

Corn Product Silage Quality

Trial Objective

- In order to get the most out of corn silage, the corn product should produce high tonnage with favorable silage quality characteristics.
- This study was conducted to determine the silage quality characteristics of various corn products.

Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield (bu/acre)	Seeding Rate (seeds/acre)
Gothenburg, NE	Hord silt loam	Soybean	Strip-till	04/28/18	09/2018	270	34K

- The study was set up as a randomized complete block with three replications.
- Twenty corn products were evaluated.
- Corn was sprinkler irrigated and weeds were controlled as needed. No fungicide or insecticide was applied.
- Silage quality was sampled for each corn product between ½ to ¾ milk line. Sampling date varied by relative maturity, but all sampling occurred in the first two weeks of September.
- Corn products were hand-harvested one inch above the soil surface to provide a representative sample and were then chopped with a wood chipper.
- A subsample of the freshly-chopped material was collected and sent to Dairyland Laboratories Inc. for silage quality analysis.

Understanding the Results

- Corn products did vary in silage quality as there were significant differences in all characteristics tested as reported in Table 1.
- Producers should work with their local seed sales team to identify how their branded corn products performed in this study.

What Does This Mean for Your Farm?

- Silage quality characteristics varied across the twenty corn products tested.
- This silage quality test should help farmers choose corn products that provide more value to their operation.



Figure 1. Corn product 109RM-A (left), 105RM (center), and 114RM-B (right) at silage harvest.

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Table 1. Silage quality characteristics of the 20 corn products.

Corn Product	Kernel Milk Line at Harvest	% DM	% Starch	% NDF	NDFD 24 hr % of NDF	NDFD 48 hr % of NDF	uNDF 24 hr % DM	uNDF 240 hr % DM	IVSD 7 hr	% ADF	% CP	TFA	Sugar	2006 % TDN	Lignin % DM	2006 NEL (Mcal/lb)	NEG (Mcal/lb)	2006 Silage Milk/Ton
109RM-A	1/2	32.43	37.35	35.70	51.58	60.67	16.88	10.46	66.91	22.01	7.14	2.27	6.93	74.3	2.86	0.74	0.51	3543.3
110RM-A	1/2	31.38	36.77	37.30	50.62	60.23	17.97	10.85	64.95	22.71	7.85	2.29	5.49	73.04	3.33	0.73	0.50	3447.0
114RM-A	1/2	29.64	35.31	41.79	47.29	59.56	21.27	11.81	62.64	25.55	8.11	2.12	3.38	70.33	3.78	0.70	0.47	3244.7
115RM-A	1/2	30.17	34.72	39.14	49.58	59.40	19.24	11.69	65.03	23.94	8.27	2.08	5.26	71.48	3.36	0.71	0.48	3329.3
97RM	3/4	37.61	39.73	38.36	51.74	61.41	18.11	10.72	61.77	23.13	7.56	2.38	3.71	72.4	3.06	0.72	0.51	3388.0
98RM	3/4	36.09	38.09	37.42	49.78	60.15	18.33	10.86	64.93	22.79	7.64	2.26	5.56	73.08	3.2	0.73	0.51	3454.7
102RM	1/2	34.41	34.52	39.61	48.91	59.55	19.7	11.58	65.28	24.28	7.56	2.08	5.25	70.95	3.46	0.70	0.47	3287.7
105RM	1/2	34.52	38.27	36.56	51.37	61.04	17.36	10.36	64.00	21.92	8.01	2.40	5.15	73.4	3.2	0.73	0.51	3471.0
109RM-B	1/2	30.37	33.44	39.66	50.35	60.23	19.19	11.57	65.02	24.32	8.22	2.13	5.56	71.41	3.41	0.71	0.48	3316.7
110RM-B	1/2	29.65	35.49	40.78	48.45	59.33	20.45	11.94	64.97	25.04	7.73	2.04	4.67	71.39	3.37	0.71	0.48	3327.7
113RM	1/2	33.18	35.63	37.90	50.89	60.47	18.12	10.96	63.63	23.12	8.73	2.18	5.03	72.25	3.35	0.72	0.49	3379.7
115RM-B	1/2	31.00	37.67	36.86	48.23	58.88	18.64	10.96	65.16	22.57	7.67	2.35	5.21	72.78	3.19	0.73	0.50	3441.3
114RM-B	1/2	31.57	40.69	35.32	48.70	58.94	17.71	10.46	65.72	21.90	7.52	2.33	5.05	73.99	3.08	0.74	0.51	3535.9
118RM	1/2	30.57	34.17	38.57	50.43	59.90	18.59	11.42	66.32	23.60	7.59	2.19	6.32	72.34	3.32	0.72	0.49	3391.3
104RM	3/4	35.57	38.01	36.64	52.67	62.83	16.94	9.81	63.76	22.33	8.01	2.33	4.94	73.11	3.09	0.72	0.51	3435.7
108RM COMP	1/2	29.34	37.67	35.74	52.46	60.57	16.59	10.68	67.15	22.44	8.15	2.14	4.95	73.52	2.96	0.73	0.51	3476.0
113RM COMP	1/2	29.96	37.47	37.86	49.22	59.81	18.75	11.06	64.64	23.92	8.28	2.22	4.06	71.89	3.11	0.71	0.49	3362.7
117RM COMP	1/2	31.38	33.24	38.82	49.25	59.64	19.17	11.42	65.53	24.67	8.03	1.98	5.76	70.83	3.45	0.70	0.48	3275.3
114RM COMP	1/2	30.32	31.96	40.74	62.51	71.04	14.92	8.20	63.96	24.13	8.06	2.05	5.49	75.15	2.33	0.72	0.52	3509.4
109RM COMP	1/2	32.23	32.71	39.26	57.43	66.28	16.29	9.60	64.55	23.96	7.88	2.09	6.04	73.51	2.86	0.72	0.50	3427.3
LSD (0.1)		2.75	5.30	3.93	3.75	2.89	2.16	1.20	1.83	2.44	0.50	0.21	1.22	2.22	0.38	0.03	0.03	173.2

DM – Dry Matter; NDF – Neutral Detergent Fiber; NDFD - incremented measurement of NDF; uNDF - undigested NDF residue; IVSD 7 hr - in vitro starch digestibility after 7 hrs; ADF – Acid Detergent Fiber; CP – Crude Protein; TFA – Total Fat; TDN – Total Digestible Nutrients; NEL – Net Energy for Lactation; NEG – Net Energy for Gain

Legal Statements

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