



*Photos by MSU Extension or courtesy*

# 2022 MICHIGAN CORN HYBRIDS COMPARED

EXTENSION BULLETIN E-431

**MICHIGAN STATE UNIVERSITY** | College of Agriculture and Natural Resources

RESEARCH CONDUCTED BY MICHIGAN STATE UNIVERSITY  
Results of the 2022 Growing Season

# COMPANY INDEX

<b>BRAND</b>	<b>CONTACT</b>	<b>BRAND</b>	<b>CONTACT</b>
<b>AG ARMOUR</b>	Ag Armour Seeds 8236 North Williams Rd. St. Johns, MI 48879 <a href="https://ag-armourseeds.com/">https://ag-armourseeds.com/</a>	<b>M &amp; W SEEDS</b>	M & W Seeds Incorporated 8443 Wilcox Road Eaton Rapids, MI 48827 <a href="http://www.mwseeds.com">www.mwseeds.com</a>
<b>CHANNEL</b>	Channel Seed 1299 N 5th Street Columbus, OH 43201 <a href="http://www.channels.com">www.channels.com</a>	<b>NK Brand</b>	Syngenta Seeds, Incorporated 2001 Butterfield Rd. - Suite 1600 Downers Grove, IL 60515 <a href="http://www.syngenta-us.com/seeds/nk">www.syngenta-us.com/seeds/nk</a>
<b>DAIRYLAND</b>	Dairyland Seed P.O. Box 958 West Bend, WI 53095 <a href="http://www.dairylandseed.com">www.dairylandseed.com</a>	<b>RENK</b>	Renk Seed Company 6809 Wilburn Road Sun Prairie, WI 53590 <a href="http://www.renkseed.com">www.renkseed.com</a>
<b>DYNA-GRO</b>	Dyna-Gro Seed 4648 S. Garfield Road Auburn, MI 48611 <a href="http://www.dyna-groseed.com">www.dyna-groseed.com</a>	<b>ROB-SEE-CO</b>	Rob-See-Co 1015 N. 205th St. Elkhorn, NE 68022 <a href="http://www.ruppseeds.com">www.ruppseeds.com</a>
<b>GOLDEN HARVEST</b>	Syngenta Seed 11055 Wayzata Boulevard Minnetonka, MN 55440 <a href="http://www.syngenta.com">www.syngenta.com</a>	<b>SEEDWAY</b>	Seedway LLC 1734 Railroad Place Hall, NY 14463 <a href="http://www.seedway.com">www.seedway.com</a>
<b>LEGACY SEEDS</b>	Legacy Seeds, Incorporated P.O. Box 68 - 290 Depot St. Scandinavia, WI 54799 <a href="http://www.legacyseeds.com">www.legacyseeds.com</a>	<b>SPECIALTY</b>	Specialty Hybrids 306 N Main Street Monticello, IN 47960 <a href="http://www.specialtyhybrids.com">www.specialtyhybrids.com</a>
<b>LEGEND</b>	Legend Seeds P.O. Box 241 De Smet, SD 57231 <a href="http://www.legendseeds.com">www.legendseeds.com</a>	<b>VIKING</b>	Albert Lea Seeds 1414 West Main Street P.O. Box 127 Albert Lea, MN 56007 <a href="mailto:www.seedhouse@alseed.com">www.seedhouse@alseed.com</a>
<b>LG SEEDS</b>	LG Seeds 1122 169th St. Westfield, IN 46074 <a href="http://www.lgseeds.com">www.lgseeds.com</a>		

# 2022

## MICHIGAN CORN PERFORMANCE TRIALS

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*Michigan State University*

### Introduction

The Michigan State University (MSU) Department of Plant, Soil and Microbial Sciences conducts the Michigan Corn Performance Trials (MCPT) each year in cooperation with Michigan State University AgBioResearch, The Ohio State University, seed corn companies, and farmers, to determine yield and quality performance for corn hybrids throughout the state of Michigan.

### Entries

Seed companies are invited to enter their hybrids in the trials and a fee is charged to cover incurred expenses. Separate indices for grain (pg. 10 and 11) and silage (pg. 25) provide a list of all hybrids entered in the 2022 trials. A total of 204 hybrids from 15 brand names make up the 230 entries, which translates into 2,760 separate plots planted across 12 grain locations and 9 silage locations in Michigan in 2022. Hybrids are entered into zones based upon growing degree days and then grouped into Early and Late trials based upon relative maturities. Company names used in association with hybrid numbers refer to the brand. Hybrid numbers are designated by the company.

Hybrids may have a seed-applied insecticide that is not listed in the bulletin. These seed-applied insecticides may enhance yield. The "TRAIT" column lists the abbreviation for a hybrids technology package, Hybrid technologies and their respective abbreviations can be found in Table D.1 (pg. 7). Trait codes used to define these hybrid technologies can be found in Table D.2 (pg. 7). All other hybrid traits not listed in Tables D.1 or D.2, pertaining only to hybrids with the given superscript per the hybrid index (page 10, 11 and 25, respectively), can be found in Table D.3 (pg. 7).

### How to Use This Bulletin

Tables list hybrids alphabetically and contain yield results for each location along with trial averages within each zone. Complete one-year yield results are listed in tables for each trial within each zone, where data is available. Two-year yield results can be found on our website listed below. One-year single-site results are less reliable than multiple year and multiple location averages, therefore one-year single-site results should be interpreted with more caution. Confidence in corn performance data increases as the number of years and the number of testing locations increase. Results for corn grain and corn silage trials are also listed on our website:

<https://www.canr.msu.edu/varietytrials>

Results are the average of four replications grown in close proximity to one another. Two or more plots of the same hybrid in the same field may produce somewhat different results because of uncontrolled variability in the soil and other environmental factors. Replication and randomization of entries are two methods employed to reduce this variability. Because these methods do not eliminate all variability, the magnitude of difference necessary for statistical significance has been calculated for yield, moisture content, and test weight. The least significant difference (LSD) is the amount an individual hybrid would have to differ from another hybrid to be considered significantly different. The coefficient of variability (CV) is indicative of a trial's precision. Trials with low levels of error variation have lower CV values.

The highest yielding hybrid in each trial is indicated with a double asterisk (\*\*), hybrids that are not significantly different from the highest yielding hybrid are indicated with a single asterisk (\*). Other agronomic information relative to each trial is given in Table B for the grain trials (pg. 9) and Table C for the silage trials (pg. 24). Fertilizer amounts are shown as total pounds per acre of N, P2O5, and K2O applied during the season.

### Season in Summary: 2022

Entry forms for participating companies were due March 15th; by the end of March seed was starting to arrive. After a lot of paperwork, printing labels, and placing labels on packets, we began counting seeds and filling packets. Seed packets were sorted by trial and location and organized according to the randomization for each location.

Planting commenced in Ingham County on May 11th and ended in Iosco and Osceola Counties on June 3rd. Changes in county locations for the 2022 season included moving the Missaukee County location to Gingrich Meadows in Osceola County.

Weed control was applied at trial locations as needed. Fertilizer applications were consistent with rates that were necessary based on soil type, soil samples, and cooperator recommendations for the field. Stand counts were conducted at all trial locations between the V4 and V6 growth stages.

Silage harvesting began on September 13th in Branch County, and finished on September 22nd in Iosco and Presque Isle Counties. Grain harvest started on October 22nd in Ingham County and ended November 29th in Presque Isle County.

Due to various uncontrollable circumstances, the Wood and Huron County locations have been dropped. Due to severe lodging, Presque Isle - Early Grain trial was also dropped.

Table A (pg. 5) presents 2022 accumulations of temperature, rainfall, and heat units plus their deviation from 30-year norms. Data is obtained from Michigan State University weather stations located closest to each trial location. Actual accumulation at each location may vary slightly. The weather summary is provided by Dr. Jeff Andresen from the Department of Geography using data from the Michigan State University Agricultural Weather Office.

# 2022 GROWING SEASON WEATHER SUMMARY

Jeff Andresen, *Extension Agricultural Meteorologist* | Department of Geography, Michigan State University

Overall for Michigan, the 2022 May through September growing season averaged out warmer and somewhat drier than normal. Mean temperatures for the state averaged out at 64.1°F, which was 2.8°F above normal and the 17th warmest on record since 1895 and ranks among the warmest 15% of growing seasons. It also was consistent with an upward trend of mean growing season temperatures of about 0.2°F per decade during the past few decades. Base 50°F seasonal growing degree day accumulations ranged from less than 2100 units across far northern sections of the state to more than 3000 units along the Indiana and Ohio state lines (Figure 1). Those totals generally range from more than 50 units below normal across sections of Upper Michigan to more than 200 units above normal across the extreme south. The mean precipitation total for the state was 15.38" which was 0.52" below average and the 44th driest May-September since 1895. However, seasonal precipitation totals varied considerably by location across the state (Figure 2), ranging from less than 12.00" across sections of east central and northern Lower Michigan to more than 20.00" across portions of the southwestern Lower and western Upper Peninsulas.

Prior to the 2022 growing season, the winter of 2021/2022 (December-February) was slightly milder than normal (the state average temperature departure was +1.5°F), but that masked large variability across the state with winter mean values ranging from near to slightly milder than normal levels across southern sections to more than 4°F below normal across western Upper Michigan. Extreme minimum temperatures during the season were not too far from normal, ranging from -25.0°F in south central Upper Michigan to +3.9°F in west central Lower Michigan. Extreme minimum soil temperatures at a 2" depth during the season ranged from +16.9°F in west central Lower Michigan to +33.0°F in northwest Lower Michigan.

Seasonal precipitation totals averaged across the state were just above normal at 5.50" (0.20" above normal) with observed individual site totals ranging from less than 4.00" across northern Lower Michigan to more than 7.00" across northern portions of the Upper Peninsula. At the beginning of April, the U.S. Drought monitor categorized much of the northern half of the Lower Peninsula and southern sections of the Upper Peninsula as either 'Abnormally Dry' (category D0) or in 'Moderate Drought' (category D1) with more normal conditions observed elsewhere.

A progressive upper air pattern across North America during much of late March and April led to the sequential passage of a number of alternating troughing (with precipitation and relatively cold weather) and ridging (with warmer than normal weather) features across the Great Lakes region resulting in regular wide swings in temperature and above normal precipitation totals in most areas. Temperatures associated with some of the passing troughing features resulted in some significant late season snowfall in many areas. The combination of cooler and wetter than normal weather led to significant challenges and delays in early season fieldwork statewide. It also suppressed early growth and phenological development of overwintering crops.

During early May, the formation of large ridging features across the center of the country led to extended periods of mostly sunny, warm, and rain-free weather that accelerated drying of topsoils which allowed rapid progress of spring planting and other fieldwork operations. By

the end of May most spring planting totals were at or even ahead of long-term averages for the date. In addition, topsoil temperatures warming quickly into the 60s and 70s during those periods favored rapid, uniform germination and early growth of planted crops in most areas. Across all the swings in temperature, mean temperatures for May ranged from cooler than normal levels (generally 1-2°F below normal) across northwestern sections of the state to warmer than normal levels across much of Lower Michigan (generally 2-4°F above normal). Precipitation totals for the month varied greatly across the state, ranging from less than 2.00" across northern Lower Michigan (less than 50% of normal) to more than 4.00" across southern and western sections of the Lower Peninsula and western Upper Michigan (120-160% of normal).

In June, Michigan and the Great Lakes region remained on the northern periphery of a large upper air ridging feature that led to periodic heat wave conditions across much of the central and southern USA. In Michigan this resulted occasional incursions of both hot, humid air from the south and relatively cooler air masses from Canada with wide swings in temperature. Mean temperatures across the state averaged out close to the climatological normals for the month, ranging from near normal across northern sections to 1-2°F above normal in the south. Precipitation totals were variable, ranging from 3.00-4.00" or more across northern sections of the state to less than 1.50" (40-70% of normal) across central sections. Just as importantly, potential evapotranspiration rates, the rate at which water could evaporate if it were available on plant and/or soil surfaces, were much above normal over most of the state due to sunnier than normal weather. This combination of conditions led to rapid drying of topsoils, high crop water demands, and to the appearance of water stress symptoms later in the month, especially on coarse-textured soils. By the end of the month, an area of D0 or 'abnormally dry' conditions as categorized by the U.S. Drought Monitor had rapidly developed across central and northern sections of Lower Michigan (26% of the state by area). Seasonal base 50°F growing degree day accumulations (since May 1st) across the state ranged from about 50 units below normal across sections of the Upper Peninsula (2-4 calendar days behind) to more than 100 units above normal (3-6 days ahead) across the southeastern Lower Peninsula.

Mean temperatures for July averaged out close to normal over most of the state, with monthly departures ranging from near zero across northern sections of the state to 1-2°F above normal in the south. Precipitation totals were highly variable depending on location but mostly below normal, ranging from less than 2.00" across northwestern sections of the Lower Peninsula to 4.00" or more across southwestern sections of the state. Dry soils and lack of water became an increasing challenge during the month, especially across central sections of the state. A widespread rain event on the 24th brought relief to some sections of the state, but as of the end of the month, 46% of the state was still classified as unfavorably dry (category D0) or in moderate drought (category D1). As is the case with many weather-related crop effects, the impacts of the dryness varied greatly by location but resulted in elevated levels of moisture stress for corn nearing or entering silking/pollination stages in some areas.

- Weather Continued On Page 6.

**TABLE A. GROWING SEASON SUMMARY - TEMPERATURE, PRECIPITATION AND GROWING-DEGREE-DAY ACCUMULATIONS**

COUNTY	MAY			JUNE			JULY			AUGUST			SEPTEMBER			SEASON			
	OBS	NORM	DEV	OBS	NORM	DEV	OBS	NORM	DEV	OBS	NORM	DEV	OBS	NORM	DEV	OBS	NORM	DEV	
Zone 1	TEMP	60.3	46.9	13.4	68.8	58.5	10.3	71.3	67.7	3.6	69.7	71	-1.3	63	69.3	-6.3	66.62	66	0.62
	PPT	3.98	4.24	-0.26	1.49	4.26	-2.77	8.68	4.09	4.59	2.87	4.12	-1.25	3.58	3.38	0.2	20.6	20.09	0.51
	GDD	270	352	-82	546	538	8	662	638	24	614	600	14	433	423	10	2525	2551	-26
Zone 1	TEMP	60.8	58.6	2.2	68.6	68	0.6	71.4	71.3	0.1	69.9	69.5	0.4	62.4	62.4	0	66.62	66	0.62
	PPT	3.03	4.12	-1.09	2.23	3.97	-1.74	5.93	4.18	1.75	8.87	4.42	4.45	1.59	3.41	-1.82	21.65	20.1	1.55
	GDD	391	342	49	561	545	16	667	650	17	619	603	16	415	403	12	2653	2543	110
Zone 2	TEMP	62	59	3	69	68.5	0.5	71.8	72.2	-0.4	70	70.2	-0.2	61.4	63.1	-1.7	66.84	66	0.84
	PPT	5	4.04	0.96	4.16	4.11	0.05	3.98	3.44	0.54	5.08	3.4	1.68	0.28	3.32	-3.04	18.5	18.31	0.19
	GDD	399	361	38	436	554	-118	673	662	11	597	616	-19	267	431	-164	2372	2624	-252
Zone 2	TEMP	63.2	57.9	5.3	71	67.5	3.5	73.5	71.3	2.2	72.1	69.5	2.6	64.2	62.1	2.1	68.8	66	2.8
	PPT	4.76	3.66	1.1	1.56	3.85	-2.29	2.3	2.94	-0.64	5.97	3.48	2.49	2.17	2.75	-0.58	16.76	16.68	0.08
	GDD	451	342	109	614	539	75	719	654	65	688	611	77	455	414	41	2927	2560	367
Zone 2	TEMP	61.2	58.1	3.1	68.6	67.9	0.7	72.1	71.6	0.5	70.8	69.5	1.3	63.2	62.3	0.9	67.18	66	1.18
	PPT	3.42	3.41	0.01	2.23	3.28	-1.05	2.99	2.83	0.16	3.87	3.85	0.02	2.44	2.81	-0.37	14.95	16.18	-1.23
	GDD	399	333	66	551	542	9	679	663	16	649	608	41	426	413	13	2704	2559	145
Zone 3	TEMP	61	58.8	2.2	67.2	68.4	-1.2	71.3	72.4	-1.1	70.2	40.6	29.6	63.7	63.1	0.6	66.68	66	0.68
	PPT	2.35	3.99	-1.64	1.04	3.94	-2.9	3.75	3.86	-0.11	4.27	3.55	0.72	1.91	3.42	-1.51	13.32	18.76	-5.44
	GDD	390	350	40	499	559	-60	657	684	-27	603	640	-37	437	427	10	2586	2660	-74
Zone 3	TEMP	60.2	54.9	5.3	66.9	65.3	1.6	70.3	70	0.3	69.4	68.5	0.9	63	62.1	0.9	65.96	66	-0.04
	PPT	1.9	3.25	-1.35	2.2	3.21	-1.01	2.23	3.57	-1.34	3.59	3.4	0.19	3.24	3.11	0.13	13.16	16.54	-3.38
	GDD	345	265	80	486	468	18	621	602	19	595	559	36	406	393	13	2453	2287	166
Zone 3	TEMP	57.9	55.8	2.1	64.1	64.5	-0.4	69.4	69.1	0.3	67.9	68	-0.1	61.6	61.9	-0.3	64.18	66	-1.82
	PPT	3.69	3.36	0.33	4.87	3.65	1.22	4.88	3.38	1.5	4.27	3.16	1.11	2.34	3.23	-0.89	20.05	16.78	3.27
	GDD	318	295	23	449	462	-13	609	594	15	562	562	0	394	393	1	2332	2306	26
Zone 3	TEMP	58.7	57.7	1	67.8	67	0.8	71.2	70.5	0.7	69.8	68.9	0.9	62.2	61.6	0.6	65.94	66	-0.06
	PPT	2.68	4.05	-1.37	1.89	3.62	-1.73	3.4	3.12	0.28	5.9	3.5	2.4	1.53	3.04	-1.51	15.4	17.33	-1.93
	GDD	352	354	-2	533	528	5	650	629	21	620	592	28	400	416	-16	2555	2519	36
Zone 4	TEMP	58.6	54.2	4.4	65.4	64.7	0.7	69.3	68.8	0.5	69	67.4	1.6	61.7	60.1	1.6	64.8	66	-1.2
	PPT	2.21	3.11	-0.9	3.23	3.54	-0.31	3.24	3.5	-0.26	4.59	3.4	1.19	1.59	2.83	-1.24	14.86	16.38	-1.52
	GDD	350	273	77	490	465	25	597	574	23	592	531	61	399	358	41	2428	2201	227
Zone 4	TEMP	57.5	55.7	1.8	63.5	65.4	-1.9	69.1	69.5	-0.4	67.4	67.3	0.1	60.5	59.7	0.8	63.6	66	-2.4
	PPT	5.68	3.73	1.95	1.34	3.32	-1.98	3.46	3.3	0.16	6.74	4.07	2.67	2.14	3.01	-0.87	19.36	17.43	1.93
	GDD	337	308	29	338	485	-147	580	595	-15	548	542	6	364	369	-5	2167	2299	-132
Zone 4	TEMP	58.1	54.9	3.2	63.4	64.4	-1	67.8	68.8	-1	65.9	67.6	-1.7	59.1	60.4	-1.3	62.86	66	-3.14
	PPT	1.42	3.04	-1.62	3.25	2.87	0.38	1.53	3.24	-1.71	3.74	3.28	0.46	1.84	3.17	-1.33	11.78	15.6	-3.82
	GDD	310	302	8	289	468	-179	310	583	-273	444	552	-108	241	377	-136	1594	2282	-688

TEMP = Mean temperature (°F)

PPT = Precipitation (inches)

GDD = Growing Degree Day calculated at base 50°F, with an 86°F cutoff

OBS = Totals observed in 2022

NORM = Normals calculated over 30 year period (1981-2010)

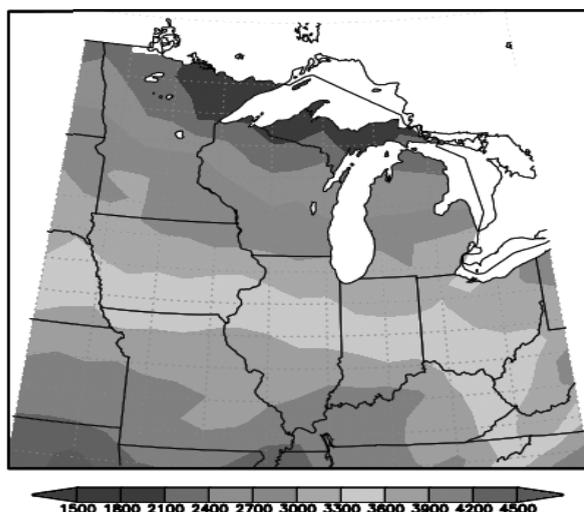
DEV = Deviation of observed from normal

Table courtesy of MSU Agricultural Weather Office (517-355-0231)

## - Weather Continued From Page 4

Following a hot, humid start of August and a cooler than normal second week, temperatures during the second half of the month stabilized close to the long term normals. A widespread heavy rain event on the 3rd and 4th of the month brought relief and significantly improved growing conditions in many central and southern areas of the state. Immediately following that event, there was a stretch of unusually warm, humid weather from the 3rd-8th of August during which the dewpoint temperatures (a direct measure of humidity, the higher the dewpoint, the greater the humidity) in most southern and central sections of the state never fell below 70F (climatologically very uncommon) with extended evening/overnight wetting events (some in excess of 12 hours per day) that led to a sudden and recent surge of plant disease pressure. Mean temperatures for the month averaged out close to slightly above normal levels, with departures generally ranging from 1-2°F in most areas of the state. Monthly precipitation totals were well above normal in most areas, ranging from just over 3.00" across extreme southwestern and southeastern sections of Lower Michigan to more than 5.00" across large portions of the western Lower Peninsula (generally from 100-150% of normal). Besides the heavy rain event on the 3rd-4th, the monthly totals also included two widespread heavy rain events across western and northern sections of the state on the 13th-14th and the 28th-29th. The passage of a strong cold front on the 29th led to a major severe weather outbreak across the southern half of the Lower Peninsula with more than 50 reports of weather-related damage, mostly the result of damaging straight-line winds. With wetter than normal conditions in many sections of the state, soil moisture levels increased relative to levels earlier in the growing season, although dryness continued as a problem in some central and eastern sections of Lower Michigan.

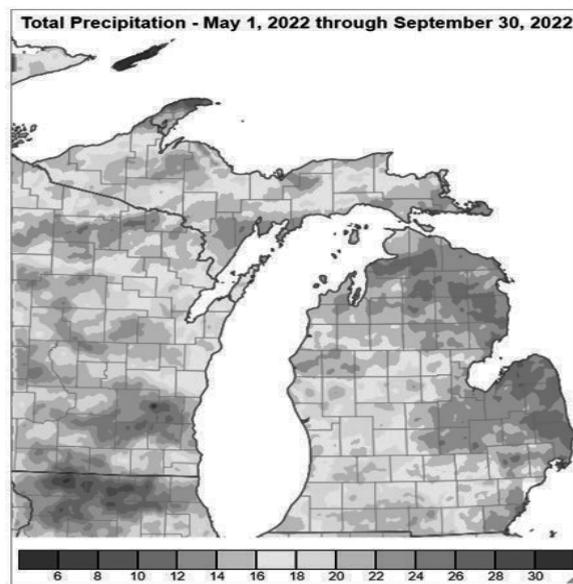
A broad upper air ridging feature across central sections of North America resulted in mostly warmer and drier than normal weather across Michigan and the Great Lakes region during early September.



