



2020 MICHIGAN CORN HYBRIDS COMPARED

EXTENSION BULLETIN E-431

WEATHER **4** | CORN GRAIN **7** | CORN SILAGE **27** | SILAGE MYCOTOXINS **29** | CORN DISEASES **45**

MICHIGAN STATE
UNIVERSITY

College of Agriculture
and Natural Resources

RESEARCH CONDUCTED BY MICHIGAN STATE UNIVERSITY

Results of the 2020 Growing Season

COMPANY INDEX

BRAND	CONTACT	BRAND	CONTACT	BRAND	CONTACT
AG ARMOUR	Ag Armour Seeds 8236 North Williams Rd. St. Johns, MI 48879 www.ag-armourseeds.com	LEGACY SEEDS	Legacy Seeds, Incorporated P.O. Box 68 - 290 Depot St. Scandinavia, WI 54799 www.legacyseeds.com	SEEDWAY	Seedway LLC 275 North Eighth Street Mifflinburg, PA 17844 www.seedway.com
AGRIGOLD	AgriGold Hybrids 5381 Akin Road St. Francisville, IL 62460 www.agrigold.com	LEGEND	Legend Seeds P.O. Box 241 DeSmet, SD 57231 www.legendseeds.com	SPECIALTY	Specialty Hybrids 306 N Main Street Monticello, IN 47960 www.specialtyhybrids.com
BLUE RIVER	Blue River Hybrids 2326 230th Street Ames, IA 50014 www.blueriverorgseed.com	LG SEEDS	LG Seeds 9915 W M21 Ovid, MI 48866 www.lgseeds.com	VIKING	Albert Lea Seeds 1414 West Main Street P.O. Box 127 Albert Lea, MN 56007 www.seedhouse@alseed.com
DAIRYLAND	Dairyland Seed P.O. Box 958 West Bend, WI 53095 www.dairylandseed.com	LOCAL SEED	Local Seed Company 802 Rozelle Street Memphis, TN 38104 www.localseed.com	WELLMAN	Wellman Seeds, Incorporated 23778 Delphos Jennings Road Delphos, OH 45833 www.wellmanseeds.com
DYNA-GRO	Dyna-Gro Seed 4648 S. Garfield Road Auburn, MI 48611 www.dyna-groseed.com	M & W SEEDS	M & W Seeds Incorporated 8443 Wilcox Road Eaton Rapids, MI 48827 www.mwseeds.com	WOLF RIVER VALLEY	Wolf River Valley Seeds 914 3rd Avenue Antigo, WI 54409 www.wolfrivervalleyseeds.com
FS InVision	Growmark, Inc. 1701 Towards Ave. Bloomington, IL 61701 www.growmark.com	NK Brand	Syngenta Seeds, Incorporated 11055 Wayzata Boulevard Minnetonka, MN 55440 www.syngenta.com	WYCKOFF	Wyckoff Hybrids 594 E 400 N Valparaiso, IN 46383 www.wyckoffhybrids.com
GOLDEN HARVEST	Syngenta Seed 11055 Wayzata Boulevard Minnetonka, MN 55440 www.syngenta.com	PIONEER	Corteva Agriscience 6900 NW 62nd Ave, Jonston, IA 50131 www.pioneer.com		
INTEGRA	Wilbur-Ellis 345 California Street, 27 th Floor San Francisco, CA 94104 www.wilburellis.com	RENK	Renk Seed Company 6809 Wilburn Road Sun Prairie, WI 53590 www.renkseed.com		
KEY	Agra Solutions LLC 23778 Delphos Jennings Rd. Delphos, OH 45833 www.agrasolutions.com	RUPP	Rupp Seeds, Incorporated 17919 Co. Road B Wauseon, OH 43567 www.ruppseeds.com		

2020

MICHIGAN CORN PERFORMANCE TRIALS

M. P. Singh, W. D. Widdicombe, and K. M. Fusilier
Department of Plant, Soil and Microbial Sciences
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 and silage provide a list of all hybrids entered in the 2020 trials (pg. 24 and 30 respectively). A total of 304 hybrids from 24 brand names make up the 464 entries, which translates into 5,568 separate plots planted across 8 grain locations and 8 silage locations in Michigan in 2020. 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 that have a seed-applied insecticide that may enhance yield are listed in the table column TRT (Treatment). The "TRAIT" column uses code numbers, listing the hybrid traits provided by the companies. Treatment and trait codes are listed in the tables on page 9.

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 and two-year yield results are listed in tables for each trial within each zone where data is available. One-year single-site results are less reliable than multiple year and multiple location averages and 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 Web site:

<http://www.varietrytrials.msu.edu>

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. 26) and Table C for the silage trials (pg. 31). Fertilizer amounts are shown as total pounds per acre of N, P₂O₅, and K₂O applied during the season.

Season in Summary: 2020

This season for the Michigan Corn Performance Trials was one like none of us had ever experienced before. Prior to the end of April, we were unsure whether we would be able to plant the trials due to the COVID-19 pandemic causing restrictions for MSU research. Thankfully, we were able to get our trials in the ground albeit at a reduced number due to restrictions from the university.

As in years prior, 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 a computer-generated random planting order. Just as we were finishing counting and sorting seed, we received word from the University that the trials were a go for the 2020 season. Three days after finishing sorting we were in the field with the planter.

Planting commenced in Ingham County on May 7th and ended in Iosco County on June 4th. This year we had to make an unusual return trip to our Ottawa county location. After heavy rains it was decided that the Ottawa location was to be replanted, a first in our memory. This meant recounting and sorting seed for the location and a trip back to the field.

A couple of changes in county locations were made for the 2020 season. The Branch county location changed cooperators, back to our cooperator we have been with for many years. Washtenaw grain and Lenawee silage were combined this year due to COVID-19 restrictions limiting the number of locations we were able to plant. This new combined silage and grain location was located in Lenawee county on a new cooperators farm slightly further south than in previous years. The Allegan location was moved further north to Ottawa county this year on a new cooperators farm under irrigation. Finally, the Cass, Saginaw, Mason, and Osceola county locations were dropped due to COVID-19 travel restrictions.

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.

Due to COVID-19 restrictions by MSU, stand counts were not conducted in 2020. Therefore, percent stand of target population (%Std) and the average stand for each location were not able to be calculated. This also affected the calculation of percent stalk lodging (%SL) only stalk lodging (SL) is reported as total number of plants lodged per plot.

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2020 GROWING SEASON WEATHER SUMMARY

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

Preceding the 2020 growing season, the winter of 2019/2020 was significantly warmer and wetter than normal with a general storm track through the Upper Great Lakes region. Seasonal snowfall totals ranged from below normal levels across most central and southern sections of the state to above normal levels across the north. With the milder than normal temperatures, ice coverage on the Great Lakes remained at much below normal levels and the melt off of seasonal snow cover occurred earlier than normal. Collectively, the most important impact of the winter conditions on the growing season was a continuation of abnormally wet soils. Twenty nineteen was the wettest year on record for the state and included the second wettest fall season on record which in some cases prevented completion of 2019 harvest operations. As a result, as of early March 2020 soil moisture levels were at record or near record high levels and the wet conditions hampered spring fieldwork activities during the first half of the spring season.

The warmer and wetter than normal winter weather pattern continued statewide for much of March into early April, especially across northern sections. The development of drier conditions across southern sections of the state led to some progress in fieldwork and early planting during late April. A slow-moving area of low pressure brought widespread rain to much of the state at the end of the month, with more than 2.00" falling from west central Lower Michigan northward through the eastern Upper Peninsula. The storm heavily influenced April precipitation totals statewide, ranging from less than 2.00" across southeastern sections of the state to more than 4.00" across western and northern Lower Michigan, where the rainfall brought soils back to saturation and to continued spring fieldwork delays.

A deep troughing feature across eastern North America brought a stretch of cold, dry weather to Michigan and the Great Lakes region during the first half of May with the passage of a series of unseasonably cold, Canadian-origin air masses and even some late season accumulating snow in portions of the state. There were two notable widespread hard freeze events statewide on the 9th and 13th, although some northern locations in the state recorded 10 consecutive days of subfreezing temperatures between the 4th and 13th. The freezes injured crops in many areas, but could have been worse if crop phenology had not been 1-2 weeks or more behind normal due to the abnormally cool temperatures the preceding few weeks. While the cold, dry weather delayed growth and vegetative development of most crops, it also allowed soils to dry leading to significant progress in spring planting, especially across eastern sections of the state. The upper air pattern came to an abrupt end during the middle of the month when the jet stream shifted north and allowed a more southwesterly pattern to develop across the Midwest with a warming of temperatures back to normal levels. The pattern change also led to the influx of Gulf of Mexico moisture back into the region with widespread heavy rains on the 13th-15th and again on the 17th-19th which resaturated topsoils in most areas.

A large upper air ridge across the Midwest led to a period of very summerlike weather during late May and the beginning of June, with mean temperatures 6-10°F above normal resulting in a surge in growing degree day accumulations and to a dramatic increase in crop growth

and development. For the month of May, mean temperatures ended up near to slightly below the long term averages statewide (generally 1-2°F below normal), the result of the average of an abnormally cold (6-10° below normal) first half of the month and unusually warm weather at the end of the month. May precipitation totals ranged from less than 2.00" across much of the Upper Michigan and sections of eastern Lower Michigan to more than 6.00" (almost 200% of normal) across western, central, and northern sections of the Lower Peninsula. Even with wetter than normal weather in many sections of the state, there were extended stretches of warm, sunny, and dry weather between rainfall events that allowed continued progress in spring planting and fieldwork operations.

A prolonged stretch of hot, dry weather developed across Michigan and the Great Lakes region during the last week of June and continued into early July thanks to the formation of a large upper air ridge across central sections of North America. The warm weather brought monthly mean temperatures for June into the warmer than normal category statewide, with departures from normal generally ranging from 1-4°F above normal. Precipitation totals ranged from less than 2.00" across east central and southeastern sections of Lower Michigan to more than 5.00" across central sections of the Upper Peninsula, much of which was associated with the rare passage of tropical cyclone remnants (Tropical Storm Cristobal) through the region on the 9th and 10th of the month. Further south, the system led to a major severe weather outbreak across large areas of Lower Michigan with widespread wind damage and power outages. The month of June was also sunnier than normal with above normal potential evapotranspiration rates. The high atmospheric demand for water depleted topsoil moisture quickly, with the development of moisture stress symptoms for some shallow-rooted crops. During the second half of the month, the U.S. Drought Monitor introduced a large area of D0 ('Abnormally Dry') conditions across the eastern Corn Belt region across sections of Illinois, Indiana, and Ohio stretching into southeastern Lower Michigan. The Drought Monitor also recently moved far northwestern sections of Upper Michigan into the D0 category as well.

The development of an upper air trough across the Midwest during the last week of July led to welcome rains across large sections of the state and to a break in warmer than normal temperatures. Mean temperatures for July were above normal state- and region-wide, generally ranging from 3-5°F above normal. Some locations across the southern half of the state recorded 8 consecutive days with high temperatures at or above 90°F from the 2nd-9th, which is climatologically rare for Michigan. Not surprisingly, seasonal base 50°F growing degree day totals as of July 31st were also generally from 50-200 units above normal. Precipitation totals for the month were highly variable, ranging from much above normal totals in northern sections of the state where more than 6.00" (200% of normal) fell to less than 1.50" (less than 50%) across southern sections of Lower Michigan. As the month progressed, abnormally dry conditions gradually expanded across southern and central sections of the state, with 46% percent of the state in the U.S. Drought Monitor's

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

Zone	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	BRANCH & CASS (Coldwater)	55.4	58.2	-2.8	68.8	67.3	1.5	73.7	71.3	2.4	69.4	69.3	0.1	60.4	61.6	-1.2	65.5
		5.32	3.18	2.14	3.36	3.67	-0.31	2.64	3.13	-0.49	3.31	3.69	-0.38	2.69	3.61	-0.92	17.32	17.28	0.04
		296	344	-48	570	527	43	723	648	75	598	597	1	363	396	-33	2550	2512	38
	LENAWEE	56.9	58.2	-1.3	59.8	68.0	-8.2	75.9	72.3	3.6	70.8	70.3	0.5	62.5	62.7	-0.2	65.2	66.3	-1.1
	(Morenci)	5.80	2.97	2.83	1.72	3.51	-1.79	2.60	3.00	-0.40	5.32	3.38	1.94	1.67	3.34	-1.67	17.11	16.20	0.91
		331	346	-15	587	541	46	743	675	68	589	624	-35	434	415	19	2684	2601	83
	WOOD (OH)	58.6	60.0	-1.4	71.8	70.1	1.7	78.3	73.2	5.1	72.5	71.0	1.5	64.2	64.3	-0.1	69.1	67.7	1.4
	(Bowling Green)	4.27	3.85	0.42	2.33	3.41	-1.08	2.19	3.76	-1.57	4.12	3.81	0.31	2.33	2.86	-0.53	15.24	17.69	-2.45
		352	371	-19	648	595	53	828	691	137	689	641	48	460	454	6	2977	2752	225
	INGHAM	56.4	58.2	-1.8	68.1	67.3	0.8	74.1	71.3	2.8	70.1	69.3	0.8	60.0	61.6	-1.6	65.7	65.5	0.2
	(MSU)	4.33	3.18	1.15	2.90	3.67	-0.77	1.64	3.13	-1.49	2.73	3.69	-0.96	4.28	3.61	0.67	15.88	17.28	-1.40
		311.5	344	-32.5	551.3	527	24.3	718.2	648	70.2	614.1	597	17.1	352.4	396	-43.6	2548	2512	35.5
	OTTAWA	56.4	58.2	-1.8	69.7	67.3	2.4	75.0	71.5	3.5	71.3	69.7	1.6	61.5	62.2	-0.7	66.8	65.8	1.0
	(Allendale)	4.25	3.43	0.82	4.79	3.74	1.05	1.83	3.43	-1.60	2.16	3.77	-1.61	3.06	4.01	-0.95	16.09	18.38	-2.29
		297	340	-43	594	526	68	761	655	106	660	610	50	373	406	-33	2685	2537	148
	HURON	54.1	57.0	-2.9	67.2	66.1	1.1	73.6	70.6	3.0	69.7	68.4	1.3	60.4	60.7	-0.3	65.0	64.6	0.4
	(Pigeon)	3.28	2.83	0.45	1.94	3.21	-1.27	2.76	2.83	-0.07	4.04	3.38	0.66	2.21	3.81	-1.60	14.23	16.06	-1.83
		266.4	317	-50.6	524.3	495	29.3	705	627	78	608.2	573	35.2	353	373	-20	2457	2385	71.9
	MONTCALM	55.3	56.7	-1.4	67.5	65.6	1.9	73.7	69.9	3.8	69.8	67.6	2.2	59.5	59.6	-0.1	65.2	63.9	1.3
	(Entrican)	4.82	2.95	1.87	3.09	3.30	-0.21	3.34	2.74	0.60	4.78	3.85	0.93	2.77	3.71	-0.94	18.80	16.55	2.25
		313	323	-10	545	488	57	695	610	85	616	555	61	366	357	9	2535	2333	202
	IOSCO	52.2	53.1	-0.9	65.8	63.6	2.2	73.0	68.1	4.9	69.1	66.3	2.8	57.6	58.7	-1.1	63.5	62.0	1.6
	(Hale)	6.02	2.95	3.07	1.89	3.34	-1.45	2.89	3.19	-0.30	5.54	3.35	2.19	2.15	3.26	-1.11	18.49	16.09	2.40
		262	276	-14	488	429	59	688	556	132	543	509	34	300	343	-43	2281	2113	168
	PRESQUE ISLE	52.2	55.3	-3.1	64.1	64.7	-0.6	70.3	69.4	0.9	66.8	67.7	-0.9	56.7	60.5	-3.8	62.0	63.5	-1.5
	(Posen)	2.91	2.79	0.12	3.29	2.80	0.5	6.76	2.81	4.0	3.02	3.47	-0.5	3.13	3.31	-0.2	19.11	15.18	3.93
		260	303.53	-43.5	472	470.06	1.9	626	594.86	31.1	533	551.10	-18.1	282	370.06	-88.1	2173	2289.6	-116.6

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 2020

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)

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D0 ('Abnormally Dry') category and 8% in D1 ('Moderate Drought') by month's end. Driest conditions were observed from the southeastern corner of the state northward into the Thumb region. A widespread 1.00-2.00" rainfall event from the 2nd-4th of August across central and southern sections eased dryness and coincided with sensitive reproductive stages of many annual crops.

An unusually strong and amplified jet stream pattern across North America led to a range of temperatures across the Great Lakes region during early August. The pattern directly led to a major derecho event containing a large, fast-moving line of severe thunderstorms on the 10th which carved a path of significant crop and property damage from west to east across the central Corn Belt region. The storms generally weakened as they entered Michigan but still caused major straight line wind damage across portions of SW Lower Michigan. The event is now considered the most expensive severe thunderstorm-related weather disaster in USA history with more than \$7.5B of losses (as of early November 2020). The second half of August was warm and dry, pushing many annual crops towards maturity. Mean August temperatures ended up close to just above normal in most locations, with monthly departures generally in the +1-2°F range. Monthly precipitation totals varied greatly across the state, ranging from less than 2.00" in sections of western Lower Michigan (less than 75% of normal) to more than 4.00" across the western Upper and southeastern Lower Peninsulas (more than 150% of normal). Persistent dryness was a continuing problem during much of the month across large areas of southern Lower Michigan, particularly given relatively moisture-sensitive phenological stages of development. At month's end, most of the southern half of Lower Michigan was classified as 'Abnormally Dry' (category D0) or 'Moderate Drought' (category D1) by the U.S. Drought Monitor. A nearly stationary frontal boundary across the state brought much needed rain (1.00-2.00" in many areas) during the last week of the month, benefitting some annual crops including soybeans.

The development of a large upper air troughing feature across central North America led to a taste of early fall weather during early September with several days of cooler than normal mean temperatures that brought some relief to moisture stress across southern sections of the state. A cold, Canadian-origin air mass moving through the state during the second week of the month resulted in the first frost and freezing temperatures of the fall season across interior sections of the Upper Peninsula, climatologically at least one week ahead of normal. A near stationary frontal boundary meandering across the Great Lakes region brought an extended period of wet weather including some heavy rainfall totals to Michigan during mid-September. The wet weather reduced the amount of abnormally dry areas in the state most of which were located across southern sections of Lower Michigan. Broad upper air ridging across the central and eastern USA led to an extended period of warm and dry weather during the second half of the month, providing nearly ideal conditions for harvest and fall planting operations. Frost and freezing temperatures were observed in many areas of the state from the 17th-21st of the month, but hard freeze conditions (28°F or less) were generally limited to interior areas of the Upper and northern Lower Peninsulas, allowing a continuation of the growing season in most southern sections. Mean temperatures during September generally averaged out at cooler than normal levels ranging from 1-2°F below normal across southern sections of the state to 3-4°F below normal across northern sections. Precipitation totals for the month ranged from less than 2.00" across far southern sections of the state to more than 6.00" across western sections of the Upper Peninsula. The mostly dry

weather late in the month led to an increase of abnormal dryness in the state, with 33% of the state included in the U.S. Drought Monitor's D0 'Abnormally Dry' or D1 'Moderate Drought' categories as of the end of September. In contrast to southern sections of the state, soil moisture in many northern areas remained at above normal levels.

The development of a highly amplified jet stream pattern with a deep troughing feature across the region brought much cooler and unsettled weather to the region for much of October, slowing fall harvest activities and early establishment of fall-planted crops. While most of the state received rainfall during this period, temperatures were cold enough across western sections of Upper Michigan to support several early season snowfall events, with more than a foot of accumulation by the end of the month. Further south, the weather pattern brought widespread hard freeze conditions (min. temperatures less than 28°F) and an end to the growing season across much of the southern and central Lower Peninsula on the last day of the month. Precipitation totals for the month were generally above normal across northern sections of the state to below normal in the south, ranging from more than 6.00" across the northwestern Lower Peninsula to less than 2.50" across the southeastern corner of the state. At the beginning of November, a major upper air pattern change (strong ridging across the eastern USA) led to an extended period of warm and dry weather which led to near optimal outdoor working conditions and a rapid resumption of fall fieldwork.

Overall, the 2020 growing season (May-September) was slightly warmer than normal, with departures generally from 1-2°F. Seasonal base 50°F growing degree day totals ended up from 50-150 units above normal in most areas of the state. However, exceptions were observed in a few interior areas of Upper Michigan with approximately 50 unit seasonal deficits. Precipitation totals ranged from near 15.0" across far southern sections of Lower Michigan (approx. 3.00" below normal) to 18.00-20.00" (1.00-3.00" above normal) across much of central and northern Lower Michigan and eastern Upper Michigan to more than 22.00" (3.00-6.00" or more above normal) across western portions of Upper Michigan. The wetter than normal season in most sections of the state is consistent with longer term trends towards wetter conditions in recent decades.

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Silage harvesting began on August 27th in Ingham County and finished on October 5th in Iosco County. We had a short break before grain harvest began, harvest started on October 15th in Ingham County and ended November 12th in Branch County.

Table A (pg. 5) presents 2020 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.

2020

GRAIN PERFORMANCE TRIALS

Introduction

The grain index (pg. 24) contains a list of all hybrids planted in the 2020 grain trials.

County results are reported in the following tables:

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

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

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

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

Tables 5E/5L Conventional Trial - Ingham**, Saginaw*, and Montcalm (Zone 3)

*Locations dropped due to COVID-19 restrictions

** Location dropped due to weather

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

Methods

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, The Ohio State University Ohio Agricultural Research and Development Center, and Michigan State University AgBioResearch Stations. 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. Experimental design, data acquisition, analysis of variance, and data summarization were facilitated in part by AGROBASE Generation II™ software. The experimental layout was a four-replication, randomized complete block design. Hybrid performance is reported as the adjusted mean averaged together from four replicated plots.

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

Data was collected on the center two rows of each plot. Target population rates are listed with other important agronomic information in Table B (pg. 26). Stalk lodging (%SL) measurements were recorded during harvest. In prior years, stalk lodging was measured as a percent (%SL). Due to the lack of stand count data in 2020 a percent rating was not able to be determined. Therefore, stalk lodging ratings (SL) for 2020 are a count of the number of lodged plants. All plants broken below the ear and/or leaning more than 45 degrees were counted. Moisture content (%H₂O) 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 (%H₂O).
2. Yield of shelled corn corrected to 15.5 percent moisture (Bu/A).
3. Test weight at harvest moisture (Twt).
4. Stalk lodging (plants broken below the ear and/or 45 degrees off vertical at harvest) (SL) is reported as total number of stalks lodged per plot.
5. Percent stand of target population (%Std) – not reported due to stand counts not recorded in 2020 due to Covid-19 travel restrictions.

