.25	32.2	22.6	3,790	30,000	0.86	0.59	86	7.0	18.4	33.9	80
Mycogen	TMF2R737	0.50	29.6	22.3	3,730	29,100	0.82	0.58	85	8.1	19.9	39.2	79
Dyna Gro	D57VP75	0.25	31.1	22.1	3,750	29,000	0.83	0.57	85	7.0	21.5	37.7	79
NK Brand	N82V-3111	0.50	32.5	21.8	3,770	28,800	0.87	0.60	86	7.7	18.0	34.5	81
Wyffels	W7736RIB	0.50	31.8	21.8	3,800	28,900	0.86	0.59	86	7.8	17.5	33.2	80
Beck's	6542A4	0.50	30.4	21.7	3,480	26,400	0.81	0.53	82	5.6	17.8	33.1	75
AgriGold	A6524VT2RIB	0.50	31.9	21.6	3,810	28,800	0.87	0.60	86	8.3	17.1	31.9	81
AgriGold	A6559VT2RIB	0.25	32.7	21.2	3,750	27,900	0.88	0.62	88	6.4	18.6	33.4	82
NK Brand	N78S-3111	0.50	29.8	20.6	3,800	27,400	0.88	0.61	86	7.4	17.4	31.7	81
Caverndale Farms	CF909VIP3110	0.50	30.2	20.5	3,800	27,200	0.85	0.59	85	8.5	19.0	34.5	80
Dyna Gro	CX13418	0.13	26.8	20.2	3,370	23,800	0.74	0.49	79	7.9	27.0	45.9	73
Pioneer Brand	P2088AMX	0.25	28.3	20.2	3,520	25,000	0.80	0.54	83	7.6	23.1	40.7	77
Wyffels	W7886RIB	0.25	32.5	20.1	3,220	22,700	0.69	0.44	75	6.6	28.0	49.6	70
Master's Choice	MCT6753	0.25	29.6	19.8	3,460	24,000	0.76	0.50	80	7.6	24.6	43.6	74
Mycogen	TMF2H747	0.25	28.5	19.8	3,790	26,200	0.85	0.56	85	7.1	20.0	35.5	80
Augusta	AU5566GTCBLL	0.25	30.8	19.6	3,690	25,300	0.81	0.54	84	7.6	22.4	38.8	77
Master's Choice	MCT6894	0.50	31.9	19.6	3,740	25,600	0.84	0.57	86	7.0	20.5	36.4	79
Beck's	6365AM	0.25	30.0	19.5	3,540	24,200	0.82	0.56	83	5.9	22.4	41.1	79
Caverndale Farms	CF1039VIP3110	0.00	25.7	19.1	3,080	20,600	0.70	0.45	77	7.7	28.2	49.8	71
Pioneer Brand	P1449Xr	0.25	28.4	19.0	3,620	24,100	0.81	0.55	86	8.3	23.0	40.9	78
DEKALB	DKC7001	0.25	26.3	18.2	3,340	21,300	0.72	0.47	87	6.6	27.1	47.8	72
Check	Check	0.00	24.9	16.9	3,050	18,000	0.67	0.43	75	6.4	29.4	51.9	69
LSD (0.10)				2.3		3,000							
CV				8.3		13.8							
Grand Mean		0.30	29.8	20.5	3,580	25,800	0.81	0.54	83	7.3	21.9	39.4	77

Milk line estimates starch deposition in the seed on day of harvest. Percent dry matter (DM) reflects the corn forage sample at harvest. Silage yields were adjusted to 35% DM; highest numerical yield is bold with gray box; bold yields are not significantly different from highest yield. Milk Yield was calculated through Dairy One Forage Laboratories. Milk per ton of silage was rounded to the nearest ten and milk per acre was rounded to the nearest hundred.

Net energy for lactation (NEL) and gain (NEG). In Vitro True Digestibility (IVTD) estimates digestibility from anaerobic fermentation by incubating samples in rumen fluid. Quality measurements based on dry weight and are calculated from composite samples at each site.