**Figure 1.** Base 50°F growing degree day totals from May 1st-September 31st, 2022. Daily degree day totals are calculated with 86°F and 50°F upper and lower cutoffs (the "corn" method). Image courtesy of the Midwestern Regional Climate Center, West Lafayette, IN.

With the exception of western portions of Upper Michigan and the northwestern Lower Peninsula where rainfall was heavier than normal, most areas of Michigan recorded below normal precipitation totals during the month of September. Monthly rainfall totals ranged from less than 1.50" across southern and eastern portions of Lower Michigan to more than 4.00" across northwestern Lower Michigan. Many of the days during late September and early October were fair, mild, and dry which favored harvest activities and winter wheat planting in most areas. Mean temperatures for September generally ranged from near normal across northern sections of the state to 1-3°F above normal elsewhere. The first freezing temperatures (32°F or lower) of the season were observed across some northern and central sections of the state during the last week of the month and the first few days of October. However, very few locations had recorded a first killing freeze (28°F or lower) as of the first week of October.

The formation of a deep upper air low across the Great Lakes region late during the second week of October brought unseasonably cool temperatures, frequent precipitation and an early taste of winterlike weather to Michigan. The system brought the first significant snowfall of the season to many northern areas of the state with accumulations more than 1 foot in some sections of western Upper Michigan. The combination of wet snow and strong winds with the system with leaves still on many trees led to a number of power outages. In general, the weather system brought most outdoor fieldwork activities to a halt by the middle of the month. Fortunately, warmer and drier than normal weather prior to the event during late September and early October and again in late October led to rapid progress in most harvest activities and the season ended near or even slightly ahead of normal for many growers. At the end of the month and season, abnormally dry conditions as defined by the U.S. Drought Monitor continued across 41% of the state including eastern and southern sections of the Lower Peninsula and western sections of Upper Michigan.



**Figure 2.** Total precipitation (inches), May 1- September 30, 2022. Figure courtesy of Northeastern Regional Climate Center, Ithaca, NY.

## HYBRID TECHNOLOGIES

**Table D.1**

TECHNOLOGY	TECH. ABBREVIATION	TRAITS <sup>1</sup>
AcreMax	AM	GT, LL, CB
Agrisure 3120 E-Z	BZ	GT, LL, CB
Agrisure 3122 E-Z	3122 E-Z	GT, LL, CB, RW
Agrisure Duracade 5122 E-Z	D1	GT, LL, CB, RW
Agrisure Duracade 5222 E-Z	D2	GT, LL, CB, RW
Agrisure Viptera 3110	VR	GT, LL, CB
Agrisure Viptera 3220 E-Z	VZ	GT, LL, CB
CONV	CONV	CONV
Powercore	PW	GT, LL, CB
Powercore Enlist	PWE	GT, LL, CB
Qrome	Q	GT, LL, CB, RW
SmartStax	STX	GT, LL, CB, RW
SmartStax RIB Complete	STXRIB	GT, LL, CB, RW
Trecepta	TRE	GT, CB
Trecepta RIB	TRERIB	GT, CB
VT DoublePRO	VT2P	GT, CB
VT DoublePRO RIB Complete	VT2PRIB	GT, CB

<sup>1</sup> Traits found in Trait Codes Table

## OTHER

**Table D.3 HYBRID TRAITS**

1	Drought Tolerant
2	Viptera (BL: Broad Leaf)
3	Western Bean Cutworm
4	Rootworm
5	Artersian
6	Rootworm; Corn Earworm; European Corn Borer; Fall Armyworm; Stalk Borer; Sugarcane Borer; Southwestern Corn Borer; Corn Rootworm
7	Corn Earworm; Fall Armyworm; Stalk Borer; Sugarcane Borer; Southerwestern Corn Borer
8	Black Cutworm; Corn Earworm; Fall Armyworm; Stalk Borer; Sugarcane Borer; Southwestern Corn Borer
9	Black Cutworm; Corn Earworm; European Corn Borer; Fall Armyworm; Stalk Borer; Sugarcane Borer; Southwestern Corn Borer; True Armyworm; Western Bean Cutworm

<sup>1</sup> Only pertains to hybrids with the given superscript in Hybrid Index

**Table D.2 TRAIT CODES**

Code	Trait
CONV	Conventional
GT	Glyphosate Tolerant (RR)
LL	Liberty Link
CB	Corn Borer
RW	Corn Rootworm

# 2022

## GRAIN PERFORMANCE TRIALS

### Introduction

The grain index (pg. 10 and 11) contains a list of all hybrids planted in the 2022 grain trials. County results are reported in the following tables:

**Tables 1E/1L Zone 1 - Branch, Cass, and Lenawee**

**Tables 2E/2L Zone 2 - Ingham, Ottawa, and Saginaw**

**Tables 3E/3L Zone 3 - Huron\*, Mason, and Montcalm**

**Tables 4E/4L Zone 4 - Iosco, Presque Isle, and Osceola**

**Tables 5E/5L Conventional Trial - Ingham (Z2), Montcalm (Z3), and Saginaw (Z2)**

\*Locations dropped due to uncontrollable events

The map of Michigan (lower right) shows each zone and the locations where the trials were located.

### Methods

Three trial locations were planted in each of four maturity zones. These zones were based on available growing degree-day units (GDU) established from long-term weather records. Hybrids entered in a zone were tested in each of the three designated locations. Entries for zone 1, zone 2, zone 3, and zone 4 were divided into two maturity groups, early and late, based on the relative maturity (RM) of each hybrid provided by the seed companies.

Variety trials were conducted on farmers' fields, Michigan State University AgBioResearch Stations, and The Ohio State University Ohio Agricultural Research and Development Center. Planting was accomplished with an Almaco Seed Pro 360 vacuum planter equipped with precision metering units, Kinze planting units and, Trimble GFX-750 paired with a NAV-900 controller provided the GPS signal. Four row plots were planted at a uniform length of 22 feet with a 3-foot alleyway at 30-inch row spacing. Plots were planted at a population of 33,264 seeds per acre. Experimental design, data acquisition, analysis of variance, and data summarization were facilitated in part by Agronomix software, Genovix. The experimental layout was a four-replication, randomized complete block design. Hybrid performance is reported as the adjusted mean averaged from four replicated plots.

All plots within a location were managed uniformly with the same date of planting, fertilizer applications, pest control, harvest date and other management practices. In the field, hybrids were identified only by a plot number to assure unbiased comparisons. Trials in Branch, Cass, and Ottawa counties were irrigated.

Data was collected on the center two rows of each plot. Target population rates and average trial populations are listed with other important agronomic information in Table B (pg. 9). Stalk lodging (%SL) measurements were recorded during harvest. All plants broken below the ear and/or leaning more than 45 degrees were counted as a lodged plant. Moisture content (%H<sub>2</sub>O) and field weights were measured by a Harvest Master™ single plot high capacity Grain Gage™ HM800 System that is mounted on the Kincaid 8-XP plot combine.

Grain yields are reported in bushels per Acre (Bu/A) and is adjusted to a standard of 15.5 percent moisture. Data was recorded on a Panasonic FZ-G1 Toughpad using Harvest Master™ Software.

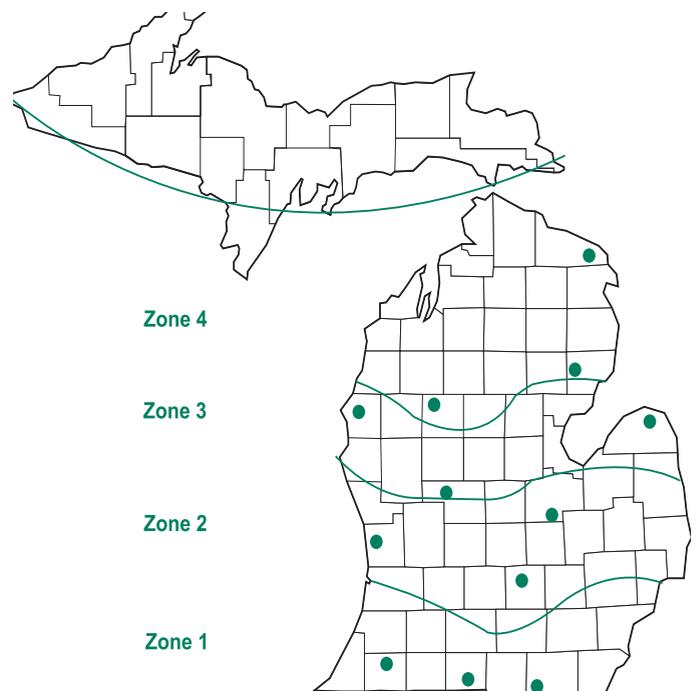
Grain test weight (Twt) is reported at harvest moisture. Automated test weight equipment loses some accuracy as harvest moistures increase. Test weight values should be used to determine relative rank and not as a precise weight.

### Results

The tables report the following information about the hybrids tested:

1. Moisture content at harvest (%H<sub>2</sub>O)
2. Yield of shelled corn corrected to 15.5 percent moisture (Bu/A)
3. Test weight at harvest moisture (Twt)
4. Percent stalk lodging (plants broken below the ear and/or 45 degrees off vertical at harvest) (%SL)
5. Percent stand of target population (%Sd)

### 2022 Grain Trial Locations



**TABLE B.**

**AGRONOMIC TABLE FOR GRAIN TRIAL LOCATIONS**

County	Planting Date	Grain Harvest	Previous Crop	Fertilizer N-P-K	Soil Type	Soil Test <sup>1</sup>	Cooperator	Location	
Zone 1	CASS (Irrigated)	5/24	11/11	Soybean	174-10-3	Loam	PH 6.5, P 20, K 157	Brossman's Farm George Brossman	Vandalia
	BRANCH (Irrigated)	5/24	11/14	Soybean	199-8-2	Loamy Sand	PH 7.3, P 98, K 104	Huff Farms Kyle Huff	Coldwater
	LENAWEE	6/1	11/17	Corn	167-7-2	Loamy Sand	PH 6.6, P 160, K 166	Raymond & Stutzman Farm Tim Stutzman	Seneca
Zone 2	INGHAM	5/11	10/22	Soybean	169-8-2	Sandy Clay Loam	PH 6.1, P 23, K 90	Plant, Soil and Microbial Sciences Facility MSU	East Lansing
	OTTAWA (Irrigated)	5/17	11/10	Corn	202-10-3	Sand	PH 6.6, P 74, K 132	Ottawa Station Farms Adam Geertman	West Olive
	SAGINAW	5/25	11/7	Soybean	171-9-3	Sandy Clay Loam	PH 6.4, P 45, K 132	Fred Gross Farms Peggy Gross, Dick Birchmeier	New Lothrop
Zone 3	HURON			LOCATION DROPPED			Wil-Le Farms Ron, Ed and Chris McCrea	Bad Axe	
	MONTCALM	6/2	11/23	Soybean	171-9-3	Sandy Loam	PH 6, P 22, K 76	Karnatz Farms Scott Karnatz	Greenville
	MASON	6/2	11/9	Corn	174-10-3	Sandy Loam	PH 6, P 66, K 96	Robert Ohse Ryan Ohse	Scottsville
Zone 4	IOSCO	6/3	11/8	Corn	171-9-3	Sandy Loam	PH 7.3, P 57, K 191	Double B Dairy Jeremy, Tim and Roger Beebe	Hale
	OSCEOLA	5/13	11/9	Soybean	26-11-3	Sand	PH 6.7, P 47, K 90	Gingrich Meadows Brandon Gingrich	Le Roy
	PRESQUE ISLE	6/3	11/29	Corn	170-8-2 + manure	Sandy Loam	PH 7.5, P 63, K 111	Ponik Farms Paul Ponik, Jeremy Karsten	Posen

<sup>1</sup> - P and K reported in m3-ppm

# GRAIN HYBRID INDEX

COMPANY/HYBRID	RM	TECHNOLOGY	TABLE	COMPANY/HYBRID	RM	TECHNOLOGY	TABLE
<b>AG ARMOUR</b>				<b>GOLDEN HARVEST (cont.)</b>			
AA9100	91	VR	3E	G00A97-3120A	100	BZ <sup>1</sup>	2E,3L
AA9304	93	D1	3E	G02K39-5122	102	D1	2L,3L
AA10253	102	PWE	2L	G07G73-5122	107	D1	1E
AA10848	108	D1	1L	G08R52-3220	108	VZ <sup>2</sup>	1L
				G10L16-5222A	110	D2 <sup>1,2</sup>	1L
				G12S75-5122	112	D1	1L
<b>DAIRYLAND SEED</b>				<b>LEGACY</b>			
DS-2080AM	80	AM	4E	LC334-21 VT2P	83	VT2P	4E
DS-2505Q	85	Q	4E	LC354-20 3110	85	VR	4E
DS-2531AM	85	AM	4E	LC414-21 VT2P	91	VT2P	4L
DS-2919AM	89	AM	4E	LC444-21	94	CONV	5E
DS-3022AM	90	AM	3E,4L	LC451-21 VT2P	95	VT2PRIB	3E
DS-3162Q	91	Q	3E,4L	LC-3517	95	CONV	5E
DS-3203AM	92	AM	3E,4L	LC482-21 VT2P	96	VT2P	3E
DS-3477AM	94	AM	3E	LC464-21 3120	96	BZ	3E
DS-3550Q	95	Q	2E,3E	LC482-21	96	CONV	5E
DS-3601AM	96	AM	2E,3E	LC474-20 TRE	97	TRERIB	2E,3E
DS-3727AM	97	AM	2E,3L	LC493-21 5122	99	D1	2E,3L
DS-3959AM	99	AM	1E,2E,3L	LC-4248	100	CONV	5E
DS-3900AM	99	AM	1E,2L,3L	LC-4248 VT2P	100	VT2PRIB	3L
DS-4014Q	100	Q	1E,2L	LC511-21 SSX	101	STXRIB	2E,3L
DS-4018AM	101	AM	1E,2L	LC-5217 VT2P	102	VT2PRIB	2L,3L
DS-4310Q	103	Q	1L,2E	LC525-21 PW	102	PW	2L,3L
DS-4510Q	105	Q	1L	LC-5217	102	CONV	5L
DS-4878AM	108	AM	1L	LC525-21	102	CONV	5L
DS-4917AM	109	AM	1L	LC554-21 DGVT2P	104	VT2P <sup>1</sup>	1E,2L
DS-5095AM	110	AM	1L	LC544-22	104	CONV	5L
DS-5161Q	111	Q	1L	LC564-20 PW	106	PW	1E,2L
DS-5250AM	112	AM	1L	LC564-20	106	CONV	5L
DS-5279Q	112	Q	1L	LC594-21 VT2P	109	VT2P	1L
<b>DYNA-GRO SEED</b>				<b>LEGEND</b>			
D31VC23	91	VT2PRIB	4L	9191VIP3110A	91	VR	3E
D34VC93	94	VT2PRIB	2E,3E,4L	48392 SS RIB	92	STXRIB	3E
D36VC66	96	VT2PRIB	2E,3E,4L	9V20AM	96	AM	3E
D40VC41	100	VT2PRIB	2E,3L	4397 TRE RIB	97	TRERIB	2E
D41SS60	102	STXRIB	3L	9200 VT2P RIB	100	VT2P	2E
D44DC73	104	VT2PRIB <sup>1</sup>	2L	5800 VT2P RIB	100	VT2P	2E
D45TC55	105	TRERIB	1E,2L				
D48VC84	108	VT2PRIB	1L				
D50VC09	110	VT2PRIB	1L				
<b>GOLDEN HARVEST</b>							
G87A53-3220	87	VZ <sup>2</sup>	4E				
G91V51-5222A	91	D2 <sup>1,2</sup>	3E,4L				
G93A49-5122	93	D1	3E				
G95D32-3220	95	VZ <sup>2</sup>	2E,3E				
G97A36-3220	97	VZ <sup>2</sup>	2E,3E				
G99A37-5222	99	D2 <sup>2</sup>	2E,3L				

## OTHER HYBRID TRAITS:

- <sup>1</sup> DT  
<sup>2</sup> VIPTERA (BL: BROAD LEP.)  
<sup>3</sup> WBC  
<sup>4</sup> RW  
<sup>5</sup> ARTESIAN  
<sup>6</sup> BCW, CEW, ECB, FAW, SB, SCB, SWB, CR  
<sup>7</sup> CEB, FAW, SB, SCB, SWB  
<sup>8</sup> BCW, CEW, FAW, SB, SCB, SWB  
<sup>9</sup> BCW, CEW, ECB, FAW, SB, SCB, SWB, TAW, WBC

# GRAIN HYBRID INDEX (cont.)

COMPANY/HYBRID	RM	TECHNOLOGY	TABLE	COMPANY/HYBRID	RM	TECHNOLOGY	TABLE
<b>M&amp;W</b>				<b>ROB-SEE-CO</b>			
MW97A VT2P	97	VT2PRIB	2E,3E,4L	RC4166-DV	91	VZ	3E
MW98A TRE	98	TRERIB <sup>3</sup>	2E,3L	RC4518-VT2P	94	VT2P	2E,3E
46T29	99	VT2PRIB	2E,3L	D98-43-TRE	98	TRE	1E,2E,3L
46T28	99	CONV	5E	D99-08-VT2P	99	VT2P	1E,2E
45T56	100	VT2PRIB	2E,3L	RC5134-PCE	101	PW	1E,2E
45T55	100	CONV	5E	D05-16-VT2P	105	VT2P	1E
45V21	103	VT2PRIB	1E,2L,3L	RC5768-VT2P	107	VT2P	1E
MW103A VT2P	103	VT2PRIB	1E,2L,3L	RC6038-DV	108	D2	1L
44V74	105	D2 <sup>3</sup>	2L	D10-16-VT2P	110	VT2P	1L
MW105A CNV	105	CONV	5L	RC6170-DV	111	D1	1L
44R33	106	CONV	5L				
44V42	107	VT2PRIB	1E,2L	<b>SEEDWAY</b>			
44V40	107	CONV	5L	SW 9333SS	93	STX <sup>8</sup>	3E
44V83	107	VZ <sup>3,4</sup>	1E	SW 9375VT	93	VT2P <sup>7</sup>	3E
43V69	111	TRERIB <sup>3</sup>	1L	SW 9726TR	97	TRE <sup>9</sup>	3E
43V43	113	VT2P <sup>1</sup>	1L	SW 0030VT	100	VT2P <sup>7</sup>	3L
<b>RENK</b>				<b>SPECIALTY HYBRIDS</b>			
RK297VT2P	88	VT2P	4E	27D728	97	VT2P	2E
RK400VT2P	93	VT2P	4L	30DT192	100	TRE	2E
RK485DGV2P	94	VT2P <sup>1</sup>	3E	34D651	104	VT2P	2L
RK444VT2P	94	VT2P	4L	36D260	106	VT2P	1E
RK561DGV2P	96	VT2P <sup>1</sup>	3E	37D832	107	VT2P	1E,2L
RK593VT2P	97	VT2P	3E	38D871	108	VT2P	1L,2L
RK590VT2P	98	VT2P	3L	39G569	109	VT2P <sup>1</sup>	1L
RK579DGV2P	99	VT2P <sup>1</sup>	3L	41A392	111	STX	1L
RK600VT2P	100	VT2P	2E				
RK600	100	CONV	5E	<b>VIKING</b>			
RK609VT2P	101	VT2P	2E	O.52-96P	96	CONV	5E
RK615SSTX	102	STX	2L	O.45-97UP	97	CONV	5E
RK642	103	CONV	5L	O.85-00P	100	CONV	5E
RK642VT2P	103	VT2P	2L	O.46-02P	102	CONV	5L
RK625DGV2P	104	VT2P <sup>1</sup>	2L	O.84-04	104	CONV	5L
RK715SSTX	105	STX	2L				
RK710DGV2P	107	VT2P <sup>1</sup>	2L				
RK700SSTX	108	STX	1L				
RK774VT2P	108	VT2P	1L				
RK805VT2P	110	VT2P	1L				
RK801SSTX	110	STX	1L				
RK821SSTX	111	STX	1L				
RK826VT2P	111	VT2P	1L				

OTHER HYBRID TRAITS:

<sup>1</sup> DT

<sup>2</sup> VIPTERA (BL: BROAD LEP.)

<sup>3</sup> WBC

<sup>4</sup> RW

<sup>5</sup> ARTESIAN

<sup>6</sup> BCW, CEW, ECB, FAW, SB, SCB, SWB, CR

<sup>7</sup> CEB, FAW, SB, SCB, SWB

<sup>8</sup> BCW, CEW, FAW, SB, SCB, SWB

<sup>9</sup> BCW, CEW, ECB, FAW, SB, SCB, SWB, TAW, WBC

TABLE 1E.