As part of a multi-year project, tar spot data is reported for plots in Ottawa county. Plots were rated for percentage of canopy greenness (GRN) and percentage of tar spot severity (TAR) on September 29th. Plants were at R5 and various stages of senescence.

2020 Grain Trial Locations

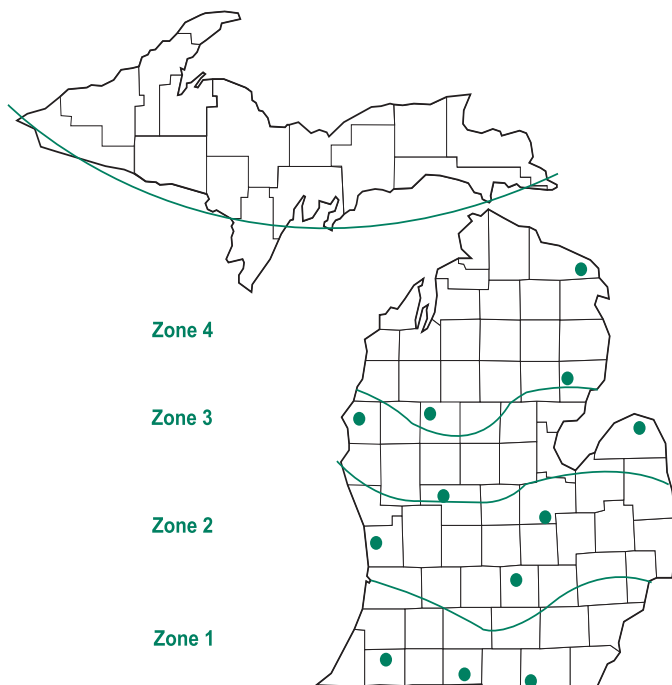


TABLE 1E.

BRANCH, CASS & LENAWEE COUNTY GRAIN TRIALS - EARLY (107 Day and Earlier)

ZONE 1

2020			Early - TRIAL AVERAGE			Branch - Early			Cass - Early			Lenawee - Early			
BRAND / HYBRID	RM TRT	TRAIT	%H2O	BU/A	Twt SL %Sd	%H2O	BU/A	Twt SL %Sd	%H2O	BU/A	Twt SL %Sd	%H2O	BU/A	Twt SL %Sd	
AGRIGOLD A636-11STXRIB	106 P500	1,2,3,4										16.9	178.7	56.7	0.5
AGRIGOLD A636-16VT2RIB	106 P500	1,2										16.9	173.0	55.7	3.5
DAIRYLAND SEED DS-4318AM	101 P250	1,2,3,4										17.2	186.6 *	57.2	1.5
DAIRYLAND SEED DS-4310Q	103 P250	1,2,3,4										17.4	174.1	57.1	0.0
DAIRYLAND SEED DS-4440AMXT	104 P250	1,2,3,4										17.4	163.4	57.1	1.0
DAIRYLAND SEED DS-4580Q	105 P250	1,2,3,4										17.4	169.7	59.1	0.0
DYNAGRO D45TC55	105 P250	1,2,6										16.6	146.8	56.8	3.3
FS InVision FS5704X RIB	107 P500	1,2,3,4										17.9	176.5	58.1	0.8
GOLDEN HARVEST G02K39-3120	102 C250	1,2,4										16.1	167.3	55.4	1.8
GOLDEN HARVEST G03R40-5222	103 C250	1,2,3,4,6										17.1	164.6	58.9	3.0
GOLDEN HARVEST G04G36-3111A	104 C250	1,2,3,4,6,16										17.3	176.9	56.7	0.0
GOLDEN HARVEST G07F23-3111	107 C250	1,2,3,4,6										17.3	170.5	56.3	18.3
INTEGRA 5081	100 P500	1,2										17.0	157.1	57.0	0.0
INTEGRA 5280	102 P500	1,2										17.1	177.3	57.9	0.0
INTEGRA 5351	103 P500	1,2,3,4,6										17.3	166.5	58.1	0.8
INTEGRA 5529	105 P500	1,2										17.2	173.8	58.0	0.5
INTEGRA 5719	107 P500	1,2										16.6	182.4	56.4	0.3
LEGACY SEEDS LC551-20 SSX	105 P500	1,2,3,4										16.2	163.0	56.2	1.8
LEGACY SEEDS LC-5819 SSX	107 P500	1,2,3,4										18.5	188.6 *	58.1	0.5
LG Seeds LG57C97V12PRO	107 P500	1,2										17.2	156.3	58.2	1.3
LOCAL SEED LC0297 SSXRIB	102 P500	1,2,3,4										17.2	183.1	57.9	0.5
LOCAL SEED LC0488 VT2PRIB	104 P500	1,2										16.5	166.3	56.1	0.0
M&W SEEDS 45V21	104 T250	1,2										16.4	150.9	57.9	1.3
M&W SEEDS 44V74	105 T250	1,2,3,4,6										18.2	186.2	55.9	0.3
M&W SEEDS 44V42	107 T250	1,2										17.5	165.5	58.7	3.0
RENK RK726H	106 P500	1,2,4										17.0	155.6	55.9	0.0
RENK RK700SSTX	107 P500	1,2,4,6										18.2	205.5 **	56.0	0.3
RUPP 8xp031	104 P500	1,2										16.3	159.5	55.8	1.8
RUPP XRD06-53	106 P250	1,2										17.4	162.8	58.7	1.8
RUPP XRD07-72	107 P250	1,2										16.7	182.7	57.0	0.0
SPECIALTY 33A580	103 P500	1,2,3,4										17.0	173.8	56.2	1.5
SPECIALTY 36D260	106 P500	1,2										18.7	180.5	57.8	0.0
SPECIALTY 37A369	107 P500	1,2,3,4										17.3	186.6 *	58.1	0.5
WELLMAN W2903DP	103 ENC	1,2										16.8	160.4	57.1	0.5
WELLMAN W2104DP	104 ENC	1,2										16.8	161.0	56.6	5.5
WELLMAN W2705DP	105 ENC	1,2										16.7	165.8	58.6	0.0
WELLMAN W2807DP	107 ENC	1,2										17.0	167.3	57.4	0.0
WYCKOFF 2195 3220	97 P250	1,2,4,6										17.1	157.7	58.6	0.5
WYCKOFF 2180 SS	98 P250	1,2										16.8	142.8	57.8	2.0
WYCKOFF 2212 VT2P	100 P250	1,2										16.7	142.3	58.2	0.5
WYCKOFF 2250 VT2P	102 P250	1,2										16.5	158.3	57.2	0.5
WYCKOFF 2300 DGV12P	103 P250	1,2,18										16.7	174.9	57.2	0.0
WYCKOFF 2335 SS	103 P250	1,2,3,4										16.8	152.0	58.4	1.3
WYCKOFF 2483 VT2P	104 P250	1,2										16.6	161.6	56.5	0.5
WYCKOFF 2433 SS	105 P250	1,2,3,4										17.8	199.2 *	58.5	0.0

WYCKOFF 2500 SS	106 P250	1,2,3,4	17.2	177.2	57.3	1.3
WYCKOFF 2550 VT2P	107 P250	1,2	17.1	155.3	59.0	0.5
WYCKOFF 2585 VT2P	107 P250	1,2	17.1	183.1	56.1	0.0
AVERAGE			17.1	169.4	57.3	1.3
HIGHEST			18.7	205.5	59.1	18.3
LOWEST			16.1	142.3	55.4	0.0
CV (%)			4.2	9.5	1.4	319.0
LSD (5%)			0.8	18.9	0.9	4.8

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

CODE NUMBERS FOR HYBRID TRAITS

Code Num.	Traits & Resistant Events
1	Glyphosate
2	European Corn Borer
3	Corn Rootworm
4	Liberty Link
5	Clearfield, IMI, IT, IR
6	Western Bean Cutworm
7	Brown Mid Rib
8	Leafy
9	High Oil
10	Waxy
11	HTF High Total Fermentable
12	HAE High Available Energy
13	HES High Extractable Starch
14	Other

TREATMENT CODES FOR SEED APPLIED INSECTICIDES

TRT	Seed Treatment	Chemical Rate
	No Seed Insecticide Applied	
C125	Cruiser® 125	0.125 mg Thiamethoxan per kernal
C250	Cruiser® 250	0.250 mg Thiamethoxan per kernal
C1250	Cruiser® 1250	1.25 mg Thiamethoxan per kernal
P250	Poncho® 250	0.25 mg Clothianidian per kernal
P1250	Poncho® 1250	1.25 mg Clothianidian per kernal
Cruiser® is a registered trademark of Syngenta Group Company Poncho® is a registered trademark of Gustafson LLC		



TABLE 1L.

BRANCH, CASS & LENAww COUNTY GRAIN TRIALS - LATE (108 Day and Later)

ZONE 1

BRAND / HYBRID	RM	TRT	TRAIT	Late - TRIAL AVERAGE				Branch - Late				Cass - Late				Lenawee - Late			
				%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	%Sd	%H2O	BU/A	Twt	%Sd	%H2O	BU/A	Twt
AGRIGOLD A638-74VT2RIB	108	P500	1,2	18.4	222.4	58.0	0.8	18.1	246.2	57.6	0.0	18.6	198.6	58.4	1.5	18.7	195.5	56.3	1.5
AGRIGOLD A639-40VT2RIB	109	P500	1,2	19.0	213.0	56.1	0.8	19.3	230.5	55.8	0.0	17.1	202.4 *	56.4	3.3	17.7	193.1	57.4	0.8
DAIRYLAND SEED DS-4840AM	108	P250	1,3,4	17.7	212.1	56.2	1.9	18.2	221.7	55.9	0.5	18.1	180.2	58.3	6.5	17.2	248.7	56.6	44.5
DAIRYLAND SEED DS-4878Q	108	P250	1,2,3,4	17.5	220.9	57.0	22.7	17.2	248.7	56.6	44.5	17.8	219.6	57.1	0.0	18.5	181.3	58.1	0.8
DAIRYLAND SEED DS-4910AMIL	109	P250	1,2,4,6	18.5	204.2	57.9	3.8	18.9	228.2	57.5	1.0	18.3	262.8	56.3	0.0	17.9	195.9	56.9	2.3
DAIRYLAND SEED DS-5018Q	110	P250	1,2,3,4	18.2	200.5	57.6	0.4	17.8	219.6	57.1	0.0	18.5	207.5 *	58.1	2.8	19.3	176.3	56.0	1.3
DAIRYLAND SEED DS-5144Q	111	P250	1,2,3,4	18.4	235.2 *	57.2	1.4	18.3	262.8	56.3	0.0	16.5	177.6	55.2	2.3	16.5	162.8	55.2	2.5
DYNAGRO D49VC70	109	P500	1,2	18.2	217.4	56.8	12.3	18.5	238.9	56.7	22.3	16.4	202.0 *	56.5	1.3	17.7	172.2	55.5	0.5
FS InVision FS58RL1 EZR	108	P250	1,2,4,6	19.1	204.9	55.9	0.7	18.8	233.5	55.7	0.0	17.2	195.2	56.2	2.8	16.2	183.2	54.8	0.0
FS InVision FS5909D2A EZR	109	P5001	2,3,4,4	17.0	211.1	55.6	1.2	17.5	244.5	55.9	0.0	17.3	177.6	56.8	0.8	17.3	188.9	54.8	5.5
FS InVision FS60UX1 RIB	110	P500	1,2,3,4	18.9	215.1	57.4	1.8	18.8	234.3	57.0	0.0	17.6	199.4	55.8	1.5	17.7	169.8	57.6	6.5
FS InVision FS6107T RIB	111	P500	1,2,6	17.0	209.6	55.1	1.3	17.5	256.4	54.9	0.0	19.7	200.4 *	56.2	1.0	19.7	200.4 *	56.2	1.0
FS InVision FS6194V RIB	111	P500	1,2	16.5	241.4 **	55.7	12.9	16.5	280.8 **	54.8	24.5	17.8	195.3	55.8	1.8	17.8	195.3	55.8	1.8
FS InVision FS6299L2 EZR	112	P250	1,2,4,6	17.8	206.2	55.2	0.3	18.3	240.1	54.9	0.0	18.8	250.6	56.9	4.8	17.1	190.7	56.9	1.8
FS InVision FS62ZX1 RIB	112	P500	1,2,3,4	17.1	226.7	55.9	1.4	16.5	258.2	55.5	0.0	18.7	214.1 *	56.3	0.8	18.7	214.1 *	56.3	0.8
GOLDEN HARVEST G09A86-3330	109	C250	1,2,4,6	18.1	205.7	54.7	0.0	19.9	228.1	54.5	0.0	18.6	204.1 *	57.2	1.0	16.6	193.2	54.3	2.0
GOLDEN HARVEST G09Y24-3220A	109	C250	2,4,6,1	17.7	213.4	55.4	2.8	18.0	237.9	56.0	0.0	17.3	177.6	56.8	0.8	17.3	196.0	56.9	2.0
GOLDEN HARVEST G10L16-3330A	110	C250	2,4,6,1	18.9	214.5	55.5	0.8	20.2	229.5	55.1	0.0	17.8	188.9	54.8	5.5	17.6	199.4	55.8	1.5
INTEGRA 5939	109	P500	1,2,3,4	18.1	201.2	57.3	3.7	18.4	232.6	57.0	0.8	17.8	195.3	55.8	1.8	17.7	169.8	57.6	6.5
LEGACY SEEDS LC634-20 SSX	113	P500	1,2,3,4	19.6	217.8	55.9	0.5	19.4	235.1	55.6	0.0	19.7	200.4 *	56.2	1.0	19.7	200.4 *	56.2	1.0
LG SEEDS LG59C72VT2RIB	109	P500	1,2	17.6	212.0	55.4	0.9	17.4	228.6	55.0	0.0	17.8	195.3	55.8	1.8	17.8	195.3	55.8	1.8
LG SEEDS LG62C35VT2RIB	112	P500	1,2	19.2	195.4	56.4	2.8	19.6	215.8	55.9	0.8	18.8	175.0	56.9	4.8	18.8	175.0	56.9	4.8
LOCAL SEED LC0999 VT2PRIB	109	P500	1,2	17.6	225.3	57.2	12.1	18.0	259.8	57.5	22.3	17.1	202.4 *	56.3	0.8	17.1	190.7	56.9	1.8
LOCAL SEED LC1289 VT2PRIB	112	P500	1,2	19.7	231.7 *	56.1	0.4	20.7	249.2	55.9	0.0	18.7	214.1 *	56.3	0.8	18.7	214.1 *	56.3	0.8
LOCAL SEED LC1398 VT2PRIB	113	P500	1,2	18.7	227.4 *	57.1	0.5	18.8	250.6	56.9	0.0	18.6	204.1 *	57.2	1.0	18.6	204.1 *	57.2	1.0
LOCAL SEED LC1488 VT2PRIB	114	P500	1,2	18.2	208.5	56.5	0.4	19.0	239.4	56.1	0.0	17.3	177.6	56.8	0.8	17.3	177.6	56.8	0.8
LOCAL SEED LC1497 DGVT2PRIB	114	P500	1,2	17.8	229.8 *	56.8	1.5	18.3	263.6	56.7	1.0	17.2	196.0	56.9	2.0	17.2	196.0	56.9	2.0
M&W SEEDS 43V69	111	T250	1,2,6	17.5	229.9 *	55.5	4.8	17.1	262.4	54.8	0.8	17.8	197.3	56.1	8.8	17.8	197.3	56.1	8.8
NK Brand NK0886-3120	108	C250	1,2,4	18.1	202.8	57.2	0.0	18.8	225.9	57.4	0.0	17.3	179.7	57.0	0.0	17.3	179.7	57.0	0.0
NK Brand NK1026-3330	110	C500	1,2,4,6	17.6	220.8	54.8	1.3	18.5	248.3	55.2	0.5	16.6	193.2	54.3	2.0	16.6	193.2	54.3	2.0
NK Brand NK1082-5222	110	C5001	2,3,4,4	18.5	220.6	55.4	0.8	19.8	239.0	55.3	0.5	17.2	202.1 *	55.4	1.0	17.2	202.1 *	55.4	1.0
RENK RK765VT2P	109	P250	1,2	17.9	199.0	56.6	12.9	17.9	214.0	56.2	25.5	17.8	184.0	56.9	0.3	17.8	184.0	56.9	0.3
RENK RK805VT2P	110	P250	1,2	17.3	189.6	56.3	4.2	17.3	221.4	55.6	0.0	17.2	157.8	56.9	8.3	17.2	157.8	56.9	8.3
RENK RK807SSTX	111	P500	1,2,3,4	19.1	200.5	56.9	1.5	18.3	209.7	56.0	0.0	19.8	191.2	57.8	3.0	19.8	191.2	57.8	3.0
RENK RK882SSTX	111	P500	1,2,3,4	19.6	227.8 *	57.0	1.9	19.0	238.0	56.6	3.0	20.1	217.6 **	57.4	0.8	20.1	217.6 **	57.4	0.8
RUPP XRD09-42	109	P250	1,2	18.5	214.2	56.7	12.9	18.3	218.2	56.6	25.5	18.7	210.2 *	56.7	0.3	18.7	210.2 *	56.7	0.3
RUPP XRD10-16	110	P250	1,2	18.0	206.0	57.2	11.8	18.3	224.8	57.5	22.3	17.7	187.2	56.9	1.3	17.7	187.2	56.9	1.3
RUPP XRD12-49	112	P250	1,2	19.3	228.0 *	56.2	0.2	19.3	244.8	56.1	0.0	19.2	211.2 *	56.2	0.3	19.2	211.2 *	56.2	0.3
SPECIALTY 38A388	108	P500	1,2,3,4	18.0	231.1 *	56.2	0.4	17.0	267.6 *	55.6	0.8	19.0	194.6	56.7	0.0	19.0	194.6	56.7	0.0
AVERAGE				18.2	215.2	56.4	3.7	18.4	239.2	56.1	5.0	17.9	191.2	56.6	2.2	17.9	191.2	56.6	2.2
HIGHEST				19.7	241.4	58.0	22.7	20.7	280.8	57.6	44.5	20.1	217.6	58.4	8.8	20.1	217.6	58.4	8.8
LOWEST				16.5	189.6	54.7	0.0	16.5	209.7	54.5	0.0	16.2	157.8	54.3	0.0	16.2	157.8	54.3	0.0
CV (%)				5.6	8.0	1.8	374.0	6.4	5.5	2.1	375.0	4.6	7.7	1.5	144.0	4.6	7.7	1.5	144.0
LSD (5%)				0.8	14.1	0.9	11.2	1.4	15.3	1.4	22.2	1.0	17.2	1.0	3.7	1.0	17.2	1.0	3.7

2 Year Averages 2020 - 2019			Late - TRIAL AVERAGE				Branch - Late				Cass - Late				Lenawee - Late								
BRAND / HYBRID	RM TRT	TRAIT	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	%SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	
AGRIGOLD A638-74VT2RIB	108	P500 1,2						20.0	254.0 *	57.6													
AGRIGOLD A639-40VT2RIB	109	P500 1,2						21.3	249.3	55.3													
DAIRYLAND SEED DS-4840AM	108	P250 1,3,4						19.7	221.0	55.5													
DAIRYLAND SEED DS-4910AML	109	P250 1,2,4,6						20.6	233.2	56.9													
DAIRYLAND SEED DS-5018Q	110	P250 1,2,3,4						19.4	223.6	56.5													
DYNAGRO D49VC70	109	P500 1,2						20.1	245.7	56.9													
FS InVision FS58RL1 EZR	108	P250 1,2,4,6						21.1	225.8	54.9													
FS InVision FS60UX1 RIB	110	P500 1,2,3,4						20.6	236.4	56.5													
FS InVision FS6194V RIB	111	P500 1,2						19.8	263.9 **	54.7													
FS InVision FS6299L2 EZR	112	P250 1,2,4,6						20.7	238.1	55.0													
FS InVision FS62ZX1 RIB	112	P500 1,2,3,4						20.3	258.1 *	55.5													
GOLDEN HARVEST G09A86-3330	109	C250 1,2,4,6						21.5	233.7	53.5													
GOLDEN HARVEST G09Y24-3220A	109	C250 2,4,6,16						20.2	231.8	55.3													
LOCAL SEED LC1289 VT2PRIB	112	P500 1,2						22.3	255.0 *	55.2													
RENK RK765VT2P	109	P250 1,2						19.8	234.0	55.5													
RENK RK807SSTX	111	P500 1,2,3,4						20.4	225.5	55.9													
RUPP XRD09-42	109	P250 1,2						20.1	236.5	55.8													
RUPP XRD10-16	110	P250 1,2						20.2	242.0	57.0													
RUPP XRD12-49	112	P250 1,2						21.5	248.2	55.7													
AVERAGE								20.5	239.8	55.8													
HIGHEST								22.3	263.9	57.6													
LOWEST								19.4	221.0	53.5													
CV (%)								5.1	6.2	1.7													
LSD (5%)								0.8	12.4	0.8													

** Highest Yielding Hybrid

* Not Significantly Different from Highest Yielding Hybrid

TABLE 2E.

