



# Corn Product Silage Quality and Tonnage

## Trial Objective

- Corn silage is an important feedstock for cattle producers across the Great Plains.
- Desirable corn products should produce high tonnage with favorable silage quality characteristics.
- In this study, the objective was to provide insights to farmers on which of the 20 corn products evaluated have high tonnage and good silage quality characteristics.

## Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield (bu/acre)	Seeding Rate (seeds/acre)
Gothenburg, NE	Silt loam	Soybean	Strip till	4/28/20	9/15/20	250	40K

- The study was set up as a randomized complete block with three replications.
- Twenty corn products were evaluated.
- Corn was sprinkler irrigated. Fertility included 100 lb N/acre applied with a streamer bar on 4/27/20, followed by 90 lb N/acre and 15 lb S/acre applied with 360 Y-DROP® applicators on 6/24/20. Weeds were controlled as needed and no fungicides or insecticides were applied.
- Silage was harvested when most of the products were at approximately half-milk line using a silage chopper without a kernel processor. Total biomass was collected and weighed. A subsample of the freshly-chopped material was collected and sent to Dairyland Laboratories Inc. for silage quality analysis.
  - Some corn products (116RM, 120RM, 113RM-A, 118RM, and EXP 115RM) had greensnap at a high level which did not allow for silage tonnage to be calculated but a subsample was taken for silage quality analysis.

## Understanding the Results



Figure 1. The 109RM-A (left) and 117RM-A (right) corn silage products at the time of cutting.



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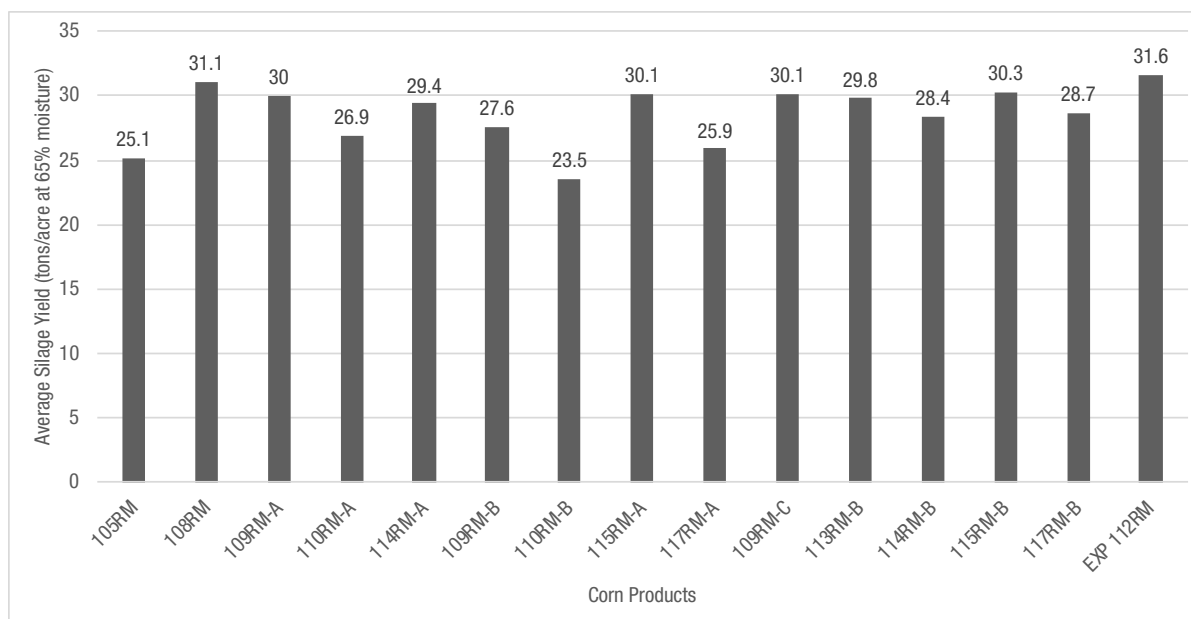


Figure 2. Average silage yield (tonnage) for corn products.

Table 1. Silage quality analysis metrics, performed by Dairyland Laboratories Inc.