## BRANCH, CASS &amp; LENAWEЕ COUNTY GRAIN TRIALS - EARLY (107 Day and Earlier)

ZONE 1

2022		Early - TRIAL AVERAGE						Branch - Early			Cass - Early			Lenawee - Early							
BRAND / HYBRID	RM TRAIT	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd					
Dairyland Seed DS-3900AM	99 AM	17.2	219.3 *	55.6	0	95	15.3	218.6	56.7	0	97	17.1	251.0	56.0	0	94	19.1	188.4	54.0	0	96
Dairyland Seed DS-4014Q	100 Q	17.7	213.6 *	53.7	0	98	15.5	205.9	56.3	0	97	18.1	245.5	54.3	0	97	19.5	189.4	50.6	0	99
Dairyland Seed DS-4018AM	101 AM	17.5	227.1 *	55.2	0	93	15.9	234.4 *	57.0	0	93	17.7	242.7	55.4	0	94	18.9	204.3 *	53.1	0	92
Dairyland Seed DS-4310Q	103 Q	17.8	223.8 *	54.1	0	96	15.6	213.1	56.2	0	98	19.0	241.8	53.7	0	98	18.6	216.4 **	52.5	0	93
Dairyland Seed DS-4510Q	105 Q	17.6	228.4 *	54.1	0	97	15.5	213.6	55.9	0	99	18.8	257.5	54.3	0	101	18.4	214.1 *	52.0	0	93
Dyna-Gro Seed D45TC55	105 TRERIB	18.2	225.8 *	54.3	0	101	15.9	233.0 *	56.2	0	99	19.4	252.9	53.7	0	101	19.4	191.4	53.1	0	102
Golden Harvest G07G73-5122	107 D1	19.2	213.6 *	53.6	0	93	17.4	214.5	55.7	0	97	20.5	238.9	52.1	0	96	19.8	187.3	53.0	0	88
Legacy Seeds LC554-21 DGV2P	104 VT2P	17.3	233.8 **	54.4	0	100	15.2	222.1	55.6	0	98	18.6	279.6 **	54.5	0	103	18.1	199.9 *	53.1	0	98
Legacy Seeds LC564-20 PW	106 PW	18.6	219.2 *	52.9	0	89	16.3	214.1	54.9	0	93	19.4	242.3	51.7	0	91	20.1	201.2 *	52.3	0	82
M&W Seeds 44V42	107 VT2PRIB	17.9	201.1	57.1	0	90	15.6	235.0 *	58.7	0	89	18.8	238.2	56.9	0	96	19.3	130.1	55.6	0	86
M&W Seeds 44V83	107 VZ	19.6	224.4 *	53.3	0	93	17.9	247.3 **	54.8	0	97	20.9	250.4	52.4	0	91	20.2	175.7	52.7	0	91
M&W Seeds 45V21	103 VT2PRIB	17.4	214.7 *	55.2	0	95	15.2	226.3	57.0	0	97	18.1	244.9	55.5	0	97	18.8	172.9	53.2	0	92
M&W Seeds MW103A VT2P	103 VT2PRIB	17.7	207.7	55.9	0	94	16.0	216.4	57.1	0	92	18.5	253.8	55.9	0	96	18.6	152.7	54.6	0	92
NK Seeds NK0696-5122	106 D1	19.0	198.5	53.7	0	96	16.3	222.5	56.6	0	95	20.2	233.9	52.0	0	94	20.6	139.0	52.5	0	98
Rob-See-Co D05-16-VT2P	105 VT2P	17.9	213.6 *	55.5	0	95	15.7	225.4	57.5	0	96	18.7	264.6 *	54.4	0	95	19.2	151.0	54.8	0	95
Rob-See-Co D98-43-TRE	98 TRE	16.7	220.2 *	54.8	0	101	15.0	238.4 *	56.0	0	100	17.4	255.9	55.2	0	100	17.8	166.3	53.1	0	103
Rob-See-Co D99-08-VT2P	99 VT2P	17.2	214.4 *	55.4	0	90	15.3	230.3 *	56.8	0	93	17.4	242.6	55.9	0	90	19.1	170.5	53.7	0	87
Rob-See-Co RC5134-PCE	101 PW	17.3	216.1 *	53.2	0	96	15.6	244.8 *	54.9	0	97	18.4	248.9	52.7	0	93	18.0	154.5	51.9	0	98
Rob-See-Co RC5768-VT2P	107 VT2P	19.2	227.7 *	54.9	0	96	16.7	241.3 *	56.4	0	96	20.2	244.7	54.4	0	97	20.9	197.1 *	53.9	0	96
Specialty Hybrids 36D260	106 VT2P	18.7	221.6 *	55.5	0	90	16.4	215.8	57.1	0	80	19.6	244.2	55.3	0	95	20.2	204.8 *	54.0	0	96
Specialty Hybrids 37D832	107 VT2P	18.9	227.3 *	54.1	0	94	16.3	218.1	56.0	0	94	19.4	263.7 *	54.1	0	95	21.1	200.2 *	52.0	0	94
AVERAGE		18.0	218.7	54.6	0	95	15.9	225.3	56.3	0	95	18.9	249.4 *	54.3	0	96	19.3	181.3	53.1	0	94
HIGHEST		19.6	233.8	57.1	0	101	17.9	247.3	58.7	0	100	20.9	279.6 *	56.9	0	103	21.1	216.4	55.6	0	103
LOWEST		16.7	198.5	52.9	0	89	15.0	205.9	54.8	0	80	17.1	233.9 *	51.7	0	90	17.8	130.1	50.6	0	82
CV (%)		9.6	16.7	3.1	0	9	2.7	7.1	1.4	0	8	2.5	7.1 *	1.5	0	5	3.6	9.2	1.1	0	11
LSD (5%)		1.2	24.6	1.1	0	6	0.5	18.8	1.0	0	9	0.6	20.8 *	0.9	0	6	0.8	19.7	0.7	0	13

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.camr.msu.edu/varietytrials>

TABLE 1L.

## BRANCH, CASS &amp; LENAWE COUNTY GRAIN TRIALS - LATE (108 Day and Later)

ZONE 1

BRAND / HYBRID	RM	TRAIT	Late - TRIAL AVERAGE						Branch - Late						Cass - Late						Lenawee - Late					
			%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd				
Ag Armour AA10848	108	D1	20.1	200.7	54.0	0	97	17.5	193.2	55.6	0	97	22.3	227.3	51.7	0	97	20.5	181.6	54.6	0	98				
Dairyland Seed DS-4878AM	108	AM	19.5	232.0	53.2	0	97	17.5	245.2*	53.9	0	97	21.4	245.6	52.0	0	97	19.7	205.0	53.6	0	96				
Dairyland Seed DS-4917AM	109	AM	20.0	232.2	54.3	0	95	18.0	236.9*	55.6	0	95	22.5	243.6	52.9	0	97	19.4	215.9	54.3	0	92				
Dairyland Seed DS-5095AM	110	AM	20.1	228.1	53.9	0	97	16.9	225.1	55.3	0	98	23.0	245.4	51.7	0	99	20.5	213.7	54.6	0	94				
Dairyland Seed DS-5161Q	111	Q	20.4	238.0*	54.4	0	93	19.1	234.4	56.4	0	93	22.1	235.0	52.6	0	92	20.1	244.6**	54.3	0	93				
Dairyland Seed DS-5250AM	112	AM	19.6	233.0	53.7	0	96	17.3	255.7*	55.1	0	98	22.0	242.1	51.6	0	97	19.7	201.3	54.4	0	94				
Dairyland Seed DS-5279Q	112	Q	20.5	226.6	53.9	0	97	18.6	250.9*	55.2	0	97	22.4	243.6	52.3	0	98	20.5	185.4	54.1	0	98				
Dyna-Gro Seed D48VC84	108	VT2PRIB	19.4	247.0*	54.3	0	97	17.2	255.8**	55.7	0	98	21.1	262.6*	53.1	0	98	19.8	222.6	54.0	0	95				
Dyna-Gro Seed D50VC09	110	VT2PRIB	19.4	226.9	53.0	0	94	17.0	240.0*	55.1	0	99	21.9	233.8	51.0	0	96	19.3	207.0	52.9	0	86				
Golden Harvest G08R52-3220	108	VZ	20.1	239.0*	52.5	0	95	18.3	251.2*	53.8	0	98	21.2	251.4*	51.5	0	96	20.8	214.4	52.3	0	93				
Golden Harvest G10L16-5222A	110	D2	20.9	226.0	52.5	0	98	18.6	237.8*	53.6	0	97	22.8	240.1	51.2	0	100	21.3	200.2	52.8	0	96				
Golden Harvest G12S75-5122	112	D1	22.3	226.6	53.0	0	99	18.5	232.8	54.7	0	97	26.3	243.1	50.9	0	99	22.3	204.0	53.3	0	101				
Legacy Seeds LC594-21 VT2P	109	VT2P	19.4	248.4**	55.1	0	99	16.8	252.3*	56.8	0	97	20.9	272.5**	53.7	0	101	20.4	220.6	54.8	0	100				
M&W Seeds 43V43	113	VT2P	20.5	236.7	53.8	0	93	17.8	229.1*	54.7	0	94	22.3	261.8*	52.8	0	92	21.5	219.2	54.1	0	92				
M&W Seeds 43V69	111	TRERIB	20.2	227.3	53.8	0	93	17.6	245.9*	55.3	0	91	22.8	236.3	52.4	0	95	20.4	199.6	53.9	0	94				
NK Seeds NK0877-3220	108	VZ	19.9	233.1	52.2	0	97	17.9	242.6*	53.5	0	98	21.6	235.6	50.7	0	98	20.2	221.2	52.5	0	96				
NK Seeds NK1082-5222A	110	D2	20.5	232.9	52.8	0	96	18.7	252.6*	54.4	0	100	22.2	241.7	51.2	0	98	20.7	204.4	52.8	0	92				
Renk RK700SSTX	108	STX	18.5	222.9	53.2	0	97	16.0	212.8	54.8	0	97	21.6	235.7	51.3	0	97	18.0	220.2	53.6	0	97				
Renk RK774VT2P	108	VT2P	18.9	235.9	54.1	0	97	16.5	243.3*	55.4	0	98	20.9	255.6*	52.5	0	94	19.2	208.9	54.3	0	99				
Renk RK801SSTX	110	STX	19.5	245.6*	55.6	0	97	17.8	243.4*	57.2	0	97	22.1	266.3*	53.9	0	99	18.8	227.2*	55.7	0	96				
Renk RK805VT2P	110	VT2P	19.4	222.2	54.0	0	92	16.5	213.1	56.3	0	96	21.4	240.7	51.8	0	98	20.3	212.9	53.9	0	83				
Renk RK821SSTX	111	STX	19.3	230.0	55.0	0	95	17.2	233.8	56.6	0	97	21.5	253.5*	53.4	0	94	19.2	202.6	55.0	0	94				
Renk RK826VT2P	111	VT2P	20.1	220.7	54.0	0	92	17.4	224.4	55.6	0	100	22.5	236.5	51.8	0	94	20.3	201.2	54.4	0	82				
Rob-See-Co D10-16-VT2P	110	VT2P	19.1	224.6	55.2	0	97	16.5	234.4	56.8	0	98	20.7	238.6	53.6	0	97	20.1	200.7	55.1	0	96				
Rob-See-Co RC6038-DV	108	D2	21.0	219.7	52.5	0	97	19.0	237.8*	53.6	0	98	22.7	222.7	51.3	0	96	21.3	198.5	52.5	0	97				
Rob-See-Co RC6170-DV	111	D1	20.2	203.4	54.0	0	99	17.3	220.6	55.9	0	99	22.3	210.5	51.6	0	98	21.0	179.0	54.6	0	99				
Specialty Hybrids 38D871	108	VT2P	19.3	231.5	53.4	0	94	16.9	231.9	55.3	0	94	21.4	246.5	51.7	0	96	19.8	216.3	53.1	0	93				
Specialty Hybrids 39G569	109	VT2P	20.0	225.8	52.0	0	93	17.4	233.0	52.7	0	99	21.7	255.8*	50.9	0	96	20.9	188.6	52.5	0	84				
Specialty Hybrids 41A392	111	STX	19.1	229.7	55.6	0	93	16.7	226.3	57.6	0	97	21.8	251.7*	53.8	0	99	18.9	211.1	55.3	0	83				
AVERAGE			19.9	229.2	53.7	0	96	17.5	235.7	55.3	0	97	22.0	244.0	52.1	0	97	20.2	207.9	53.9	0	93				
HIGHEST			22.3	248.4	55.6	0	99	19.1	255.8	57.6	0	100	26.3	272.5	53.9	0	101	22.3	244.6	55.7	0	101				
LOWEST			18.5	200.7	52.0	0	92	16.0	193.2	52.7	0	91	20.7	210.5	50.7	0	92	18.0	179.0	52.3	0	82				
CV (%)			3.4	7.5	1.2	0	7	3.5	7.0	1.2	0	3	3.3	7.9	1.3	0	4	3.3	7.5	1.1	0	12				
LSD (5%)			0.5	11.6	0.4	0	5	0.7	19.3	0.8	0	4	0.9	22.8	0.8	0	5	0.8	18.2	0.7	0	13				

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.camr.msu.edu/varietytrials>

TABLE 2E.

INGHAM, OTTAWA & SAGINAW COUNTY GRAIN TRIALS - EARLY (101 Day and Earlier)

ZONE 2

BRAND / HYBRID	RM	TRAIT	2022						Early - TRIAL AVERAGE						Ottawa - Early						Ingham - Early						Saginaw - Early							
			%H2O		BU/A		%SL		%Sd		%H2O		BU/A		%SL		%Sd		%H2O		BU/A		%SL		%Sd		%H2O		BU/A		%SL		%Sd	
			%H2O	Twt	%SL	%Sd	%H2O	Twt	%SL	%Sd	%H2O	Twt	%SL	%Sd	%H2O	Twt	%SL	%Sd	%H2O	Twt	%SL	%Sd	%H2O	Twt	%SL	%Sd	%H2O	Twt	%SL	%Sd	%H2O	Twt	%SL	%Sd
Dairyland Seed DS-3550Q	95	Q	15.6	178.0	54.0	0	100	18.3	199.0	54.5	0	101	12.0	113.6	51.6	0	100	16.5	221.4	55.8	0	98	16.5	221.4	55.8	0	98	16.5	221.4	55.8	0	98		
Dairyland Seed DS-3601AM	96	AM	15.4	189.8	55.9	0	97	16.2	206.1*	56.9	0	98	14.4	145.0	54.1	0	99	15.7	218.4	56.7	0	94	15.7	218.4	56.7	0	94	15.7	218.4	56.7	0	94		
Dairyland Seed DS-3727AM	97	AM	16.9	184.3	56.5	0	99	16.7	189.7	57.4	0	99	16.3	150.0	54.4	0	99	17.7	213.3	57.8	0	98	17.7	213.3	57.8	0	98	17.7	213.3	57.8	0	98		
Dairyland Seed DS-3900AM	99	AM	17.4	201.8	55.8	0	96	17.0	212.0*	56.7	0	96	17.4	178.4	53.6	0	98	17.7	215.1	57.3	0	93	17.7	215.1	57.3	0	93	17.7	215.1	57.3	0	93		
Dairyland Seed DS-3959AM	99	AM	15.9	195.5	54.7	0	99	17.1	209.9*	55.8	0	99	13.4	159.9	52.5	0	103	17.3	216.6	55.7	0	94	17.3	216.6	55.7	0	94	17.3	216.6	55.7	0	94		
Dairyland Seed DS-4878AM	108	AM	20.4	228.6***	53.7	0	96	19.9	222.7*	53.8	0	99	21.7	247.1***	53.5	0	97	19.7	216.2	53.8	0	91	19.7	216.2	53.8	0	91	19.7	216.2	53.8	0	91		
Dyna-Gro Seed D34VC93	94	VT2PRB	14.3	175.6	54.8	0	98	16.1	191.0	53.3	0	97	11.0	104.1	51.1	0	100	15.9	231.6*	57.1	0	97	15.9	231.6*	57.1	0	97	15.9	231.6*	57.1	0	97		
Dyna-Gro Seed D36VC66	96	VT2PRB	16.2	185.3	55.8	0	97	17.1	197.8	57.4	0	97	14.9	128.9	52.4	0	99	16.7	229.2*	57.5	0	96	16.7	229.2*	57.5	0	96	16.7	229.2*	57.5	0	96		
Dyna-Gro Seed D40VC41	100	VT2PRB	16.5	207.4	55.1	0	97	16.1	206.8*	55.6	0	100	16.4	180.5	53.1	0	97	17.0	235.0*	56.7	0	95	17.0	235.0*	56.7	0	95	17.0	235.0*	56.7	0	95		
Golden Harvest G00A97-3120A	100	BZ	17.1	199.3	56.3	0	96	16.5	180.9	56.3	0	100	17.6	205.3	55.3	0	97	17.2	211.7	57.1	0	90	17.2	211.7	57.1	0	90	17.2	211.7	57.1	0	90		
Golden Harvest G95D32-3220	95	VZ	15.4	173.2	55.9	0	94	17.0	190.1	57.2	0	93	12.3	113.3	52.2	0	98	17.0	216.2	58.3	0	91	17.0	216.2	58.3	0	91	17.0	216.2	58.3	0	91		
Golden Harvest G97A36-3220	97	VZ	17.4	198.0	56.6	0	99	18.2	201.5	57.5	0	101	16.7	158.0	54.9	0	99	17.3	234.4*	57.4	0	98	17.3	234.4*	57.4	0	98	17.3	234.4*	57.4	0	98		
Golden Harvest G99A37-5222	99	D2	16.5	197.2	54.8	0	99	16.3	194.7	55.0	0	100	15.9	196.8	54.1	0	99	17.4	200.0	55.2	0	97	17.4	200.0	55.2	0	97	17.4	200.0	55.2	0	97		
Legacy Seeds LC474-20 TRE	97	TRERIB	16.6	221.6**	55.2	0	100	16.0	204.0	55.1	0	100	17.0	234.9**	54.4	0	103	16.9	225.9	56.0	0	98	16.9	225.9	56.0	0	98	16.9	225.9	56.0	0	98		
Legacy Seeds LC493-21-5122	99	D1	16.8	192.8	55.5	0	97	18.4	194.1	56.1	0	97	14.0	168.5	54.4	0	99	18.1	215.8	56.1	0	96	18.1	215.8	56.1	0	96	18.1	215.8	56.1	0	96		
Legacy Seeds LC511-21 SXX	101	STXRIB	18.3	212.7	55.5	0	98	18.1	194.2	56.2	0	98	18.8	224.7*	53.3	0	97	18.0	219.2	57.0	0	98	18.0	219.2	57.0	0	98	18.0	219.2	57.0	0	98		
Legend Seeds 4397 TRE RIB	97	TRERIB	16.3	220.1*	55.3	0	100	15.9	206.8*	56.0	0	98	15.9	236.8*	53.8	0	101	17.0	216.8	56.1	0	100	17.0	216.8	56.1	0	100	17.0	216.8	56.1	0	100		
Legend Seeds 5800 VT2P RIB	100	VT2P	15.7	179.9	55.3	0	98	16.7	183.3	56.2	0	98	13.9	127.1	51.8	0	98	16.5	229.2*	57.9	0	97	16.5	229.2*	57.9	0	97	16.5	229.2*	57.9	0	97		
Legend Seeds 9200 VT2P RIB	100	VT2P	16.1	190.5	55.5	0	91	17.3	199.3	56.6	0	94	13.0	151.7	53.3	0	94	17.9	220.5	56.7	0	85	17.9	220.5	56.7	0	85	17.9	220.5	56.7	0	85		
M&W Seeds 45T56	100	VT2PRB	15.8	200.8	55.6	0	95	15.2	209.6*	56.0	0	98	15.5	164.8	54.1	0	95	16.9	228.2*	56.9	0	92	16.9	228.2*	56.9	0	92	16.9	228.2*	56.9	0	92		
M&W Seeds 46T29	99	VT2PRB	14.8	184.9	56.1	0	98	16.5	202.4	57.0	0	100	11.7	120.3	53.6	0	99	16.2	231.9*	57.8	0	97	16.2	231.9*	57.8	0	97	16.2	231.9*	57.8	0	97		
M&W Seeds MW97A VT2P	97	VT2PRB	14.6	191.1	54.6	0	98	16.2	204.0	56.0	0	99	11.7	135.9	51.0	0	97	16.0	233.3*	56.8	0	97	16.0	233.3*	56.8	0	97	16.0	233.3*	56.8	0	97		
M&W Seeds MW98A TRE	98	TRERIB	17.1	215.8	55.2	0	95	16.2	210.5*	56.1	0	94	17.9	223.8*	53.9	0	98	17.1	213.2	55.8	0	92	17.1	213.2	55.8	0	92	17.1	213.2	55.8	0	92		
NK Seeds NK0007-3120	100	BZ	17.3	207.4	55.6	0	96	16.9	191.1	55.9	0	99	17.7	202.0	53.4	0	97	17.2	229.2*	57.4	0	93	17.2	229.2*	57.4	0	93	17.2	229.2*	57.4	0	93		
NK Seeds NK9231-3120	92	BZ	14.7	177.3	54.7	0	98	16.3	213.4*	55.4	0	99	11.8	112.8	52.5	0	98	16.0	205.8	56.1	0	97	16.0	205.8	56.1	0	97	16.0	205.8	56.1	0	97		
NK Seeds NK9874-3220	98	VZ	17.1	188.6	56.2	0	98	17.7	181.1	56.9	0	99	16.1	170.4	54.9	0	99	17.6	214.4	56.7	0	97	17.6	214.4	56.7	0	97	17.6	214.4	56.7	0	97		
NK Seeds NK9922-5222	99	D2	16.6	196.2	54.8	0	98	16.1	174.3	55.2	0	100	16.6	206.6	53.6	0	100	17.1	207.7	55.6	0	95	17.1	207.7	55.6	0	95	17.1	207.7	55.6	0	95		
NK Seeds NK9991-5122	99	D1	17.5	191.5	55.4	0	97	17.6	178.9	55.8	0	98	16.8	170.6	54.5	0	99	18.2	224.9	56.0	0	95	18.2	224.9	56.0	0	95	18.2	224.9	56.0	0	95		
Renk RK600VT2P	100	VT2P	16.0	217.1	55.2	0	98	16.8	224.1**	56.5	0	100	14.2	188.9	52.3	0	98	16.9	238.3*	56.9	0	97	16.9	238.3*	56.9	0	97	16.9	238.3*	56.9	0	97		
Renk RK609VT2P	101	VT2P	16.3	201.4	55.6	0	95	15.8	196.6	56.4	0	96	15.2	179.8	54.0	0	98	17.9	227.7*	56.5	0	92	17.9	227.7*	56.5	0	92	17.9	227.7*	56.5	0	92		
Rob-See-Co D98-43-TRE	98	TRE	16.8	214.4	55.1	0	98	15.6	206.6*	55.0	0	98	17.7	216.1	54.5	0	98	17.0	220.5	56.0	0	99	17.0	220.5	56.0	0	99	17.0	220.5	56.0	0	99		
Rob-See-Co D99-08-VT2P	99	VT2P	15.2	195.6	55.2	0	90	16.4	192.8	56.3	0	91	11.9	154.0	52.5	0	90	17.2	239.9**	56.8	0	90	17.2	239.9**	56.8	0	90	17.2	239.9**	56.8	0	90		
Rob-See-Co RC4518-VT2P	94	VT2P	14.6	182.7	55.3	0	97	15.9	210.6*	56.2	0	96	11.7	102.3	52.8	0	97	16.2	235.2*	56.9	0	98	16.2	235.2*	56.9	0	98	16.2	235.2*	56.9	0	98		
Rob-See-Co RC5134-PCE	101	PW	17.8	217.0	53.9	0	99	17.8	210.4*	53.5	0	102	17.9	213.5	54.3	0	98	17.8	226.9	53.7	0	98	17.8	226.9	53.7	0	98	17.8	226.9	53.7	0	98		
Specialty Hybrids 27D728	97	VT2P	15.2	189.5	55.9	0	100	16.2	197.7	56.1	0	99	12.8	148.4	53.8	0	101	16.5	222.3	57.8	0	99	16.5	222.3	57.8	0	99	16.5	222.3	57.8	0	99		
Specialty Hybrids 30DT192	100	TRE	16.2	218.2	55.5	0	96	16.6	212.1*	56.6	0	97	14.8	121.6	53.0	0	100	17.2	230.1*	57.0	0	92	17.2	230.1*	57.0	0	92	17.2	230.1*	57.0	0	92		
AVERAGE			16.3	197.8	55.3	0	97	16.8	200.0	56.0	0	98	15.1	170.8	53.4	0	98	17.1	222.7	56.6	0	95	17.1	222.7	56.6	0	95	17.1	222.7	56.6	0	95		
HIGHEST			20.4	228.6	56.6	0	100	19.9	224.1	57.5	0	102	21.7	247.1	55.3	0	103	19.7	239.9	58.3	0	100	19.7	239.9	58.3	0	100	19.7	239.9	58.3	0	100		
LOWEST			14.3	173.2	53.7	0	90	15.2	174.3	53.5	0	91	11.0	102.3	51.0	0	90	15.7	200.0	53.7	0	85	15.7	200.0	53.7	0	85	15.7	200.0	53.7	0	85		
CV (%)			5.4	8.3	1.7	0	4	3.5	7.8	1.3	0	4	9.2	12.1	2.6	0	3	3.3	4.8	1.0	0	4	3.3	4.8	1.0	0	4	3.3	4.8	1.0	0	4		
LSD (5%)			0.2	3.2	0.2	0	1	0.7	18.3	0.8	0	4	1.6	24.2	1.6	0	4	0.7	12.4	0.6	0	5	0.7	12.4	0.6	0	5	0.7	12.4	0.6	0	5		

\*\*\* Highest yielding hybrid, however RM is out of range

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

TABLE 2L.