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

ZONE 2

2020			Early - TRIAL AVERAGE				Ingham - Early				Ottawa - Early				Saginaw - Early									
BRAND /HYBRID	RM TRT	TRAIT	%H2O	BUJA	Twt	SL	%Sd	%H2O	BUJA	Twt	SL	%Sd	%H2O	BUJA	Twt	SL	%Sd	%H2O	BUJA	Twt	SL	%Sd		
AG ARMOUR AA9509	95 C250	1,2,4,6						23.5	233.2	53.4	0.8		23.5	233.2	53.4	0.8		23.5	233.2	53.4	0.8		35.0	1.3
AG ARMOUR AA9608	96 C250	1,2,4,6						24.2	249.1	53.8	3.3		24.2	249.1	53.8	3.3		24.2	249.1	53.8	3.3		36.0	1.3
AG ARMOUR AA10020	100 C250	1,2,4						27.0	258.4 *	53.3	0.8		27.0	258.4 *	53.3	0.8		27.0	258.4 *	53.3	0.8		57.0	3.5
AGRIGOLD A628-16VT2RIB	98 P500	1,2						27.5	256.8 *	52.3	0.3		27.5	256.8 *	52.3	0.3		27.5	256.8 *	52.3	0.3		64.0	4.0
AGRIGOLD A629-22VT2RIB	99 P500	1,2						22.7	237.2	54.3	1.0		22.7	237.2	54.3	1.0		22.7	237.2	54.3	1.0		49.0	4.8
DAIRYLAND SEED DS-3519AM	95 P250	1,3,4						23.0	246.2	54.9	6.5		23.0	246.2	54.9	6.5		23.0	246.2	54.9	6.5		34.0	2.5
DAIRYLAND SEED DS-3550Q	95 P250	1,2,3,4						19.6	252.5	50.4	2.5		19.6	252.5	50.4	2.5		19.6	252.5	50.4	2.5		63.0	4.0
DAIRYLAND SEED DS-3715AM	97 P250	1,3,4						23.6	238.5	52.1	4.3		23.6	238.5	52.1	4.3		23.6	238.5	52.1	4.3		54.0	2.5
DAIRYLAND SEED DS-3750AM	97 P250	1,3,4						23.8	213.8	54.7	1.5		23.8	213.8	54.7	1.5		23.8	213.8	54.7	1.5		39.0	1.0
DAIRYLAND SEED DS-3810Q	98 P250	1,2,3,4						24.4	253.6	52.2	0.8		24.4	253.6	52.2	0.8		24.4	253.6	52.2	0.8		51.0	1.8
DAIRYLAND SEED DS-4000AMXT	100 P250	1,2,3,4						25.9	270.7 **	52.5	1.5		25.9	270.7 **	52.5	1.5		25.9	270.7 **	52.5	1.5		59.0	1.5
DAIRYLAND SEED DS-4014Q	100 P250	1,2,3,4						25.7	263.1 *	51.0	0.0		25.7	263.1 *	51.0	0.0		25.7	263.1 *	51.0	0.0		64.0	2.5
DAIRYLAND SEED DS-4018AM	100 P250	1,3,4						23.4	257.7 *	52.8	1.3		23.4	257.7 *	52.8	1.3		23.4	257.7 *	52.8	1.3		53.0	4.0
DAIRYLAND SEED DS-4318AM	101 P250	1,2,3,4						25.3	251.0	52.0	4.3		25.3	251.0	52.0	4.3		25.3	251.0	52.0	4.3		60.0	1.5
DYNAGRO D39DC43	99 P250	1,2,18						25.1	251.9	51.0	0.5		25.1	251.9	51.0	0.5		25.1	251.9	51.0	0.5		49.0	7.8
DYNAGRO D40VC41	100 P250	1,2						25.9	245.3	51.5	1.5		25.9	245.3	51.5	1.5		25.9	245.3	51.5	1.5		69.0	1.8
FS InVision FS6098X RIB	100 P500	1,2,3,4						25.4	220.2	52.1	0.0		25.4	220.2	52.1	0.0		25.4	220.2	52.1	0.0		54.0	4.3
FS InVision FS51QX1 RIB	101 P500	1,2,3,4						25.1	224.6	52.5	6.0		25.1	224.6	52.5	6.0		25.1	224.6	52.5	6.0		66.0	2.8
GOLDEN HARVEST G95M41-5122	95 C250	1,2,3,4						24.1	230.2	52.5	3.0		24.1	230.2	52.5	3.0		24.1	230.2	52.5	3.0		36.0	2.0
GOLDEN HARVEST G99E68-5122	99 C250	1,2,3,4						26.3	250.2	52.5	3.0		26.3	250.2	52.5	3.0		26.3	250.2	52.5	3.0		55.0	1.8
GOLDEN HARVEST G00H12-5122	100 C250	1,2,3,4						25.4	242.7	53.8	3.8		25.4	242.7	53.8	3.8		25.4	242.7	53.8	3.8		40.0	1.0
INTEGRA 4509	95 P500	1,2						22.5	227.6	53.0	10.8		22.5	227.6	53.0	10.8		22.5	227.6	53.0	10.8		14.0	3.3
INTEGRA 4601	96 P500	1,2						23.6	261.9 *	52.7	7.3		23.6	261.9 *	52.7	7.3		23.6	261.9 *	52.7	7.3		56.0	5.5
INTEGRA 4782	97 P500	1,2						23.4	241.9	53.0	2.3		23.4	241.9	53.0	2.3		23.4	241.9	53.0	2.3		39.0	6.0
INTEGRA 4888	98 P500	1,2						26.4	234.2	53.0	5.8		26.4	234.2	53.0	5.8		26.4	234.2	53.0	5.8		70.0	3.5
INTEGRA 5081	100 P500	1,2						24.3	238.2	51.6	0.0		24.3	238.2	51.6	0.0		24.3	238.2	51.6	0.0		40.0	4.3
KEY 995BLG	95 ENC	1,2,4,6						24.4	238.3	53.8	1.8		24.4	238.3	53.8	1.8		24.4	238.3	53.8	1.8		49.0	1.5
LEGACY SEEDS LC484-20 SSX	98 P500	1,2,3,4						24.3	262.1 *	52.7	1.5		24.3	262.1 *	52.7	1.5		24.3	262.1 *	52.7	1.5		45.0	5.5
LEGACY SEEDS LC-4248 SSX	100 P250	1,2,3,4						25.3	250.9	52.9	0.8		25.3	250.9	52.9	0.8		25.3	250.9	52.9	0.8		54.0	5.0
LEGEND EXP 20-9980	99 C250	1,2,4						24.1	230.3	52.2	1.0		24.1	230.3	52.2	1.0		24.1	230.3	52.2	1.0		59.0	2.0
LG Seeds LG47C7VT2PRO	97 P500	1,2						23.6	243.0	52.8	1.3		23.6	243.0	52.8	1.3		23.6	243.0	52.8	1.3		35.0	7.0
LG SEEDS LG6505VT2RIB	100 P500	1,2						23.3	242.3	54.8	2.5		23.3	242.3	54.8	2.5		23.3	242.3	54.8	2.5		46.0	5.8
LG Seeds LG51C48VT2RIB	101 P500	1,2						25.7	262.8 *	52.2	0.0		25.7	262.8 *	52.2	0.0		25.7	262.8 *	52.2	0.0		70.0	2.0
LOCAL SEED LC9108 VT2PRIB	91 P500	1,2						23.0	232.7	53.4	2.0		23.0	232.7	53.4	2.0		23.0	232.7	53.4	2.0		48.0	3.3
LOCAL SEED Z59598 5222EZ	95 P500	1,2,3,4,6						23.9	250.8	53.5	3.0		23.9	250.8	53.5	3.0		23.9	250.8	53.5	3.0		33.0	2.0
LOCAL SEED Z59796 3220EZ	97 P500	1,2,4,6						23.8	224.8	54.6	11.8		23.8	224.8	54.6	11.8		23.8	224.8	54.6	11.8		34.0	5.3
LOCAL SEED LC9888 VT2PRIB	98 P500	1,2						24.1	221.9	54.0	1.5		24.1	221.9	54.0	1.5		24.1	221.9	54.0	1.5		56.0	4.3
M&W SEEDS 47T16	90 T250	1,2						19.8	246.4	53.7	1.8		19.8	246.4	53.7	1.8		19.8	246.4	53.7	1.8		6.3	2.8
M&W SEEDS 46P76	97 T250	1,2						24.1	234.1	52.9	2.0		24.1	234.1	52.9	2.0		24.1	234.1	52.9	2.0		68.0	5.3
M&W SEEDS 46T29	99 T250	1,2						23.8	251.2	53.7	4.5		23.8	251.2	53.7	4.5		23.8	251.2	53.7	4.5		51.0	5.8
M&W SEEDS 45T56	100 T250	1,2						25.5	260.1 *	51.5	1.0		25.5	260.1 *	51.5	1.0		25.5	260.1 *	51.5	1.0		61.0	3.0
NK Brand NK9991-5122	99 C250	1,2,3,4						25.8	249.3	52.2	0.0		25.8	249.3	52.2	0.0		25.8	249.3	52.2	0.0		61.0	1.0
RENK RK600VT2P	100 P500	1,2,3,4						24.5	232.4	52.5	12.5		24.5	232.4	52.5	12.5		24.5	232.4	52.5	12.5		44.0	2.3
RUPP 8xp094	94 P500	1,2						22.1	258.3 *	54.2	10.8		22.1	258.3 *	54.2	10.8		22.1	258.3 *	54.2	10.8		13.0	10.0
RUPP XRD96-13	96 C250	1,2,4,6						22.4	243.4	53.3	6.8		22.4	243.4	53.3	6.8		22.4	243.4	53.3	6.8		28.0	2.5

RUPP XRJ88-52	98 P500	1,2,3,4	24.9	194.5	52.4	1.3	66.0	3.5
RUPP XRD01-90	101 P250	1,2	24.3	235.8	53.0	2.3	44.0	3.8
SPECIALTY 27D728	97 P500	1,2	23.7	254.8 *	52.7	2.0	49.0	6.5
SPECIALTY 28D249	98 P500	1,2	23.9	255.2 *	52.2	2.0	41.0	7.0
SPECIALTY 29D010	99 P500	1,2	25.4	254.9 *	50.9	1.0	71.0	2.8
AVERAGE			24.2	243.6	52.8	2.9	49.0	3.6
HIGHEST			27.5	270.7	54.9	12.5	71.0	10.0
LOWEST			19.6	194.5	50.4	0.0	6.3	1.0
CV (%)			3.8	5.9	1.5	144.0	25.0	75.0
LSD (5%)			1.1	17.0	0.9	4.9	14.0	3.1

2 Year Averages 2020 - 2019			Early - TRIAL AVERAGE					Ingham - Early					Ottawa - Early					Saginaw - Early						
BRAND / HYBRID	RM TRT TRAIT		%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	GRN	TAR	%H2O	BU/A	Twt	SL	%Sd
AG ARMOUR AA9509	95 C250	1,2,4,6	22.3	222.7	54.3			22.3	222.7	54.3			22.3	222.7	54.3			34.0	6.9					
AG ARMOUR AA9608	96 C250	1,2,4,6	21.8	236.0 *	55.5			21.8	236.0 *	55.5			21.8	236.0 *	55.5			28.0	6.9					
AGRIGOLD A628-16VT2RIB	98 P500	1,2	23.2	236.7 *	54.0			23.2	236.7 *	54.0			23.2	236.7 *	54.0			53.0	7.6					
DAIRYLAND SEED DS-3519AM	95 P250	1,3,4	20.9	231.6	56.7			20.9	231.6	56.7			20.9	231.6	56.7			31.0	6.3					
DAIRYLAND SEED DS-3715AM	97 P250	1,3,4	20.9	224.4	53.1			20.9	224.4	53.1			20.9	224.4	53.1			41.0	6.9					
DAIRYLAND SEED DS-3750AM	97 P250	1,3,4	21.4	217.3	56.9			21.4	217.3	56.9			21.4	217.3	56.9			38.0	7.4					
DAIRYLAND SEED DS-4018AM	100 P250	1,3,4	21.4	237.4 *	54.3			21.4	237.4 *	54.3			21.4	237.4 *	54.3			53.0	5.8					
FS InVision FS5098X RIB	100 P500	1,2,3,4	22.9	223.0	54.0			22.9	223.0	54.0			22.9	223.0	54.0			42.0	9.0					
FS InVision FS51QX1 RIB	101 P500	1,2,3,4	22.0	216.4	54.6			22.0	216.4	54.6			22.0	216.4	54.6			63.0	10.0					
INTEGRA 4782	97 P500	1,2	20.4	222.7	54.9			20.4	222.7	54.9			20.4	222.7	54.9			27.0	12.0					
INTEGRA 5081	100 P500	1,2	21.1	217.3	53.2			21.1	217.3	53.2			21.1	217.3	53.2			24.0	9.6					
LG SEEDS LG5505VT2RIB	100 P500	1,2	20.7	225.3	56.1			20.7	225.3	56.1			20.7	225.3	56.1			34.0	15.0					
LOCAL SEED ZS9598 5222EZ	95 P500	1,2,3,4,6	21.9	232.6 *	54.3			21.9	232.6 *	54.3			21.9	232.6 *	54.3			22.0	7.3					
LOCAL SEED ZS9796 3220EZ	97 P500	1,2,4,6	21.5	226.9	56.0			21.5	226.9	56.0			21.5	226.9	56.0			24.0	10.0					
LOCAL SEED LC9888 VT2PRIB	98 P500	1,2	20.9	205.7	56.1			20.9	205.7	56.1			20.9	205.7	56.1			33.0	10.0					
M&W SEEDS 47T16	90 T250	1,2	18.6	219.6	54.7			18.6	219.6	54.7			18.6	219.6	54.7			4.4	7.6					
M&W SEEDS 46P76	97 T250	1,2	20.9	228.0	54.6			20.9	228.0	54.6			20.9	228.0	54.6			36.0	11.0					
M&W SEEDS 46T29	99 T250	1,2	20.8	237.4 *	55.0			20.8	237.4 *	55.0			20.8	237.4 *	55.0			39.0	10.0					
M&W SEEDS 45T56	100 T250	1,2	22.2	242.4 **	53.3			22.2	242.4 **	53.3			22.2	242.4 **	53.3			46.0	7.8					
RUPP XRD96-13	96 C250	1,2,4,6	20.8	237.0 *	55.2			20.8	237.0 *	55.2			20.8	237.0 *	55.2			31.0	7.5					
RUPP XRJ88-52	98 P500	1,2,3,4	21.6	206.3	54.0			21.6	206.3	54.0			21.6	206.3	54.0			46.0	7.4					
RUPP XRD01-90	101 P250	1,2	21.8	225.1	55.0			21.8	225.1	55.0			21.8	225.1	55.0			41.0	9.4					
SPECIALTY 27D728	97 P500	1,2	20.9	234.6 *	54.3			20.9	234.6 *	54.3			20.9	234.6 *	54.3			38.0	11.0					
SPECIALTY 28D249	98 P500	1,2	20.6	237.9 *	53.6			20.6	237.9 *	53.6			20.6	237.9 *	53.6			31.0	14.0					
AVERAGE			21.3	226.8	54.7			21.3	226.8	54.7			21.3	226.8	54.7			36.0	9.0					
HIGHEST			23.2	242.4	56.9			23.2	242.4	56.9			23.2	242.4	56.9			63.0	15.0					
LOWEST			18.6	205.7	53.1			18.6	205.7	53.1			18.6	205.7	53.1			4.4	5.8					
CV (%)			3.5	5.4	1.4			3.5	5.4	1.4			3.5	5.4	1.4			30.0	49.0					
LSD (5%)			0.7	10.5	0.6			0.7	10.5	0.6			0.7	10.5	0.6			10.0	2.9					

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

GRN ==> Percentage of Canopy Greenness

TAR ==> Percentage of Tar Spot Severity

TABLE 2L.

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

ZONE 2

BRAND /HYBRID	RM TRT	TRAIT	Late - TRIAL AVERAGE			Ingham - Late			Ottawa - 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
2020														
AG ARMOUR AA10404	104 C250	1,2,4,6							29.9	273.1	50.9	4.0		
AGRIGOLD A632-35-5222EZ	102 C500	1,2,3,4,6							26.7	226.1	51.8	6.0		
AGRIGOLD A633-14V72PRO	103 P500	1,2							27.7	233.5	52.6	4.0		
DAIRYLAND SEED DS-4310Q	103 P250	1,2,3,4							26.1	261.8	51.6	0.8		
DAIRYLAND SEED DS-4440AMXT	104 P250	1,2,3,4							29.4	259.5	52.4	0.0		
DAIRYLAND SEED DS-4580Q	105 P250	1,2,3,4							27.1	248.5	53.3	2.5		
DAIRYLAND SEED DS-4878Q	108 P250	1,2,3,4							29.7	269.3	51.8	2.8		
DYNAGRO D43VC81	103 P250	1,2							26.0	267.1	52.1	0.0		
DYNAGRO D44SS54	104 P500	1,2,3,4							30.8	297.4 **	51.2	0.0		
DYNAGRO D45TC55	105 P250	1,2,6							25.9	279.9	51.4	0.3		
DYNAGRO D49VC70	109 P250	1,2							32.8	268.6	52.4	0.5		
FS InVision FS53ZX1 RIB	103 P500	1,2,3,4							29.6	227.5	51.8	0.0		
FS InVision FS5594X RIB	105 P500	1,2,3,4							29.9	257.9	52.9	0.3		
FS InVision FS55RL1 EZR	105 P250	1,2,4,6							30.9	266.6	49.8	2.5		
FS InVision FS5704X RIB	107 P500	1,2,3,4							30.5	261.8	53.3	0.0		
GOLDEN HARVEST G02K39-3120	102 C250	1,2,4							26.5	262.3	50.7	1.0		
GOLDEN HARVEST G03R40-5222	103 C250	1,2,3,4,6							25.8	238.8	52.0	5.3		
GOLDEN HARVEST G04G36-3111A	104 C250	1,2,3,4,6,16							26.8	239.8	51.7	0.0		
INTEGRA 5280	102 P500	1,2							28.1	252.0	53.1	0.0		
INTEGRA 5351	103 P500	1,2,3,4,6							27.5	227.5	51.8	3.8		
LEGACY SEEDS LC-5217 VT2P	103 P250	1,2							26.6	258.8	51.9	0.0		
LEGACY SEEDS LC-5319 SSX	103 P500	1,2,3,4							27.8	284.6 *	51.3	0.3		
LEGACY SEEDS LC533-20 5222	103 C250	1,2,3,4,6							27.6	240.7	51.7	2.8		
LEGEND 9102 VIP3110	102 C250	1,2,4,6							25.7	235.5	53.5	4.0		
LG Seeds LG57C97VT2PRO	107 P500	1,2							29.7	256.9	51.5	1.8		
LOCAL SEED LC0297 SSXRIB	102 P500	1,2,3,4							27.8	280.1	51.3	0.0		
LOCAL SEED LC0488 VT2PRIB	104 P500	1,2							27.2	274.6	52.0	0.0		
M&W SEEDS 45V21	104 T250	1,2							25.1	275.8	51.7	0.8		
M&W SEEDS 44V42	107 T250	1,2							27.7	255.2	54.0	2.0		
NK Brand NK0243-3120	102 C250	1,2,4							27.0	266.0	50.7	3.0		
NK Brand NK0472-5222	104 C250	1,2,3,4,6							27.0	234.2	52.0	2.3		
RENK RK695GT0BLLBL	102 P500	1,2,4,6							26.0	246.8	53.1	4.0		
RENK RK621VT2P	103 P250	1,2							26.3	253.3	51.7	0.8		
RENK RK642VT2P	103 P250	1,2							27.9	257.8	52.2	0.0		
RENK RK710DGV72P	106 P250	1,2							30.6	268.8	51.3	0.0		
RUPP 8xp031	104 P500	1,2							27.9	262.8	49.6	1.8		
SPECIALTY 33A580	103 P500	1,2,3,4							31.1	260.7	51.0	0.0		
SPECIALTY 36D260	106 P500	1,2							30.3	278.5	52.7	0.0		
WELLMAN W2903DP	103 ENC	1,2							27.8	257.3	51.9	0.5		
AVERAGE									28.1	258.1	51.9	1.5		
HIGHEST									32.8	297.4	54.0	6.0		
LOWEST									25.1	226.1	49.6	0.0		
CV (%)									5.6	5.3	1.4	149.0		
LSD (5%)									1.8	16.0	0.9	2.6		

2 Year Averages 2020 - 2019			Late - TRIAL AVERAGE				Ingham - Late				Ottawa - Late				Saginaw - Late					
BRAND / HYBRID	RM	TRT	TRAIT	%H2O	BUJA	Twt	SL	%Sd	%H2O	BUJA	Twt	SL	%Sd	GRN	TAR	%H2O	BUJA	Twt	SL	%Sd
DAIRYLAND SEED DS-4580Q	105	P250	1,2,3,4						24.5	237.2 *	55.5			71.0	4.9					
FS InVision FS53ZX1 RIB	103	P500	1,2,3,4						24.4	217.4	54.3			54.0	8.9					
FS InVision FS5594X RIB	105	P500	1,2,3,4						26.0	231.1	55.4			66.0	4.3					
FS InVision FS55RL1 EZR	105	P250	1,2,4,6						26.8	226.3	52.2			69.0	4.4					
GOLDEN HARVEST G02K39-3120	102	C250	1,2,4						24.6	239.6 *	51.2			66.0	3.8					
INTEGRA 5280	102	P500	1,2						24.0	225.6	55.5			46.0	7.3					
LEGACY SEEDS LC-5217 VT2P	103	P250	1,2						23.0	232.5 *	54.5			42.0	7.1					
LEGACY SEEDS LC-5319 SSX	103	P500	1,2,3,4						24.0	242.7 **	53.1			39.0	8.8					
RENK RK621VT2P	103	P250	1,2						23.7	224.8	53.8			33.0	4.6					
RENK RK642VT2P	103	P250	1,2						23.6	221.1	54.5			42.0	7.3					
AVERAGE									24.5	229.8	54.0			53.0	6.1					
HIGHEST									26.8	242.7	55.5			71.0	8.9					
LOWEST									23.0	217.4	51.2			33.0	3.8					
CV (%)									4.6	5.0	1.8			24.0	60.0					
LSD (5%)									1.0	10.2	0.8			11.0	2.1					

GRN => Percentage of Canopy Greenness

TAR => Percentage of Tar Spot Severity

** Highest Yielding Hybrid

* Not Significantly Different from Highest Yielding Hybrid

TABLE 3E.

