



Bayer Corn Product Silage Tonnage and Quality

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.

- The objectives of this study are:
 - » to evaluate different corn products covering a range of relative maturities for high tonnage and good silage quality characteristics.
 - » to provide insights to farmers on different product options to maximize yield and quality potential.

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 tillage	5/1/2021	9/13/2021-9/21/2021	270	32,000

- The study was set up as a randomized complete block with three replications.
- Thirty Bayer corn products with relative maturities from 100 to 120 were evaluated.
- Irrigation was applied as needed using sprinkler irrigation.
- Fertility included 27 lb. N/acre, 60 lb P/acre, 25 lb S/acre, and 0.25 lb Zn/acre applied with strip-till 4/27/21, followed by 120 lb N/acre applied with 360 Y-DROP® applicators on 6/24/21. Weeds were controlled as needed and no fungicides or insecticides were applied.
- Silage was harvested when most of the products were at approximately half to two-thirds-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.



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Understanding the Results

Products	TON @ 65%	% DM	% Starch	% NDF	NDFD 48	uNDF 24	uNDF 240	IVSD 7hr	% ADF	% CP	TFA	SUGAR	% TDN	Lignin % DM	NEL	NEG	2006 MILK/TON
110RM-A	28.2	37.45	44.41	29.7	64.79	13.19	6.95	68.69	17.13	8.45	2.97	1.7	76.66	2.43	0.76	0.59	3703
Exp A	31	37.87	46.31	28.57	63.35	13.25	7.73	67.54	16.47	8.39	2.95	2	76.08	2.59	0.76	0.59	3670
109RM-A	28.8	36.79	42.31	30.87	64.2	13.83	7.8	68	17.93	8.94	2.81	1.68	75.92	2.6	0.75	0.58	3646
111RM-B	30	37.86	45.03	29.64	62.85	13.85	7.76	66.91	17.49	8.58	3.05	2.08	75.64	2.6	0.75	0.59	3634
Exp C	29.7	39.19	43.75	30.97	64.35	13.8	7.25	68.58	17.73	8.03	2.57	2.06	74.27	2.46	0.73	0.58	3512
109RM-B	29.6	39.97	44.32	30.82	62.03	14.62	8.34	67.66	18.32	8.16	2.92	1.8	73.23	2.69	0.72	0.58	3440
103RM-A	27.6	42.21	45.06	30.63	63.8	13.88	7.52	65.75	17.58	8.23	3.02	2.27	72.2	2.45	0.71	0.59	3347
108RM-A	26.5	41.64	42.89	31.05	62.23	14.6	8.09	66.99	18.34	8.34	2.58	2.47	71.47	2.67	0.7	0.57	3295
115RM-A	28.8	40.14	40.74	33.74	60.6	16.33	9.29	67.73	20.47	7.91	2.46	2.23	71.28	2.97	0.7	0.55	3290
118RM-A	29.9	43.55	44.39	31.69	63.05	14.69	8.7	66.98	18.08	7.77	2.94	2.06	70.99	2.76	0.69	0.58	3254
117RM-A	31.1	40.08	42.55	32.84	57.25	17.35	10.69	67.56	20.3	8.11	2.76	1.96	70.6	3.42	0.7	0.54	3265
115RM-B	33.1	42.2	39.76	34.21	60.85	16.4	9.42	67.99	20.68	8.16	2.36	2.09	69.82	3.01	0.68	0.55	3168
113RM-B	29.7	43.28	44.97	29.52	60.21	14.69	7.87	66.93	18.21	8.64	2.74	2.31	69.79	2.62	0.68	0.57	3173
114RM-C	32	46.66	46.15	29.1	61.42	14.03	7.6	66.57	17.75	8.51	2.73	2.52	69.61	2.59	0.68	0.58	3152
112RM-A	32.2	42.14	40.16	34.12	61.17	16.11	9.52	67.07	20.86	8.38	2.46	2.66	69.58	3.16	0.68	0.55	3148
116RM-B	30.4	39.55	35.26	37.41	60.13	17.84	10.21	67.22	23.5	8.39	2.14	2.19	69.54	3.22	0.68	0.52	3146
Exp D	31.6	42.84	40.43	34.17	61.57	16.05	8.78	66.91	20.68	8.16	2.49	2.58	69.51	2.86	0.67	0.55	3139
111RM-A	26.3	46.96	42.61	31.46	62.43	14.73	8.09	67.53	18.61	8.34	2.66	2.91	69.4	2.69	0.67	0.57	3126
105RM-A	29.2	45.71	46.5	27.83	59.64	14.18	7.73	65.96	16.76	8.52	2.78	2.76	69.4	2.52	0.68	0.58	3145
116RM-A	32.7	44.82	40.73	33.96	63.36	15.42	8.76	68.37	20.17	7.87	2.44	1.92	69.19	2.78	0.67	0.56	3097
114RM-B	33	43.86	39.08	35.23	62.46	16.11	9.17	68.03	21.16	8.11	2.4	2.53	69.11	2.95	0.67	0.55	3098
112RM-B	32	46.5	46.69	29.2	60.73	14.32	7.84	67.02	17.93	8.42	2.8	2.25	69.1	2.68	0.67	0.58	3115
113RM-A	32.5	43.79	42.16	32.51	62.14	15.23	8.01	66.97	20.36	8.45	2.56	2.32	69.03	2.77	0.67	0.56	3098
113RM-C	32.5	49.04	45.87	29.9	61.04	14.48	8.37	66.63	18.08	8.23	2.7	2.71	69.02	2.79	0.67	0.57	3107
120RM-A	27.3	38.92	33.64	37.71	57.18	19.32	12.11	68.16	23.12	8.45	2.23	3.44	68.99	3.85	0.68	0.5	3135
100RM-A	26.1	42.67	41.92	32.78	58.61	16.39	9.45	65.6	19.69	8.58	2.62	2.37	68.98	3.08	0.68	0.55	3111
114RM-A	32.8	44.71	43.12	31.45	61.3	15.09	8.43	67.1	19.43	8.39	2.57	2.52	68.52	2.78	0.66	0.56	3064
113RM-D	32.7	45.07	44.97	30.56	59.09	15.4	8.07	67.4	19.24	8.37	2.48	2.3	68.16	2.65	0.67	0.56	3047
119RM-A	31.5	41.47	30.81	42.07	61.44	19.18	11.95	67.73	25.85	8.17	2.05	2.63	67.69	3.9	0.65	0.5	2981
Exp B	27.7	43.83	29.77	41.88	60.98	19.44	11.01	68.37	26.23	8.37	1.74	2.23	65.27	3.66	0.62	0.48	2794
LSD P=.10	2.51	2.14	6.97	5.58	3.15	2.01	2.03	1.35	3.58	0.41	0.36	0.59	2.05	0.62	0.03	0.04	162.9