## INGHAM, OTTAWA &amp; SAGINAW COUNTY GRAIN TRIALS - LATE (102 Day and Later)

ZONE 2

BRAND / HYBRID	RM	TRAIT	Late - TRIAL AVERAGE						Ottawa - Late						Ingham - Late						Saginaw - Late					
			%H2O	BU/A	Twt	%SL	%Sd	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%Sd	%H2O	BU/A	Twt	%SL	%Sd	
Ag Armour AA10253	102	PWE	18.3	206.3	53.5	0	97	17.3	196.5	54.7	0	98	19.4	211.9	51.6	0	100	18.2	210.6	54.3	0	94				
Dairyland Seed DS-4014Q	100	Q	15.4	169.4	52.9	0	98	17.2	186.9	56.3	0	99	11.5	104.0	46.9	0	98	17.5	217.3*	55.6	0	98				
Dairyland Seed DS-4018AM	101	AM	16.4	189.7	54.9	0	94	16.1	181.5	57.4	0	94	14.7	181.2	51.1	0	96	18.4	206.4	56.1	0	94				
Dairyland Seed DS-4310Q	103	Q	17.7	209.5	55.1	0	98	17.7	208.5*	56.6	0	99	17.4	192.8	52.0	0	99	18.0	227.2*	56.7	0	95				
Dairyland Seed DS-4510Q	105	Q	17.1	203.1	53.0	0	99	17.4	212.0*	55.9	0	99	15.4	188.5	48.2	0	99	18.6	208.8	54.9	0	98				
Dyna-Gro Seed D44DC73	104	VT2PRIB	16.4	212.6	53.2	0	96	15.3	191.4	55.4	0	96	15.2	212.8	49.9	0	95	18.5	233.6**	54.4	0	96				
Dyna-Gro Seed D45TC55	105	TRERIB	18.4	226.5	54.4	0	98	17.6	225.7**	56.0	0	98	18.8	229.7	52.6	0	98	18.8	224.0*	54.5	0	97				
Golden Harvest G02K39-5122	102	D1	15.9	168.9	52.1	0	95	18.1	184.6	55.2	0	90	11.8	117.7	47.0	0	97	18.0	204.5	54.2	0	98				
Legacy Seeds LC-5217 VT2P	102	VT2PRIB	15.7	192.3	53.5	0	96	17.5	195.3	55.7	0	92	12.5	172.3	49.5	0	99	17.2	209.3	55.4	0	99				
Legacy Seeds LC525-21 PW	102	PW	17.2	201.1	54.1	0	98	17.6	200.4	54.4	0	99	17.2	195.8	53.0	0	98	17.0	207.2	54.8	0	97				
Legacy Seeds LC554-21 DGVVT2P	104	VT2P	16.2	211.6	53.5	0	104	15.8	212.5*	55.1	0	101	15.0	205.7	50.5	0	111	17.9	216.6*	54.9	0	101				
Legacy Seeds LC564-20 PW	106	PW	18.4	200.3	52.4	0	96	17.8	197.4	53.4	0	94	18.8	218.1	51.1	0	100	18.6	185.3	52.9	0	95				
M&W Seeds 44V42	107	VT2PRIB	18.6	207.6	56.5	0	96	17.7	185.9	59.0	0	99	19.4	226.3	53.6	0	97	18.8	210.7	56.8	0	94				
M&W Seeds 44V74	105	D2	16.3	181.4	52.4	0	94	17.7	171.9	54.3	0	95	13.1	186.9	48.6	0	94	18.2	185.5	54.3	0	94				
M&W Seeds 45V21	103	VT2PRIB	16.7	212.4	55.1	0	97	16.6	202.5	56.9	0	99	15.7	219.8	52.5	0	98	17.9	214.7*	56.0	0	95				
M&W Seeds MW103A VT2P	103	VT2PRIB	17.9	220.6	56.4	0	96	17.2	209.3*	57.4	0	95	19.0	235.1	54.6	0	95	17.5	217.2*	57.2	0	97				
Renk RK615SSTX	102	STX	18.0	204.0	55.0	0	97	17.2	196.0	56.7	0	95	18.6	202.5	52.4	0	99	18.3	213.7*	55.8	0	96				
Renk RK625DGVVT2P	104	VT2P	15.5	208.5	53.4	0	97	16.1	200.8	54.4	0	97	14.9	204.5	50.5	0	96	15.7	220.3*	55.4	0	99				
Renk RK642VT2P	103	VT2P	15.5	193.4	54.4	0	98	17.1	197.8	56.6	0	97	12.5	176.2	50.3	0	101	16.9	206.2	56.3	0	95				
Renk RK710DGVVT2P	107	VT2P	19.5	223.7	54.8	0	96	18.2	219.0*	56.4	0	98	21.4	225.8	52.9	0	96	19.0	226.3*	55.1	0	95				
Renk RK715SSTX	105	STX	18.3	222.0	54.0	0	96	18.4	198.6	55.2	0	96	18.0	247.6*	52.0	0	93	18.6	219.7*	54.7	0	100				
Specialty Hybrids 34D651	104	VT2P	18.1	204.7	54.9	0	95	17.6	202.0	56.1	0	92	19.9	203.3	52.1	0	99	16.9	208.7	56.4	0	94				
Specialty Hybrids 37D832	107	VT2P	20.1	233.3**	53.5	0	94	18.2	207.6*	56.3	0	92	22.1	258.6**	49.9	0	97	20.1	233.6**	54.3	0	93				
Specialty Hybrids 38D871	108	VT2P	20.1	222.9	53.7	0	97	18.5	199.8	54.9	0	98	22.2	254.2*	52.3	0	98	19.6	214.7*	54.0	0	94				
AVERAGE			17.4	205.2	54.0	0	97	17.3	199.3	55.8	0	96	16.8	203.0	51.0	0	98	18.1	213.4	55.2	0	96				
HIGHEST			20.1	233.3	56.5	0	104	18.5	225.7	59.0	0	101	22.2	258.6	54.6	0	111	20.1	233.6	57.2	0	101				
LOWEST			15.4	168.9	52.1	0	94	15.3	171.9	53.4	0	90	11.5	104.0	46.9	0	93	15.7	185.3	52.9	0	93				
CV (%)			5.7	8.3	2.0	0	5	4.1	8.6	1.2	0	6	8.4	7.9	3.1	0	6	3.6	8.5	1.2	0	3				
LSD (5%)			0.2	4.1	0.3	0	1	0.8	20.1	0.8	0	7	1.7	18.8	1.9	0	7	0.8	21.3	0.8	0	4				

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.camr.msu.edu/varietytrials>

**TABLE 3E.**

**HURON, MASON & MONTCALM COUNTY GRAIN TRIALS - EARLY (97 Day and Earlier)**

**ZONE 3**

2022		Early - TRIAL AVERAGE				Huron - Early				Mason - Early				Montcalm - Early								
BRAND / HYBRID	RM	TRAIT	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd					
Ag Armour AA9100	91	VR	21.9	170.4	50.1	0	91						21.0	167.1	48.6	0	86	22.7	173.7	51.6	0	97
Ag Armour AA9304	93	D1	21.9	173.2	49.8	0	91						20.6	184.2 *	48.3	0	83	23.2	162.1	51.2	0	99
Dairyland Seed DS-3022AM	90	AM	20.7	189.7 **	52.1	0	89						19.8	195.2 *	49.9	0	85	21.6	184.2 *	54.3	0	93
Dairyland Seed DS-3162Q	91	Q	19.3	161.5	51.2	0	86						19.0	147.1	50.2	0	75	19.6	175.9	52.3	0	97
Dairyland Seed DS-3203AM	92	AM	21.2	186.9 *	50.9	0	86						20.2	197.6 **	49.4	0	77	22.2	176.3	52.4	0	94
Dairyland Seed DS-3477AM	94	AM	21.7	183.6 *	47.4	0	89						21.3	193.3 *	49.6	0	78	22.1	173.8	53.2	0	100
Dairyland Seed DS-3550Q	95	Q	23.9	186.8 *	47.7	0	83						23.2	186.7 *	46.3	0	70	24.5	186.9 *	49.1	0	97
Dairyland Seed DS-3601AM	96	AM	22.6	188.7 *	50.0	0	94						22.5	187.8 *	47.9	0	94	22.8	189.6 *	52.0	0	94
Dairyland Seed DS-3727AM	97	AM	21.5	171.7	51.3	0	92						20.6	177.0	49.4	0	85	22.3	166.5	53.2	0	99
Dyna-Gro Seed D34VC93	94	VT2PRIB	21.2	178.5 *	50.9	0	82						20.1	159.8	49.1	0	71	22.3	197.3 **	52.7	0	93
Dyna-Gro Seed D36VC66	96	VT2PRIB	21.7	174.3	50.2	0	87						20.5	182.4 *	48.7	0	76	22.9	166.3	51.6	0	98
Golden Harvest G91V51-5222A	91	D2	22.4	172.0	50.7	0	94						22.2	155.9	48.8	0	88	22.6	188.2 *	52.5	0	101
Golden Harvest G93A49-5122	93	D1	21.5	147.5	49.7	0	89						20.5	138.8	47.9	0	78	22.6	156.2	51.5	0	99
Golden Harvest G95D32-3220	95	VZ	20.5	165.8	51.6	0	91						19.6	160.4	51.1	0	83	21.4	171.2	52.1	0	98
Golden Harvest G97A36-3220	97	VZ	22.8	171.4	50.0	0	95						21.2	159.0	48.5	0	93	24.4	183.8 *	51.5	0	98
Legacy Seeds LC451-21 VT2P	95	VT2PRIB	21.2	164.6	51.1	0	84						20.1	148.7	49.3	0	70	22.4	180.6	52.8	0	99
Legacy Seeds LC464-21 3120	96	BZ	22.4	167.4	50.2	0	91						20.8	159.4	49.5	0	83	24.0	175.3	50.9	0	99
Legacy Seeds LC474-20 TRE	97	TREBIB	21.9	176.1	49.4	0	94						21.7	170.1	47.4	0	88	22.1	182.1 *	51.4	0	101
Legacy Seeds LC482-21 VT2P	96	VT2P	21.0	172.7	50.6	0	97						20.4	162.5	49.1	0	96	21.7	183.0 *	52.0	0	97
Legend Seeds 48392 SS RIB	92	STXRIB	20.9	171.5	52.0	0	79						19.7	175.0	50.6	0	61	22.1	168.1	53.4	0	97
Legend Seeds 9191VIP3110A	91	VR	21.4	184.4 *	51.5	0	86						20.5	176.6	50.5	0	72	22.2	192.2 *	52.6	0	100
Legend Seeds 9V20AM	96	AM	21.3	180.9 *	49.9	0	93						20.7	168.8	48.5	0	90	21.8	193.0 *	51.3	0	96
M&W Seeds MW97A VT2P	97	VT2PRIB	21.0	168.0	50.6	0	83						20.0	158.9	48.6	0	71	22.0	177.0	52.6	0	95
NK Seeds NK9347-5122	93	D1	21.0	164.7	50.9	0	86						20.1	167.4	49.2	0	73	21.9	162.0	52.5	0	100
Renk RK485DGV2P	94	VT2P	22.5	173.8	52.1	0	76						22.0	159.3	50.7	0	56	23.0	188.3 *	53.5	0	96
Renk RK561DGV2P	96	VT2P	21.8	171.2	49.7	0	91						20.8	164.7	48.1	0	83	22.8	177.7	51.2	0	99
Renk RK593VT2P	97	VT2P	21.7	179.6 *	51.0	0	84						20.5	168.4	50.0	0	71	23.0	190.9 *	52.0	0	97
Rob-See-Co RC4166-DV	91	VZ	22.6	181.7 *	50.6	0	87						22.6	175.8	49.0	0	75	22.7	187.6 *	52.3	0	98
Rob-See-Co RC4518-VT2P	94	VT2P	21.2	179.0 *	51.1	0	88						20.1	165.5	49.3	0	77	22.3	192.6 *	53.0	0	99
Seedway SW 9333SS	93	STX	21.3	161.1	50.6	0	89						20.4	168.3	49.6	0	79	22.3	153.9	51.7	0	100
Seedway SW 9375VT	93	VT2P	20.3	163.0	51.3	0	81						20.5	175.9	50.2	0	67	20.2	150.2	52.5	0	96
Seedway SW 9726TR	97	TRE	23.0	162.8	48.9	0	91						21.1	168.4	48.5	0	84	24.9	157.3	49.4	0	98
AVERAGE			21.6	173.3	50.6	0	88						20.8	169.6	49.1	0	79	22.4	177.0	52.1	0	98
HIGHEST			23.9	189.7	52.1	0	97						23.2	197.6	51.1	0	96	24.9	197.3	54.3	0	101
LOWEST			19.3	147.5	47.7	0	76						19.0	138.8	46.3	0	56	19.6	150.2	49.1	0	93
CV (%)			4.1	8.8	2.3	0	16						4.6	10.0	2.6	0	25	3.6	7.6	2.1	0	4
LSD (5%)			0.7	12.6	1.0	0	12						1.1	19.8	1.5	0	23	1.0	15.9	1.3	0	5

\*\* Highest Yielding Hybrid  
 \* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/varietytrials>

TABLE 3L.

## HURON, MASON &amp; MONTCALM COUNTY GRAIN TRIALS - LATE (98 Day and Later)

ZONE 3

2022		Late - TRIAL AVERAGE				Huron - Late				Mason - Late				Montcalm - Late			
BRAND / HYBRID	RM	TRAIT	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd
Dairyland Seed DS-3900AM	99	AM	22.6	176.4 *	49.5	0	85	22.5	182.9 *	47.5	0	75	22.7	169.8	51.5	0	94
Dairyland Seed DS-3959AM	99	AM	23.1	170.9 *	46.6	0	93	22.9	180.4 *	42.4	0	88	23.2	161.3	50.8	0	99
Dairyland Seed DS-4014Q	100	Q	25.9	168.8	49.3	0	88	25.9	173.4	45.7	0	81	25.9	164.3	52.9	0	94
Dairyland Seed DS-4018AM	101	AM	24.6	165.5	48.7	0	81	25.7	168.8	47.2	0	68	23.5	162.2	50.2	0	93
Dyna-Gro Seed D40VC41	100	VT2PRIB	24.2	165.6	49.2	0	87	24.7	148.0	48.0	0	75	23.6	183.1 *	50.4	0	100
Dyna-Gro Seed D41SS60	102	STXRIB	22.8	172.4 *	50.0	0	88	22.7	172.9	48.9	0	77	22.9	171.9	51.1	0	99
Golden Harvest G00A97-3120A	100	BZ	23.2	170.3 *	49.3	0	84	22.6	170.0	48.6	0	74	23.9	170.7	50.1	0	95
Golden Harvest G02K39-5122	102	D1	25.3	152.6	47.2	0	84	26.2	142.9	45.3	0	70	24.4	162.3	49.2	0	98
Golden Harvest G99A37-5222	99	D2	25.2	162.0	47.1	0	88	26.2	150.5	45.4	0	77	24.2	173.5 *	48.9	0	99
Legacy Seeds LC-4248 VT2P	100	VT2PRIB	23.8	174.4 *	52.6	0	90	24.1	167.0	55.0	0	80	23.6	181.8 *	50.2	0	99
Legacy Seeds LC493-21 5122	99	D1	23.0	183.4 **	52.5	0	82	22.5	193.3 **	53.5	0	66	23.6	173.6 *	51.5	0	99
Legacy Seeds LC511-21 SSX	101	STXRIB	23.9	160.8	46.4	0	92	24.7	150.1	42.5	0	83	23.1	171.5	50.3	0	100
Legacy Seeds LC-5217 VT2P	102	VT2PRIB	22.8	177.3 *	50.5	0	86	22.6	178.0 *	50.9	0	74	23.1	176.6 *	50.1	0	98
Legacy Seeds LC525-21 PW	102	PW	28.8	165.2	45.9	0	83	29.7	169.6	45.4	0	69	27.9	160.7	46.3	0	98
M&W Seeds 45T56	100	VT2PRIB	24.4	183.3 *	51.4	0	83	25.1	185.4 *	53.2	0	69	23.8	181.2 *	49.7	0	96
M&W Seeds 45V21	103	VT2PRIB	25.5	165.6	47.7	0	89	25.8	160.4	46.6	0	81	25.2	170.9	48.8	0	97
M&W Seeds 46T29	99	VT2PRIB	21.8	181.3 *	50.2	0	89	22.2	191.3 *	49.0	0	82	21.5	171.4	51.3	0	97
M&W Seeds MW103A VT2P	103	VT2PRIB	23.6	182.5 *	50.1	0	86	23.4	179.6 *	49.6	0	76	23.9	185.5 *	50.6	0	95
M&W Seeds MW98A TRE	98	TRERIB	22.4	168.2	48.9	0	84	22.1	150.4	47.2	0	71	22.7	185.9 **	50.6	0	98
NK Seeds NK0007-3120	100	BZ	23.5	166.3	49.8	0	82	23.6	164.0	48.4	0	70	23.5	168.5	51.3	0	94
NK Seeds NK9874-3220	98	VZ	23.6	179.6 *	54.7	0	84	23.7	176.0 *	57.1	0	71	23.6	183.2 *	52.4	0	97
NK Seeds NK9922-5222	99	D2	24.8	168.7	47.1	0	91	24.7	162.2	45.8	0	81	24.9	175.1 *	48.5	0	101
Renk RK579DGV2P	99	VT2P	22.6	176.5 *	50.1	0	79	22.3	180.3 *	49.1	0	60	22.9	172.7 *	51.1	0	99
Renk RK590VT2P	98	VT2P	22.9	167.4	49.4	0	75	22.6	157.3	48.0	0	51	23.2	177.6 *	50.7	0	99
Rob-See-Co D98-43-TRE	98	TRE	22.3	164.2	48.5	0	84	22.0	163.6	47.2	0	72	22.5	164.8	49.8	0	96
Seedway SW 0030VT	100	VT2P	22.9	181.8 *	49.8	0	96	23.3	183.0 *	47.7	0	90	22.4	180.7 *	51.9	0	101
AVERAGE			23.8	171.2	49.3	0	86	24.0	169.3	48.3	0	74	23.7	173.1	50.4	0	97
HIGHEST			28.8	183.4	54.7	0	96	29.7	193.3	57.1	0	90	27.9	185.9	52.9	0	101
LOWEST			21.8	152.6	45.9	0	75	22.0	142.9	42.4	0	51	21.5	160.7	46.3	0	93
CV (%)			5.4	9.6	8.9	0	22	6.8	9.1	11.7	0	28	2.8	6.8	2.9	0	3
LSD (5%)			1.1	13.6	3.6	0	16	1.9	18.2	6.6	0	24	0.8	13.9	1.7	0	3

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.camr.msu.edu/varietytrials>

TABLE 4E. IOSCO, OSCEOLA & PRESQUE ISLE COUNTY GRAIN TRIALS - EARLY (89 Day and Earlier)

2022		TRIAL AVERAGE												Iosco - Early			Osceola - Early			Presque Isle - Early					
BRAND / HYBRID	RM TRAIT	%H2O	BU/A	BU/A	Twt	%SL	%Sd	%H2O	BU/A	BU/A	Twt	%SL	%Sd	%H2O	BU/A	BU/A	Twt	%SL	%Sd	%H2O	BU/A	BU/A	Twt	%SL	%Sd
Dairyland Seed DS-2080AM	80 AM	17.9	139.6	139.6	54.8	0	95	19.0	161.3	161.3	55.4	0	95	16.7	118.0	118.0	54.2	0	95	16.7	118.0	118.0	54.2	0	95
Dairyland Seed DS-2505Q	85 Q	18.9	153.9	153.9	53.3	0	98	21.2	176.7	176.7	53.1	0	95	16.7	131.0	131.0	53.5	0	100	16.7	131.0	131.0	53.5	0	100
Dairyland Seed DS-2531AM	85 AM	19.2	154.8	154.8	51.8	0	88	21.8	193.4	193.4	51.7	0	87	16.6	116.3	116.3	52.0	0	90	16.6	116.3	116.3	52.0	0	90
Dairyland Seed DS-2919AM	89 AM	20.5	164.9	164.9	53.1	0	98	23.6	208.5**	208.5**	52.8	0	98	17.4	121.3	121.3	53.5	0	99	17.4	121.3	121.3	53.5	0	99
Golden Harvest G87A53-3220	87 VZ	19.3	147.6	147.6	53.3	0	82	21.5	143.9	143.9	53.2	0	83	17.2	151.3*	151.3*	53.4	0	81	17.2	151.3*	151.3*	53.4	0	81
Legacy Seeds LC334-21 VT2P	83 VT2P	18.2	166.3	166.3	54.2	0	94	20.2	184.9	184.9	53.1	0	95	16.2	127.8	127.8	55.4	0	93	16.2	127.8	127.8	55.4	0	93
Legacy Seeds LC354-20 3110	85 VR	19.7	147.5	147.5	53.7	0	96	21.7	155.7	155.7	52.6	0	97	17.8	139.4	139.4	54.8	0	96	17.8	139.4	139.4	54.8	0	96
Renk RK29VT2P	88 VT2P	20.3	178.3**	178.3**	53.1	0	98	23.7	204.2*	204.2*	51.1	0	97	17.0	152.5**	152.5**	55.2	0	98	17.0	152.5**	152.5**	55.2	0	98
AVERAGE		19.3	155.4	155.4	53.4	0	94	21.6	178.6	178.6	52.8	0	93	16.9	132.2	132.2	54.0	0	94	16.9	132.2	132.2	54.0	0	94
HIGHEST		20.5	178.3	178.3	54.8	0	98	23.7	208.5	208.5	55.4	0	98	17.8	152.5	152.5	55.4	0	100	17.8	152.5	152.5	55.4	0	100
LOWEST		17.9	139.6	139.6	51.8	0	82	19.0	143.9	143.9	51.1	0	83	16.2	116.3	116.3	52.0	0	81	16.2	116.3	116.3	52.0	0	81
CV (%)		4.1	6.4	6.4	1.6	0	4	4.2	5.7	5.7	1.0	0	4	3.9	7.3	7.3	2.0	0	3	3.9	7.3	7.3	2.0	0	3
LSD (5%)		0.7	8.3	8.3	0.7	0	3	1.1	12.4	12.4	0.6	0	5	0.8	11.7	11.7	1.3	0	4	0.8	11.7	11.7	1.3	0	4