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

ZONE 3

2020			Early - TRIAL AVERAGE			Huron - Early			Mason - Early			Montcalm - Early							
BRAND / HYBRID	RM	TRT	TRAIT	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	
AG ARMOUR AA9100	91	C250	1,2,4,6						34.1	241.1 *	51.2	0.5							
AG ARMOUR AA9303	93	C250	1,2,4,6						25.2	225.3	52.2	0.3							
AG ARMOUR AA9509	95	C250	1,2,4,6						25.1	225.0	53.1	0.0							
AG ARMOUR AA9608	96	C250	1,2,4,6						26.4	236.6 *	53.7	1.3							
DAIRYLAND SEED DS-3193AM	91	P250	1,3,4						24.2	224.6	52.5	0.8							
DAIRYLAND SEED DS-3345AM	93	P250	1,3,4						24.6	210.6	53.6	0.0							
DAIRYLAND SEED DS-3366Q	93	P250	1,2,3,4						25.0	226.3	53.7	0.3							
DAIRYLAND SEED DS-3519AM	95	P250	1,3,4						25.6	235.2 *	54.0	0.0							
DAIRYLAND SEED DS-3550Q	95	P250	1,2,3,4						27.6	234.9 *	51.4	0.0							
DAIRYLAND SEED DS-3715AM	97	P250	1,3,4						27.2	240.1 *	51.3	0.8							
DAIRYLAND SEED DS-3750AM	97	P250	1,3,4						26.6	217.4	55.5	0.0							
DYNAGRO D37VC64	97	P250	1,2						26.7	237.9 *	52.2	0.8							
FS InVision FS4507V RIB	95	P500	1,2						24.3	233.3	54.0	2.3							
FS InVision FS477V1 RIB	97	P250	1,2						27.0	229.5	51.6	2.3							
GOLDEN HARVEST G91V51-3110A	91	C250	1,2,4,6,16						24.1	225.9	53.7	3.0							
GOLDEN HARVEST G90Y04-3220A	92	C250	1,2,4,6,16						25.5	226.1	52.9	1.0							
GOLDEN HARVEST G95D32-3220	95	C250	1,2,4,6						26.4	240.3 *	53.8	0.8							
GOLDEN HARVEST G95M41-5122	95	C250	1,2,3,4						27.1	217.7	52.2	0.0							
INTEGRA 4119	91	P500	1,2						24.6	216.1	53.6	4.0							
INTEGRA 4311	93	P500	1,2						28.0	242.5 *	52.8	0.0							
INTEGRA 4509	95	P500	1,2						27.2	227.5	51.3	1.5							
INTEGRA 4601	96	P500	1,2						26.4	243.3 *	52.3	0.0							
INTEGRA 4782	97	P500	1,2						26.4	235.2 *	51.9	0.8							
LEGACY SEEDS LC431-20 S5X	93	P500	1,2,3,4						24.9	223.0	53.6	0.5							
LEGACY SEEDS LC441-20 VT2P	94	P500	1,2						24.8	240.0 *	52.0	0.0							
LEGACY SEEDS LC-3517 VT2P	95	P250	1,2						25.4	232.0	52.6	1.0							
LEGEND 40J9192 VIP3110A	92	C250	1,2,4,6						24.8	232.1	53.5	3.0							
LEGEND 9995 VIP3220 EZREF	95	C250	1,2,4,6						26.1	240.9 *	53.3	1.5							
LG SEEDS LG44C27VT2RIB	94	P500	1,2						25.5	230.8	53.0	3.5							
LG Seeds LG47C77VT2PRO	97	P500	1,2						26.1	242.2 *	52.2	0.5							
LOCAL SEED LC9108 VT2PRIB	91	P500	1,2						25.4	222.2	53.4	0.0							
LOCAL SEED ZS9598 5222EZ	95	P500	1,2,3,4,6						25.4	224.2	53.7	0.3							
LOCAL SEED ZS9796 3220EZ	97	P500	1,2,4,6						26.5	247.3 *	53.8	0.8							
M&W SEEDS 48R11	87	T250	1,2						23.0	215.2	54.3	1.0							
M&W SEEDS 47T16	90	T250	1,2						23.7	219.2	52.9	0.8							
M&W SEEDS 46P76	97	T250	1,2						27.3	225.6	52.2	0.0							
NK Brand NK9653-5222	96	C250	1,2,3,4,6						25.2	235.1 *	53.7	0.0							
RENK RK433VT2P	92	P250	1,2						25.9	225.2	52.2	0.0							
RENK RK499VT2P	94	P250	1,2						25.5	241.0 *	52.1	0.0							
RENK RK561DGV2P	95	P250	1,2						26.5	243.0 *	52.1	0.0							
RENK RK593VT2P	97	P250	1,2						29.4	238.8 *	52.6	0.0							
RUPP 8xp094	94	P500	1,2						24.2	232.9	53.5	0.3							
RUPP XRD96-13	96	C250	1,2,4,6						27.5	248.1 **	53.1	0.0							
SEEDWAY SW3569 5222	93	C500	1,2,3,4,6						25.2	221.2	52.1	0.3							
SEEDWAY SW3768 GENSS	95	P500	1,2,3,4						26.2	234.1 *	52.1	0.0							

WOLF RIVER VALLEY 1092RR	90	P250	1	24.7	218.0	53.3	4.8
WOLF RIVER VALLEY 2693RR	93	C250	1	25.6	232.5	52.8	0.0
WOLF RIVER VALLEY 2096RR	96	C250	1	27.0	243.1 *	51.9	0.3
WOLF RIVER VALLEY 1197RR	97	C250	1	26.3	243.1 *	52.7	1.0
AVERAGE				26.0	231.5	52.8	0.8
HIGHEST				34.1	248.1	55.5	4.8
LOWEST				23.0	210.6	51.2	0.0
CV (%)				3.1	5.4	1.3	200.0
LSD (5%)				0.9	14.7	0.8	1.9

2 Year Averages 2020 - 2019				Early - TRIAL AVERAGE				Huron - Early				Mason - Early				Montcalm - Early			
BRAND / HYBRID	RM	TRT	TRAIT	%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 AA9509	95	C250	1,2,4,6	28.9	204.9	51.0		28.9	204.9	51.0		28.9	204.9	51.0		28.9	204.9	51.0	
AG ARMOUR AA9608	96	C250	1,2,4,6	30.0	210.1	51.4		30.0	210.1	51.4		30.0	210.1	51.4		30.0	210.1	51.4	
DAIRYLAND SEED DS-3519AM	95	P250	1,3,4	28.0	213.3 *	51.6		28.0	213.3 *	51.6		28.0	213.3 *	51.6		28.0	213.3 *	51.6	
DAIRYLAND SEED DS-3550Q	95	P250	1,2,3,4	31.3	208.1	49.1		31.3	208.1	49.1		31.3	208.1	49.1		31.3	208.1	49.1	
DAIRYLAND SEED DS-3715AM	97	P250	1,3,4	29.3	214.5 *	49.0		29.3	214.5 *	49.0		29.3	214.5 *	49.0		29.3	214.5 *	49.0	
DAIRYLAND SEED DS-3750AM	97	P250	1,3,4	29.5	191.8	52.9		29.5	191.8	52.9		29.5	191.8	52.9		29.5	191.8	52.9	
DYNAGRO D37VC64	97	P250	1,2	31.8	212.3 *	50.4		31.8	212.3 *	50.4		31.8	212.3 *	50.4		31.8	212.3 *	50.4	
FS InVision FS47TV1 RIB	97	P250	1,2	32.7	199.5	50.4		32.7	199.5	50.4		32.7	199.5	50.4		32.7	199.5	50.4	
GOLDEN HARVEST G91V51-3110A	91	C250	1,2,4,6,16	25.1	211.0	51.7		25.1	211.0	51.7		25.1	211.0	51.7		25.1	211.0	51.7	
GOLDEN HARVEST G90Y04-3220A	92	C250	1,2,4,6,16	30.2	197.4	50.3		30.2	197.4	50.3		30.2	197.4	50.3		30.2	197.4	50.3	
GOLDEN HARVEST G95D32-3220	95	C250	1,2,4,6	28.4	209.7	51.8		28.4	209.7	51.8		28.4	209.7	51.8		28.4	209.7	51.8	
INTEGRA 4782	97	P500	1,2	31.9	199.9	50.1		31.9	199.9	50.1		31.9	199.9	50.1		31.9	199.9	50.1	
LEGACY SEEDS LC-3517 VT2P	95	P250	1,2	30.7	211.7	50.9		30.7	211.7	50.9		30.7	211.7	50.9		30.7	211.7	50.9	
LEGEND 9995 VIP3220 EZREF	95	C250	1,2,4,6	28.6	211.3	51.2		28.6	211.3	51.2		28.6	211.3	51.2		28.6	211.3	51.2	
LG SEEDS LG44C27VT2RIB	94	P500	1,2	30.3	208.3	50.9		30.3	208.3	50.9		30.3	208.3	50.9		30.3	208.3	50.9	
LOCAL SEED ZS9598 5222EZ	95	P500	1,2,3,4,6	28.5	206.0	51.1		28.5	206.0	51.1		28.5	206.0	51.1		28.5	206.0	51.1	
LOCAL SEED ZS9796 3220EZ	97	P500	1,2,4,6	29.6	218.0 *	51.9		29.6	218.0 *	51.9		29.6	218.0 *	51.9		29.6	218.0 *	51.9	
M&W SEEDS 48R11	87	T250	1,2	24.6	202.2	52.9		24.6	202.2	52.9		24.6	202.2	52.9		24.6	202.2	52.9	
M&W SEEDS 47T16	90	T250	1,2	26.8	202.4	51.0		26.8	202.4	51.0		26.8	202.4	51.0		26.8	202.4	51.0	
M&W SEEDS 46P76	97	T250	1,2	31.9	198.3	50.2		31.9	198.3	50.2		31.9	198.3	50.2		31.9	198.3	50.2	
RENK RK433VT2P	92	P250	1,2	31.6	201.8	50.9		31.6	201.8	50.9		31.6	201.8	50.9		31.6	201.8	50.9	
RENK RK561DGV2P	95	P250	1,2	30.9	213.0 *	50.5		30.9	213.0 *	50.5		30.9	213.0 *	50.5		30.9	213.0 *	50.5	
RENK RK593VT2P	97	P250	1,2	32.1	211.0	50.9		32.1	211.0	50.9		32.1	211.0	50.9		32.1	211.0	50.9	
RUPP XRD96-13	96	C250	1,2,4,6	29.6	221.5 **	51.5		29.6	221.5 **	51.5		29.6	221.5 **	51.5		29.6	221.5 **	51.5	
SEEDWAY SW3569 5222	93	C500	1,2,3,4,6	28.6	200.6	50.2		28.6	200.6	50.2		28.6	200.6	50.2		28.6	200.6	50.2	
SEEDWAY SW3768 GENSS	95	P500	1,2,3,4	29.3	205.3	50.8		29.3	205.3	50.8		29.3	205.3	50.8		29.3	205.3	50.8	
AVERAGE				29.6	207.1 *	51.0		29.6	207.1 *	51.0		29.6	207.1 *	51.0		29.6	207.1 *	51.0	
HIGHEST				32.7	221.5 *	52.9		32.7	221.5 *	52.9		32.7	221.5 *	52.9		32.7	221.5 *	52.9	
LOWEST				24.6	191.8 *	49.0		24.6	191.8 *	49.0		24.6	191.8 *	49.0		24.6	191.8 *	49.0	
CV (%)				5.0	5.3 *	1.5		5.0	5.3 *	1.5		5.0	5.3 *	1.5		5.0	5.3 *	1.5	
LSD (5%)				1.2	9.4 *	0.6		1.2	9.4 *	0.6		1.2	9.4 *	0.6		1.2	9.4 *	0.6	

** Highest Yielding Hybrid

* Not Significantly Different from Highest Yielding Hybrid

TABLE 3L.

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

ZONE 3

2020 BRAND / HYBRID	RM	TRT	TRAIT	Late - TRIAL AVERAGE			Huron - Late			Mason - Late			Montcalm - 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 AA10020	100	C250	1,2,4				30.9	249.3 *	53.9	0.0						
AG ARMOUR AA10404	104	C250	1,2,4,6				33.6	239.3 *	51.9	0.5						
DAIRYLAND SEED DS-3810Q	98	P250	1,2,3,4				27.3	233.3	51.5	0.0						
DAIRYLAND SEED DS-4000AMXT	100	P250	1,2,3,4				29.7	244.5 *	52.4	0.0						
DAIRYLAND SEED DS-4014Q	100	P250	1,2,3,4				29.0	244.4 *	51.7	0.0						
DAIRYLAND SEED DS-4018AM	100	P250	1,3,4				29.8	229.8	52.1	1.0						
DYNAGRO D39VC40	99	P250	1,2				25.7	227.4	52.4	1.0						
DYNAGRO D40VC41	100	P250	1,2				31.9	246.1 *	52.4	0.0						
DYNAGRO D43VC81	103	P250	1,2				27.5	237.2	52.0	6.8						
DYNAGRO D45TC55	105	P250	1,2,6				30.2	249.7 *	51.2	0.0						
FS InVision FS5098X RIB	100	P500	1,2,3,4				29.0	252.4 **	52.5	0.0						
FS InVision FS51QX1 RIB	101	P500	1,2,3,4				30.0	233.8	52.4	0.3						
FS InVision FS53ZX1 RIB	103	P500	1,2,3,4				28.4	246.2 *	52.8	1.0						
GOLDEN HARVEST G99E68-5122	99	C250	1,2,3,4				31.1	234.3	52.5	0.0						
GOLDEN HARVEST G00H12-5122	100	C250	1,2,3,4				27.7	234.3	52.0	5.0						
INTEGRA 4888	98	P500	1,2				29.8	246.5 *	53.1	0.0						
INTEGRA 5081	100	P500	1,2				27.0	239.6 *	51.5	1.3						
INTEGRA 5280	102	P500	1,2				29.0	241.1 *	53.3	0.0						
INTEGRA 5351	103	P500	1,2,3,4,6				30.7	230.8	52.4	1.0						
LEGACY SEEDS LC484-20 SSX	98	P500	1,2,3,4				26.9	222.4	52.8	0.8						
LEGACY SEEDS LC-4248 SSX	100	P250	1,2,3,4				30.1	245.0 *	52.9	0.0						
LEGACY SEEDS LC-5217 VT2P	103	P250	1,2				29.3	247.2 *	52.3	0.0						
LG SEEDS LG5505VT2RIB	100	P500	1,2				29.8	220.6	53.0	0.0						
LG Seeds LG51C48VT2RIB	101	P500	1,2				33.5	240.7 *	53.2	0.0						
LOCAL SEED LC9888 VT2PRIB	98	P500	1,2				26.0	208.3	54.0	0.0						
LOCAL SEED LC0297 SSXRIB	102	P500	1,2,3,4				31.4	249.8 *	51.7	0.0						
LOCAL SEED LC0488 VT2PRIB	104	P500	1,2				27.8	245.6 *	51.4	0.0						
M&W SEEDS 46T29	99	T250	1,2				30.1	239.1 *	53.5	0.0						
M&W SEEDS 45T56	100	T250	1,2				29.0	241.3 *	53.0	1.3						
NK Brand NK9991-5122	99	C250	1,2,3,4				30.8	236.4	53.2	0.0						
RENK RK579DGV72P	99	P250	1,2				30.2	230.6	53.0	0.0						
RUPP XRJ98-52	98	P500	1,2,3,4				28.3	242.5 *	53.1	0.0						
SEEDWAY SW4000 GENSS	99	P500	1,2,3,4				30.1	221.2	52.7	0.0						
SEEDWAY SW4010 GENSS	100	P500	1,2,3,4				28.6	221.4	51.9	0.0						
WOLF RIVER VALLEY 2899RR	99	C250	1				27.8	219.2	52.6	1.0						
AVERAGE							29.4	236.9	52.5	0.6						
HIGHEST							33.6	252.4	54.0	6.8						
LOWEST							25.7	208.3	51.2	0.0						
CV (%)							4.3	5.1	1.5	343.0						
LSD (5%)							1.5	14.1	0.9	2.4						

2 Year Averages 2020 - 2019

BRAND / HYBRID	RM	TRT	TRAIT	Late - TRIAL AVERAGE				Huron - Late				Mason - Late				Montcalm - 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
DAIRYLAND SEED DS-3810Q	98	P250	1,2,3,4					33.2	211.2	49.5									
DAIRYLAND SEED DS-4018AM	100	P250	1,3,4					35.6	201.6	50.7									
DYNAGRO D39VC40	99	P250	1,2					32.3	203.6	51.0									
FS InVision FS5098X RIB	100	P500	1,2,3,4					35.5	221.6**	50.9									
FS InVision FS51QX1 RIB	101	P500	1,2,3,4					36.0	203.3	50.5									
FS InVision FS53ZX1 RIB	103	P500	1,2,3,4					34.9	217.8*	51.1									
INTEGRA 5081	100	P500	1,2					34.3	213.8*	50.5									
INTEGRA 5280	102	P500	1,2					34.3	216.9*	51.8									
LEGACY SEEDS LC-5217 VT2P	103	P250	1,2					35.2	217.0*	51.1									
LG SEEDS LG5505VT2RIB	100	P500	1,2					33.9	199.7	51.5									
LOCAL SEED LC9888 VT2PRIB	98	P500	1,2					31.1	192.0	51.8									
LOCAL SEED LC0297 SSXRIB	102	P500	1,2,3,4					38.5	208.7	50.7									
RENK RK579DGV2P	99	P250	1,2					34.7	210.8	51.3									
RUPP XRJ98-52	98	P500	1,2,3,4					33.6	214.0*	51.2									
SEEDWAY SW4000 GENSS	99	P500	1,2,3,4					33.8	206.6	51.0									
SEEDWAY SW4010 GENSS	100	P500	1,2,3,4					33.8	194.9	50.0									
AVERAGE								34.4	208.3	50.9									
HIGHEST								38.5	221.6	51.8									
LOWEST								31.1	192.0	49.5									
CV (%)								5.2	5.0	1.5									
LSD (5%)								1.4	9.1	0.7									

** Highest Yielding Hybrid

* Not Significantly Different from Highest Yielding Hybrid

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

2020			TRIAL AVERAGE				Iosco - Early				Osceola - Early				Presque Isle - Early			
BRAND / HYBRID	RM	TRT	TRAIT	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd
DAIRYLAND SEED DS-2068RR	80	P250	1	23.2	182.7	53.1	2.1		21.3	179.9	53.9	1.3		25.1	185.4	52.2	2.8	
DAIRYLAND SEED DS-2350AM	83	P250	1,3,4	22.7	201.4 *	51.6	6.2		20.6	198.3 *	52.5	8.8		24.7	204.4	50.6	3.5	
DAIRYLAND SEED DS-2505Q	85	P250	1,2,3,4	24.6	206.5 *	51.4	0.3		23.0	201.4 **	52.1	0.5		26.1	211.6 *	50.7	0.0	
DAIRYLAND SEED DS-2716Q	87	P250	1,2,3,4	23.1	192.2	51.0	0.7		20.7	190.5 *	51.9	1.3		25.4	193.8	50.0	0.0	
DYNAGRO D27VC87	87	P500	1,2	23.9	207.1 *	52.2	1.9		22.0	197.5 *	52.6	2.0		25.7	216.6 *	51.8	1.8	
FS InVision FS3508V RIB	85	P500	1,2	23.5	210.9 **	51.1	0.0		21.0	197.4 *	52.1	0.0		25.9	224.3 *	50.1	0.0	
FS InVision FS37TV1 RIB	87	P500	1,2	23.5	206.0 *	52.3	2.5		21.5	200.4 *	53.3	1.5		25.4	211.6 *	51.2	3.5	
LEGACY SEEDS LC351+20 VT2P	85	P500	1,2	23.3	203.4 *	51.4	0.0		21.1	182.3	52.3	0.0		25.5	224.5 **	50.4	0.0	
LEGEND 47J9185 VIP3110A	85	C250	1,2,4,6	24.3	166.6	52.0	0.8		22.8	130.7	52.3	0.8		25.8	202.4	51.7	0.8	
LEGEND 47J086 VIP3220 EZREF	86	C250	1,2,4,6	25.0	200.0 *	52.0	1.7		24.2	189.9 *	51.5	0.5		25.8	210.1 *	52.4	2.8	
LEGEND 47J988 3120 EZREF	88	C250	1,2,4	24.4	190.7	49.1	0.5		22.3	183.8	49.2	0.0		26.5	197.6	48.9	1.0	
LG SEEDS LG5375VT2RIB	85	P500	1,2	24.2	188.6	53.3	0.8		22.7	170.1	54.4	0.0		25.7	207.0	52.1	1.5	
LOCAL SEED LC8498 VT2PRIB	84	P500	1,2	23.9	191.4	51.5	0.2		22.2	169.9	52.5	0.3		25.6	212.9 *	50.4	0.0	
LOCAL SEED LC8597 VT2PRIB	85	P500	1,2	24.9	184.5	52.0	0.2		23.1	160.1	53.1	0.3		26.7	208.8	50.9	0.0	
M&W SEEDS 48R11	87	T250	1,2	23.5	200.0 *	52.1	1.9		22.0	189.7 *	52.8	2.0		24.9	210.3 *	51.3	1.8	
AVERAGE				23.9	195.5	51.7	1.3		22.0	182.8	52.4	1.3		25.7	208.1	51.0	1.3	
HIGHEST				25.0	210.9	53.3	6.2		24.2	201.4	54.4	8.8		26.7	224.5	52.4	3.5	
LOWEST				22.7	166.6	49.1	0.0		20.6	130.7	49.2	0.0		24.7	185.4	48.9	0.0	
CV (%)				4.7	7.1	1.5	167.0		6.3	8.0	1.5	124.0		3.1	6.0	1.5	201.0	
LSD (5%)				0.9	11.6	0.6	1.8		1.7	17.5	0.9	1.9		1.0	14.8	0.9	3.1	

2 Year Averages 2020 - 2019			TRIAL AVERAGE				Iosco - Early				Osceola - Early				Presque Isle - Early			
BRAND / HYBRID	RM	TRT	TRAIT	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd
FS InVision FS37TV1 RIB	87	P500	1,2	26.8	196.3 **	51.0			24.9	204.0 **	51.5			28.6	188.5 *	50.5		
LEGEND 47J086 VIP3220 EZREF	86	C250	1,2,4,6	27.9	187.1	51.3			26.6	193.0 *	51.1			29.1	181.2	51.4		
LEGEND 47J988 3120 EZREF	88	C250	1,2,4	28.6	184.4	49.1			26.4	198.0 *	49.1			30.8	170.7	49.0		
LOCAL SEED LC8597 VT2PRIB	85	P500	1,2	27.6	189.8 *	51.3			25.6	187.9	51.7			29.6	191.6 **	50.9		
M&W SEEDS 48R11	87	T250	1,2	26.3	194.1 *	51.4			24.1	201.2 *	52.0			28.5	187.0 *	50.7		
AVERAGE				27.4	190.3	50.8			25.5	196.8	51.1			29.3	183.8	50.5		
HIGHEST				28.6	196.3	51.4			26.6	204.0	52.0			30.8	191.6	51.4		
LOWEST				26.3	184.4	49.1			24.1	187.9	49.1			28.5	170.7	49.0		
CV (%)				6.3	6.5	1.6			6.2	7.2	1.7			5.0	6.0	1.6		
LSD (5%)				0.9	6.6	0.4			1.2	11.4	0.7			1.1	9.9	0.7		

** Highest Yielding Hybrid

* Not Significantly Different from Highest Yielding Hybrid

TABLE 4L.