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.



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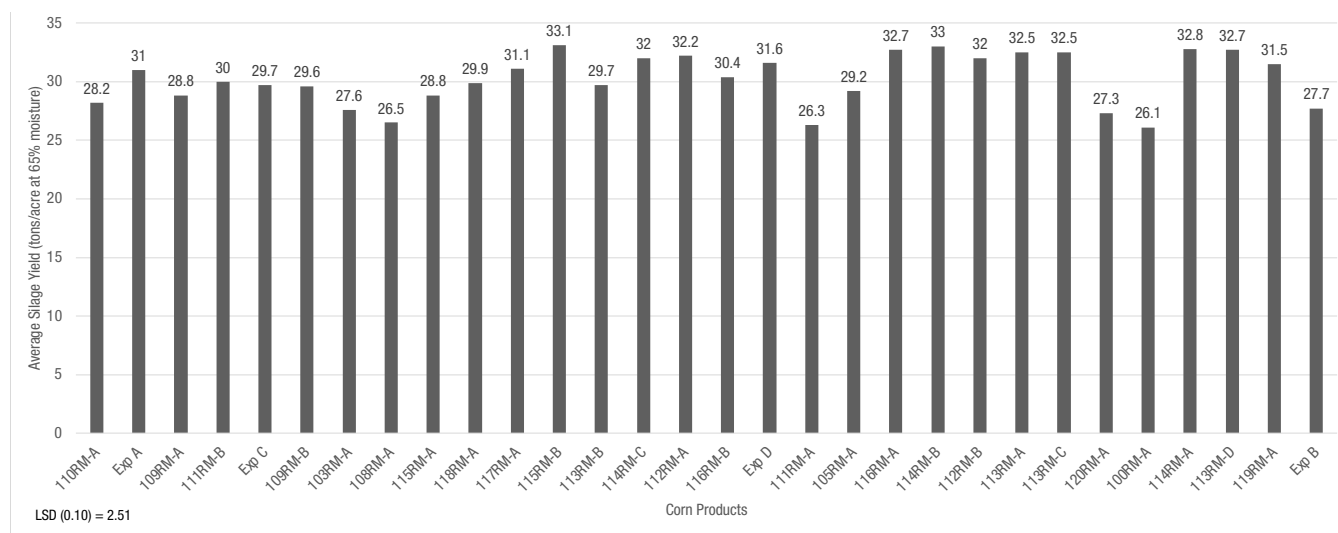


Figure 1. Average silage yield (tons/acre) for Bayer RIB Complete® brand blend corn silage products spanning a wide range of relative maturities.

Results showed a general trend towards increasing yield as relative maturity increased from early maturing to later maturing corn products, with tonnage ranging from 26.1 for the earliest RM product to 33.1 tons per acre for several corn products of 114RM or greater (Figure 1).

Milk/ton was not correlated with relative maturity of the products being tested since some of the earlier products had higher levels of milk/ton than later maturing products. The highest milk/ton value of 3703 resulted from a silage corn product with a RM of 110, while the lowest milk/ton value resulted from a silage corn product with a RM of 119. % TDN correlated with milk/ton but not directly with RM. (Table 1).

In terms of silage quality characteristics, results for each characteristic measured were highly dependent on the specific corn product and not related specifically to the relative maturity. Table 1 lists the quality characteristics for each corn product tested.

Key Learnings

- Producers should work with their local seed sales team to identify the right corn product for their operation
- Corn product selection for silage production will depend on the RM that the grower needs to suit the geography.
- Each corn product, regardless of RM, has a specific set of fiber quality characteristics and growers should consider all of the product options within their optimal RM range to to suit their specific operation.

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.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. 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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