\*\* Highest Yielding Hybrid  
 \* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/varietytrials>

**TABLE 4L. IOSCO, OSCEOLA & PRESQUE ISLE COUNTY GRAIN TRIALS - LATE (90 Day and Later) ZONE 4**

2022		TRIAL AVERAGE						Iosco - Late			Osceola - Late			Presque Isle - Late			
BRAND / HYBRID	RM	TRAIT	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd
Dairyland Seed DS-3022AM	90	AM	19.4	159.0	53.6	13	93	23.0	202.6	52.4	0	94	15.9	116.5	55.7	0	92
Dairyland Seed DS-3162Q	91	Q	19.0	167.0 *	51.3	5	95	22.4	192.6	49.6	0	98	16.1	144.4 *	53.7	0	92
Dairyland Seed DS-3203AM	92	AM	21.3	163.2	52.1	2	95	24.7	213.2 *	50.5	0	99	17.5	119.5	54.6	0	94
Dyna-Gro Seed D31VC23	91	VT2PRIB	20.1	153.4	53.2	4	92	24.3	189.8	52.3	0	93	15.1	121.9	55.3	0	91
Dyna-Gro Seed D34VC93	94	VT2PRIB	21.6	155.1	52.0	11	95	26.9	196.6	51.3	0	94	15.8	119.2	53.8	0	95
Dyna-Gro Seed D36VC66	96	VT2PRIB	21.8	166.5 *	52.1	8	98	27.3	220.3 **	50.2	0	98	16.2	118.1	54.9	0	99
Golden Harvest G91V51-5222A	91	D2	21.3	165.9 *	51.8	1	96	24.5	207.9 *	50.3	0	95	17.4	130.4	53.8	0	97
Legacy Seeds LC414-21 VT2P	91	VT2P	20.6	158.3	52.7	2	95	24.3	193.0	52.0	0	94	16.4	125.9	54.4	0	95
M&W Seeds MW97A VT2P	97	VT2PRIB	21.2	158.6	51.3	8	97	26.5	191.9	50.3	0	99	15.7	128.8	53.4	0	97
Renk RK400VT2P	93	VT2P	19.8	172.5 **	53.7	6	95	23.7	214.3 *	52.1	0	95	15.8	140.6 *	56.2	0	95
Renk RK444VT2P	94	VT2P	22.4	165.1 *	51.9	8	91	27.0	191.9	50.8	0	94	17.1	147.0 **	54.2	0	86
AVERAGE			20.8	162.2	52.3	6	95	25.0	201.3	51.1	0	96	16.3	128.4	54.5	0	94
HIGHEST			22.4	172.5	53.7	13	98	27.3	220.3	52.4	0	99	17.5	147.0	56.2	0	99
LOWEST			19.0	153.4	51.3	1	91	22.4	189.8	49.6	0	93	15.1	116.5	53.4	0	86
CV (%)			7.0	7.5	2.1	86	5	4.1	5.7	1.8	0	4	4.7	10.0	1.2	0	6
LSD (5%)			1.0	7.9	0.7	11	3	1.2	13.7	1.1	0	5	0.9	15.4	0.8	0	7

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.camr.msu.edu/varietytrials>

**TABLE 5E. INGHAM, MONTCALM & SAGINAW COUNTY CONVENTIONAL GRAIN TRIALS - EARLY (101 Day and Earlier) ZONE 2 - 3**

2022 BRAND / HYBRID	RM TRAIT	Early - TRIAL AVERAGE						Ingham - Early			Montcalm - Early			Saginaw - Early							
		%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd					
Legacy Seeds LC-3517	95 CONV	17.0	187.9 *	53.7	0	99	11.7	143.9	50.2	0	99	22.7	191.2 **	52.6	0	98	16.7	228.7 *	58.2	0	99
Legacy Seeds LC-4248	100 CONV	16.9	193.6 *	52.5	0	98	11.8	151.5	49.2	0	98	22.4	189.8 *	51.0	0	100	16.7	239.6 **	57.3	0	95
Legacy Seeds LC444-21	94 CONV	18.0	185.4 *	53.8	0	98	15.5	173.8 *	54.5	0	97	23.0	166.9	50.6	0	98	15.5	215.4	56.5	0	99
Legacy Seeds LC482-21	96 CONV	17.2	187.0 *	54.0	0	95	12.9	159.6 *	51.5	0	93	22.6	180.6 *	52.0	0	97	16.3	220.6	58.6	0	94
M&W Seeds 45T55	100 CONV	17.3	185.2 *	52.8	0	96	12.7	142.7	50.0	0	92	22.9	187.5 *	51.5	0	98	16.4	225.2	56.9	0	97
M&W Seeds 46T28	99 CONV	17.2	187.8 *	53.7	0	97	12.9	151.0	51.7	0	98	22.9	184.6 *	51.5	0	95	15.9	227.7 *	58.0	0	99
Renk RK600	100 CONV	17.7	194.6 *	53.5	0	93	13.7	170.8 *	51.9	0	94	22.9	181.6 *	51.4	0	93	16.4	231.3 *	57.1	0	92
Viking O.45-97UP	97 CONV	17.4	189.4 *	54.8	0	94	14.8	170.9 *	54.2	0	92	21.9	173.6	52.5	0	92	15.7	223.8	57.7	0	97
Viking O.52-96P	96 CONV	17.1	183.3 *	54.0	0	95	11.8	139.0	50.8	0	97	23.0	190.4 *	52.6	0	95	16.5	220.4	58.6	0	94
Viking O.85-00P	100 CONV	18.2	197.2 **	52.6	0	96	14.2	180.9 **	51.3	0	94	23.5	180.0 *	50.3	0	97	17.1	230.7 *	56.3	0	97
AVERAGE		17.4	189.1	53.5	0	96	13.2	158.4	51.5	0	95	22.8	182.6	51.6	0	96	16.3	226.3	57.5	0	96
HIGHEST		18.2	197.2	54.8	0	99	15.5	180.9	54.5	0	99	23.5	191.2	52.6	0	100	17.1	239.6	58.6	0	99
LOWEST		16.9	183.3	52.5	0	93	11.7	139.0	49.2	0	92	21.9	166.9	50.3	0	92	15.5	215.4	56.3	0	92
CV (%)		25.1	17.9	6.0	0	5	9.5	11.2	2.4	0	4	3.6	6.8	1.4	0	4	2.2	4.6	0.6	0	6
LSD (5%)		3.0	23.0	2.2	0	3	1.5	21.5	1.5	0	5	1.0	15.0	0.8	0	5	0.4	12.5	0.4	0	7

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/VarietyTrials>

**TABLE 5L. INGHAM, MONTCALM & SAGINAW COUNTY CONVENTIONAL GRAIN TRIALS - LATE (102 Day and Later) ZONE 2 - 3**

2022 BRAND / HYBRID	RM TRAIT	Late - TRIAL AVERAGE				Ingham - Late				Montcalm - Late				Saginaw - Late							
		%H2O	BU/A	Twt	%SL %Sd	%H2O	BU/A	Twt	%SL %Sd	%H2O	BU/A	Twt	%SL %Sd	%H2O	BU/A	Twt	%SL %Sd				
Legacy Seeds LC-5217	102 CONV	17.2	213.3 *	55.1	0	96	17.2	205.2 *	54.6	0	96	17.2	205.2 *	54.6	0	96	17.4	229.6 *	56.1	0	97
Legacy Seeds LC525-21	102 CONV	17.7	197.7	55.1	0	99	17.7	186.7	55.2	0	99	17.7	186.7	55.2	0	99	17.8	219.8	54.9	0	98
Legacy Seeds LC544-22	104 CONV	17.9	202.8	56.6	0	97	18.2	197.9	56.0	0	97	18.2	197.9	56.0	0	97	17.5	212.5	57.7	0	98
Legacy Seeds LC564-20	106 CONV	17.4	209.8 *	53.3	0	97	16.9	205.7 *	53.1	0	96	16.9	205.7 *	53.1	0	96	18.6	217.8	53.8	0	98
M&W Seeds 44R33	106 CONV	18.7	224.4 **	55.5	0	98	18.7	223.5 **	55.2	0	98	18.7	223.5 **	55.2	0	98	18.7	226.2	56.0	0	97
M&W Seeds 44V40	107 CONV	19.6	218.4 *	55.4	0	95	19.8	216.0 *	54.6	0	95	19.8	216.0 *	54.6	0	95	19.1	223.3	57.1	0	96
M&W Seeds MW105A CNV	105 CONV	19.2	205.8	56.6	0	99	19.1	202.8 *	56.5	0	100	19.1	202.8 *	56.5	0	100	19.4	211.8	57.0	0	97
Renk RK642	103 CONV	17.3	219.7 *	55.2	0	98	17.0	209.8 *	54.6	0	99	17.0	209.8 *	54.6	0	99	18.0	239.6 **	56.4	0	95
Viking O.46-02P	102 CONV	16.6	213.4 *	54.2	0	98	15.9	208.9 *	53.1	0	101	15.9	208.9 *	53.1	0	101	17.9	222.5	56.6	0	90
Viking O.84-04	104 CONV	17.3	200.2	56.7	0	99	17.2	181.1	56.1	0	99	17.2	181.1	56.1	0	99	17.5	238.4 *	57.8	0	99
AVERAGE		17.9	210.5	55.4	0	98	17.8	203.8	54.9	0	98	17.8	203.8	54.9	0	98	18.2	224.2	56.3	0	97
HIGHEST		19.6	224.4	56.7	0	99	19.8	223.5	56.5	0	101	19.8	223.5	56.5	0	101	19.4	239.6	57.8	0	99
LOWEST		16.6	197.7	53.3	0	95	15.9	181.1	53.1	0	95	15.9	181.1	53.1	0	95	17.4	211.8	53.8	0	90
CV (%)		17.4	11.3	5.19	0	4	5.2	8.8	2.0	0	3	5.2	8.8	2.0	0	3	2.2	4.4	0.8	0	5
LSD (5%)		2.4	15.63	1.9	0	3	1.1	21.5	1.3	0	4	1.1	21.5	1.3	0	4	0.5	11.8	0.5	0	6

\*\* Highest Yielding Hybrid  
 \* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/varietytrials>

# 2022

## SILAGE PERFORMANCE TRIALS

### Introduction

The silage index (pg. 25) contains a list of all hybrids planted in the 2022 silage trials.

County results are reported in the following tables:

**Tables 6E/6L Zone 1** - Branch, Lenawee, and Wood\*

**Tables 7E/7L Zone 2/3** - Ottawa, Huron\*, and Ingham

**Tables 8E/8L Zone 4** - Iosco, Osceola, and Presque Isle

\*Locations dropped due to uncontrollable events

The map of Michigan (pg. 23) shows each zone and the locations where the trials were located.

### Methods

Testing procedures (randomization, replication, planting rates, etc.) for silage evaluation are the same as those utilized for grain trials. For silage, agronomic information refer to Table C (pg. 24).

All silage maturity zones were divided into two maturity groups designated early and late based on the relative maturity (RM) submitted by the companies with results listed in separate tables. The Wood County, OH location is managed in cooperation with The Ohio State University. Planting and in-season management is conducted by The Ohio State University while Michigan State University harvests plots and performs quality and data analysis.

A New Holland T6.175 tractor powered a two-row Champion C1200 Kemper forage harvester, and a rear mounted Haldrup M-63 weigh system is used to harvest the two center rows of plots. Electronic scales mounted on the Haldrup M-63 weigh system measured plot and subsample weights. All field data was recorded on a Panasonic FZ-G1 Toughpad using Harvest Master™ software. Total plot weight was used to calculate green tons per acre (GT/A). Subsamples of fodder, including grain, were collected, weighed, and oven dried in a WRH586-500 Greives forced air dryer until weight loss was zero, then re-weighed to determine the percent dry matter (%DM). Dry tons per acre (DT/A) is calculated mathematically by multiplying GT/A by %DM. The samples were ground using a Christy mill fitted with a 1mm screen before conducting quality analysis using near-infrared spectroscopy (NIRS) to predict quality components.

### Silage Analysis

Tables 6E, 6L, 7E, 7L, 8E, and 8L provide silage quality data as determined by near-infrared spectroscopy (NIRS) analysis on freshly dried & ground samples. Data is provided for individual locations as well as averaged over multiple locations within each zone. Near-infrared spectral analysis involves irradiating the sample with light in the near infrared spectrum (1,100 to 2,500 nm). The illuminated sample absorbs light proportional to specific chemical and physical properties. The reflected energy is measured and correlated statistically with the NIRS Consortiums calibration equation established for silage quality levels. Results of the six quality traits analyzed are presented in the quality tables.

The six silage quality traits:

1. **IVD=(in vitro) digestible dry matter-48hr.** IVD is a measure of forage digestibility. Higher IVD is desirable.
2. **ADF=acid detergent fiber.** ADF represents the less digestible portion of the corn forage, containing cellulose, lignin, and heat damaged protein. ADF is closely related to the digestibility of forages. Lower ADF implies the forage is more digestible. More mature plant material will contain higher ADF concentrations. A low concentration of ADF is desirable.
3. **NDF=neutral detergent fiber.** NDF is a measure of the fiber content of the corn forage. It is less digestible than non-fiber constituents of the forage. Forages with high NDF levels have lower energy. NDF is also a measure of potential forage intake. High NDF levels decrease the potential forage intake. Low NDF content is desirable.
4. **NDFD=neutral detergent fiber digestibility.** NDFD is the portion of neutral detergent fiber digested by animals at a specified level of feed intake. High NDFD is desirable.
5. **CP=crude protein.** Forages are generally supplemented with high protein concentrates such as soybean meal to increase the protein content of ruminant diets. Corn hybrids with high protein levels require less supplementation and therefore result in lower feed costs. High protein content is desirable.
6. **STRCH=starch.** Starch from the grain, along with the digestible component of the fiber, accounts for most of the energy in corn silage. High starch content is desirable.

Silage quality traits are reported on a dry matter basis (100 percent DM). Quality traits in these tables are intended for use in hybrid selection only. Analysis for the balancing of feed rations should be analyzed from hybrids grown on each individual farm..



**TABLE C.**

**AGRONOMIC TABLE FOR SILAGE TRIAL LOCATIONS**

	County	Planting Date	Silage Harvest	Previous Crop	Fertilizer		Soil Type	Soil Test <sup>1</sup>	Cooperator	Location
					N-P-K	LOCATION DROPPED				
Zone 1	WOOD (OH)				LOCATION DROPPED				OARDC Rich Minyo, Matt Davis	Hoytville, OH
	BRANCH (Irrigated)	5/24	9/13	Soybean	199-8-2	Loamy Sand	PH 7.3, P 98, K 104	Huff Farms Kyle Huff		Coldwater
	LENAWEE	6/1	9/20	Corn	167-7-2	Loamy Sand	PH 6.6, P 160, K 166	Raymond & Stutzman Farm Tim Stutzman		Seneca
Zone 2	INGHAM	5/12	9/16	Soybean	169-8-2	Sandy Clay Loam	PH 7.1, P 29, K 118	Plant, Soil and Microbial Sciences Facility MSU		East Lansing
	OTTAWA (Irrigated)	5/17	9/19	Corn	202-10-3	Sand	PH 6.6, P 74, K 132	Ottawa Station Farms Adam Geertman		West Olive
Zone 3	HURON				LOCATION DROPPED			Wil-Le Farms Ron, Ed and Chris McCrea		Bad Axe
	IOSCO	6/3	9/22	Corn	171-9-3	Sandy Loam	PH 7.3, P 57, K 191	Double B Dairy Jeremy, Tim and Roger Beebe		Hale
	OSCEOLA	5/13	9/14	Soybean	175-11-3	Sand	PH 6.7, P 47, K 90	Gingrich Meadows Brandon Gingrich		Le Roy
PRESQUE ISLE	6/3	9/22	Corn	170-8-2 + manure	Sandy Loam	PH 7.5, P 63, K 111	Ponik Farms Paul Ponik, Jeremy Karsten		Posen	

<sup>1</sup> - P and K reported in m3-ppm

# SILAGE HYBRID INDEX

COMPANY/HYBRID	RM	TECHNOLOGY	TABLE	COMPANY/HYBRID	RM	TECHNOLOGY	TABLE
<b>CHANNEL</b>				<b>LEGACY (cont.)</b>			
206-99STXRIB	106	STX	6E	LC623-21 5122	112	D2	6L
210-98STXRIB	110	STX	6E	LC634-20 SSX	113	STXRIB	6L
210-99STXRIB	110	STX	6E	<b>LG SEEDS</b>			
212-52SSPRIB	112	STX	6L	LG42C37-3220	92	VZ	8E
214-22STXRIB	114	STX	6L	LG45C21-5122	95	D1	7E,8E
<b>DAIRYLAND SEED</b>				LG49C28-VT2	99	VT2P	7E,8L
HiDF-3044Q	90	Q	8E	LG50C93-5222	100	D2	7E,8L
DS-3162Q	91	Q	8E	LG51C62-VT2	101	VT2P	7E
DS-3601Q	96	Q	7E,8E	LG52C42-VT2	102	VT2P	7E
HiDF-3855Q	98	Q	7E,8L	LG54C11-5222	104	D2	7E
HiDF-4073Q	100	Q	6E,7E,8L	LG58C77-5222	108	D2	6E,7L
HiDF-3802Q	102	Q	7E	LG59C72-VT2	109	VT2P	6E,7L
HiDF-4545Q	105	Q	6E,7L	<b>NK SEEDS</b>			
DS-4510Q	105	Q	7L	NK9991-5122	99	D1	7E
HiDF-4999Q	109	Q	6E	NK9922-5222	99	D2	7E
HiDF-5000Q	110	Q	6E,7L	NK0748-5122	107	D1	7L
DS-5144Q	111	Q	6L	NK1239-5122	112	D1	6L
<b>DYNA-GRO SEED</b>				Nk1354-5222	113	D2	6L
D36VC66	96	VT2PRIB	8E	NK1755-5222	117	D2	6L
D40VC41	100	VT2PRIB	7E,8L	<b>RENK</b>			
D41SS60	102	STXRIB	7E	RK710DGV2P	107	VT2P <sup>1</sup>	7L
D45TC55	105	TRERIB	7L	RK700SSTX	108	STX	7L
D48SS50	108	STXRIB	6E,7L	RK842VT2P	112	VT2P	7L
D50VC09	110	VT2PRIB	6E,7L	RK895DGV2P	113	VT2P <sup>1</sup>	7L
D52DC82	112	VT2PRIB <sup>1</sup>	6L,7L	RK945DGV2P	115	VT2P <sup>1</sup>	7L
<b>GOLDEN HARVEST</b>				RK940SSTX	115	STX	7L
G91V51-5222A	91	D2 <sup>1,2</sup>	8E	<b>SEEDWAY</b>			
G95D32-3220	95	VZ <sup>2</sup>	8E	SW 9726TR	97	TRE <sup>9</sup>	6E
G02K39-5122	102	D1	7E,8L	SW 0030SS	100	STX <sup>6</sup>	6E
G04S19-3122	104	3122 E-Z	7E,8L	SW 0321SS	103	STX <sup>6</sup>	6E
G07G73-5122	107	D1	6E	<b>SPECIALTY HYBRIDS</b>			
G10L16-5222A	110	D2 <sup>1,2</sup>	6E,7L	37A901	107	STX	6E,7L
G12S75-5122	112	D1	6L,7L	38G252	108	VT2P <sup>1</sup>	6E,7L
G13Z50-5222	113	D2 <sup>2</sup>	6L	40A662	110	STX	6E,7L
G14N11-5222	114	D2 <sup>2</sup>	6L	41DT911	111	TRE	6L
<b>LEGACY</b>				42A843	112	VT2P	6L
LC451-21 VT2P	95	VT2PRIB	8E	43A311	113	STX	6L
LC464-21 3120	96	BZ	8L	<b>VIKING</b>			
LC474-20 TRE	97	TRERIB	8E	O.69-01P	101	CONV	8L
LC493-21 5122	99	D1	7E	O.51-04P	104	CONV	7E
LC-4248 VT2P	100	VT2PRIB	7E	O.48-08P	108	CONV	7L
LC-5217 VT2P	102	VT2PRIB	7E	O.82-14P	114	CONV	6L
LC525-21 PW	102	PW	7E	O.23-11GS	111	CONV	6L
LC555-21 5122	105	D1	7L	<b>OTHER HYBRID TRAITS:</b>			
LC594-21 VT2P	109	VT2P	6E	<sup>1</sup> DT	<sup>4</sup> RW	<sup>7</sup> CEB, FAW, SB, SCB, SWB	
				<sup>2</sup> VIPTERA (BL: BROAD LEP.)	<sup>5</sup> ARTESIAN	<sup>8</sup> BCW, CEW, FAW, SB, SCB, SWB	
				<sup>3</sup> WBC	<sup>6</sup> BCW, CEW, ECB, FAW, SB, SCB, SWB, CR	<sup>9</sup> BCW, CEW, ECB, FAW, SB, SCB, SWB, TAW, WBC	