2020		TRIAL AVERAGE						Iosco - Early			Osceola - Late			Presque Isle - Late				
BRAND / HYBRID	RM	TRT	TRAIT	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd
AG ARMOUR AA9100	91	C250	1,2,4,6	34.3	184.2	46.6	0.7	32.9	171.8	45.6	0.5	35.6	196.6	35.6	196.6	47.5	0.8	
AG ARMOUR AA9206	90	C250	1,2,4	27.2	183.6	48.4	0.3	27.0	181.2	47.2	0.3	27.4	205.9	27.4	205.9	49.5	0.3	
DAIRYLAND SEED DS-3030AM	92	P250	1,3,4	24.4	190.8	50.1	1.4	23.1	181.7	49.9	0.5	25.6	199.8	25.6	199.8	50.2	2.3	
DAIRYLAND SEED DS-3162Q	91	P250	1,2,3,4	23.3	208.1	49.0	0.0	21.1	196.2	49.0	0.0	25.4	219.9	25.4	219.9	48.9	0.0	
DAIRYLAND SEED DS-3193AM	91	P250	1,3,4	24.5	215.6	49.9	1.4	23.3	208.1	49.7	1.0	25.6	223.1	25.6	223.1	50.1	1.8	
DAIRYLAND SEED DS-3345AM	93	P250	1,3,4	25.1	200.5	51.5	0.6	24.4	184.7	51.1	0.8	25.8	216.3	25.8	216.3	51.9	0.3	
DAIRYLAND SEED DS-3366Q	93	P250	1,2,3,4	24.6	206.0	52.8	2.2	23.5	192.3	53.0	4.3	25.6	219.7	25.6	219.7	52.5	0.0	
FS InVision FS4008V RIB	90	P500	1,2	24.3	209.4	49.8	0.4	22.6	193.6	49.6	0.3	26.0	225.1	26.0	225.1	49.9	0.5	
FS InVision FS4507V RIB	95	P500	1,2	25.2	205.1	50.2	2.4	24.6	200.5	49.2	3.5	25.7	209.7	25.7	209.7	51.1	1.3	
LEGACY SEEDS LC-3048 VT2P	90	P250	1,2	25.0	196.2	49.6	1.2	24.1	186.7	49.2	0.0	25.8	205.7	25.8	205.7	50.0	2.3	
LEGACY SEEDS LC413-20 3110A	91	C250	1,2,4,6	25.4	200.1	50.1	4.5	24.2	199.5	48.8	0.0	26.5	200.6	26.5	200.6	51.3	9.0	
LEGACY SEEDS LC431-20 SSX	93	P500	1,2,3,4	26.5	196.8	49.2	0.4	25.0	183.0	49.1	0.0	28.0	210.6	28.0	210.6	49.3	0.8	
LG SEEDS LG42C63VT2RIB	92	P500	1,2	22.6	198.2	49.3	0.3	20.3	188.9	48.3	0.0	24.8	207.5	24.8	207.5	50.3	0.5	
LG SEEDS LG44C27VT2RIB	94	P500	1,2	26.0	196.6	48.8	1.4	23.4	183.9	48.9	1.3	28.6	209.2	28.6	209.2	48.6	1.5	
LOCAL SEED LC9108 VT2PRIB	91	P500	1,2	25.4	202.8	50.7	0.7	24.6	186.5	50.4	0.3	26.2	219.0	26.2	219.0	50.9	1.0	
LOCAL SEED ZS9598 5222EZ	95	P500	1,2,3,4,6	27.5	185.0	48.6	0.9	27.1	171.5	47.7	0.0	27.9	198.4	27.9	198.4	49.4	1.8	
LOCAL SEED ZS9796 3220EZ	97	P500	1,2,4,6	26.8	188.7	50.0	0.4	26.2	168.4	48.7	0.0	27.3	208.9	27.3	208.9	51.3	0.8	
LOCAL SEED LC9888 VT2PRIB	98	P500	1,2	25.8	184.8	50.9	1.9	25.3	170.7	51.2	0.0	26.3	198.8	26.3	198.8	50.6	3.8	
M&W SEEDS 47T16	90	T250	1,2	24.9	209.2	50.4	0.6	24.1	200.7	50.3	0.8	25.7	217.7	25.7	217.7	50.4	0.3	
M&W SEEDS 46P76	97	T250	1,2	26.9	190.4	48.9	0.2	25.7	171.1	48.8	0.0	28.0	209.7	28.0	209.7	49.0	0.3	
NK Brand NK9175-3110A	91	C250	1,2,4,6	25.5	187.1	49.0	3.3	23.9	179.7	47.8	0.0	27.0	194.5	27.0	194.5	50.2	6.5	
RENK RK315VT2P	90	P250	1,2	23.9	196.2	49.9	1.7	21.8	192.5	49.7	1.8	26.0	199.9	26.0	199.9	50.1	1.5	
AVERAGE				25.7	197.1	49.7	1.2	24.5	185.2	49.2	0.7	26.8	208.9	26.8	208.9	50.1	1.7	
HIGHEST				34.3	215.6	52.8	4.5	32.9	208.1	53.0	4.3	35.6	225.1	35.6	225.1	52.5	9.0	
LOWEST				22.6	183.6	46.6	0.0	20.3	161.2	45.6	0.0	24.8	194.5	24.8	194.5	47.5	0.0	
CV (%)				3.39	5.89	1.77	163	4.3	6.8	2.0	221.0	2.4	4.9	2.4	4.9	1.5	135.0	
LSD (5%)				0.72	9.98	0.73	1.6	1.2	14.9	1.2	1.8	0.8	12.0	0.8	12.0	0.9	2.7	

2 Year Averages 2020 - 2019		TRIAL AVERAGE						Iosco - Early			Osceola - Late			Presque Isle - Late				
BRAND / HYBRID	RM	TRT	TRAIT	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd	%H2O	BU/A	Twt	SL	%Sd
AG ARMOUR AA9206	92	C250	1,2,4	31.3	166.1	48.7		28.9	181.2	48.0		33.6	151.0	33.6	151.0	49.3		
DAIRYLAND SEED DS-3030AM	90	P250	1,3,4	27.8	179.8	48.9		25.8	193.2	48.4		29.8	166.3	29.8	166.3	49.3		
LEGACY SEEDS LC-3048 VT2P	90	P250	1,2	29.2	187.4	49.2		28.5	186.1	48.7		29.8	188.6	29.8	188.6	49.6		
LG SEEDS LG42C63VT2RIB	92	P500	1,2	28.7	178.0	49.0		26.0	188.3	48.2		31.3	167.7	31.3	167.7	49.7		
LG SEEDS LG44C27VT2RIB	94	P500	1,2	32.5	181.1	48.8		28.4	196.1	48.6		36.6	166.1	36.6	166.1	49.0		
LOCAL SEED ZS9598 5222EZ	95	P500	1,2,3,4,6	33.6	161.5	48.1		30.7	174.5	47.2		36.4	148.4	36.4	148.4	48.9		
LOCAL SEED ZS9796 3220EZ	97	P500	1,2,4,6	32.5	175.0	49.7		30.5	173.0	48.4		34.4	177.0	34.4	177.0	50.9		
M&W SEEDS 47T16	90	T250	1,2	30.1	185.5	49.8		27.8	202.2	49.5		32.4	168.7	32.4	168.7	50.1		
M&W SEEDS 46P76	97	T250	1,2	34.9	167.8	49.1		31.5	180.7	48.5		38.2	154.8	38.2	154.8	49.6		
AVERAGE				31.2	175.8	49.0		28.7	186.1	48.4		33.6	165.4	33.6	165.4	49.6		
HIGHEST				34.9	187.4	49.8		31.5	202.2	49.5		38.2	188.6	38.2	188.6	50.9		
LOWEST				27.8	161.5	48.1		25.8	173.0	47.2		29.8	148.4	29.8	148.4	48.9		
CV (%)				6.09	7.13	1.62		6.9	7.0	1.9		5.6	8.2	5.6	8.2	1.3		
LSD (5%)				0.97	6.99	0.43		1.5	10.8	0.8		1.4	12.5	1.4	12.5	0.6		

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

2020		Early - TRIAL AVERAGE			Ingham - Early			Montcalm - Early			Saginaw - Early		
BRAND / HYBRID	RM TRT TRAIT	%H2O	BU/A	Twt SL %Sd	%H2O	BU/A	Twt SL %Sd	%H2O	BU/A	Twt SL %Sd	%H2O	BU/A	Twt SL %Sd
AGRIGOLD A629-93	99 C500 Conv.				23.5	196.9	55.1	0.5					
BLUE RIVER 14A91***	82 MXL Conv.												
BLUE RIVER 22K32	86 MXL Conv.				19.2	164.3	54.8	0.3					
BLUE RIVER 26B78***	88 MXL Conv.												
BLUE RIVER 30K84	90 MXL Conv.				22.6	184.4	55.0	0.5					
BLUE RIVER 33A16***	92 MXL Conv.				21.9	221.1 *	54.3	0.3					
BLUE RIVER 38G54	96 MXL Conv.				22.6	199.0	52.8	1.0					
BLUE RIVER 42C87	98 MXL Conv.				20.4	206.3	55.5	0.8					
KEY 592	92 ENC Conv.				20.0	204.3	55.8	0.8					
LEGACY SEEDS LC-3438 CONV	94 C250 Conv.				21.1	202.7	55.8	0.8					
LEGACY SEEDS LC-3517 CONV	95 C250 Conv.				24.1	199.8	56.0	0.5					
LEGACY SEEDS LC-4148 CONV	101 C250 Conv.				22.9	228.5 **	54.8	0.5					
LG SEEDS LG49C19	99 P500 Conv.				23.6	209.5	54.8	0.0					
LG SEEDS LG51C62	101 P500 Conv.												
M&W SEEDS 48R10***	87 T250 Conv.												
M&W SEEDS 47R22	94 T250 Conv.				19.4	198.9	56.7	2.8					
M&W SEEDS 46T28	99 T250 Conv.				19.9	212.6	54.8	0.5					
M&W SEEDS 45P33	100 T250 Conv.				23.9	209.6	53.5	0.0					
PIONEER P9998	99 P125L Conv.				22.3	197.2	53.1	1.5					
PIONEER P0157	101 P125L Conv.				24.3	176.1	55.9	4.0					
RENK RK568	95 P250 Conv.				20.4	192.2	55.4	1.3					
RUPP XRA97-55	97 P250 Conv.				20.0	188.5	55.9	1.0					
RUPP XRA00-60	100 P250 Conv.				21.2	206.2	54.9	0.3					
VIKING O.84-95UP	95 C250 Conv.				20.4	186.9	56.2	0.0					
VIKING O.45-97UP	97 C250 Conv.				20.2	189.6	55.7	0.8					
VIKING O.98-98P	98 C250 Conv.				21.3	177.4	55.8	0.0					
VIKING O.85-00P	100 C250 Conv.				21.9	200.8	54.1	0.5					
AVERAGE					21.6	197.9	55.1	0.8					
HIGHEST					24.3	228.5	56.7	4.0					
LOWEST					19.2	164.3	52.8	0.0					
CV (%)					4.8	5.8	1.4	183.0					
LSD (5%)					1.2	13.5	0.9	1.7					
2 Year Averages 2020 - 2019		Early - TRIAL AVERAGE			Ingham - Early			Montcalm - Early			Saginaw - Early		
BRAND / HYBRID	RM TRT TRAIT	%H2O	BU/A	Twt SL %Sd	%H2O	BU/A	Twt SL %Sd	%H2O	BU/A	Twt SL %Sd	%H2O	BU/A	Twt SL %Sd
BLUE RIVER 38G54	96 MXL Conv.				23.2	204.6 **	52.5						
LEGACY SEEDS LC-3438 CONV	94 C250 Conv.				22.3	197.1 *	54.6						
LEGACY SEEDS LC-3517 CONV	95 C250 Conv.				22.5	192.7	54.2						
LEGACY SEEDS LC-4148 CONV	101 C250 Conv.				26.3	195.0	54.0						
M&W SEEDS 47R22	94 T250 Conv.				21.8	194.4	55.3						
M&W SEEDS 45P33	100 T250 Conv.				24.4	187.1	51.7						
RENK RK568	95 P250 Conv.				22.1	177.2	53.6						
RUPP XRA97-55	97 P250 Conv.				21.8	181.2	54.2						
VIKING O.84-95UP	95 C250 Conv.				21.6	175.5	54.5						
VIKING O.98-98P	98 C250 Conv.				23.5	174.4	53.3						
VIKING O.85-00P	100 C250 Conv.				23.3	189.8	52.5						

AVERAGE										23.0	188.1	53.7	
HIGHEST										26.3	204.6	55.3	
LOWEST										21.6	174.4	51.7	
CV (%)										4.0	5.4	1.5	
LSD (5%)										0.7	8.5	0.7	

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

2020 BRAND / HYBRID	RM TRT 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															
AGRIGOLD A634-93	104 C500 Conv.																																			
KEY 908	108 ENC Conv.																																			
LEGACY SEEDS LC-5217 CONV	103 C250 Conv.																																			
LEGACY SEEDS LC-5438 CONV	104 C250 Conv.																																			
LG SEEDS LG54C04	104 P500 Conv.																																			
M&W SEEDS 45R67	103 T250 Conv.																																			
M&W SEEDS 44R33	106 T250 Conv.																																			
M&W SEEDS 44M87	108 T250 Conv.																																			
RENK RK642	102 P250 Conv.																																			
RUPP XRA03-67	103 P250 Conv.																																			
VIKING O.46-02P	102 C250 Conv.																																			
VIKING O.55-02P	102 C250 Conv.																																			
VIKING O.51-04P	104 C250 Conv.																																			
VIKING O.18-06P	106 C250 Conv.																																			
VIKING O.52-96	106 C250 Conv.																																			
AVERAGE																																				
HIGHEST																																				
LOWEST																																				
CV (%)																																				
LSD (5%)																																				

2 Year Averages 2020 - 2019 BRAND / HYBRID	RM TRT 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															
AGRIGOLD A634-93	104 C500 Conv.																																			
KEY 908	108 ENC Conv.																																			
LEGACY SEEDS LC-5217 CONV	103 C250 Conv.																																			
LG SEEDS LG54C04	104 P500 Conv.																																			
M&W SEEDS 45R67	103 T250 Conv.																																			
M&W SEEDS 44R33	106 T250 Conv.																																			
M&W SEEDS 44M87	108 T250 Conv.																																			
RENK RK642	102 P250 Conv.																																			
VIKING O.46-02P	102 C250 Conv.																																			
VIKING O.51-04P	104 C250 Conv.																																			
VIKING O.18-06P	106 C250 Conv.																																			
AVERAGE																																				
HIGHEST																																				
LOWEST																																				
CV (%)																																				
LSD (5%)																																				

*** Highest Yielding Hybrid
* Not Significantly Different from Highest Yielding Hybrid
*** Deer Damage

HYBRID INDEX FOR GRAIN TRIALS

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CONVENTIONAL TRIAL
Tables 5E/5L
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Trial Average

BRAND / HYBRID	RM TABLE	BRAND / HYBRID	RM TABLE	BRAND / HYBRID	RM TABLE
AG ARMOUR		DAIRYLAND SEED	Cont.	GOLDEN HARVEST	Cont.
AA9100	91 3E,4L	DS-4318AM	101 1E,2E	G00H12-5122	100 2E,3L
AA9206	92 4L	DS-4310Q	103 1E,2L	~G02K39-3120	102 1E,2L
AA9303	93 3E	DS-4440AMXT	104 1E,2L	~G03R40-5222	103 1E,2L
AA9509	95 2E,3E	DS-4580Q	105 1E,2L	G04G36-3111A	104 1E,2L
AA9608	96 2E,3E	DS-4840AM	108 1L	G07F23-3111	107 1E
AA10020	100 2E,3L	DS-4878Q	108 1L,2L	~G09A86-3330	109 1L
AA10404	104 2L,3L	DS-4910AML	109 1L	~G09Y24-3220A	109 1L
		DS-5018Q	110 1L	~G10L16-3330A	110 1L
		DS-5144Q	111 1L		
AGRIGOLD		DYNAGRO		INTEGRA	
A628-16VT2RIB	98 2E	D27VC87	87 4E	4119	91 3E
A629-22VT2RIB	99 2E	D37VC64	97 3E	4311	93 3E
A629-93	99 5E	~D39DC43	99 2E	4509	95 2E,3E
A632-35-5222EZ	102 2L	~D39VC40	97 3E	4601	96 2E,3E
A633-14VT2PRO	103 2L	D40VC41	99 3L	4782	97 2E,3E
A634-93	104 5L	D43VC81	100 2E,3L	4888	98 2E,3L
A636-11STXRIB	106 1E	D44SS54	103 2L,3L	5081	100 1E,2E,3L
A636-16VT2RIB	106 1E	D45TC55	104 2L	5280	102 1E,2L,3L
A638-74VT2RIB	108 1L	D49VC70	105 1E,2L,3L	~5351	103 1E,2L,3L
A639-40VT2RIB	109 1L		109 1L,2L	~5529	105 1E
				5719	107 1E
				~5939	109 1L
BLUE RIVER		FS InVision		KEY	
~14A91	82 5E	FS3508V RIB	85 4E	592	92 5E
~22K32	86 5E	FS37TV1 RIB	87 4E	995BLG	95 2E
~26B78	88 5E	FS4008V RIB	90 4L	908	108 5L
30K84	90 5E	FS4507V RIB	95 3E,4L		
33A16	92 5E	FS47TV1 RIB	97 3E		
38G54	96 5E	FS5098X RIB	100 2E,3L		
~42C87	98 5E	FS51QX1 RIB	101 2E,3L		
		FS53ZX1 RIB	103 2L,3L		
DAIRYLAND SEED		FS5594X RIB	105 2L	LEGACY SEEDS	
DS-2068RR	80 4E	FS55RL1 EZR	105 2L	LC351-20 VT2P	85 4E
DS-2350AM	83 4E	FS5704X RIB	107 1E,2L	LC-3048 VT2P	90 4L
DS-2505Q	85 4E	FS58RL1 EZR	108 1L	~LC413-20 3110A	91 4L
DS-2716Q	87 4E	FS5909D2A EZR	109 1L	LC431-20 SSX	93 3E,4L
DS-3030AM	90 4L	FS60UX1 RIB	110 1L	LC-3438 CONV	94 5E
~DS-3162Q	91 4L	FS6107T RIB	111 1L	LC441-20 VT2P	94 3E
DS-3193AM	91 3E,4L	FS6194V RIB	111 1L	LC-3517 CONV	95 5E
DS-3345AM	93 3E,4L	FS6299L2 EZR	112 1L	~LC-3517 VT2P	95 3E
DS-3366Q	93 3E,4L	FS62ZX1 RIB	112 1L	~LC484-20 SSX	98 2E,3L
DS-3519AM	95 2E,3E			LC-4248 SSX	100 2E,3L
DS-3550Q	95 2E,3E			LC-4148 CONV	101 5E
~DS-3715AM	97 2E,3E	GOLDEN HARVEST		LC-5217 CONV	103 5L
DS-3750AM	97 2E,3E	~G91V51-3110A	91 3E	~LC-5217 VT2P	103 2L,3L
DS-3810Q	98 2E,3L	~G90Y04-3220A	92 3E	LC-5319 SSX	103 2L
DS-4000AMXT	100 2E,3L	~G95D32-3220	95 3E	~LC533-20 5222	103 2L
DS-4014Q	100 2E,3L	G95M41-5122	95 2E,3E	LC-5438 CONV	104 5L
DS-4018AM	100 2E,3L	G99E68-5122	99 2E,3L	~LC551-20 SSX	105 1E
				LC-5819 SSX	107 1E
				~LC634-20 SSX	113 1L

BRAND / HYBRID LEGEND	RM TABLE	BRAND / HYBRID NK Brand	RM TABLE	BRAND / HYBRID SPECIALTY	RM TABLE
47J9185 VIP3110A	85 4E	NK9175-311A	91 4L	27D728	97 2E
47J086 VIP3220 EZREF	86 4E	NK9653-5222	96 3E	28D249	98 2E
47J988 3120 EZREF	88 4E	~NK9991-5122	99 2E,3L	29D010	99 2E
9191 VIP3110	92 3E	NK0243-3120	102 2L	33A580	103 1E,2L
9995 VIP3220 EZREF	95 3E	~NK0472-5222	104 2L	36D260	106 1E,2L
EXP 20-9980	99 2E	~NK0886-3120	108 1L	37A369	107 1E
9102 VIP3110	102 2L	~NK1026-3330	110 1L	38A388	108 1L
		~NK1082-5222	110 1L		
LG Seeds		PIONEER		VIKING	
LG5375VT2RIB	85 4E	P9998	99 5E	O.84-95UP	95 5E
LG42C63VT2RIB	92 4L	P0157	101 5E	O.45-97UP	97 5E
~LG44C27VT2RIB	94 3E,4L			O.98-98P	98 5E
LG47C77VT2PRO	97 2E,3E	RENK		O.85-00P	100 5E
LG49C19	99 5E	RK315VT2P	90 4L	O.46-02P	102 5L
~LG5505VT2RIB	100 2E,3L	RK433VT2P	92 3E	O.55-02P	102 5L
LG51C48VT2RIB	101 2E,3L	RK499VT2P	94 3E	O.51-04P	104 5L
LG51C62	101 5E	RK561DGV2P	95 3E	O.18-06P	106 5L
LG54C04	104 5L	RK568	95 5E	O.52-96	106 5L
LG57C97VT2PRO	107 1E,2L	RK593VT2P	97 3E		
LG59C72VT2RIB	109 1L	RK579DGV2P	99 3L	WELLMAN	
~LG62C35VT2RIB	112 1L	RK600VT2P	100 2E	W2903DP	103 1E,2L
		RK642	102 5L	W2104DP	104 1E
LOCAL SEED		~RK695GTCBLLBL	102 2L	W2705DP	105 1E
LC8498 VT2PRIB	84 4E	~RK621VT2P	103 2L	W2807DP	107 1E
LC8597 VT2PRIB	85 4E	~RK642VT2P	103 2L		
~LC9108 VT2PRIB	91 2E,3E,4L	~RK710DGV2P	106 2L	WOLF RIVER VALLEY	
~ZS9598 5222EZ	95 2E,3E,4L	~RK726H	106 1E	1092RR	90 3E
~ZS9796 3220EZ	97 2E,3E,4L	RK700SSTX	107 1E	2693RR	93 3E
~LC9888 VT2PRIB	98 2E,3L,4L	RK765VT2P	109 1L	2096RR	96 3E
LC0297 SSXRIB	102 1E,2L,3L	RK805VT2P	110 1L	1197RR	97 3E
~LC0488 VT2PRIB	104 1E,2L,3L	~RK807SSTX	111 1L	2899RR	99 3L
~LC0999 VT2PRIB	109 1L	RK882SSTX	111 1L		
~LC1289 VT2PRIB	112 1L	RUPP			
LC1398 VT2PRIB	113 1L	8xp094	94 2E,3E	2195 3220	97 1E
~LC1488 VT2PRIB	114 1L	XRD96-13	96 2E,3E	2180 SS	98 1E
LC1497 DGVT2PRIB	114 1L	XRA97-55	97 5E	2212 VT2P	100 1E
		~XRJ98-52	98 2E,3L	2250 VT2P	102 1E
M&W SEEDS		XRA00-60	100 5E	2300 DGVT2P	103 1E
48R10	87 5E	XRD01-90	101 2E	2335 SS	103 1E
48R11	87 3E,4E	XRA03-67	103 5L	2483 VT2P	104 1E
47T16	90 2E,3E,4L	8xp031	104 1E,2L	2433 SS	105 1E
47R22	94 5E	XRD06-53	106 1E	2500 SS	106 1E
46P76	97 2E,3E,4L	XRD07-72	107 1E	2550 VT2P	107 1E
46T28	99 5E	XRD09-42	109 1L	2585 VT2P	107 1E
46T29	99 2E,3L	XRD10-16	110 1L		
45P33	100 5E	XRD12-49	112 1L		
45T56	100 2E,3L				
45R67	103 5L	SEEDWAY			
45V21	104 1E,2L	SW3569 5222	93 3E		
44V74	105 1E	SW3768 GENSS	95 3E		
44R33	106 5L	~SW4000 GENSS	99 3L		
44V42	107 1E,2L	SW4010 GENSS	100 3L		
44M87	108 5L				
43V69	111 1L				

~ Denotes hybrids that were entered into the Grain and Silage Trials.