Table 4. 2014 Mason County, Kentucky

Company or Brand	Hybrid	Milk Line	DM%	Tons/A 35% DM	Milk Yield		NEL Mcal/lb	NEG Mcal/lb	IVTD	Quality %			
					lbs/ton	lbs/acre				CP	ADF	NDF	TDN
DEKALB	DKC6642	0.50	47.4	32.2	3,020	34,000	0.83	0.56	84	6.7	18.5	34.1	78
Mycogen	TMF2R737	1.00	51.7	29.0	2,920	29,600	0.80	0.53	83	6.2	20.8	38.6	77
NK Brand	N78S-3111	1.00	45.2	28.6	2,850	28,500	0.80	0.52	82	5.8	20.4	35.4	75
NK Brand	N82V-3111	0.75	43.5	27.1	2,840	27,000	0.74	0.48	80	7.7	26.8	45.6	73
Augusta	AU5566GTCBLL	1.00	37.6	27.0	3,150	29,700	0.75	0.48	80	6.8	24.5	43.3	73
Beck's	6542A4	0.75	44.4	26.4	2,740	25,400	0.72	0.46	79	6.1	26.9	47.0	72
DEKALB	DKC7001	1.00	43.0	26.3	2,560	23,600	0.78	0.50	81	8.0	22.7	36.9	73
Mycogen	TMF2H747	0.50	50.8	25.9	2,420	22,000	0.65	0.38	74	6.3	29.6	49.9	66
Dyna Gro	CX13418	0.75	41.0	25.7	2,920	26,300	0.76	0.49	80	7.5	22.1	39.3	73
Wyffels	W7886RIB	0.75	48.8	25.1	3,030	26,700	0.83	0.56	84	7.3	18.8	34.4	78
AgriGold	A6559VT2RIB	0.50	43.8	24.9	2,770	24,100	0.72	0.46	79	8.4	25.8	47.2	72
Beck's	6365AM	0.75	48.4	24.1	2,900	24,400	0.82	0.54	84	8.1	18.9	34.5	76
Dyna Gro	D57VP75	0.50	35.2	23.8	3,170	26,400	0.73	0.47	78	6.9	25.4	43.7	71
Check	Check	0.25	42.5	23.5	2,670	22,000	0.68	0.42	75	6.2	29.2	48.9	69
Pioneer Brand	P1449Xr	0.75	45.0	23.5	2,970	24,400	0.76	0.51	82	7.4	25.5	48.2	76
Pioneer Brand	P2088AMX	0.50	38.3	23.5	2,930	24,100	0.73	0.45	78	7.3	24.3	40.5	70
Augusta	AU8868VT3PROX	1.00	41.0	23.4	3,070	25,100	0.74	0.49	81	7.4	28.5	48.5	74
Master's Choice	MCT6753	0.75	40.5	23.0	2,990	24,100	0.76	0.49	81	7.9	23.5	41.7	73
Caverndale Farms	CF1039VIP3110	0.50	37.0	22.3	2,710	21,100	0.64	0.38	72	7.3	29.7	50.4	65
Caverndale Farms	CF909VIP3110	0.75	39.9	22.0	3,110	24,000	0.78	0.51	81	7.1	21.7	39.8	74
AgriGold	A6524VT2RIB	0.75	40.3	21.1	3,000	22,100	0.74	0.48	80	7.1	26.6	44.5	73
Wyffels	W7736RIB	0.75	45.3	21.0	2,680	19,700	0.72	0.46	77	7.6	24.3	45.6	71
Master's Choice	MCT6894	0.75	44.8	20.2	2,680	18,900	0.74	0.47	79	7.2	22.6	42.2	72
LSD (0.10)					5.7	5,600							
CV					16.4	13.8							
Grand Mean		0.72	43.3	24.8	2,870	24,900	0.75	0.48	80	7.1	24.2	42.6	73

Milk line estimates starch deposition in the seed on day of harvest. Percent dry matter (DM) reflects the corn forage sample at harvest. Silage yields were adjusted to 35% DM; highest numerical yield is bold with gray box; bold yields are not significantly different from highest yield. Milk Yield was calculated through Dairy One Forage Laboratories. Milk per ton of silage was rounded to the nearest ten and milk per acre was rounded to the nearest hundred.

Net energy for lactation (NEL) and gain (NEG). In Vitro True Digestibility (IVTD) estimates digestibility from anaerobic fermentation by incubating samples in rumen fluid. Quality measurements based on dry weight and are calculated from composite samples at each site.

Procedures for the 2014 Kentucky Silage Corn Hybrid Performance Test

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. Representatives from seed companies submitted hybrids of their choosing. The 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. In some cases, fertilizer rates are above recommendations. 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. All 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 (Ithaca, NY), who also calculated milk yield.

Hybrid performance reported here includes silage yield adjusted to 35% dry matter, milk yield per ton and per acre, net energy for gain and for lactation, in vitro true digestibility, crude protein, acid detergent fiber, neutral detergent fiber.

Silage yield was separated using the Least Significant Difference (or LSD). The LSD helps hybrid performance from field variability. For example, in "Table 1. All Locations", the LSD for silage yield was 2.5 tons/acre. The highest overall yield was 29.9 tons/acre. All hybrids with yields within 2.5 tons of the 29.9 tons are likely to yield similar to each other next year.

Explanation of Terms:

- Milk Line – visible line on the kernel resulting from starch deposition. As starch fills the kernel, the milk line moves from the bottom to top of the kernel. About 0.50 to 0.75 (1/2 to 3/4) milk line is ideal for silage, depending on whole plant moisture.
- Dry Matter – measured as a percent of total weight at time of harvest. Dry matter should be 30 to 40% at time of harvest for most silage systems.
- Milk Yield – per ton of dry matter (calculated at Dairy One) and per acre.
- NEL – net energy for lactation: Main energy value for dairy ration balancing
- NEG – net energy for gain. Main energy value for beef ration balancing.

- IVTD – in vitro true digestibility. Energy estimate from anaerobic fermentation of forage samples in rumen fluid.
- CP – crude protein
- ADF – acid detergent fiber
- NDF – neutral detergent fiber: higher NDF generally indicates lower forage intake and lower animal performance.
- Check – A known hybrid that is common across all sites and serves as a comparison for yield and quality.
- RIB – refuge in a bag
- VIP – Viptera Bt corn

2014 Season Comments

Adequate plant stands and rainfall were achieved at each location in 2014 providing for excellent comparisons of hybrid yields.

A combination of silage yield and forage values should be used when selecting hybrids. The milk line and the dry matter content at time of harvest both can impact the forage quality measurements. Overall, corn at Casey County was slightly too wet at harvest, corn at Boyle County was about correct and corn at Mason County was slightly too dry at harvest.

Research conducted by:

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Dan Grigson	Lincoln		
Linda McClanahan	Mercer		
Tom Mills	Rockcastle		
Shannon Farrell	Robertson		
Robert Marsh	Rowan		
Richard Whitis	Pulaski		
Linda McClanahan	Mercer		
Colby Guffey	Clinton		
Ricky Arnett	Green		

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