**TABLE 6E.**

**BRANCH, LENAWEE & WOOD (OHIO) COUNTY SILAGE TRIALS - EARLY (110 Day and Earlier)**

**ZONE 1**

2022		Early - TRIAL AVERAGE										Branch - Early																										
BRAND / HYBRID	RM	TRAIT	YIELD					% QUALITY					MILK 2006					YIELD					% QUALITY					MILK 2006										
			%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MK/T	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MK/T	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MK/T	MK/A
Channel 206-99STXRIB	106	STX	37.5	25.3	9.5*	99	85.5	19.6	23.9	39.5	6.7	39.8	2934	28162	34.5	25.0	8.6*	100	83.7	21.8	25.7	35.9	5.9	36.0	2561	22140	34.5	25.0	8.6*	100	83.7	21.8	25.7	35.9	5.9	36.0	2561	22140
Channel 210-98STXRIB	110	STX	37.7	25.7	9.6*	99	86.3	20.6	25.9	47.0	6.9	40.0	3140	30561	35.6	25.5	9.1*	103	84.6	23.3	26.9	41.8	6.5	38.0	2897	26236	35.6	25.5	9.1*	103	84.6	23.3	26.9	41.8	6.5	38.0	2897	26236
Channel 210-99STXRIB	110	STX	36.9	25.1	9.2*	99	85.2	20.5	25.0	41.0	6.7	38.2	2860	26572	36.3	25.5	9.3*	100	84.3	21.7	25.8	39.2	6.0	36.4	2654	24903	36.3	25.5	9.3*	100	84.3	21.7	25.8	39.2	6.0	36.4	2654	24903
Dairyland Seed HIDF-4073Q	100	Q	43.1	23.0	9.9*	97	87.2	19.1	24.8	48.1	6.8	39.8	3107	26727	48.4	20.6	10.3**	99	85.1	20.8	25.2	40.7	6.1	37.2	2729	20205	48.4	20.6	10.3**	99	85.1	20.8	25.2	40.7	6.1	37.2	2729	20205
Dairyland Seed HIDF-4545Q	105	Q	35.9	26.2	9.4*	96	86.2	22.1	27.2	49.0	7.0	38.7	3100	29235	35.8	25.3	9.0*	96	84.2	26.3	29.5	46.5	6.2	36.9	2876	26096	35.8	25.3	9.0*	96	84.2	26.3	29.5	46.5	6.2	36.9	2876	26096
Dairyland Seed HIDF-4999Q	109	Q	34.8	26.5	9.2*	98	85.7	21.8	27.7	47.9	7.0	35.5	2875	26743	34.4	24.4	8.4	99	83.8	24.5	30.0	45.5	6.3	32.4	2607	21756	34.4	24.4	8.4	99	83.8	24.5	30.0	45.5	6.3	32.4	2607	21756
Dairyland Seed HIDF-5000Q	110	Q	33.4	26.4	8.8	88	84.9	21.1	25.2	39.8	6.9	36.1	2703	23826	35.5	23.7	8.4	89	84.8	21.1	25.3	39.5	6.2	36.4	2657	22366	35.5	23.7	8.4	89	84.8	21.1	25.3	39.5	6.2	36.4	2657	22366
Dyna-Gro Seed D48SS60	108	STXRIB	36.4	25.2	9.1*	92	85.3	20.2	24.6	40.2	7.1	38.8	2912	26642	36.4	24.2	8.8*	88	83.9	21.5	24.8	35.1	6.4	37.3	2657	23487	36.4	24.2	8.8*	88	83.9	21.5	24.8	35.1	6.4	37.3	2657	23487
Dyna-Gro Seed D50VC09	110	VT2PRIB	35.8	24.8	8.9	92	86.0	21.3	27.2	48.0	6.5	38.0	3036	27369	35.2	22.8	8.0	91	83.9	23.1	27.4	41.4	5.6	36.5	2717	21806	35.2	22.8	8.0	91	83.9	23.1	27.4	41.4	5.6	36.5	2717	21806
Golden Harvest G10L16-5222A	110	D2	35.9	27.0	9.7*	97	86.2	19.4	24.4	43.3	6.6	40.0	2679	23157	37.1	25.6	9.5*	98	84.0	21.1	24.3	34.1	5.7	36.6	2372	19303	37.1	25.6	9.5*	98	84.0	21.1	24.3	34.1	5.7	36.6	2372	19303
Golden Harvest G07G73-5122	107	D1	35.0	24.4	8.5	97	84.4	21.6	25.9	39.8	6.9	35.6	3017	29396	35.2	23.2	8.1	99	82.6	24.0	27.6	36.8	6.3	32.3	2515	23922	35.2	23.2	8.1	99	82.6	24.0	27.6	36.8	6.3	32.3	2515	23922
Legacy Seeds LC594-21 VT2P	109	VT2P	38.4	26.2	10.1**	99	86.3	19.3	24.9	44.0	6.8	40.5	3111	31302	37.3	26.4	9.8*	99	84.7	20.2	24.2	36.7	6.3	40.7	2928	28770	37.3	26.4	9.8*	99	84.7	20.2	24.2	36.7	6.3	40.7	2928	28770
LG Seeds LG58C77-5222	108	D2	34.3	25.4	8.7	94	83.9	22.2	25.8	37.6	6.8	34.7	2566	22626	34.6	23.0	7.9	97	82.4	24.0	27.5	35.8	6.1	31.3	2242	17850	34.6	23.0	7.9	97	82.4	24.0	27.5	35.8	6.1	31.3	2242	17850
LG Seeds LG59C72-VT2	109	VT2P	36.2	25.5	9.2*	97	85.0	20.3	24.0	37.4	6.9	39.8	2914	27163	39.4	25.4	10.0*	99	84.8	20.1	23.5	35.0	6.0	41.2	2899	29029	39.4	25.4	10.0*	99	84.8	20.1	23.5	35.0	6.0	41.2	2899	29029
Seedway SW 0030SS	100	STX	37.5	25.2	9.5*	99	85.7	20.0	23.9	39.7	7.0	41.0	3053	28932	37.6	25.2	9.5*	100	84.7	21.3	23.4	34.7	6.4	41.6	2950	28059	37.6	25.2	9.5*	100	84.7	21.3	23.4	34.7	6.4	41.6	2950	28059
Seedway SW 0321SS	103	STX	37.3	24.9	9.3*	98	85.6	19.5	25.4	43.2	6.8	36.8	2810	26108	36.6	25.3	9.3*	100	84.2	20.7	27.2	41.7	5.9	32.0	2381	22014	36.6	25.3	9.3*	100	84.2	20.7	27.2	41.7	5.9	32.0	2381	22014
Seedway SW 9726TR	97	TRE	41.3	22.7	9.3*	96	84.6	20.7	24.5	37.5	6.6	39.8	2904	27205	39.9	23.0	9.2*	95	81.6	23.9	25.9	28.9	5.8	35.4	2385	21839	39.9	23.0	9.2*	95	81.6	23.9	25.9	28.9	5.8	35.4	2385	21839
Specialty Hybrids 37A901	107	STX	37.4	25.2	9.4*	96	87.2	19.0	25.6	49.5	7.0	39.8	3185	29854	38.7	23.2	9.0*	97	86.9	18.8	25.1	47.2	6.2	41.4	3176	28509	38.7	23.2	9.0*	97	86.9	18.8	25.1	47.2	6.2	41.4	3176	28509
Specialty Hybrids 38G252	108	VT2P	37.3	26.5	9.8*	98	85.6	20.4	25.5	43.4	6.8	38.4	2940	28806	38.9	24.9	9.7*	97	85.0	21.3	26.4	42.9	5.9	37.9	2841	27189	38.9	24.9	9.7*	97	85.0	21.3	26.4	42.9	5.9	37.9	2841	27189
Specialty Hybrids 40A662	110	STX	35.3	27.1	9.5*	97	84.3	20.9	26.0	39.3	6.9	36.0	2709	25917	36.1	25.8	9.3*	98	82.8	21.7	25.9	33.5	6.2	35.4	2497	23238	36.1	25.8	9.3*	98	82.8	21.7	25.9	33.5	6.2	35.4	2497	23238
AVERAGE			36.9	25.4	9.3	96	85.6	20.5	25.4	42.8	6.8	38.4	2928	27315	37.2	24.4	9.1	97	84.1	22.1	26.1	38.6	6.1	36.6	2677	23936	37.2	24.4	9.1	97	84.1	22.1	26.1	38.6	6.1	36.6	2677	23936
HIGHEST			43.1	27.1	10.1	99	87.2	22.2	27.7	49.5	7.1	41.0	3185	31302	48.4	26.4	10.3	103	86.9	26.3	30.0	47.2	6.5	41.6	3176	29029	48.4	26.4	10.3	103	86.9	26.3	30.0	47.2	6.5	41.6	3176	29029
LOWEST			33.4	22.7	8.5	88	83.9	19.0	23.9	37.4	6.5	34.7	2566	22626	34.4	20.6	7.9	88	81.6	18.8	23.4	28.9	5.6	31.3	2242	17850	34.4	20.6	7.9	88	81.6	18.8	23.4	28.9	5.6	31.3	2242	17850
CV (%)			10.3	7.5	13.0	6	2.1	13.0	11.6	15.0	6.6	11.6	10	15	12.2	7.8	16.7	5	2.3	10.1	11.8	14.0	8.9	9.9	11	15	12.2	7.8	16.7	5	2.3	10.1	11.8	14.0	8.9	9.9	11	15
LSD (5%)			3.1	1.6	1.0	4	1.5	2.2	2.4	5.3	0.4	3.7	239	3407	5.4	2.3	1.8	6	2.3	2.6	3.6	6.4	0.6	4.3	337	4343	5.4	2.3	1.8	6	2.3	2.6	3.6	6.4	0.6	4.3	337	4343

\*\* Highest Yielding Hybrid  
 \* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/varietytrials>

2022		Lenawee - Early										Wood - Early																				
BRAND / HYBRID	RM	TRAIT	YIELD					% QUALITY					MILK 2006					YIELD					% QUALITY					MILK 2006				
			%DM	GT/A	DT/A	%STD	%STR	IVD	ADF	NDF	NDFF	CP	STR	MK/T	MK/A	%DM	GT/A	DT/A	%STD	%STR	IVD	ADF	NDF	NDFF	CP	STR	MK/T	MK/A				
Channel 206-98STXRIB	106	STX	40.6	25.6	10.3**	97	87.4	17.5	22.2	43.1	7.6	43.6	3307	34183																		
Channel 210-98STXRIB	110	STX	39.9	25.8	10.2*	96	86.1	18.0	24.9	52.3	7.4	41.9	3384	34886																		
Channel 210-98STXRIB	110	STX	37.4	24.8	9.2	97	88.2	19.3	24.2	42.8	7.4	39.9	3065	28240																		
Dairyland Seed HIDF-4073Q	100	Q	37.8	25.3	9.5*	95	89.2	17.3	24.3	55.5	7.5	42.5	3485	33250																		
Dairyland Seed HIDF-4545Q	105	Q	36.0	27.1	9.7*	96	88.3	18.0	25.0	51.6	7.8	40.5	3325	32374																		
Dairyland Seed HIDF-4999Q	109	Q	35.3	28.5	10.0*	97	87.5	19.2	25.3	50.4	7.7	38.6	3143	31730																		
Dairyland Seed HIDF-5000Q	110	Q	31.3	29.1	9.1	87	85.1	21.0	25.0	40.1	7.7	35.8	2749	25285																		
Dyna-Gro Seed D48SS50	108	STXRIB	36.4	26.2	9.4*	97	86.7	19.0	24.5	45.3	7.8	40.2	3168	29797																		
Dyna-Gro Seed D50VCO9	110	VT2PRIB	36.5	26.8	9.8*	94	88.0	19.4	27.0	54.7	7.5	39.6	3355	32931																		
Golden Harvest G10L16-5222A	110	D2	34.8	28.4	9.9*	97	88.5	17.7	24.5	52.6	7.4	43.4	2986	27010																		
Golden Harvest G07G73-5122	107	D1	34.9	25.6	9.0	95	86.2	19.2	24.1	42.7	7.4	39.0	3519	34871																		
Legacy Seeds LC594-21 VT2P	109	VT2P	39.4	26.0	10.3**	98	87.9	18.3	25.7	51.4	7.3	40.3	3294	33834																		
LG Seeds LG58C77-5222	108	D2	34.0	27.8	9.5*	90	85.4	20.4	24.2	39.3	7.6	38.2	2890	27401																		
LG Seeds LG59C72-VT2	109	VT2P	32.9	25.6	8.5	94	85.2	20.6	24.6	39.8	7.7	38.4	2929	25297																		
Seedway SW 0030SS	100	STX	37.4	25.3	9.4*	98	86.7	18.8	24.4	44.7	7.5	40.4	3157	29806																		
Seedway SW 0321SS	103	STX	38.0	24.5	9.3	95	87.1	18.3	23.6	44.7	7.7	41.6	3238	30202																		
Seedway SW 9726TR	97	TRE	42.6	22.3	9.5*	97	87.6	17.6	23.1	46.1	7.5	44.2	3423	32572																		
Specialty Hybrids 37A901	107	STX	36.1	27.1	9.8*	94	87.5	19.1	26.1	51.9	7.9	38.3	3195	31198																		
Specialty Hybrids 38G252	108	VT2P	35.6	28.1	10.0*	98	86.2	19.4	24.7	44.0	7.7	38.9	3038	30424																		
Specialty Hybrids 40A662	110	STX	34.5	28.3	9.8*	95	85.8	20.2	26.1	45.1	7.6	36.5	2920	28595																		
AVERAGE			36.6	26.4	9.6	95	87.0	18.9	24.7	46.9	7.6	40.1	3179	30694																		
HIGHEST			42.6	29.1	10.3	98	89.2	21.0	27.0	55.5	7.9	44.2	3519	34886																		
LOWEST			31.3	22.3	8.5	87	85.1	17.3	22.2	39.3	7.3	35.8	2749	25285																		
CV (%)			7.9	7.2	8.3	6	1.8	11.5	11.3	15.5	4.6	10.8	9	15																		
LSD (5%)			3.4	2.25	0.94	7	1.81	2.57	3.29	8.59	0.41	5.11	343	5354																		

\*\* Highest Yielding Hybrid  
\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/varietytrials>

TABLE 6L.

BRANCH, LENAWEЕ & WOOD (OHIO) COUNTY SILAGE TRIALS - LATE (111 Day and Later)

ZONE 1

2022		Late - TRIAL AVERAGE										Branch - Late														
		RM	TRAIT	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	M/KT	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	M/KT
Channel 212-52SSPRIB	112	STX	35.7	25.5	9.0 *	98	85.1	20.5	25.0	40.3	6.9	38.1	2859	26039	36.0	24.5	8.8	97	83.8	21.5	24.7	34.3	6.0	37.8	2650	23408
Channel 214-22STXRIB	114	STX	37.5	26.0	9.7 **	99	86.2	20.1	25.6	45.6	6.8	39.2	3052	29607	38.0	25.6	9.7 *	99	85.5	20.5	25.3	42.8	6.1	39.0	2900	28084
Dairyland Seed DS-5144Q	111	Q	36.6	26.0	9.5 *	96	84.7	22.0	26.3	42.1	6.7	36.0	2754	26171	38.6	25.6	9.9 *	97	84.9	21.4	25.6	40.9	5.8	37.7	2755	27276
Dyna-Gro Seed D52DC82	112	VT2PRIB	35.3	26.9	9.5 *	93	86.2	19.8	24.9	44.2	6.8	39.4	3015	28755	34.8	25.7	8.9	89	85.2	20.8	25.0	40.5	6.2	38.1	2798	24993
Golden Harvest G12S75-5122	112	D1	35.8	26.7	9.5 *	97	85.1	21.9	28.1	46.2	7.0	34.7	2815	26583	38.5	24.1	9.2	99	84.0	21.8	26.8	40.2	5.8	36.3	2668	24442
Golden Harvest G13Z50-5222	113	D2	36.2	25.4	9.2 *	96	85.7	21.8	26.9	47.3	6.5	37.4	2927	27313	36.8	24.2	8.9	98	83.5	23.7	28.7	42.5	5.5	33.3	2519	22748
Golden Harvest G14N11-5222	114	D2	35.8	25.8	9.2 *	95	84.7	21.5	26.3	41.9	6.6	37.5	2863	26542	37.1	24.3	9.0	99	82.5	23.2	26.3	33.6	5.7	36.0	2511	22916
Legacy Seeds LC623-21 5122	112	D2	37.4	26.4	9.7 **	96	82.0	24.7	28.3	35.8	6.7	30.6	2289	22088	42.7	25.1	10.6 **	92	81.3	25.0	27.9	32.8	5.9	31.1	2177	22864
Legacy Seeds LC634-20 SXX	113	STXRIB	36.3	25.5	9.3 *	94	85.3	21.3	27.0	45.5	7.1	35.7	2838	26573	37.0	23.5	8.7	94	83.8	22.7	27.8	41.4	6.4	34.3	2614	22800
NK Seeds NK1239-5122	112	D1	36.4	26.6	9.5 *	97	84.4	22.6	27.8	43.5	6.9	34.0	2688	25875	39.2	22.4	8.8	101	83.0	23.8	27.9	38.9	6.1	33.2	2466	21741
NK Seeds NK1354-5222	113	D2	46.0	19.2	8.5	98	79.7	27.9	30.8	35.9	8.9	36.0	2906	24644	35.8	22.4	8.0	100	72.0	37.6	38.0	25.9	9.5	29.5	2446	19564
NK Seeds NK1755-5222	117	D2	32.7	28.2	9.1 *	97	85.0	22.3	28.3	46.1	6.8	32.2	2595	23789	33.3	26.3	8.7	94	84.4	23.0	28.8	45.6	6.1	32.0	2519	21918
Specialty Hybrids 41DT911	111	TRE	37.4	25.4	9.5 *	97	85.2	21.2	25.5	41.8	6.8	37.9	2875	27788	36.4	23.3	8.5	96	82.9	23.8	27.3	37.2	5.7	34.4	2478	21125
Specialty Hybrids 42A843	112	VT2P	33.1	28.7	9.5 *	98	84.4	21.3	25.9	39.7	7.0	36.0	2725	25836	34.2	27.5	9.4	97	84.0	21.0	24.8	35.5	6.4	37.0	2637	24925
Specialty Hybrids 43A311	113	STX	36.0	26.3	9.4 *	99	86.1	20.4	26.1	46.8	7.0	37.3	2944	27741	37.4	24.9	9.2	98	84.1	22.6	27.1	41.2	5.8	35.3	2626	24318
Viking O.23-11GS	111	CONV	34.8	27.5	9.5 *	99	85.1	20.5	24.0	37.8	6.4	37.9	2736	26139	34.3	26.8	9.1	99	84.2	21.1	23.9	33.8	5.4	37.1	2518	22876
Viking O.82-14P	114	CONV	33.9	27.1	9.2 *	87	84.7	22.7	27.8	45.1	6.7	35.4	2802	26210	32.7	25.9	8.5	82	82.9	25.8	31.2	44.7	6.0	29.6	2383	20232
AVERAGE			36.3	26.1	9.3	96	84.7	21.9	26.7	42.7	6.9	36.2	2805	26335	36.6	24.8	9.1	96	83.0	23.5	27.5	38.3	6.1	34.8	2569	23308
HIGHEST			46.0	28.7	9.7	99	86.2	27.9	30.8	47.3	8.9	39.4	3052	29607	42.7	27.5	10.6	101	85.5	37.6	38.0	45.6	9.5	39.0	2900	28084
LOWEST			32.7	19.2	8.5	87	79.7	19.8	24.0	35.8	6.4	30.6	2289	22088	32.7	22.4	8.0	82	72.0	20.5	23.9	25.9	5.4	29.5	2177	19564
CV (%)			12.4	11.6	11.0	7	3.7	16.9	12.6	15.8	15.9	13.7	12	17	10.6	8.7	10.5	7	2.4	10.4	8.3	14.3	11.1	12.3	13	19
LSD (5%)			3.7	2.5	0.9	6	2.6	3.1	2.8	5.6	0.9	4.1	278	3726	4.6	2.6	1.1	8	2.3	2.9	2.7	6.5	0.8	5.1	407	5155

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/varietytrials>

2022			Lenawee - Late										Wood - Late																											
BRAND /HYBRID	RM	TRAIT	YIELD					% QUALITY					MILK 2006					YIELD					% QUALITY					MILK 2006												
			%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/T	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/T	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/T	MK/A		
Channel 212-52SSPRIB	112	STX	35.4	26.4	9.3	99	86.5	19.6	25.3	46.3	7.8	38.3	3068	28670																										
Channel 214-22STXRIB	114	STX	37.1	26.4	9.7	100	86.8	19.8	25.9	48.5	7.6	39.5	3205	31129																										
Dairyland Seed DS-5144Q	111	Q	34.6	26.4	9.1	95	84.6	22.6	27.0	43.4	7.6	34.4	2752	25066																										
Dyna-Gro Seed D52DC82	112	VT2PRIB	35.8	28.2	10.1	97	87.2	18.7	24.7	47.9	7.5	40.6	3231	32516																										
Golden Harvest G12S75-5122	112	D1	33.2	29.3	9.7	96	86.2	22.1	29.4	52.2	8.3	33.1	2962	28723																										
Golden Harvest G13Z50-5222	113	D2	35.7	26.5	9.5	95	87.9	20.0	25.1	52.1	7.4	41.5	3334	31878																										
Golden Harvest G14N11-5222	114	D2	34.4	27.3	9.4	91	86.9	19.7	26.3	50.3	7.5	39.1	3214	30168																										
Legacy Seeds LC623-21 5122	112	D2	32.2	27.6	8.9	99	82.7	24.5	28.7	38.8	7.6	30.1	2400	21313																										
Legacy Seeds LC634-20 S5X	113	STXRIB	35.7	27.5	9.8	94	86.9	19.9	26.3	49.7	7.7	37.1	3061	30345																										
NK Seeds NK1239-5122	112	D1	33.6	30.8	10.3	94	85.9	21.5	27.6	48.2	7.8	34.8	2910	30010																										
NK Seeds NK1354-5222	113	D2	56.3	15.9	8.9	95	87.5	18.3	23.6	46.0	8.2	42.5	3365	29724																										
NK Seeds NK1755-5222	117	D2	32.0	30.0	9.6	100	85.5	21.6	27.7	46.6	7.4	32.4	2670	25660																										
Specialty Hybrids 41DT911	111	TRE	38.5	27.6	10.6	**	98	87.5	18.5	23.8	46.5	7.9	41.4	3271	34452																									
Specialty Hybrids 42A843	112	VT2P	31.9	29.9	9.5	**	99	84.9	21.7	27.0	44.0	7.7	34.9	2813	26746																									
Specialty Hybrids 43A311	113	STX	34.5	27.6	9.5	**	99	88.1	18.3	25.0	52.3	8.1	39.4	3262	31165																									
Viking O.23-11GS	111	CONV	35.3	28.2	9.9	**	98	86.0	19.9	24.1	41.7	7.5	38.7	2953	29402																									
Viking O.82-14P	114	CONV	35.1	28.3	9.9	**	92	86.6	19.7	24.4	45.5	7.4	41.3	3222	32187																									
AVERAGE			36.0	27.3	9.6	96	86.3	20.4	26.0	47.1	7.7	37.6	3041	29362																										
HIGHEST			56.3	30.8	10.6	100	88.1	24.5	29.4	52.3	8.3	42.5	3365	34452																										
LOWEST			31.9	15.9	8.9	91	82.7	18.3	23.6	38.8	7.4	30.1	2400	21313																										
CV (%)			6.2	9.1	9.3	6	2.2	12.0	11.5	16.6	6.4	11.3	11	16																										
LSD (5%)			2.7	2.9	1.1	6	2.2	2.9	3.6	9.3	0.6	5.0	387	5482																										