TABLE B.

AGRONOMIC TABLE FOR GRAIN TRIAL LOCATIONS

	COUNTY	PLANTING DATES	HARVEST DATES	PREVIOUS CROP	100 % STAND	AVERAGE STAND	FERTILIZER N - P - K
Zone 1	BRANCH (Irrigated)	May 13	Nov 12	Soybean	33,264	-	189-10-3
	LENAWEE	May 13	Oct 30	Soybean	33,264	-	195-10-3
	CASS	DROPPED	2020	DUE	TO	COVID-19	RESTRICTIONS
Zone 2	OTTAWA (Irrigated)	June 5	Nov 3	Soybean	33,264	-	199-10-3 plus manure
	INGHAM	May 8	Oct 15 Early Oct 16 Late	Wheat	33,264	-	160-10-3
	INGHAM CONV.	May 8	Oct 15	Wheat	33,264	-	160-10-3
	SAGINAW & CONV.	DROPPED	2020	DUE	TO	COVID-19	RESTRICTIONS
Zone 3	HURON	May 27	Oct 29	Wheat	33,264	-	135-10-3 plus manure
	MONTCALM & CONV.	May 11	Nov 2	Soybean	33,264	-	160-10-3
	MASON (Irrigated)	DROPPED	2020	DUE	TO	COVID-19	RESTRICTIONS
Zone 4	IOSCO	June 4	Nov 4	Corn	33,264	-	160-10-3 plus manure
	OSCEOLA	DROPPED	2020	DUE	TO	COVID-19	RESTRICTIONS
	PRESQUE ISLE	May 21	Nov 4	Alfalfa	33,264	-	144-10-3 plus manure

	COUNTY	SOIL TYPE	SOIL TEST ¹	FARM COOPERATOR	LOCATION
Zone 1	BRANCH	Oshemo sandy loam	pH 7.3, P 134 K 119	Huff Farms Kyle Huff	Coldwater
	LENAWEE	Brady and Macomb loam	pH 6.5, P 46 K 176	Raymond & Stutzman Farm Tim Stutzman	Seneca
	CASS	DROPPED		Brossman's Farm George Brossman	Vandalia
Zone 2	OTTAWA	Granby loamy sand	pH 6.3, P 443 K 168	Ottawa Station Farms Adam Geertman	West Olive
	INGHAM	Conover loam	pH 6.4, P 56 K 137	Plant, Soil & Microbial Sciences Research Facility, MSU	East Lansing
	INGHAM CONV.	Conover loam	pH 6.4, P 56, K 137	Plant, Soil & Microbial Sciences Research Facility, MSU	East Lansing
	SAGINAW & CONV.	DROPPED		Fred Gross Farms Peggy Gross & Dick Birchmeier	New Lothrop
Zone 3	HURON	Kilmanagh loam	pH 6.8, P 147 K 305	Wil-Le Farms Ron, Ed and Chris McCrea	Bad Axe
	MONTCALM	McBride sandy loam	pH 6.4, P 73 K 135	Karnatz Farms Scott Karnatz	Greenville
	MASON	DROPPED		Robert Oshe Jacob Zwagerman	Scottville
Zone 4	IOSCO	Kawkawlin sandy loam	pH 7.1, P 55 K 134	Double B Dairy Jeremy, Tim and Roger Beebe	Hale
	OSCEOLA	DROPPED		Pine Crest Dairy Farm John Bode	Cadillac
	PRESQUE ISLE	Alstad and Omena sandy loam	pH 7.6, P 50 K 206	Ponik Farms Paul Ponik	Posen

¹-P and K reported in m3-ppm

2020

SILAGE PERFORMANCE TRIALS

Introduction

The silage index (pg. 30) contains a list of all hybrids planted in the 2020 silage trials.

County results are reported in the following tables:

Tables 6E/6L Zone 1 - Branch, Lenawee, and Wood County, OH

Tables 7E/7L Zone 2/3 - Ottawa, Huron (Zone 3), and Ingham

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

*Locations dropped due to COVID-19 restrictions

The map of Michigan (pg. 28) 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. 31).

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 quality traits are:

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.

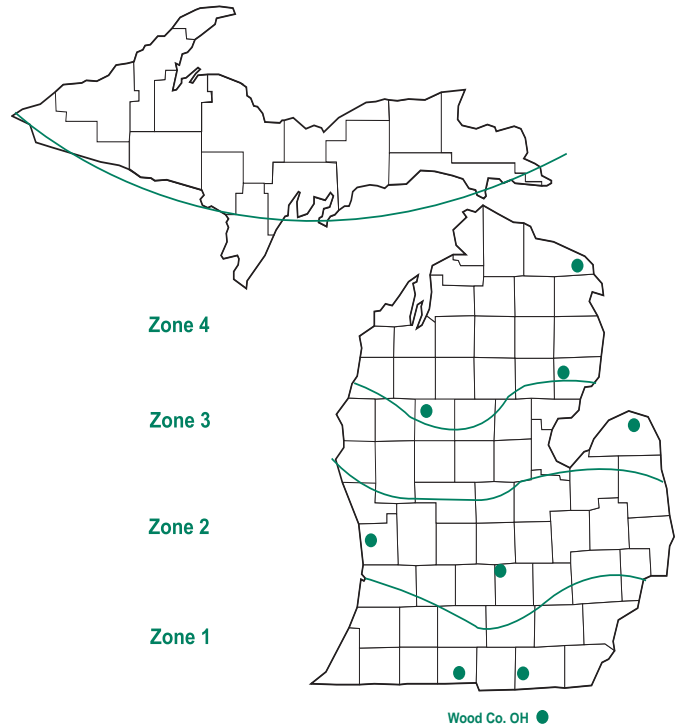
Silage quality traits are reported on a dry matter basis (100 percent DM). Quality traits in these tables are intended for use in hybrid selection only. Analysis for the balancing of feed rations should be analyzed from hybrids grown on each individual farm.

Milk2006

The MILK2006 equation (University Wisconsin-Madison Dairy Science Department) was used to estimate MK/T (milk per ton) and MK/A (milk per acre). MILK2006 estimates the dry matter intake using the NDF and CWD (cell wall digestibility) parameters of the sample. The updated equation utilizes crude protein, fat, and sugar, as well as the organic acid fractions, along with their total-tract digestibility coefficients to estimate energy. Whole plant dry matter was calculated to 34% for all hybrids and digestibility coefficients used. Fat and sugars, as well as the organic acid fractions, were held constant. MILK2006 also assumes the weight of the cow is 1,350 lbs. and that it consumes a 30 percent neutral detergent fiber diet. Using National Research Council (NRC, 2001) energy requirements, the estimated intake of energy from corn silage is converted to milk per ton. Milk per acre is then calculated using the estimated values for milk per ton and dry matter yield per acre. For more information on the utility of MILK2006 please see:

www.uwex.edu/ces/crops/uwforage/Milk2006silage.html

2020 Silage Trial Locations



Notes



STATUS OF MYCOTOXINS IN MICHIGAN SILAGE CORN

H. Kaur, W.D. Widdicombe, P. Kaatz, P. Durst, and M.P. Singh
Department of Plant, Soil and Microbial Sciences

Mycotoxins are secondary metabolites produced by ear and stalk rot causing fungal species (such as *Fusarium graminearum*, that produces deoxynivalenol- DON) to improve their survival. Presence of fungal inoculum from previous crop residue and a combination of optimal (warm and wet) weather conditions favorable to fungal infection and hybrid susceptibility can result in ear/stalk rot infection and associated pre-harvest mycotoxin contamination in silage corn. Moreover, feeding by western bean cutworm (WBC) and other ear-feeding insects in conventional and even some Bt hybrids can contribute to fungal rots and mycotoxin accumulation.

Mycotoxins in silage corn can cause feed rejections, vomiting, loss in milk production, poor reproductive performance, sickness and in severe cases even death of animals. When present in sufficient concentrations in the diet, mycotoxins can have a serious economic impact on farms. Very often mycotoxins co-exist (meaning >1 toxin in the same lot) and their impacts on the quality of silage and health of livestock may be synergistic. This makes it difficult to determine safe levels (thresholds) for individual mycotoxins.

Problem of mycotoxins has increased over recent years due to shift of WBC from a secondary to primary pest of corn and increase in its flight from southern to Midwestern states. WBC and other insects cause physical damage to plants and provide easy access to infecting spores, causing fungal rots and associated mycotoxin accumulation. Moreover, with change in weather patterns, conditions have become more conducive to fungal growth.

In 2019, a research project was initiated to understand the status of mycotoxins across Michigan fields and identify management practices that can reduce their level while silage corn is grown in the field. Farmers were invited to submit silage samples for 26 different mycotoxins. A total of 34 silage samples were submitted from nine Michigan counties (Figure 1). All of the samples tested positive for at least one mycotoxin. 24 (out of 26) mycotoxins were found in at least one of the samples. Three mycotoxins (DON, zearalenone-ZON, and beauvericin) were reported in all samples. All the samples had co-occurrence of two or more mycotoxins, at least 10 mycotoxins were positive in each sample. This indicated widespread occurrence of mycotoxins in Michigan fields. However, mycotoxin levels reported in most samples were relatively low, and only a subset of samples had levels greater than the threshold. Around 50% of the samples had DON levels and 20% samples had ZON levels greater than the threshold (0.5 to 1.0 ppm and 0.4 ppm, respectively, total diet dry matter basis for dairy). Highest reported value was 5.3 ppm for DON and 2.7 ppm for ZON. None of the samples tested positive for aflatoxins (more widespread in southern states). 2019 season had a very delayed beginning due to wet spring, but low rainfall around silking resulted in non-ideal conditions for fungal growth and expectations of low toxin levels. However, mycotoxin data still showed low to moderate levels in most of the samples.

In 2020, around 50 samples from 20 counties across Michigan (Figure 1) were received which are currently under mycotoxin and quality analysis. Unlike 2019, growing season started with timely planting, however there was a dry spell later in the season around silking. Insect flight was also lower in comparison to other years. Ear and stalk rot infections were also low in 2020, resulting in expectations of low mycotoxin levels.

Collection of samples from multiple years and fields is essential to understand the environmental and management scenarios leading to mycotoxins accumulation in a given field so that growers can use this information in minimizing toxin levels in the feed.

Overall, 2019 results showed that mycotoxins are present in Michigan silage corn fields, although concentrations were relatively low. Since mycotoxin accumulation begins while silage corn is grown in the field, it is imperative to tackle this issue at field level and explore management strategies to minimize the risk involved. Small plot research on various management strategies such as hybrid insect protection traits, fungicide applications, crop rotation, timely planting and harvest, optimum seeding rates, tillage is underway to provide growers with practical information that can be implemented at field level. Besides field management, efforts are being made to evaluate the impact of ensiling on mycotoxin degradation. The overall aim of this project is to provide growers with information on management strategies that can lead to improved plant health and silage quality using an integrated management approach.

Updated information on this project will be posted on our website:

www.canr.msu.edu/agronomy

This work is supported by funding from Michigan Alliance for Animal Agriculture, Project GREEN, and Michigan Milk Producers Association.

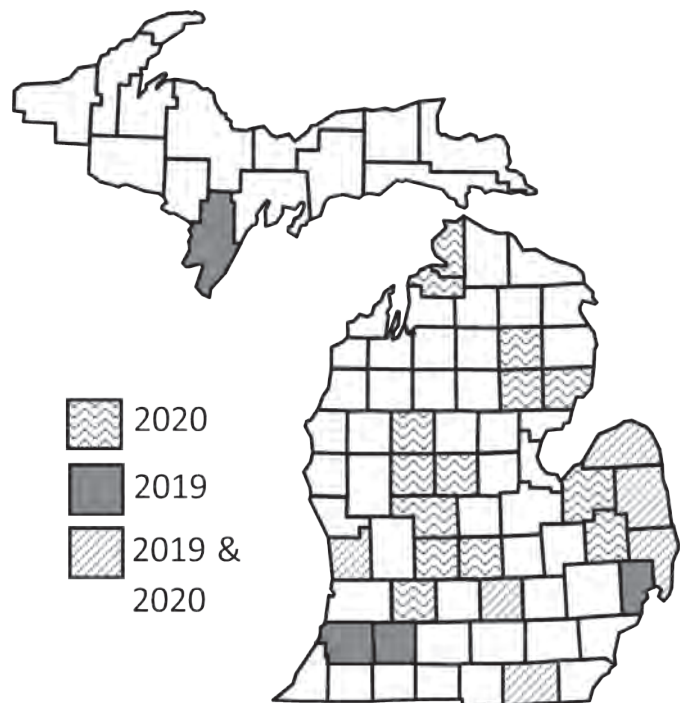


Figure 1: Counties submitting silage samples for analysis over years.

SILAGE HYBRID INDEX

ZONE 1 - Tables 6E/6L

Branch
Lenawee
Wood (Ohio)
Trial Average

ZONE 2/3- Tables 7E/7L

Huron - Zone 3
Ingham
Ottawa
Trial Average

ZONE 4 - Tables 8E/8L

Iosco
Osceola
Presque Isle
Trial Average

BRAND / HYBRID	RM TABLE	BRAND / HYBRID	RM TABLE	BRAND / HYBRID	RM TABLE
AG ARMOUR		INTEGRA		NK Brand	
AA11010	110 7L	4810 STP	98 7E	~ NK9991-5122	99 7E
		5191 STP	101 7E	NK0440-3122	104 7E
BLUE RIVER		~ 5351	103 7E	~ NK0472-5222	104 7E
~ 14A91	82 8E	~ 5529	105 6E,7L	NX10701-5122	107 7L
~ 22K32	86 8E	5500 STP	105 6E,7L	~ NK0886-3120	108 7L
~ 26B78	88 8E	5831	108 6E	~ NK1026-3330	110 6E
~ 42C87	98 7E	~ 5939	109 6E	~ NK1082-5222	110 6E
51T59	103 7E	6010 STP	110 6E	NX11003-5122	110 6E
		6284	112 6L	NK1239-5122	112 6L
		6498 STP	114 6L		
DAIRYLAND SEED		LEGACY SEEDS		RENK	
HiDF-3044Q	90 8E	~ LC413-20 3110A	91 8E	~ RK695GTCBLLBL	102 7E
~ DS-3162Q	91 7E,8E	~ LC-3517 VT2P	95 8E	~ RK621VT2P	103 7E
~ DS-3715AM	97 7E,8E	~ LC484-20 SSX	98 8L	~ RK642VT2P	103 7E
HiDF-3197RA	97 7E,8E	~ LC-5217 VT2P	103 7E,8L	~ RK710DGV2P	106 7L
HiDF-3099RA	99 7E,8L	~ LC533-20 5222	103 7E	RK771RR	106 7L
HiDF-3802Q	102 6E,7E	LC535-20 GT	103 7E	~ RK807SSTX	108 7L
HiDF-4545Q	105 6E,7L	~ LC551-20 SSX	105 7L	RK937VT2P	111 7L
HiDF-4999Q	109 6E,7L	LC-7236 5222	112 6L	RK945DGV2P	113 6L
HiDF-3211RA	111 6L	~ LC634-20 SSX	113 6L		
HiDF-5202Q	112 6L			RUPP	
		LG Seeds		~ XRJ98-52	98 7E
DYNAGRO		~ LG44C27VT2RIB	94 8E		
~ D39DC43	99 7E	~ LG5505VT2RIB	100 7E,8L	SEEDWAY	
~ D39VC40	99 8L	LG57C33STXRIB	107 7L	~ SW4000 GENSS	99 6E
D43SS81	103 7E,8L	LG59C66VT2RIB	109 6E	SW5569	106 6E
D47SS29	107 6E,7L	LG60C47STXRIB	110 6E	SW6540	108 6E
D52SS63	112 6L	~ LG62C35VT2RIB	112 6L	SW6790	113 6L
		LOCAL SEED		SPECIALTY	
GOLDEN HARVEST		LC8607 5222EZ	86 8E	39A569	109 6E
~ G91V51-3110A	91 8E	~ LC9108 VT2PRIB	91 8E	40A148	110 6E
~ G90Y04-3220A	92 8E	~ ZS9598 5222EZ	95 7E,8E	42A843	112 6L
~ G95D32-3220	95 8E	~ ZS9796 3220EZ	97 7E,8E		
~ G02K39-3120	102 7E	~ LC9888 VT2PRIB	98 7E,8L	~ Denotes hybrids that were entered into	
~ G03R40-5222	103 7E	2S0398 5222EZ	103 6E,7E,8L	the Grain and Silage Trials.	
G04S19-3122	104 7E	~ LC0488 VT2PRIB	104 6E,7E,8L		
GX90771-5122	107 6E,7L	LC0607 TC	106 6E,7L		
G08M20-5122	108 7L	LC0708 VT2PRIB	107 6E,7L		
~ G09A86-3330	109 6E	~ LC0999 VT2PRIB	109 6E,7L		
~ G09Y24-3220A	109 6E,7L	~ LC1289 VT2PRIB	112 6L		
~ G10L16-3330A	110 6E,7L	~ LC1488 VT2PRIB	114 6L		
G14N11-5222	114 6L				
G16K01-3120	116 6L				

TABLE C.

AGRONOMIC TABLE FOR SILAGE TRIAL LOCATIONS

COUNTY		PLANTING DATES	HARVEST DATES	PREVIOUS CROP	100 % STAND	AVERAGE STAND	FERTILIZER N - P - K
Zone 1	BRANCH (Irrigated)	May 13	Sept 11	Soybean	33,264	-	189-10-3
	LENAWEE	May 13	Sep 10	Soybean	33,264	-	195-10-3
	WOOD (OHIO)	June 1	Sep 16	Soybean	33,264	-	222-26-0
Zone 2/3	OTTAWA (Irrigated)	June 5	Oct 2	Soybean	33,264	-	199-10-3
	INGHAM	May 7	Aug 27 & 31	Soybean	33,264	-	160-10-3
	HURON	May 27	Sep 29	Wheat	33,264	-	135-10-3 plus manure
Zone 4	IOSCO	June 4	Oct 5	Corn	33,264	-	160-10-3 plus manure
	OSCEOLA	DROPPED	2020	DUE	TO	COVID-19	RESTRICTIONS
	PRESQUE ISLE	May 21	Oct 5	Alfalfa	33,264	-	144-10-3 plus manure

COUNTY		SOIL TYPE	SOIL TEST ¹	FARM COOPERATOR	LOCATION
Zone 1	BRANCH	Oshtemo sandy loam	pH 7.3, P 134 K 119	Huff Farms Kyle Huff	Coldwater
	LENAWEE	Brady and Macomb loam	pH 6.5, P 46 K 176	Raymond & Stutzman Farm Tim Stutzman	Seneca
	WOOD (OHIO)	Hoytville clay loam	pH 6.9, P 57 K 191	OARDC Matt Davis & Richard Minyo	Hoytville, Ohio
Zone 2/3	OTTAWA	Granby loamy sand	pH 6.3, P 443 K 168	Ottawa Station Farms Adam Geertman	West Olive
	INGHAM	Marlette and Conover loam	pH 6.7, P 27 123 K	Plant, Soil & Microbial Sciences Research Facility, MSU	East Lansing
	HURON	Kilmanagh loam	pH 6.8, P 147 305 K	Wil-Le Farms Ron, Ed and Chris McCrea	Bad Axe
Zone 4	IOSCO	Kawkawlin sandy loam	pH 7.1, P 55 K 134	Double B Dairy Jeremy, Tim and Roger Beebe	Hale
	OSCEOLA	DROPPED		Pine Crest Dairy Farm John Bode	Cadillac
	PRESQUE ISLE	Alstad and Omena Sandy Loam	pH 7.6, P 50 K 206	Ponik Farms Paul Ponik	Posen

¹-P and K reported in m3-ppm

TABLE 6E.

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

ZONE 1

Table with columns: BRAND / HYBRID, RM, TRT, TRAIT, %DM, GT/A, DT/A, %STD, YIELD, ADF, NDF, NDFD, CP, STR, MILK/2006, MK/2006, INDI, ADF, NDF, NDFD, CP, STR, MILK/2006, MK/2006. Includes sub-headers for Early-Trial Average and Branch-Early.

Table with columns: BRAND / HYBRID, RM, TRT, TRAIT, %DM, GT/A, DT/A, %STD, YIELD, ADF, NDF, NDFD, CP, STR, MILK/2006, MK/2006, INDI, ADF, NDF, NDFD, CP, STR, MILK/2006, MK/2006. Includes sub-headers for 2 Year Averages 2020-2019 and Branch-Early.

TABLE 6L.