Product	% DM	% Starch	% NDF	NDFD 24	NDFD 48	uNDF 24	uNDF 240	IVSD 7hr	% ADF	% CP	TFA	Sugar	% TDN	Lignin % DM	NEL	NEG	2006 milk/ton
105RM	35.0	37.5	36.4	45.2	55.6	19.4	12.0	66.5	22.3	8.5	2.4	3.3	69.5	3.7	0.69	0.48	3186.3
108RM	36.6	40.7	33.9	45.6	56.4	18.0	10.2	65.7	20.0	8.1	2.6	3.0	70.8	3.0	0.71	0.51	3284.3
109RM-A	41.1	45.5	30.2	49.8	61.6	14.5	8.0	67.7	16.8	7.4	2.7	3.6	70.5	2.2	0.69	0.55	3221.0
110RM-A	37.6	40.5	33.8	47.1	58.0	17.2	9.6	68.0	20.0	7.6	2.3	3.6	69.8	2.7	0.69	0.51	3190.3
114RM-A	37.2	40.0	32.5	50.4	61.2	15.5	8.8	66.7	18.4	8.4	2.5	4.0	72.2	2.5	0.71	0.53	3359.3
116RM	41.6	39.5	32.0	48.0	59.3	16.1	9.4	68.2	18.7	8.4	2.5	4.1	69.0	2.7	0.68	0.53	3117.3
120RM	37.4	37.2	34.5	46.6	57.1	17.8	9.9	67.4	20.2	8.0	2.1	4.5	69.8	2.9	0.69	0.51	3195.3
109RM-B	36.9	39.9	33.7	50.5	61.1	16.0	8.6	67.1	19.2	8.3	2.5	3.3	71.7	2.4	0.71	0.53	3323.0
110RM-B	36.4	38.2	34.2	48.7	59.2	16.8	9.4	67.9	20.1	8.1	2.3	4.2	71.0	2.6	0.70	0.51	3274.3
113RM-A	38.7	41.5	32.1	48.2	59.5	15.9	8.8	67.9	18.3	8.1	2.4	3.9	70.4	2.4	0.69	0.53	3225.7
115RM-A	35.0	36.3	35.6	49.2	59.4	17.4	9.8	69.1	20.7	7.7	2.3	4.3	71.6	2.8	0.71	0.51	3322.7
117RM-A	34.4	35.5	35.4	47.5	58.0	17.9	10.1	66.6	20.8	8.5	2.1	4.2	71.0	3.0	0.70	0.49	3287.7
118RM	42.8	40.9	31.5	49.0	60.3	15.5	8.8	67.8	17.8	8.4	2.6	3.2	69.5	2.5	0.68	0.54	3149.7
109RM-C	42.7	47.2	29.6	44.1	56.1	15.8	8.6	67.3	16.8	7.4	2.4	2.9	66.7	2.4	0.65	0.53	2947.3
113RM-B	37.9	41.4	32.6	47.6	58.6	16.4	9.5	68.5	18.8	7.8	2.4	3.5	70.3	2.6	0.69	0.52	3222.3
114RM-B	39.0	42.8	31.4	45.3	56.9	16.6	9.9	67.1	18.8	8.0	2.7	3.4	69.9	3.0	0.69	0.53	3205.3
115RM-B	38.4	46.0	30.7	49.2	60.8	14.9	7.8	67.8	17.2	7.6	2.6	2.8	71.8	2.1	0.71	0.55	3332.0
117RM-B	36.8	40.7	32.7	50.1	60.8	15.7	9.2	67.7	18.8	8.1	2.8	3.3	72.2	2.5	0.71	0.53	3362.0
EXP 112RM	40.6	46.2	28.6	45.2	57.7	15.2	9.0	67.6	16.0	8.2	2.8	3.0	70.0	2.5	0.69	0.55	3202.0
EXP 115RM	37.2	36.9	34.5	49.7	60.2	16.7	9.1	68.3	19.9	8.2	2.1	4.2	70.3	2.6	0.69	0.51	3218.0
LSD (0.1)	3.3	5.2	3.7	2.9	2.5	1.8	1.4	2.0	2.5	0.7	0.3	ND	1.9	0.6	0.02	0.03	149.0

DM – Dry matter; NDF – Neutral detergent fiber; NDFD – Incremented measurement of NDF; uNDF – undigested NDF residue; IVSD 7hr – 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.



# Corn Product Silage Quality and Tonnage

- Corn product tonnage was numerically different but variability in the study did not allow for significant differences to be observed (Figure 2).
- Corn silage quality was different in all parameters tested (Table 1).
- For this study, several products provided statistically equal quality as judged by milk per ton, including 117 RM, 108, 109RM-A, 114RM-A, 109RM-B, 110RM-B, 113RM-A, 115RM-A, 117RM-A, 113RM-B, 115RM-B and EXP 115RM.

## Key Learnings

- Producers should work with their local seed sales team to identify how their branded corn products performed in this study.

## Legal Statements

The information discussed in this report is from a single site, 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.

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

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