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/VarietyTrials>

**TABLE 7E.**

**HURON, INGHAM & OTTAWA COUNTY SILAGE TRIALS - EARLY (104 Day and Earlier)**

**ZONE 2 - 3**

2022		Early - TRIAL AVERAGE										Huron - Early															
BRAND / HYBRID	RM	TRAIT	YIELD			% QUALITY			MILK 2006			YIELD			% QUALITY			MILK 2006									
			%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MKT	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MKT	MK/A	
Dairyland Seed DS-3601Q	96	Q	39.0	21.1	8.2	94	90.1	17.0	27.3	63.7	7.5	42.3	3668	30073													
Dairyland Seed H1DF-3802Q	102	Q	37.2	22.0	8.2	98	89.5	19.8	29.5	63.8	7.9	34.5	3301	26905													
Dairyland Seed H1DF-3855Q	98	Q	41.6	21.0	8.7 *	99	89.4	19.5	29.0	62.6	7.2	38.3	3447	29874													
Dairyland Seed H1DF-4073Q	100	Q	41.0	20.1	8.2	101	89.8	18.7	26.4	60.1	7.5	38.9	3418	27949													
Dyna-Gro Seed D40VC41	100	VT2PRIB	40.2	19.2	7.6	99	89.7	18.0	27.0	60.4	6.8	40.5	3475	26568													
Dyna-Gro Seed D41SS60	102	STXRIB	40.5	19.9	8.0	100	87.8	19.6	27.7	54.8	7.6	35.4	3113	25177													
Golden Harvest G02K39-5122	102	D1	40.9	20.0	8.1	98	88.8	17.7	27.0	58.1	7.7	39.2	3424	27891													
Golden Harvest G04S19-3122	104	3122 E-Z	39.4	19.9	7.8	99	88.0	20.5	29.6	58.2	7.4	36.2	3324	26234													
Legacy Seeds LC-4248 VT2P	100	VT2PRIB	41.2	21.7	8.9 *	99	89.4	19.1	28.8	61.6	7.0	37.6	3408	30503													
Legacy Seeds LC493-21 5122	99	D1	40.5	20.1	8.1	96	89.3	18.5	27.5	61.0	8.0	39.1	3506	28307													
Legacy Seeds LC-5217 VT2P	102	VT2PRIB	41.5	21.1	8.7 *	100	88.8	18.9	27.4	57.6	7.1	39.2	3398	30000													
Legacy Seeds LC525-21 PW	102	PW	39.8	23.3	9.3 **	101	86.5	20.6	27.2	48.9	7.1	37.7	3138	29472													
LG Seeds LG45C21-5122	95	D1	42.3	18.0	7.5	94	87.6	19.4	27.0	53.4	7.8	37.4	3239	24406													
LG Seeds LG49C28-VT2	99	VT2P	40.6	21.9	8.9 *	98	87.7	20.0	27.4	54.8	7.4	39.6	3395	30240													
LG Seeds LG50C93-5222	100	D2	42.9	18.5	7.9	100	88.1	19.7	29.5	59.2	7.7	37.1	3418	26905													
LG Seeds LG51C62-VT2	101	VT2P	39.7	21.4	8.4	97	88.5	19.6	28.0	58.5	7.3	38.2	3359	28304													
LG Seeds LG52C42-VT2	102	VT2P	40.4	21.4	8.6 *	98	88.9	17.4	25.0	54.6	7.4	41.4	3434	29384													
LG Seeds LG54C11-5222	104	D2	42.5	20.4	8.6 *	99	87.3	20.3	28.7	55.4	7.7	35.8	3182	27546													
NK Seeds NK9922-5222	99	D2	41.7	19.7	8.2	101	88.2	20.3	30.4	60.8	7.4	35.9	3338	27384													
NK Seeds NK9991-5122	99	D1	41.8	18.9	7.9	101	88.7	19.2	28.3	59.0	7.8	38.1	3431	26918													
Viking O.51-04P	104	CONV	40.9	19.8	8.1	93	89.3	18.2	27.2	59.3	7.6	38.6	3424	27880													
AVERAGE			40.7	20.4	8.3	98	88.6	19.1	27.9	58.4	7.5	38.1	3373	27996													
HIGHEST			42.9	23.3	9.3	101	90.1	20.6	30.4	63.8	8.0	42.3	3668	30503													
LOWEST			37.2	18.0	7.5	93	86.5	17.0	25.0	48.9	6.8	34.5	3113	24406													
CV (%)			8.5	9.4	9.5	4	2.4	13.1	13.8	18.6	5.7	11.6	10	16													
LSD (5%)			2.9	1.6	0.7	3	1.8	2.1	3.2	9.0	0.4	3.7	278	3663													

\*\* Highest Yielding Hybrid  
 \* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/varietytrials>

2022		Ingham - Early										Ottawa - Early														
BRAND / HYBRID	RM	TRAIT	YIELD			% QUALITY					MILK 2006			YIELD			% QUALITY					MILK 2006				
			%DM	GT/A	DT/A	IVD	ADF	NDF	NDFD	CP	STR	MK/A	MK/T	%STD	%DM	GT/A	DT/A	IVD	ADF	NDF	NDFD	CP	STR	MK/A	MK/T	
Dairyland Seed DS-3601Q	96	Q	41.6	19.7	8.2	94	90.2	15.4	26.5	63.5	7.9	44.0	37.69	31031	36.4	22.5	8.2	94	90.1	18.6	28.1	64.0	7.0	40.6	3568	29116
Dairyland Seed HIDF-3802Q	102	Q	38.7	21.7	8.4	96	89.4	20.1	30.2	64.7	8.0	31.5	3149	26377	35.8	22.3	7.9	99	89.6	19.6	28.9	62.9	7.7	37.4	3453	27432
Dairyland Seed HIDF-3855Q	98	Q	45.0	19.8	8.9*	99	90.0	19.9	30.6	66.6	7.5	36.6	3463	30775	38.3	22.1	8.4*	99	89.9	19.2	27.3	58.7	6.9	40.0	3431	28974
Dairyland Seed HIDF-4073Q	100	Q	42.3	18.5	7.8	100	90.2	19.5	30.2	66.9	7.8	35.8	3524	27233	39.8	21.8	8.6*	101	89.4	17.8	22.6	53.3	7.2	41.9	3311	28666
Dyna-Gro Seed D40VC41	100	VT2PRIB	37.2	20.3	7.6	99	90.2	18.6	29.3	66.3	6.9	38.2	3464	26170	43.3	18.1	7.7	99	89.2	17.4	24.7	54.5	6.7	42.9	3487	26966
Dyna-Gro Seed D41SS60	102	STXRIB	43.2	19.4	8.4	100	88.8	19.4	29.3	61.5	8.0	35.1	3331	27887	37.7	20.3	7.7	101	86.7	19.9	26.2	48.1	7.2	35.6	2895	22466
Golden Harvest G02K39-5122	102	D1	42.2	19.0	8.0	99	89.6	18.3	28.1	63.0	7.9	36.4	3398	27042	39.5	21.1	8.3	98	88.1	17.1	25.8	53.2	7.5	42.1	3450	28741
Golden Harvest G04S19-3122	104	3122 E-Z	40.3	20.3	8.2	99	89.0	21.7	33.3	66.8	7.9	32.6	3436	28091	38.6	19.6	7.5	99	87.1	19.4	25.9	49.5	7.0	39.7	3212	24377
Legacy Seeds LC-4248-VT2P	100	VT2PRIB	40.3	21.2	8.5	98	89.2	21.8	33.8	67.9	7.4	30.6	3284	28246	42.1	22.1	9.3**	100	89.5	16.4	23.9	55.3	6.5	44.6	3531	32761
Legacy Seeds LC493-21-5122	99	D1	42.6	19.0	8.1	97	89.4	18.5	28.3	62.5	8.2	37.4	3497	28094	38.4	21.1	8.1	96	89.2	18.5	26.7	59.5	7.7	40.7	3514	28521
Legacy Seeds LC-5217-VT2P	102	VT2PRIB	42.7	20.9	8.9*	99	91.0	18.3	30.3	69.7	7.6	38.5	3741	33474	40.3	21.3	8.5*	101	86.7	19.5	24.5	45.4	6.7	39.8	3055	26525
Legacy Seeds LC525-21-PW	102	PW	41.1	24.0	9.8**	101	88.2	19.8	28.7	58.3	7.7	37.2	3386	33190	38.6	22.7	8.8*	101	84.7	21.4	25.7	39.5	6.6	38.3	2891	25754
LG Seeds LG45C21-5122	95	D1	42.4	18.1	7.6	93	89.0	19.2	29.3	62.4	8.4	35.3	3394	25689	42.2	17.9	7.5	94	86.3	19.7	24.8	44.5	7.2	39.6	3084	23123
LG Seeds LG49C28-VT2P	99	VT2P	44.8	20.7	9.3*	97	89.8	18.9	29.2	64.6	7.7	37.2	3487	32477	36.4	23.2	8.4*	99	85.7	21.0	25.7	45.0	7.1	42.0	3303	28003
LG Seeds LG50C93-5222	100	D2	43.2	18.7	8.1	101	88.2	20.6	31.6	62.5	8.1	34.6	3433	27657	42.7	18.2	7.7	100	88.0	18.9	27.4	55.9	7.3	39.6	3402	26154
LG Seeds LG51C62-VT2	101	VT2P	39.7	20.9	8.2	97	89.3	18.9	28.9	62.9	7.6	37.4	3488	28685	39.6	21.9	8.6*	97	87.6	20.3	27.2	54.0	6.9	39.1	3231	27924
LG Seeds LG52C42-VT2	102	VT2P	39.9	21.3	8.4	97	90.8	16.7	26.7	65.1	7.9	41.1	3695	30993	40.9	21.6	8.7*	98	87.0	18.1	23.3	44.0	7.0	41.7	3173	27775
LG Seeds LG54C11-5222	104	D2	43.8	19.6	8.5	99	87.7	20.0	29.0	57.6	7.9	35.5	3259	28026	41.2	21.2	8.7*	99	86.9	20.5	28.4	53.2	7.5	36.1	3106	27065
NK Seeds NK922-5222	99	D2	45.3	19.0	8.6	101	90.3	18.6	30.7	68.3	8.1	36.8	3607	30916	38.2	20.4	7.8	101	86.2	22.0	30.0	53.3	6.7	35.1	3069	23851
NK Seeds NK9991-5122	99	D1	43.3	18.3	7.9	100	88.3	20.5	30.6	61.5	8.2	34.5	3367	26581	40.2	19.5	7.8	102	89.0	18.0	26.1	56.5	7.3	41.7	3495	27254
Viking O.51-04P	104	CONV	41.2	19.1	7.9	97	89.5	18.1	27.9	62.2	8.2	37.3	3462	27422	40.7	20.6	8.4*	88	89.0	18.3	26.5	56.4	7.0	39.9	3386	28337
AVERAGE			41.9	20.0	8.3	98	89.4	19.2	29.6	64.0	7.9	36.4	3459	28860	39.6	20.9	8.2	98	87.8	19.1	26.2	52.7	7.1	39.9	3288	27132
HIGHEST			45.3	24.0	9.8	101	91.0	21.8	33.8	69.7	8.4	44.0	3769	33474	43.3	23.2	9.3	102	90.1	22.0	30.0	64.0	7.7	44.6	3568	32761
LOWEST			37.2	18.1	7.6	93	87.7	15.4	26.5	57.6	6.9	30.6	3149	25689	35.8	17.9	7.5	88	84.7	16.4	22.6	39.5	6.5	35.1	2891	22466
CV (%)			8.2	8.9	9.8	4	2.1	10.8	10.0	9.9	5.2	10.6	7	13	8.8	9.9	9.1	4	2.7	15.0	14.0	20.3	6.4	12.3	11	17
LSD (5%)			4.1	2.1	1.0	4	2.2	2.5	3.5	7.5	0.5	4.6	287	4467	4.1	2.4	0.9	5	2.8	3.4	4.3	12.6	0.5	5.8	431	5525

\*\* Highest Yielding Hybrid  
\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.canr.msu.edu/varietytrials>

TABLE 7L.

HURON, INGHAM & OTTAWA COUNTY SILAGE TRIALS - LATE (105 Day and Later)

ZONE 2 - 3

2022		Late - TRIAL AVERAGE										Huron - Late														
BRAND / HYBRID	RM	TRAIT	YIELD					% QUALITY					% QUALITY													
			%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFF	CP	STR	MILK 2006	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFF	CP	STR	MILK 2006	MK/A
Dairyland Seed DS-4510Q	105	Q	39.8	19.7	7.8	97	89.6	18.3	27.3	62.4	7.9	39.6	3590	28112												
Dairyland Seed H1DF-4545Q	105	Q	40.1	21.7	8.7	96	90.1	18.7	28.8	65.8	7.9	38.8	3502	30459												
Dairyland Seed H1DF-5000Q	110	Q	39.0	24.0	9.3	90	89.3	19.5	29.3	62.9	8.4	37.1	3475	29982												
Dyna-Gro Seed D45TC55	105	TRERIB	44.4	17.5	7.7	97	89.8	16.6	25.5	56.4	8.5	42.8	3539	27079												
Dyna-Gro Seed D48S50	108	STXRIB	41.5	19.7	8.1	97	89.7	19.2	30.2	65.0	8.2	37.4	3592	28900												
Dyna-Gro Seed D50VC09	110	VT2PRIB	40.0	20.8	8.3	99	88.7	18.4	26.1	54.5	7.9	39.3	3372	29132												
Dyna-Gro Seed D52DC82	112	VT2PRIB	38.3	25.8	9.8	**	89.3	18.7	27.8	58.9	7.7	39.3	3505	31065												
Golden Harvest G10L16-5222A	110	D2	39.9	19.0	7.5	100	87.1	20.0	27.3	52.6	8.2	36.7	3231	24333												
Golden Harvest G12S75-5122	112	D1	38.5	21.0	8.0	100	86.3	22.2	32.4	57.2	8.0	33.5	3124	24966												
Legacy Seeds LC555-21-5122	105	D1	38.5	20.0	7.6	99	87.0	20.9	28.7	53.6	7.8	35.0	3128	24952												
LG Seeds LG58C77-5222	108	D2	39.3	21.0	8.2	94	89.6	17.9	26.5	61.5	8.2	39.0	3409	27968												
LG Seeds LG59C72-VT2	109	VT2P	38.5	20.2	7.7	99	87.7	19.6	26.0	52.9	8.2	38.3	3284	25389												
NK Seeds NK0748-5122	107	D1	43.7	20.0	8.5	98	88.2	19.0	26.7	54.3	7.8	38.8	3289	30348												
Renk RK700SSTX	108	STX	39.6	19.1	7.6	99	88.3	19.1	27.6	57.0	8.4	37.4	3350	25333												
Renk RK710D.G.VT2P	107	VT2P	40.4	20.4	8.3	100	87.9	20.2	29.1	58.3	7.9	35.7	3320	27207												
Renk RK842VT2P	112	VT2P	42.4	21.8	9.1	* 96	88.6	20.2	30.5	61.9	7.8	36.0	3426	31167												
Renk RK850D.G.VT2P	113	VT2P	40.1	20.5	8.2	95	88.1	19.1	26.6	53.4	7.7	38.8	3311	27144												
Renk RK940SSTX	115	STX	38.0	22.6	8.5	93	88.0	19.9	28.8	57.5	8.1	35.7	3201	27379												
Renk RK945D.G.VT2P	115	VT2P	38.6	22.4	8.6	99	88.0	18.7	26.0	51.6	7.9	38.8	3207	27470												
Specialty Hybrids 37A901	107	STX	41.0	20.0	8.1	87	88.5	18.9	27.4	58.5	8.3	36.7	3374	29402												
Specialty Hybrids 38G252	108	VT2P	39.0	20.8	8.1	99	88.9	18.1	27.1	58.3	7.9	39.3	3448	27707												
Specialty Hybrids 40A662	110	STX	37.8	22.6	8.4	98	88.7	19.0	28.6	59.1	7.8	37.3	3353	28134												
Viking O.48-08P	108	CONV	42.4	18.3	7.7	91	89.5	18.3	27.4	61.7	8.1	39.6	3556	27352												
AVERAGE			40.0	20.8	8.3	97	88.6	19.2	27.9	58.0	8.0	37.9	3373	27869												
HIGHEST			44.4	25.8	9.8	100	90.1	22.2	32.4	65.8	8.5	42.8	3592	31167												
LOWEST			37.8	17.5	7.5	87	86.3	16.6	25.5	51.6	7.7	33.5	3124	24333												
CV (%)			8.7	8.7	10.3	8	2.3	13.2	7.4	13.6	5.8	11.7	11	14												
LSD (5%)			2.9	1.5	0.7	6	1.7	2.1	1.7	6.5	0.4	3.7	300	3236												

\*\* Highest Yielding Hybrid  
\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.camr.msu.edu/varietytrials>

2022		Ingham - Late										Ottawa - Late													
		RM	TRAIT	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	ND/DF	CP	STR	MK/A	MK/T	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	ND/DF	CP	STR
105	Dairyland Seed DS-4510Q	40.9	18.3	7.5	97	91.0	19.3	31.1	71.0	8.3	36.2	3652	27467	38.7	21.0	8.1	98	88.2	17.4	23.5	53.8	7.5	43.0	3527	28756
105	Dairyland Seed H1DF-4545Q	41.7	21.3	8.9	98	92.1	18.0	30.9	74.1	8.0	39.0	3762	33407	38.5	22.1	8.5	95	88.1	19.4	26.7	57.4	7.8	38.6	3242	27511
110	Dairyland Seed H1DF-5000Q	38.4	20.0	7.6	88	90.3	20.4	32.7	70.3	8.4	34.6	3637	27866	39.6	27.9	11.0	92	88.3	18.7	25.8	55.5	8.3	39.6	3313	32099
105	Dyna-Gro Seed D45TC55	45.4	15.5	7.1	97	92.3	16.8	30.4	74.4	8.0	41.3	3807	26837	43.4	19.4	8.4	97	87.4	16.5	20.6	38.5	8.1	44.3	3271	27320
108	Dyna-Gro Seed D48S550	43.5	18.0	7.8	97	90.8	18.8	31.3	70.4	8.0	37.6	3800	29725	39.6	21.3	8.3	98	88.7	19.7	29.1	59.6	8.4	37.1	3384	28076
110	Dyna-Gro Seed D50VC09	41.3	19.0	7.9	98	90.7	19.3	30.3	68.8	8.1	38.6	3735	29448	38.7	22.5	8.6	99	86.8	18.5	21.9	40.3	7.7	40.3	3008	28816
112	Dyna-Gro Seed D52DC82	39.9	22.4	8.9	98	90.8	19.6	31.7	70.7	7.7	36.3	3714	33166	36.7	29.1	10.6	99	87.9	17.9	23.8	47.1	7.7	42.4	3296	28963
110	Golden Harvest G10L16-5222A	41.2	17.1	7.0	101	88.7	20.4	30.8	63.3	8.7	33.8	3388	23860	38.7	20.9	8.1	99	85.6	19.6	23.9	42.0	7.7	39.6	3074	24806
112	Golden Harvest G12S75-5122	39.3	19.5	7.7	100	88.8	20.9	32.6	65.0	8.6	34.6	3489	28640	37.6	22.5	8.4	99	83.8	23.6	32.2	49.4	7.4	32.5	2758	23293
105	Legacy Seeds LC555-21 5122	41.2	17.5	7.1	97	88.6	20.7	31.2	63.3	8.1	33.6	3368	24016	35.8	22.5	8.1	101	85.3	21.1	26.2	43.9	7.5	36.4	2887	25888
108	LG Seeds LG58C77-5222	42.1	18.6	7.8	95	91.1	17.8	28.9	69.1	8.4	38.2	3652	28652	36.6	23.4	8.6	94	88.2	18.1	24.2	53.8	8.0	39.7	3165	27285
109	LG Seeds LG59C72-V12	41.2	18.0	7.4	99	88.4	20.5	29.2	60.2	8.8	35.2	3330	24859	35.8	22.4	8.0	98	87.1	18.7	22.9	45.6	7.5	41.5	3238	25919
107	NK Seeds NK0748-5122	49.7	16.7	8.3	98	90.8	17.6	29.4	68.3	8.1	39.8	3737	31087	37.7	23.3	8.7	100	85.7	20.5	23.9	40.2	7.4	37.8	2841	29609
108	Renk RK700SSTX	39.2	16.7	6.6	98	89.6	20.8	32.3	67.8	8.5	33.4	3412	22280	40.1	21.6	8.6	99	87.1	17.4	22.9	46.2	8.3	41.4	3288	28385
107	Renk RK710DGV12P	40.7	18.3	7.4	98	89.5	19.8	31.6	66.5	8.5	34.2	3533	26227	40.1	22.6	9.1	101	86.2	20.6	26.7	50.2	7.3	37.2	3106	28187
112	Renk RK842VT2P	46.5	19.0	8.7	97	88.7	21.1	32.8	65.7	7.9	34.3	3512	30723	38.3	24.7	9.4	96	88.4	19.2	28.1	58.2	7.8	37.7	3340	31611
113	Renk RK895DGV12P	42.2	19.4	8.2	96	90.0	19.1	30.1	66.5	8.1	37.0	3574	29291	38.0	21.6	8.2	94	86.2	19.1	23.1	40.2	7.4	40.7	3048	24997
115	Renk RK940SSTX	40.2	18.8	7.6	98	88.7	20.6	31.3	64.0	8.0	34.4	3329	25391	35.8	26.5	9.5	87	87.4	19.3	26.3	51.1	8.2	37.0	3074	29366
115	Renk RK945DGV12P	40.5	20.4	8.2	99	90.3	18.8	29.7	67.2	8.2	37.3	3477	28375	36.8	24.5	9.0	100	85.7	18.5	22.4	36.0	7.6	40.2	2937	26565
107	Specialty Hybrids 37A901	42.5	17.5	7.4	97	89.5	20.2	31.8	66.9	8.2	33.5	3465	25663	39.5	22.6	8.9	77	87.5	17.5	23.0	50.1	8.3	39.9	3283	33141
108	Specialty Hybrids 38G252	39.7	18.5	7.3	98	91.0	18.0	30.3	70.3	8.6	37.9	3691	27073	38.3	23.0	8.8	101	86.7	18.3	23.9	46.4	7.3	40.7	3204	28342
110	Specialty Hybrids 40A662	40.4	19.5	7.9	99	90.6	18.7	31.8	70.2	7.7	38.0	3717	28319	35.2	25.7	9.0	97	86.8	19.2	25.5	48.1	8.0	36.7	2988	26949
108	Viking O48-08P	44.6	15.6	6.9	92	91.0	18.0	29.4	69.1	9.2	37.7	3727	25914	40.2	21.0	8.4	91	88.1	18.6	25.4	54.3	7.0	41.6	3385	28789
AVERAGE		41.8	18.5	7.7	97	90.1	19.3	30.9	68.0	8.3	36.4	3587	27708	38.2	23.1	8.8	96	87.0	19.0	24.9	48.2	7.7	39.4	3159	28029
HIGHEST		49.7	22.4	8.9	101	92.3	21.1	32.8	74.4	9.2	41.3	3807	33407	43.4	29.1	11.0	101	88.7	23.6	32.2	59.6	8.4	44.3	3527	33141
LOWEST		38.4	15.5	6.6	88	88.4	16.8	28.9	60.2	7.7	33.4	3329	22280	35.2	19.4	8.0	77	83.8	16.5	20.6	36.0	7.0	32.5	2758	23293
CV (%)		7.6	10.0	11.0	3	2.0	10.7	7.6	8.7	6.3	10.7	6	13	9.8	7.7	9.8	10	2.7	15.3	9.8	19.6	5.2	12.6	15	16
LSD (5%)		3.8	2.2	1.0	4	2.1	2.4	2.8	7.0	0.6	4.6	248	4198	4.4	2.1	1.0	11	2.8	3.4	2.9	11.1	0.5	5.8	550	5284

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.camr.msu.edu/varietytrials>