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

ZONE 1

2020		Late - TRIAL AVERAGE										Branch - Late															
BRAND / HYBRID	RM	TRT	TRAIT	YIELD					% QUALITY					YIELD					% QUALITY								
				%DM	GTA	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/A	MK/T	MILK 2006	%DM	GTA	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/A
DAIRYLAND SEED HIDF-321HRA	111	P250	1,2,3,4	35.6	23.8	8.2		84.2	20.7	41.5	61.5	7.0	34.0	3465	28755	31.1	29.4	9.1		83.1	20.8	41.9	59.6	6.5	35.6	3401	30852
DAIRYLAND SEED HIDF-5202Q	112	P250	1,2,3,4	36.5	24.4	8.5		86.4	18.0	37.1	63.4	7.7	39.9	3639	30785	31.4	33.1	10.6 *		85.4	18.6	38.4	61.9	7.7	39.1	3553	37537
DYNAGRO D62SS63	112	P500	1,2,3,4	38.4	22.1	8.3		83.9	19.6	40.2	61.2	7.2	38.0	3476	28486	36.7	27.4	10.0		83.4	17.3	36.8	59.2	7.1	41.4	3454	34821
GOLDENHARVEST G4N11-5222	114	C250	1,2,3,4,6	40.0	20.4	7.8		86.0	18.3	37.6	63.5	7.0	41.6	3617	28073	35.5	25.7	9.1		85.8	18.2	37.8	62.3	6.8	41.6	3585	32549
GOLDENHARVEST G16K01-3120	116	C250	1,2,4	37.3	21.9	7.9		85.5	17.1	36.5	61.1	6.9	40.7	3593	28787	34.5	25.5	8.8		84.3	16.8	35.7	59.2	7.2	40.7	3516	30773
INTEGRA 6284	112	P500	1,2	39.8	23.1	9.0 **		85.3	18.1	37.8	62.5	7.1	40.2	3574	31693	37.8	29.2	11.1 *		85.5	16.9	36.9	60.5	6.8	42.6	3575	39476
INTEGRA 6488 STP	114	P500	1	32.6	21.4	6.8		82.3	24.2	46.8	62.2	7.3	25.6	3257	22366	30.6	22.2	6.6		82.2	23.4	46.0	61.3	7.5	25.3	3227	22123
LEGACY SEEDS LC-7236 5222	112	C250	1,2,3,4,6	38.5	21.3	7.8		86.5	17.6	36.1	63.5	7.4	41.2	3657	27683	34.4	28.3	9.8		85.9	18.0	36.4	61.4	6.9	42.2	3604	33310
LEGACY SEEDS LC634-20 SSX	113	P500	1,2,3,4	40.6	21.1	8.2		85.4	18.3	38.2	61.8	7.1	41.1	3576	29892	37.7	25.4	9.6		83.9	18.8	39.9	59.6	6.9	40.3	3482	31743
LG SEEDS LG62C35VT2R1B	112	P500	1,2	40.7	20.9	8.2		84.9	19.3	38.3	61.0	7.4	39.0	3547	28613	36.4	28.2	10.4		83.2	17.6	36.2	59.1	7.1	41.6	3563	35250
LOCAL SEED LC1289 VT2PR1B	112	P500	1,2	37.5	22.6	8.1		84.9	19.6	39.7	62.8	7.2	37.1	3531	28650	32.9	28.6	9.2		84.4	19.9	36.4	60.2	7.2	37.4	3497	32254
LOCAL SEED LC1488 VT2PR1B	114	P500	1,2	42.3	20.8	8.5		86.1	18.6	36.6	62.6	7.2	42.0	3632	31068	38.7	28.8	11.2 **		86.4	18.8	34.0	61.5	7.1	44.0	3650	40725
NK Brand NK1239-5122	112	C500	1,2,3,4	39.5	21.4	8.1		84.3	19.3	40.2	61.9	7.1	37.9	3501	29622	34.3	28.1	9.8		82.8	21.0	41.4	58.4	6.7	36.3	3387	33103
REMK R637V2P	113	P250	1,2	42.8	20.0	8.2		86.4	17.4	35.8	61.8	7.4	42.6	3649	29005	38.4	25.7	9.9		86.6	16.4	33.8	60.4	7.1	44.8	3664	36082
REMK R646DG/V2P	115	P250	1,2	37.5	21.4	7.6		84.9	19.2	39.0	61.2	7.1	38.8	3540	27191	33.9	27.3	9.0		84.1	19.1	39.1	59.3	7.1	39.9	3479	31998
SEEDWAY SW6790	113	P500	1,2	39.9	20.9	8.1		85.7	17.1	36.9	61.7	7.2	38.5	3551	29473	36.5	26.7	9.8		85.0	17.8	37.0	59.5	6.9	41.3	3547	34591
SPECIALTY 42A843	112	P500	1,2,3,4	38.0	23.2	8.5		85.9	17.7	37.6	61.8	7.2	41.6	3611	30282	35.4	29.3	10.4		85.4	18.0	38.1	60.5	6.9	40.7	3559	36855
AVERAGE				38.7	21.8	8.1		85.2	18.8	38.6	62.1	7.2	38.8	3554	28839	35.1	27.6	9.7		84.7	18.7	38.0	60.2	7.0	39.7	3513	33720
HIGHEST				42.8	24.4	9.0		86.5	24.2	46.8	63.5	7.7	42.6	3657	31693	38.7	33.1	11.2		86.6	23.4	46.0	62.3	7.7	44.8	3684	40725
LOWEST				32.6	20.0	6.8		82.3	17.1	35.8	61.0	6.9	25.6	3257	22366	30.6	22.2	6.6		82.2	16.4	33.8	58.4	6.5	25.3	3227	22123
CV (%)				6.2	6.0	7.2		1.8	7.9	6.6	2.8	5.8	6.9	3	6	5.1	6.0	6.5		2.0	7.3	6.2	2.6	6.6	6.1	3	7
LSD (5%)				1.6	0.9	0.4		1.0	1.0	1.7	1.2	0.3	1.8	68	1251	2.1	2.0	0.7		2.0	1.6	2.8	1.9	0.6	2.9	127	2767

2 Year Averages 2020 - 2019		Late - TRIAL AVERAGE										Branch - Late															
BRAND / HYBRID	RM	TRT	TRAIT	YIELD					% QUALITY					YIELD					% QUALITY								
				%DM	GTA	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/A	MK/T	MILK 2006	%DM	GTA	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/A
DAIRYLAND SEED HIDF-321HRA	111	P250	1,2,3,4	35.9	26.3	9.5		84.0	19.4	38.3	58.1	7.4	38.2	3468	32426	33.6	28.0	9.6		83.8	19.3	38.1	57.0	7.2	39.3	3442	32077
DYNAGRO D62SS63	112	P500	1,2,3,4	40.0	25.2	10.0 *		84.0	17.9	37.0	57.8	7.5	40.5	3477	34602	40.1	28.3	11.4 *		83.9	17.0	35.2	56.6	7.6	42.8	3473	38728
INTEGRA 6488 STP	114	P500	1	39.9	19.6	7.7		80.9	24.1	45.2	57.5	7.9	26.3	3148	24649	36.6	18.5	6.8		80.0	24.6	45.9	56.3	8.2	25.2	3072	21093
SPECIALTY 42A843	112	P500	1,2,3,4	38.3	25.7	10.2 **		84.2	18.7	37.6	57.6	7.4	40.0	3481	35227	39.2	29.1	11.8 **		83.9	18.8	37.7	56.8	7.6	40.2	3450	40476
AVERAGE				38.5	24.2	9.4		83.3	20.0	39.5	57.7	7.5	36.2	3393	31701	37.9	26.0	9.9		82.9	19.9	39.2	56.7	7.6	36.9	3359	33093
HIGHEST				40.0	26.3	10.2		84.2	24.1	45.2	58.1	7.9	40.5	3481	35227	40.1	29.1	11.8		83.9	24.6	45.9	57.0	8.2	25.2	3473	40476
LOWEST				35.9	19.6	7.7		80.9	17.9	37.0	57.5	7.4	26.3	3148	24649	33.6	18.5	6.8		80.0	17.0	35.2	56.3	7.2	25.2	3072	21093
CV (%)				7.2	8.0	10.0		2.3	8.9	7.0	3.0	6.1	8.0	3	9	6.8	6.8	7.4		2.1	8.3	6.5	2.4	6.8	6.9	3	7
LSD (5%)				1.5	0.9	0.5		1.0	0.9	1.4	1.0	0.2	1.6	64	1486	2.1	1.5	0.6		1.5	1.3	2.1	1.2	0.4	2.3	98	1892

2020										Lenawee - Late										Wood - Late													
BRAND / HYBRID	RM	TRT	TRAIT	YIELD					% QUALITY					MILK 2006					YIELD					% QUALITY					MILK 2006				
				%DM	GT/A	DT/A	%STD	STR	IND	ADF	NDF	NDFD	CP	STR	MKT	MK/A	%DM	GT/A	DT/A	%STD	STR	IND	ADF	NDF	NDFD	CP	STR	MKT	MK/A				
DAIRYLAND SEED HIDF-321HRA	111	P250	1,2,3,4	44.1	17.4	7.7 *	85.6	20.5	40.7	63.1	7.3	33.9	3516	28192	31.6	24.8	7.8 *	84.0	21.0	42.0	61.8	7.2	32.6	3477	27222								
DAIRYLAND SEED HIDF-5202Q	112	P250	1,2,3,4	47.9	16.4	7.7 *	87.7	16.5	34.8	64.6	7.8	44.8	3740	28799	30.4	23.6	7.2	86.1	18.9	38.2	63.6	7.7	35.7	3625	26018								
DYNAMRO D62SS63	112	P500	1,2,3,4	45.0	16.0	7.2 *	83.7	22.5	43.3	62.4	7.3	35.9	3449	23733	33.4	23.0	7.7 *	84.7	19.0	40.6	62.2	7.2	36.6	3527	27104								
GOLDEN HARVEST G4H11-5222	114	C250	1,2,3,4,6	51.1	13.3	6.8	86.2	18.2	37.1	65.1	7.1	44.1	3639	24812	33.5	22.1	7.4	86.1	18.5	37.9	63.3	7.3	36.9	3628	26859								
GOLDEN HARVEST G16K01-3120	116	C250	1,2,4	44.9	16.0	7.2 *	86.6	15.7	35.8	62.5	6.6	44.5	3670	27289	32.5	24.3	7.9 *	85.5	18.7	37.9	61.6	7.1	36.9	3594	28299								
INTEGRA 6284	112	P500	1,2	46.8	17.0	7.8 **	85.2	17.7	36.3	63.5	7.4	43.0	3584	28914	34.9	23.1	8.1 **	83.3	19.7	40.4	63.5	7.2	35.0	3562	28689								
INTEGRA 6488 STP	114	P500	1	37.8	16.8	6.3	82.9	23.3	45.0	62.1	7.1	31.0	3393	21444	29.5	25.3	7.5	81.8	26.0	49.5	63.2	7.2	20.7	3150	23531								
LEGACY SEEDS LC1236 5222	112	C250	1,2,3,4,6	49.1	13.0	6.3	87.1	16.4	34.0	64.6	7.6	44.5	3709	23394	31.9	22.5	7.2	86.6	18.3	37.8	64.7	7.7	36.7	3658	26344								
LEGACY SEEDS LC634-20 S5X	113	P500	1,2,3,4	48.6	15.6	7.2 *	86.7	17.7	36.6	63.5	7.7	43.6	3667	26301	35.4	22.5	8.0 *	85.6	18.5	38.2	62.2	6.8	39.4	3600	28631								
LG SEEDS LG62C35V72RB	112	P500	1,2	51.7	13.6	7.0	85.2	18.7	37.1	63.5	7.8	42.8	3577	28630	34.0	21.0	7.1	84.4	21.7	41.7	60.5	7.4	32.5	3500	24958								
LOCAL SEED LC1289 V72PRB	112	P500	1,2	45.0	16.0	7.0	85.3	19.4	41.0	64.2	7.1	40.3	3557	25011	34.8	23.3	8.1 **	85.0	19.4	41.7	64.2	7.1	33.6	3540	28865								
LOCAL SEED LC1488 V72PRB	114	P500	1,2	51.7	12.7	6.7	86.0	18.4	37.7	62.9	7.2	43.0	3622	24829	36.6	20.8	7.6 *	86.1	18.7	38.2	63.4	7.2	38.9	3624	27651								
NK Brand NK1239-5122	112	C500	1,2,3,4	50.2	13.9	7.0	85.2	17.3	38.5	63.7	7.4	42.7	3566	27728	33.9	22.1	7.5	85.1	19.5	40.9	63.6	7.2	34.8	3549	28037								
RENK R1637/V72P	113	P250	1,2	52.5	13.1	6.9	86.1	18.3	37.2	62.5	7.5	43.2	3627	24833	37.4	21.1	7.9 *	86.4	17.6	36.4	62.6	7.4	39.9	3657	28799								
RENK R1648DGV72P	115	P250	1,2	46.2	13.9	6.4	85.7	19.0	38.3	62.5	7.1	41.1	3597	23886	32.5	23.0	7.5	84.9	19.5	39.8	61.9	7.3	35.4	3544	26490								
SEEDWAY SW6790	113	P500	1,2	46.8	15.0	7.0	85.6	16.0	36.6	62.2	7.5	35.0	3455	25632	36.5	21.1	7.7 *	86.4	17.6	37.1	63.3	7.2	39.1	3651	28015								
SPECIALTY 42A&43	112	P500	1,2,3,4	45.4	16.6	7.4 *	87.2	17.2	36.2	62.8	7.5	45.9	3696	25822	33.3	23.6	7.9 *	85.3	18.0	38.6	62.0	7.1	38.3	3578	28170								
AVERAGE				47.3	15.1	7.0	85.8	18.4	38.0	63.3	7.3	41.1	3592	25632	33.6	22.8	7.6	85.2	19.4	39.8	62.8	7.2	35.6	3557	27265								
HIGHEST				52.5	17.4	7.8	87.7	23.3	45.0	65.1	7.8	45.9	3740	28799	37.4	25.3	8.1	86.6	26.0	49.5	64.7	7.7	39.9	3658	28799								
LOWEST				37.8	12.7	6.3	82.9	15.7	34.0	62.1	6.6	31.0	3393	21444	29.5	20.8	7.1	81.8	17.6	36.4	60.5	6.8	20.7	3150	23531								
CV (%)				6.8	7.7	7.4	1.9	7.5	6.0	2.1	4.9	6.2	3	5	5.2	4.0	5.6	1.6	6.4	6.4	3.1	5.6	6.6	3	6								
LSD (5%)				3.8	1.4	0.6	1.9	1.6	2.7	1.6	0.4	3.0	123	1550	2.1	1.1	0.5	1.6	1.5	3.0	2.3	0.5	2.8	110	2096								

2 Year Averages 2020 - 2019										Lenawee - Late										Wood - Late													
BRAND / HYBRID	RM	TRT	TRAIT	YIELD					% QUALITY					MILK 2006					YIELD					% QUALITY					MILK 2006				
				%DM	GT/A	DT/A	%STD	STR	IND	ADF	NDF	NDFD	CP	STR	MKT	MK/A	%DM	GT/A	DT/A	%STD	STR	IND	ADF	NDF	NDFD	CP	STR	MKT	MK/A				
DAIRYLAND SEED HIDF-321HRA	111	P250	1,2,3,4												38.1	24.7	9.4 **	84.3	19.5	38.5	59.1	7.5	37.1	3494	32775								
DYNAMRO D62SS63	112	P500	1,2,3,4												40.0	22.0	8.7	84.1	18.9	38.8	59.0	7.4	38.2	3480	30277								
INTEGRA 6488 STP	114	P500	1												41.3	20.6	8.7	81.8	23.7	44.6	56.6	7.6	27.4	3225	28205								
SPECIALTY 42A&43	112	P500	1,2,3,4												37.5	22.4	8.6	84.5	18.6	37.4	58.4	7.2	39.8	3511	29977								
AVERAGE															39.2	22.4	8.8	83.7	20.2	39.8	58.8	7.4	35.6	3428	30006								
HIGHEST															41.3	24.7	9.4	84.5	23.7	44.6	59.1	7.6	39.8	3511	32775								
LOWEST															37.5	20.6	8.6	81.8	18.6	37.4	58.4	7.2	27.4	3225	28205								
CV (%)															6.2	4.9	7.4	1.6	6.7	6.0	2.8	5.2	6.9	3	6								
LSD (5%)															2.0	1.0	0.5	1.2	1.2	2.1	1.5	0.3	2.2	83	1592								

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

TABLE 7E.

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

ZONE 2 - 3

2020		Early - TRIAL AVERAGE										Huron - Early													
BRAND / HYBRID	TRT	RM	TRAIT	YIELD					% QUALITY					YIELD					% QUALITY					MILK 2006	
				%DMI	GTIA	DTIA	%STD	STR	ADF	NDF	NDFD	CP	STR	ADF	NDF	NDFD	CP	STR	ADF	NDF	NDFD	CP	STR	MKT	MKA
BLUE RIVER 42C87	98	MXL	Conv.	38.2	24.9	9.4	84.5	18.6	40.4	61.1	7.4	40.2	3490	34392	37.3	25.7	9.5	84.9	20.1	41.9	62.1	7.4	38.1	3549	35897
BLUE RIVER 51T59	103	MXL	Conv.	36.3	24.9	9.0	85.9	19.4	38.1	62.5	7.4	39.7	3580	32277	38.8	24.2	9.4	88.0	16.7	36.4	67.0	7.4	44.9	3757	35316
DAIRYLAND SEED DS-3162Q	91	P250	1,2,3,4	41.2	21.7	8.9	85.3	18.0	36.6	59.8	7.7	41.9	3576	31870	39.7	21.3	8.5	86.1	17.7	37.5	62.8	8.1	41.4	3642	30780
DAIRYLAND SEED DS-3715AM	97	P250	1,3,4	40.6	21.9	8.9	85.8	17.9	36.7	62.9	7.2	42.8	3577	32027	42.9	22.6	9.7	89.6	14.0	33.4	69.0	7.7	48.6	3794	36717
DAIRYLAND SEED HIF-3197RA	97	P250	1,2,3,4	42.0	22.6	9.5	86.0	19.3	37.9	62.4	7.8	41.3	3593	33959	42.3	21.9	9.3	89.9	15.9	34.1	67.1	7.7	47.3	3804	35193
DAIRYLAND SEED HIF-3099RA	99	P250	1,2,3,4	36.6	25.1	9.2	84.0	19.1	38.6	59.3	7.5	38.3	3488	30963	34.9	25.7	8.9	84.5	18.1	39.2	62.8	7.9	37.1	3541	30512
DAIRYLAND SEED HIF-3802Q	102	P250	1,2,3,4	36.4	26.7	9.7	86.0	18.1	37.3	63.7	7.5	41.2	3609	35022	34.6	28.5	9.9	86.0	17.8	36.7	65.4	7.6	42.8	3640	38100
DYNAGRO D39DC43	99	P500	1,2,18	42.8	20.8	8.9	85.8	18.2	37.0	62.5	7.1	42.8	3587	31180	43.0	22.1	9.5	88.8	17.3	36.9	67.6	7.4	44.2	3763	35745
DYNAGRO D43SS81	103	P500	1,2,3,4	39.2	23.8	9.4	86.4	17.3	36.4	62.9	7.3	42.2	3631	33927	40.4	23.3	9.4	87.9	16.0	35.6	66.1	7.5	44.9	3736	35110
GOLDEN HARVEST G02K39-3120	102	C250	1,2,4	38.8	23.5	9.1	86.5	17.5	35.1	63.4	7.7	43.2	3636	32940	37.0	23.2	9.4	87.7	16.8	33.2	68.0	8.0	45.8	3762	33171
GOLDEN HARVEST G0R40-5222	103	C250	1,2,3,4,6	39.5	23.7	9.5	85.0	19.9	39.2	61.7	7.7	37.8	3525	33000	39.9	24.2	9.7	86.8	19.0	39.0	66.3	7.8	39.5	3677	35471
GOLDEN HARVEST G0AS19-3122	104	C250	1,2,3,4	38.3	26.0	9.9	85.2	19.0	38.4	62.5	7.2	40.4	3546	34391	38.8	26.1	10.0	86.6	15.8	37.1	66.5	7.4	43.7	3657	34287
INTEGRA 4810 STP	98	P500	1	40.9	22.4	9.2	81.8	25.1	45.9	61.4	8.0	28.6	3284	29483	37.5	24.0	9.1	83.4	25.1	44.8	62.8	8.6	27.8	3387	30751
INTEGRA 5191 STP	101	P500	1	33.3	25.8	8.5	82.5	23.4	43.9	61.0	7.6	30.1	3323	27713	31.3	25.9	8.0	83.0	19.7	41.8	62.1	8.0	33.7	3431	27438
INTEGRA 5351	103	P500	1,2,3,4,6	41.4	23.6	9.9	84.7	19.3	40.3	60.8	8.0	38.3	3513	34291	40.9	24.4	10.0	86.5	18.7	40.0	66.3	7.9	40.0	3652	35186
LEGACY SEEDS LC-5217 V72P	103	P250	1,2	38.5	24.4	9.4	85.0	17.8	39.0	62.4	7.1	42.2	3539	33078	37.8	24.7	9.3	87.3	14.8	35.7	66.8	7.3	45.7	3716	34694
LEGACY SEEDS LC533-20 5222	103	C250	1,2,3,4,6	39.9	23.9	9.6	84.4	19.7	39.4	60.4	7.8	40.5	3498	33364	39.6	24.7	9.8	86.8	17.2	38.0	65.2	7.9	42.9	3681	36063
LEGACY SEEDS LC535-20 GT	103	C250	1	37.3	26.3	9.7	84.6	21.2	39.9	62.3	7.0	37.1	3504	33761	37.1	23.8	9.6	86.6	18.4	36.5	65.2	7.1	43.1	3683	35268
LG SEEDS LG5050V72RB	100	P500	1,2	38.4	23.7	9.2	86.3	18.8	37.2	62.5	8.0	43.8	3620	33511	39.9	24.4	9.5	88.0	15.3	35.5	66.3	8.3	46.1	3755	35721
LOCAL SEED ZS959 5222EZ	95	P500	1,2,3,4,6	37.1	22.7	8.5	86.4	16.8	34.9	61.5	8.2	42.9	3640	30893	37.3	23.9	8.9	88.3	14.2	32.0	65.8	8.6	48.1	3778	33561
LOCAL SEED ZS9796 3222EZ	97	P500	1,2,4,6	40.2	23.0	9.2	85.4	16.3	34.4	59.0	7.7	44.5	3590	32539	40.1	23.7	9.5	88.0	15.7	34.1	64.8	8.4	46.1	3756	35890
LOCAL SEED LC9888 V72PRIB	98	P500	1,2	43.4	19.8	8.6	84.2	18.7	37.2	58.6	8.2	42.1	3507	29428	43.0	20.5	8.8	86.6	15.9	35.9	62.9	8.2	44.2	3684	32528
LOCAL SEED ZS0399 5222EZ	103	P500	1,2,3,4,6	42.7	22.4	9.6	84.8	18.4	38.2	59.6	7.9	40.7	3530	34007	41.6	23.1	9.6	86.2	17.7	37.5	63.1	8.3	41.5	3646	34924
LOCAL SEED LC0489 V72PRIB	104	P500	1,2	39.4	24.2	9.6	85.6	17.9	37.0	61.0	7.2	41.4	3589	34760	39.5	25.6	10.1	86.6	17.3	35.9	62.7	7.1	44.7	3685	37250
NK Brand NK9981-5122	99	C250	1,2,3,4	37.8	24.4	9.3	85.7	18.8	37.9	62.4	7.9	41.7	3583	32906	38.0	25.3	9.6	88.4	15.4	34.5	66.4	8.6	46.4	3787	36461
NK Brand NK040-3122	104	C250	1,2,3,4	37.8	26.2	9.9	86.4	18.3	37.3	65.0	7.5	41.2	3628	36166	37.9	26.3	10.0	88.4	17.3	37.6	69.1	7.8	42.5	3766	37666
NK Brand NK0472-5222	104	C250	1,2,3,4,6	38.9	24.0	9.4	83.5	20.7	41.9	60.9	7.6	34.7	3430	33176	39.5	23.7	9.4	86.4	20.3	42.3	67.0	7.8	37.0	3625	36378
RENK R1695GTCLBL	102	P500	1,2,4,6	41.5	23.4	9.7	84.4	19.1	38.3	60.2	7.9	42.3	3507	34013	41.9	23.4	9.8	87.3	16.5	36.9	65.7	8.1	43.6	3719	36354
RENK R162V72P	103	P250	1,2	40.7	23.2	9.4	86.3	17.4	35.9	61.9	7.2	42.7	3638	33881	41.0	23.7	9.7	87.4	16.8	36.0	64.8	7.3	45.0	3728	36140
RENK R164V72P	103	P250	1,2	38.2	24.1	9.2	85.5	18.3	37.4	60.6	7.3	41.5	3562	32223	39.2	23.9	9.4	87.1	19.4	38.5	62.8	7.5	41.8	3645	34114
RUPP XR98-52	98	P500	1,2,3,4	38.0	24.7	9.3	84.3	18.4	37.0	59.9	7.5	41.1	3514	31976	39.2	24.7	9.7	88.3	14.7	33.1	64.4	7.5	48.5	3793	36791
AVERAGE				39.2	23.8	9.3	85.1	18.9	38.2	61.5	7.6	40.3	3543	32811	39.1	24.3	9.4	87.0	17.3	37.0	65.3	7.8	42.8	3695	34909
HIGHEST				43.4	26.7	9.9	86.5	25.1	45.9	65.0	8.2	44.5	3640	36166	43.0	28.5	10.1	89.6	25.1	44.8	69.1	8.6	46.6	3804	38100
LOWEST				33.3	19.8	8.5	81.8	16.3	34.4	58.6	7.0	28.6	3284	27713	31.3	20.5	8.0	83.0	14.0	32.0	62.1	7.1	27.8	3387	27438
CV (%)				6.0	6.7	7.6	2.3	8.8	7.3	4.2	5.7	7.6	3	7	5.4	4.7	7.2	2.2	7.3	6.5	4.9	5.3	6.4	3	7
LSD (5%)				1.6	1.1	0.5	1.3	1.1	1.9	1.7	0.3	2.1	77	1451	2.5	1.3	0.8	2.2	1.5	2.8	3.8	0.5	3.2	121	2791

TABLE 7L.