2022		TRIAL AVERAGE												Iosco - Early											
		YIELD						% QUALITY						YIELD			% QUALITY								
		%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFF	CP	STR	MILK 2006 MKT	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFF	CP	STR	MILK 2006 MKT	MK/A
BRAND / HYBRID	RM TRAIT	37.3	19.9	7.3	93	88.9	19.3	27.9	59.5	7.7	36.8	3328	24532	32.8	22.0	7.2	93	90.4	18.2	27.8	65.4	8.5	35.5	3397	24644
Dairyland Seed DS-3162Q	91 Q	32.3	24.9	7.8	91	89.3	20.1	29.1	63.2	7.6	34.6	3230	24362	29.9	29.3	8.8	92	91.1	19.4	29.8	70.2	8.4	33.7	3391	29810
Dairyland Seed DS-3601Q	96 Q	36.3	20.3	7.2	96	90.0	19.0	28.6	65.1	7.7	37.3	3460	25046	33.0	24.5	8.1	96	91.6	17.8	28.2	69.9	8.1	38.0	3670	29721
Dairyland Seed HIDF-3044Q	90 Q	34.8	22.2	7.6	96	89.2	18.3	26.9	59.5	7.6	37.6	3322	25256	30.2	27.4	8.3	97	91.0	17.2	26.8	66.2	8.4	37.5	3509	29193
Dyna-Gro Seed D36VC66	96 VT2PRIB	31.9	23.0	7.3	96	87.9	21.0	29.4	58.0	7.8	32.5	3041	22956	29.2	27.3	8.0	97	89.9	20.5	30.4	66.6	8.3	32.1	3269	26041
Golden Harvest G91V51-5222A	91 D2	34.4	22.9	7.8	96	87.5	19.7	26.4	51.8	7.8	34.6	2957	24337	31.2	26.1	8.1	97	89.2	18.9	27.0	59.7	8.4	33.8	3114	29712
Golden Harvest G95D32-3220	95 VZ	33.9	24.0	8.0	94	87.8	20.2	28.2	56.4	7.3	34.3	3045	24309	31.3	28.5	8.9	93	89.3	17.8	25.5	57.6	7.9	35.7	3112	27740
Legacy Seeds LC451-21 VT2P	95 VT2PRIB	32.9	25.8	8.3	95	88.1	20.7	30.0	59.8	7.3	33.2	3111	25881	30.7	28.7	8.8	98	91.1	18.7	30.2	70.6	8.2	34.9	3548	31203
Legacy Seeds LC474-20 TRE	97 TRERIB	34.5	23.1	7.9	94	88.1	19.1	26.2	54.4	7.7	36.5	3126	26306	30.9	27.0	8.4	94	89.4	18.0	25.4	57.7	8.1	37.2	3245	27318
LG Seeds LG42C37-3220	92 VZ	33.6	21.7	7.2	93	88.1	20.5	29.5	59.4	8.0	33.6	3152	22909	31.1	26.3	8.2	94	90.0	18.5	27.3	63.4	8.7	36.2	3395	27882
LG Seeds LG45C21-5122	95 D1	34.2	22.8	7.6	94	88.5	19.8	28.2	58.7	7.6	35.1	3177	24589	31.0	26.7	8.3	95	90.3	18.2	27.8	64.7	8.3	35.5	3365	28326
AVERAGE		37.3	25.8	8.3	96	90.0	21.0	30.0	65.1	8.0	37.6	3460	26306	33.0	29.3	8.9	98	91.6	20.5	30.4	70.6	8.7	38.0	3670	31203
HIGHEST		31.9	19.9	7.2	91	87.5	18.3	26.2	51.8	7.3	32.5	2957	22909	29.2	22.0	7.2	92	89.2	17.2	25.4	57.6	7.9	32.1	3112	24644
LOWEST		6.6	19.4	13.0	5	2.7	19.2	16.5	13.5	13.3	22.1	9	13	7.8	4.6	9.8	5	1.8	11.4	9.5	9.9	5.0	11.9	9	15
CV (%)		1.5	3.0	0.7	3	1.6	2.6	3.2	5.4	0.7	5.3	192	2201	2.9	1.5	1.0	5	2.0	2.5	3.2	7.7	0.5	5.1	367	5276
LSD (5%)																									

\*\* Highest Yielding Hybrid  
\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.camr.msu.edu/varietytrials>

2022		Presque Isle - Early												Wexford - Early											
		YIELD						% QUALITY						YIELD			% QUALITY								
		%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFF	CP	STR	MILK 2006 MKT	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFF	CP	STR	MILK 2006 MKT	MK/A
BRAND / HYBRID	RM TRAIT	34.7	21.5	7.4	93	86.9	23.9	33.2	60.5	8.3	28.9	2996	22196	44.3	16.2	7.2	94	89.3	15.8	22.7	52.7	6.4	46.1	3592	26755
Dairyland Seed DS-3162Q	91 Q	29.3	27.6	8.1	91	86.2	25.0	33.7	58.9	8.2	25.1	2675	21542	37.7	17.8	6.7	91	90.6	16.0	23.8	60.5	6.1	45.1	3622	21732
Dairyland Seed DS-3601Q	96 Q	36.6	19.9	7.1	95	86.8	25.0	35.3	62.6	8.4	26.4	2944	20929	39.2	16.6	6.5	97	91.7	14.3	22.4	62.8	6.7	47.6	3766	24487
Dairyland Seed HIDF-3044Q	90 Q	34.9	22.3	7.8	93	86.9	21.9	30.4	56.1	7.9	31.9	2997	23592	39.4	16.8	6.6	97	89.8	15.7	23.4	56.4	6.4	43.4	3462	22982
Dyna-Gro Seed D36VC66	96 VT2PRIB	31.0	22.9	7.1	94	85.8	25.0	33.7	57.8	8.2	24.9	2644	21117	35.4	19.0	6.7	97	87.9	17.6	24.0	49.5	7.0	40.6	3210	21712
Golden Harvest G91V51-5222A	91 D2	33.1	24.1	8.0	95	86.6	22.5	30.0	54.3	8.3	28.7	2722	21531	39.0	18.4	7.1	97	86.9	17.8	22.4	41.4	6.8	41.2	3035	21767
Golden Harvest G95D32-3220	95 VZ	32.7	24.8	8.1	95	85.4	24.9	33.4	55.6	7.8	26.0	2648	21359	37.6	18.9	7.1	93	88.8	17.9	25.6	56.1	6.1	41.3	3373	23829
Legacy Seeds LC451-21 VT2P	95 VT2PRIB	30.6	29.2	8.9	95	86.0	23.4	31.9	55.2	8.1	27.0	2673	23802	37.3	19.5	7.3	92	87.1	19.9	28.0	53.7	5.7	37.6	3112	22637
Legacy Seeds LC474-20 TRE	97 TRERIB	33.5	23.9	8.0	92	86.7	21.9	29.2	54.1	8.3	30.7	2837	25675	39.2	18.3	7.2	95	88.3	17.5	24.1	51.5	6.6	41.6	3295	25925
LG Seeds LG42C37-3220	92 VZ	33.6	22.0	7.4	95	85.2	25.4	34.7	56.4	8.7	24.4	2667	20310	36.1	16.8	6.1	99	89.0	18.0	26.4	58.3	6.7	40.2	3395	20535
LG Seeds LG45C21-5122	95 D1	33.0	23.8	7.8	94	86.2	23.9	32.5	57.2	8.2	27.4	2780	22025	38.5	17.8	6.8	94	88.9	17.1	24.3	54.3	6.4	42.5	3386	23236
AVERAGE		36.6	29.2	8.9	95	86.9	25.4	35.3	62.6	8.7	31.9	2997	25675	44.3	19.5	7.3	97	91.7	19.9	28.0	62.8	7.0	47.6	3766	26755
HIGHEST		29.3	19.9	7.1	91	85.2	21.9	29.2	54.1	7.8	24.4	2644	20310	35.4	16.2	6.1	89	86.9	14.3	22.4	41.4	5.7	37.6	3035	20535
LOWEST		6.0	10.3	9.0	4	2.0	9.5	9.8	12.2	6.4	15.3	11	13	6.1	8.9	10.0	5	1.4	11.1	9.5	7.1	6.0	8.9	7	11
CV (%)		2.4	3.0	0.8	5	2.1	2.7	3.9	8.4	0.6	5.1	366	3494	2.9	1.9	0.8	5	1.5	2.3	2.8	4.6	0.5	4.5	282	3138
LSD (5%)																									

\*\* Highest Yielding Hybrid  
\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.camr.msu.edu/varietytrials>

TABLE 8L.

## IOSCO, OSCEOLA &amp; PRESQUE ISLE COUNTY SILAGE TRIALS - LATE (98 Day and Later)

ZONE 4

2022 BRAND / HYBRID	RM	TRAIT	TRIAL AVERAGE												Iosco - Late													
			YIELD			% QUALITY			MILK 2006			YIELD			% QUALITY			MILK 2006										
			%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MKIT	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MKIT	MK/A		
Dairyland Seed H1DF-3855Q	98	Q	33.3	24.8	8.1	**	97	89.0	20.2	29.1	62.0	7.2	34.2	3181	23945	31.1	27.0	8.4	*	99	90.1	20.3	30.5	67.4	7.8	31.6	3168	23350
Dairyland Seed H1DF-4073Q	100	Q	32.1	24.8	7.9	*	98	90.0	19.4	29.5	64.8	7.3	34.4	3294	25691	31.5	27.4	8.7	*	100	90.7	17.8	27.3	64.7	8.0	35.6	3338	28793
Dyna-Gro Seed D40VC41	100	VT2PRIB	31.4	26.2	8.1	**	97	88.1	20.7	29.1	58.4	7.0	32.9	3016	24261	29.2	29.8	8.7	*	100	89.7	19.3	28.7	64.0	7.6	33.3	3174	27665
Golden Harvest G02K39-5122	102	D1	31.0	24.1	7.3		95	88.6	21.6	32.1	64.4	7.5	30.3	3097	23350	29.7	26.9	8.0	*	97	90.7	19.1	30.4	69.2	8.4	32.8	3390	27013
Golden Harvest G04S19-3122	104	3122 E-Z	31.1	26.5	8.1	**	96	88.5	23.7	35.0	67.1	7.7	25.3	2924	24584	28.0	28.9	8.1	*	98	90.5	21.2	32.7	71.0	8.4	27.5	3122	25199
Legacy Seeds LC464-21 3120	96	BZ	34.8	22.9	7.9	*	97	86.7	21.4	29.5	54.4	7.1	32.2	2907	22835	33.6	24.8	8.3	*	96	87.9	20.9	30.6	60.3	7.4	30.2	2944	24693
LG Seeds LG49C28-VT2	99	VT2P	31.6	26.0	8.1	**	90	87.4	21.5	30.2	57.9	7.4	31.3	2949	24019	31.1	28.2	8.8	**	92	88.6	18.8	27.2	57.8	8.2	33.8	3077	27083
LG Seeds LG50C93-5222	100	D2	32.2	23.9	7.6	*	97	87.5	19.9	31.9	60.4	7.6	30.0	3002	22702	31.1	26.1	8.1	*	99	89.4	19.6	30.5	64.6	8.3	30.8	3146	25530
Viking O.69-01P	101	CONV	30.2	23.3	6.9		90	88.3	22.3	32.6	64.0	8.0	28.3	2969	20870	28.2	25.0	7.1		89	91.5	19.3	31.1	72.6	9.0	31.0	3316	23526
AVERAGE			32.0	24.7	7.8		95	88.2	21.4	31.0	61.5	7.4	31.0	3037	23584	30.4	27.1	8.2		97	89.9	19.6	29.9	65.7	8.1	31.9	3186	26095
HIGHEST			34.8	26.5	8.1		98	90.0	23.7	35.0	67.1	8.0	34.4	3294	25691	33.6	29.8	8.8		100	91.5	21.2	32.7	72.6	9.0	35.6	3390	28793
LOWEST			30.2	22.9	6.9		90	86.7	19.4	29.1	54.4	7.0	25.3	2907	20870	28.0	24.8	7.1		89	87.9	17.8	27.2	57.8	7.4	27.5	2944	23526
CV (%)			7.0	5.8	9.5	4	4	2.1	9.7	8.4	10.7	5.4	12.5	10	13	5.9	4.4	7.8	4	4	1.6	9.3	8.2	8.4	5.1	11.6	8	13
LSD (5%)			1.5	1.0	0.5	3	3	1.2	1.4	1.8	4.5	0.3	2.6	204	2081	2.2	1.4	0.8	4	4	1.8	2.2	3.0	6.7	0.5	4.5	294	4058

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.cam.msu.edu/varietytrials>

2022 BRAND / HYBRID	RM	TRAIT	Presque Isle - Late												Wexford - Late													
			YIELD			% QUALITY			MILK 2006			YIELD			% QUALITY			MILK 2006										
			%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MKIT	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MKIT	MK/A		
Dairyland Seed H1DF-3855Q	98	Q	30.3	29.1	8.8	*	94	87.2	23.2	31.9	59.8	8.0	28.1	2855	22166	38.4	18.1	6.9	*	98	89.9	17.0	25.0	58.9	6.0	42.9	3519	24319
Dairyland Seed H1DF-4073Q	100	Q	29.7	30.3	9.0	*	98	89.8	22.6	34.9	70.4	8.2	27.2	3172	28463	35.2	16.8	5.9		97	89.5	17.8	26.2	59.4	5.7	40.4	3372	19819
Dyna-Gro Seed D40VC41	100	VT2PRIB	28.7	29.7	8.5	*	97	86.0	25.5	34.3	58.7	7.5	24.7	2652	22625	36.3	19.1	6.9	*	92	88.5	17.5	24.5	52.4	5.9	40.8	3221	22491
Golden Harvest G02K39-5122	102	D1	28.3	29.3	8.3	*	92	87.5	25.1	36.3	65.7	8.3	23.3	2834	23491	35.2	16.3	5.7		95	87.6	20.5	29.6	58.4	5.9	34.8	3068	19547
Golden Harvest G04S19-3122	104	3122 E-Z	30.3	31.0	9.4	**	96	86.5	27.9	40.1	66.1	8.8	15.9	2493	26983	35.0	19.5	6.8	*	93	88.5	21.9	32.4	64.4	6.0	32.7	3156	21571
Legacy Seeds LC464-21 3120	96	BZ	31.9	25.8	8.2		98	85.3	24.0	31.5	53.0	7.7	28.5	2716	22521	38.9	17.9	7.0	*	96	87.0	19.2	26.4	50.0	6.2	37.9	3059	21292
LG Seeds LG49C28-VT2	99	VT2P	28.0	28.9	8.1		89	86.1	24.9	34.4	58.7	8.3	24.1	2680	21601	35.8	21.0	7.5	**	88	87.6	20.9	28.8	57.1	5.6	36.1	3089	23374
LG Seeds LG50C93-5222	100	D2	29.0	26.4	7.6		96	84.9	27.5	37.3	59.5	8.7	20.5	2568	19627	36.4	19.2	7.0	*	95	88.2	18.6	27.8	57.3	5.9	38.8	3290	22949
Viking O.69-01P	101	CONV	27.7	27.4	7.6		88	85.6	26.4	36.6	60.5	8.9	20.4	2562	20747	34.7	17.5	6.1		93	87.7	21.2	30.1	58.8	6.2	33.5	3029	18338
AVERAGE			29.3	28.7	8.4		94	86.5	25.2	35.3	61.4	8.3	23.6	2726	23136	36.2	18.4	6.7		94	88.3	19.4	27.9	57.4	5.9	37.5	3200	21522
HIGHEST			31.9	31.0	9.4		98	89.8	27.9	40.1	70.4	8.9	28.5	3172	28463	38.9	21.0	7.5		98	89.9	21.9	32.4	64.4	6.2	42.9	3519	24319
LOWEST			27.7	25.8	7.6		88	84.9	22.6	31.5	53.0	7.5	15.9	2493	19627	34.7	16.3	5.7		88	87.0	17.0	24.5	50.0	5.6	32.7	3029	18338
CV (%)			9.8	5.1	10.6	5	5	2.6	10.0	8.4	11.3	5.1	18.6	14	14	5.2	8.8	9.6	4	4	1.9	9.4	8.6	12.4	6.4	9.3	8	13
LSD (5%)			3.5	1.8	1.1	6	6	2.7	3.1	3.6	8.4	0.5	5.3	447	4077	2.3	2.0	0.8	5	5	2.1	2.2	2.9	8.6	0.5	4.2	327	3274

\*\* Highest Yielding Hybrid

\* Not Significantly Different from Highest Yielding Hybrid

2-Year Averages Available in online version at <https://www.cam.msu.edu/varietytrials>

# MYCOTOXINS IN MICHIGAN SILAGE CORN – AN OVERVIEW

Harkirat Kaur, Phil Durst, Phil Kaatz, Martin Mangual, and Maninder Pal Singh

Fungi such as *Aspergillus*, *Fusarium*, *Penicillium* and *Gibberella* spp. can cause accumulation of mycotoxins (toxic secondary metabolites) in corn ear and stalk. Cool and wet weather conditions around silking tends to be favorable for growth of *F. graminearum* and may cause high deoxynivalenol (DON or vomitoxin) accumulation. Feeding by birds, animals, and ear damaging insects such as western bean cutworm (WBC) and European corn borer (ECB) can provide easy entry for the fungus and intensify infections. Mycotoxins in grain corn have long been studied and measured, but the presence of mycotoxins in silage corn might get ignored. Yet, the impact of mycotoxins on livestock will be from the total mycotoxin load in the ration, not just that from one component.

Mycotoxins result in metabolic disruptions in livestock, risking their lives and productivity, and causing losses in milk production, hormonal imbalance, reduced reproductive performance and in severe cases the death of animals. Mycotoxins can have serious economic consequences if present in sufficient concentrations. Moreover, various mycotoxins co-occur in the plant and their impacts on the health of livestock may be synergistic. This makes it difficult to determine safe levels (thresholds) for individual mycotoxins.

To understand the extent and gravity of mycotoxins in Michigan silage corn, MSU Cropping System Agronomy lab conducted a three-year survey of Michigan silage corn starting in 2019. A total of 122 samples from across 22 counties were collected during harvesting seasons of 2019, 2020 and 2021 and analyzed for 26 different mycotoxins.

Results showed the presence of mycotoxins in Michigan silage corn. All the samples tested positive for at least one mycotoxin. Deoxynivalenol was detected in all 122 samples. At least 60% (in 2021) and 50% (in 2019) of the samples had DON concentrations greater than 1 ppm (threshold limit for dairy cattle), whereas in 2020 only 12% of samples had DON levels greater than 1 ppm (Table 1). Other frequently occurring mycotoxins in 2021 were zearalenone (ZON), fumonisins, and moniliformin. However, none of these toxins were found at levels greater than their respective threshold limits (2 ppm, 0.1 ppm, and 0.4 ppm, respectively for dairy cattle). In 2020 and 2019, enniatins and beauvericin were the toxins that occurred in 100% of the samples, but their concentrations were low. The second most frequently occurring category of mycotoxins in 2020 were fumonisins, with eight samples at levels greater than threshold (2 ppm). Zearalenone occurred in significant amounts only in 2019, with three samples greater than 1 ppm.

Co-occurrence of mycotoxins was reported in all the samples. On average, most of the samples tested positive for at least 10 mycotoxins in 2021 with a maximum of 13 in one sample. In 2020, four samples tested positive for more than 20 mycotoxins and each sample tested positive for at least seven different mycotoxins. Mycotoxin co occurrence was most pronounced in 2019 of all three years with a maximum of 24 mycotoxins detected in a single sample.

Overall, the concentration and frequency of mycotoxins were observed to be dependent on regional weather conditions around silking in corn. In 2020, since growing season was drier and rainfall was more sporadic compared to 2019 and 2021, lower frequency and concentration of mycotoxins was observed.

Highest DON and ZON concentration found across tested samples was lower in 2020 (1.4 and 0.07 ppm) compared to 2019 (5.7 and 2.5 ppm) and 2021 (18.4 ppm and 0.23 ppm, respectively). The only toxin that occurred in higher concentration in 2020 (10.6 ppm) than in 2019 and 2021 was fumonisin. Accumulation of fumonisin occurs due to *F. verticilloides* infection which is favored when the environment is warm and dry around silking whereas DON is the dominant toxin under cool and humid conditions

Although all the samples tested positive for multiple mycotoxins, levels of individual toxins were not always above threshold levels (Table 1). Besides that, some of the tested mycotoxins do not have established threshold levels or they might be lower due to synergistic negative impacts of mycotoxin co-occurrence. Therefore, mycotoxin levels must be taken into consideration while making management decisions to prevent any risks to livestock health.

There are few ways to overcome mycotoxins once they are present in corn, therefore, preventing mycotoxin accumulation in the field using integrated pest management approach is essential. These include hybrid selection, timely planting, fungicide application, scouting and spraying for ear feeding insects, and timely harvest. Recent research at MSU has shown that hybrid selection (i.e., use of ear-feeding insect protection traits) reduced insect feeding (70-85%), ear rot infections (70-75%) and eventually mycotoxin accumulations in silage corn at locations with high insect pressure. Furthermore, hybrids with resistance against stalk rots (in addition to ear rots) can also help alleviate the accumulation of mycotoxins. Fermentation processes in bunker silos will not break down mycotoxins from an already infected silage corn which makes the field management even more crucial.

Toxin	2019	2020	2021
DON <sup>1</sup> (detectable)	100	100	100
DON >1 ppm (threshold)	50	12	60
ZON <sup>2</sup> (detectable)	100	35	100
ZON >0.4 ppm (threshold)	26	0	0
Fumonisin (detectable)	95	96	100
Fumonisin >2 ppm (threshold)	5	16	0
Moniliformin (detectable)	62	56	100
Moniliformin >0.1 ppm (threshold)	0	0	3
Enniatins and beauvericin (detectable)	100	100	100
Enniatins and beauvericin (high levels)	0	0	0
Presence of >1 mycotoxins	100	100	100
Presence of >10 mycotoxins	100	92	96

<sup>1</sup> Deoxynivalenol, <sup>2</sup> zearalenone

**Table 1.** Percentages of samples (n=122) with toxins at detectable and threshold levels (for dairy cattle).

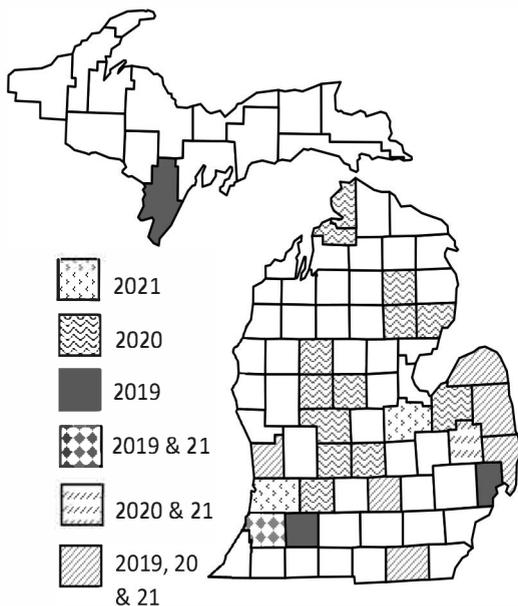


Figure: Counties submitting silage samples for analysis over years during survey





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