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

ZONE 2 - 3

		Late - TRIAL AVERAGE												Huron - Late											
2020		YIELD						% QUALITY						YIELD						% QUALITY					
BRAND / HYBRID	RM	TRT	TRAIT	%DM	GTIA	DTIA	%STD	IVD	ADF	NDF	NDFD	CP	STR	MILK 2006	MK/A	MK/A	IVD	ADF	NDF	NDFD	CP	STR	MILK 2006	MKT	MK/A
AG ARMOUR AA1010	110	C250	1,2,6	43.9	19.4	8.5	85.2	19.7	36.8	58.7	7.5	41.3	3548	29701	45.0	21.2	9.5	87.0	15.8	31.4	58.8	7.7	48.9	3707	35324
DAIRYLAND SEED HIF-4646Q	105	P250	1,2,3,4	35.5	29.8	10.7**	85.6	19.5	38.6	62.8	6.9	40.1	3559	39481	34.5	29.0	10.0*	86.7	16.7	36.7	63.8	7.2	43.6	3650	36381
DAIRYLAND SEED HIF-4999Q	109	P250	1,2,3,4	35.0	30.0	10.4*	86.2	17.8	36.8	62.5	7.5	40.8	3610	37353	32.9	29.9	9.8	86.4	17.7	36.0	62.3	7.7	42.0	3638	35749
DYNAGRO D47SS29	107	P500	1,2,3,4	37.7	26.0	9.7	84.7	17.5	35.7	58.3	7.3	43.0	3534	34107	37.8	25.9	9.8	85.8	16.5	34.3	58.6	7.6	45.3	3613	35338
GOLDENHARVEST G690771-512Z	107	C250	1,2,3,4	39.2	27.1	10.5*	84.6	19.1	38.6	61.3	6.9	40.8	3502	36843	38.2	27.3	10.4*	86.6	14.1	33.1	62.5	7.6	45.8	3654	38148
GOLDENHARVEST G68M20-512Z	108	C250	1,2,3,4	37.4	27.4	10.2*	84.7	18.2	38.0	60.5	7.3	41.1	3514	36685	38.7	25.9	10.0*	85.4	16.5	36.4	59.9	7.5	44.5	3675	37473
GOLDENHARVEST G69Y24-3220f	109	C250	1,2,4,6,16	35.3	28.9	10.2*	84.7	18.5	37.7	60.5	7.0	40.7	3520	35707	37.7	27.4	10.3*	86.1	16.1	34.6	60.6	7.3	45.4	3630	37775
GOLDENHARVEST G10L16-3330p	110	C250	1,2,4,6,16	36.5	27.7	10.1	84.8	18.4	37.2	59.1	7.1	42.0	3526	35566	36.6	27.7	10.2*	86.4	16.3	34.2	60.2	7.4	46.2	3650	37031
INTEGRA 5529	105	P500	1,2	41.6	24.8	10.1	84.5	19.1	37.8	59.0	7.3	41.5	3506	35333	41.1	23.6	9.7	85.6	17.1	36.1	60.1	7.7	43.9	3688	34641
INTEGRA 5500 STP	105	P500	1,2,3,4	39.6	25.0	9.8	82.7	20.9	40.4	57.9	7.2	38.6	3383	32613	40.7	23.7	9.6	84.0	18.8	37.8	59.6	7.4	43.1	3484	33436
LEGACY SEEDS LC561-20 SSX	105	P500	1,2,3,4	39.2	25.5	10.0	85.5	18.7	36.5	60.6	7.5	40.9	3561	35350	39.4	24.8	9.7	86.5	17.7	36.2	60.4	7.9	43.6	3637	35363
LG SEEDS LG57C333TXRIB	107	P500	1,2,3,4	34.2	28.9	9.9	84.1	18.0	36.9	59.3	7.3	41.5	3489	34767	35.4	28.5	10.0*	85.2	16.9	37.0	60.1	7.6	43.8	3660	35703
LOCAL SEED LC0807 TC	106	P500	1,2,6	39.6	25.6	10.0	84.1	18.5	37.3	59.9	7.5	40.8	3483	35345	38.4	27.0	10.3*	86.3	16.8	34.8	60.7	7.8	43.6	3641	37617
LOCAL SEED LC0708 V12PRIB	107	P500	1,2	39.5	25.1	9.9	83.9	19.8	37.3	57.3	7.6	41.8	3472	34394	40.4	26.0	10.5**	83.8	20.3	37.7	57.2	7.7	42.1	3475	36393
LOCAL SEED LC0998 V12PRIB	109	P500	1,2	36.8	25.9	9.5	83.7	19.3	38.6	60.8	6.7	40.4	3454	33192	38.2	25.5	9.7	85.3	17.4	36.1	62.5	6.8	43.8	3573	36435
NK Brand NX10701-512Z	107	C250	1,2,3,4	38.1	26.8	10.3*	83.4	21.0	39.4	59.9	6.9	39.3	3433	35326	38.0	26.4	10.0*	84.9	17.3	35.6	60.8	7.3	44.8	3652	35585
NK Brand NK0886-3120	108	C250	1,2,4	38.0	25.8	9.7	84.3	18.6	39.3	59.6	7.5	41.2	3482	33605	40.0	23.9	9.5	85.2	15.4	38.8	59.9	7.6	45.0	3546	33785
RENK RK110DG V12P	106	P250	1,2	38.4	25.7	9.8	84.2	18.8	37.2	58.6	7.3	41.5	3491	34232	37.6	27.2	10.2*	85.2	17.3	35.3	59.8	7.9	43.4	3572	36627
RENK RK128H	106	P500	1,2,4	38.0	25.2	9.4	84.8	18.3	35.8	59.5	7.5	42.3	3533	32791	35.6	27.3	9.7	85.3	19.1	37.8	59.4	7.8	40.9	3555	32808
RENK RK17RR	108	P250	1	39.3	26.0	10.0	85.8	17.2	35.6	60.2	7.2	42.3	3593	35342	38.9	25.8	10.0*	87.0	13.4	33.0	60.6	7.5	47.0	3695	35418
RENK RK807 SSTX	111	P500	1,2,3,4	35.1	29.7	10.3*	84.1	20.3	39.2	60.0	7.4	38.3	3472	35713	35.2	28.6	10.0*	85.8	18.7	36.5	61.1	7.9	42.6	3596	36065
AVERAGE				38.0	26.5	10.0	84.5	18.9	37.7	59.8	7.3	41.0	3508	34869	38.1	26.3	10.0	85.7	16.9	35.7	60.4	7.6	44.2	3600	35762
HIGHEST				43.9	30.0	10.7	86.2	21.0	40.4	62.8	7.6	43.0	3610	39481	45.0	29.9	10.5	87.0	20.3	38.8	63.8	7.9	48.9	3707	38148
LOWEST				34.2	19.4	8.5	82.7	17.2	35.6	57.3	6.7	38.3	3383	29701	32.9	21.2	9.5	83.8	13.4	31.4	57.2	6.8	40.9	3475	32808
CV (%)				5.9	6.7	7.1	2.3	8.0	7.1	2.9	5.3	7.4	4	7	5.9	4.5	5.2	1.9	6.4	6.5	2.4	4.0	6.5	3	6
LSD (5%)				1.5	1.2	0.5	1.3	1.0	1.8	1.2	0.3	2.0	84	1548	2.7	1.4	0.6	1.9	1.3	2.7	1.7	0.4	3.4	124	2599

		Late - TRIAL AVERAGE												Huron - Late											
2 Year Averages 2020 - 2019		YIELD						% QUALITY						YIELD						% QUALITY					
BRAND / HYBRID	RM	TRT	TRAIT	%DM	GTIA	DTIA	%STD	IVD	ADF	NDF	NDFD	CP	STR	MILK 2006	MK/A	MK/A	IVD	ADF	NDF	NDFD	CP	STR	MILK 2006	MKT	MK/A
DYNAGRO D47SS29	107	P500	1,2,3,4	41.9	28.1	11.5**	81.8	20.8	39.4	58.3	7.4	37.3	3286	39468	41.3	27.5	11.2**	84.5	16.9	35.3	56.2	7.7	43.3	3510	40286
GOLDENHARVEST G69Y24-3220f	109	C250	1,2,4,6,16	36.6	30.7	11.3*	82.6	21.0	40.9	57.5	7.1	36.2	3351	36480	36.0	29.8	10.7*	83.7	18.3	37.7	57.4	7.2	40.4	3441	36792
INTEGRA 5500 STP	105	P500	1,2,3,4	42.3	25.3	10.5	81.1	22.5	42.2	55.8	7.5	35.6	3252	33234	40.5	25.0	10.0	82.5	20.2	39.2	56.5	7.5	39.0	3362	33673
AVERAGE				40.2	28.0	11.1	81.8	21.4	40.8	56.5	7.3	36.4	3300	36721	39.3	27.4	10.6	83.6	18.5	37.4	56.7	7.5	40.9	3437	36917
HIGHEST				42.3	30.7	11.5	82.6	22.5	42.2	57.5	7.5	37.3	3351	36468	41.3	29.8	11.2	84.5	20.2	39.2	57.4	7.7	43.3	3510	40286
LOWEST				36.6	25.3	10.5	81.1	20.8	39.4	55.8	7.1	35.6	3252	33234	36.0	25.0	10.0	82.5	16.9	35.3	56.2	7.2	39.0	3362	33673
CV (%)				7.2	6.8	8.8	2.8	9.1	7.9	3.5	5.4	7.6	4	6	7.0	5.9	7.3	2.3	8.2	7.1	3.3	4.8	6.3	4	6
LSD (5%)				1.5	1.0	0.5	1.3	0.9	1.6	1.1	0.2	1.6	75	1202	2.2	1.3	0.6	1.6	1.2	2.1	1.6	0.3	2.3	103	1814

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

2020																							
Ingham - Late						Ottawa - Late																	
BRAND / HYBRID	RM	TRT	TRAIT	YIELD			% QUALITY			YIELD			% QUALITY			MILK 2006							
				%DMI	G/TA	DT/A	%STD	IND	ADF	NDF	NDFD	CP	STR	%DMI	G/TA	DT/A	%STD	IND	ADF	NDF	NDFD	CP	STR
AG ARMOUR AA11010	110	C250	1,2,6	43.5	16.4	7.1	85.9	19.1	35.9	60.6	7.8	41.1	43.2	20.7	9.0	82.6	24.1	43.1	56.7	7.1	34.0	32.6	27427
DAIRYLAND SEED HIF-4545Q	105	P250	1,2,3,4	36.1	25.9	9.3 *	86.6	19.2	37.3	64.0	7.2	41.3	35.9	34.6	12.7 **	83.4	22.7	42.0	60.5	6.4	35.3	3385	43113
DAIRYLAND SEED HIF-4999Q	109	P250	1,2,3,4	38.1	25.1	9.4 **	87.5	17.6	36.5	65.6	7.6	41.3	36.98	34.694	34.9	84.7	18.2	37.8	59.4	7.3	38.9	3494	41616
DYNAGRO D47SS29	107	P500	1,2,3,4	38.5	21.8	8.1	86.3	16.6	35.0	60.8	7.6	42.8	36.43	29.603	36.9	82.0	19.5	37.8	55.7	6.8	40.9	3345	37480
GOLDEN HARVEST G90771-5122	107	C250	1,2,3,4	38.6	24.5	9.2 *	85.1	19.1	39.8	62.4	7.1	39.1	35.36	32.385	40.8	82.3	24.0	43.1	58.9	6.1	37.5	3316	39996
GOLDEN HARVEST G08M20-5122	108	C250	1,2,3,4	37.7	23.2	8.6	85.7	18.1	38.9	63.3	7.2	39.5	35.81	30.796	35.8	82.9	20.0	38.8	58.4	7.2	39.3	3385	43187
GOLDEN HARVEST G09Y24-3220F	109	C250	1,2,4,6,16	33.1	26.0	8.5	85.5	18.8	38.8	62.6	7.2	38.4	35.69	30.328	35.2	82.6	20.7	39.7	58.2	6.5	38.1	3361	39319
GOLDEN HARVEST G10L16-3330A	110	C250	1,2,4,6,16	35.5	24.8	8.8 *	84.9	18.6	37.0	59.1	7.1	40.8	35.46	31.223	37.3	83.1	20.3	40.4	58.1	6.7	39.1	3383	38543
INTEGRA 5529	105	P500	1,2	43.7	21.5	9.0 *	85.3	18.6	37.7	61.0	6.9	41.8	35.66	32.096	40.0	82.6	21.6	39.5	56.0	7.1	38.9	3364	39260
INTEGRA 5500 STP	105	P500	1,2,3,4	37.3	22.7	8.5	83.9	19.8	39.1	58.6	7.2	37.4	34.73	29.451	40.7	80.4	24.2	44.2	55.6	7.0	35.4	3194	34952
LEGACY SEEDS LC561-20 SSX	105	P500	1,2,3,4	40.7	20.8	8.5	86.7	18.6	35.4	62.4	7.8	42.2	36.61	30.961	37.5	83.5	19.9	38.1	59.1	6.9	36.9	3385	39726
LG SEEDS LG57C335TXRB	107	P500	1,2,3,4	32.7	25.0	8.1	85.1	17.5	35.6	61.2	7.5	42.0	35.66	30.131	34.6	82.0	19.6	38.0	56.6	6.7	38.7	3340	38466
LOCAL SEED LC1807 TC	106	P500	1,2,6	41.7	20.0	8.3	84.3	18.8	39.3	60.1	7.7	39.8	34.95	28.864	38.5	81.6	19.9	37.9	55.8	7.0	39.0	3313	39555
LOCAL SEED LC0708 VT2PRIB	107	P500	1,2	40.8	20.5	8.5	85.7	18.3	36.5	60.8	7.8	41.8	35.98	30.605	37.4	82.0	20.7	37.8	53.9	7.3	41.6	3343	36183
LOCAL SEED LC0999 VT2PRIB	109	P500	1,2	37.2	22.7	8.4	84.7	19.5	38.8	60.4	7.0	38.7	35.22	29.579	34.9	81.1	21.0	40.8	59.5	6.3	37.6	3266	33562
NK Brand NX10701-5122	107	C250	1,2,3,4	36.5	25.3	9.3 *	83.2	22.1	41.2	61.9	6.6	37.8	34.23	31.663	39.8	82.2	23.5	41.4	57.0	6.7	35.4	3323	38732
NK Brand NK0886-3120	108	C250	1,2,4	37.4	22.6	8.2	85.4	19.7	38.0	61.7	7.6	40.1	35.68	29.302	36.5	82.3	20.8	41.2	57.2	7.4	38.5	3331	37427
RENK RK710DG/VT2P	106	P250	1,2	40.1	20.0	8.1	84.8	18.1	35.5	58.7	7.3	42.1	35.50	28.683	37.4	82.6	21.1	40.8	57.3	6.7	38.9	3351	37486
RENK RK726H	106	P500	1,2,4	39.2	19.5	7.4	83.8	17.3	34.5	61.0	7.8	43.1	34.85	25.455	39.4	85.3	18.4	35.0	58.1	7.0	42.9	3559	40111
RENK RK77RR	108	P250	1	41.7	20.9	8.4	86.9	16.4	34.0	61.3	7.4	43.9	36.84	30.967	37.2	83.6	21.9	39.8	58.8	6.7	36.0	3401	39642
RENK RK07SSTX	111	P500	1,2,3,4	35.7	25.8	9.1 *	84.1	21.0	41.5	61.7	7.3	35.0	34.68	31.487	34.4	82.5	21.1	39.8	57.2	7.2	37.4	3351	39588
AVERAGE				38.4	22.6	8.5	85.3	18.7	37.4	61.4	7.4	40.5	35.66	30.494	37.5	82.6	21.1	39.9	57.5	6.9	38.1	3358	38351
HIGHEST				43.7	26.0	9.4	87.5	22.1	41.5	65.6	7.8	43.9	36.98	35.949	43.2	85.3	24.2	44.2	60.5	7.4	42.9	3559	43187
LOWEST				32.7	16.4	7.1	83.2	16.4	34.0	56.6	6.6	35.0	34.23	25.455	34.2	80.4	18.2	35.0	53.9	6.1	34.0	3194	27427
CV (%)				5.7	8.6	6.3	2.2	6.7	7.3	3.2	5.1	7.0	4	6	5.6	2.7	6.7	6.0	2.4	6.4	6.5	4	7
LSD (5%)				2.6	2.3	0.6	2.3	1.5	3.2	2.3	0.4	3.4	149	2324	2.5	2.6	1.7	2.8	1.6	0.5	2.9	165	3138

2 Year Averages 2020 - 2019																					
Ingham - Late						Ottawa - Late															
BRAND / HYBRID	RM	TRT	TRAIT	YIELD			% QUALITY			YIELD			% QUALITY			MILK 2006					
				%DMI	G/TA	DT/A	%STD	IND	ADF	NDF	NDFD	CP	STR	%DMI	G/TA	DT/A	%STD	IND	ADF	NDF	NDFD
DYNAGRO D47SS29	107	P500	1,2,3,4	42.4	28.7	11.9 **	79.0	24.7	43.5	56.4	7.2	31.4	30.82	36.651							
GOLDEN HARVEST G09Y24-3220F	109	C250	1,2,4,6,16	37.2	31.7	11.8 *	81.6	23.7	44.0	57.6	7.0	32.1	32.62	40.129							
INTEGRA 5500 STP	105	P500	1,2,3,4	44.1	25.7	11.0	79.7	24.7	45.3	55.2	7.4	32.3	31.43	32.796							
AVERAGE				41.2	28.7	11.6	80.1	24.4	44.3	56.4	7.2	31.9	31.62	36.625							
HIGHEST				44.1	31.7	11.9	81.6	24.7	45.3	57.6	7.4	32.3	32.62	40.129							
LOWEST				37.2	25.7	11.0	79.0	23.7	43.5	55.2	7.0	31.4	30.82	32.796							
CV (%)				6.9	6.0	7.9	3.5	7.8	7.6	3.5	5.9	6.8	5	6							
LSD (5%)				2.2	1.5	0.8	2.4	1.4	2.6	1.6	0.3	2.1	133	2004							

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

2020		TRIAL AVERAGE										Iosco - Early													
BRAND / HYBRID	RM	TRT	TRAIT	YIELD			% QUALITY			IVD	ADF	NDF	NDFD	YIELD			% QUALITY			IVD	ADF	NDF	NDFD	MILK 2006	
				%DM	GTIA	DTIA	%STD	%DM	GTIA					DTIA	%STD	%DM	GTIA	DTIA	%STD					MKLT	MK/A
BLUE RIVER 14A91	82	MXL	Conv.	47.3	15.9	7.5	84.5	19.8	40.8	61.0	8.6	39.2	3465	20687	50.3	12.4	6.4	85.3	21.4	40.5	63.6	9.1	35.6	3540	22550
BLUE RIVER 22K32	86	MXL	Conv.	40.8	21.2	8.4	84.0	19.9	38.0	58.9	8.4	36.8	3456	29076	46.4	17.3	8.0	84.8	19.9	39.4	61.4	8.8	34.8	3506	28116
BLUE RIVER 26B78	88	MXL	Conv.	40.7	21.9	8.7	85.5	18.9	35.8	60.8	8.4	42.4	3588	31995	46.5	17.7	8.2	86.5	17.3	34.1	62.9	8.8	43.8	3661	32282
DAIRYLAND SEED HIF-3044Q	90	P250	1,2,3,4	41.6	20.5	8.7	84.8	19.8	37.7	59.7	8.0	41.9	3517	30881	44.4	17.2	8.0	85.3	19.8	38.8	62.0	8.5	40.1	3554	28741
DAIRYLAND SEED DS-3162Q	91	P250	1,2,3,4	39.7	22.2	8.6	82.6	23.2	39.8	59.7	7.9	36.7	3339	29440	43.8	18.6	8.1	84.2	24.5	39.8	62.0	8.1	33.3	3419	27679
DAIRYLAND SEED DS-3715AM	97	P250	1,3,4	40.7	22.5	9.1*	85.1	20.2	35.9	58.6	7.6	42.1	3546	31410	44.5	18.4	8.4	86.6	19.1	34.2	63.1	8.0	41.6	3666	30782
DAIRYLAND SEED HIF-3197RA	97	P250	1,2,3,4	41.5	23.4	9.6**	83.9	21.1	40.7	61.3	8.2	37.4	3436	31719	45.2	19.7	8.9*	84.8	20.9	40.1	63.7	8.6	36.3	3515	31309
GOLDEN HARVEST G6A1V51-3110A	91	C250	1,2,4,6,16	39.4	23.0	9.0*	83.5	17.7	37.2	59.0	8.0	40.0	3426	32366	44.3	18.6	8.5	85.7	17.3	40.2	62.2	8.1	33.4	3534	31341
GOLDEN HARVEST G6A1Y04-3220A	92	C250	1,2,4,6,16	35.8	26.6	9.2*	82.3	22.6	41.9	59.1	8.3	36.1	3332	30773	42.0	22.3	9.4**	83.7	21.0	40.1	62.3	8.4	37.1	3457	32367
GOLDEN HARVEST G6A5D32-3220	95	C250	1,2,4,6	37.6	21.0	7.7	83.8	20.2	37.1	58.0	8.4	39.4	3447	26344	39.9	16.2	6.4	85.3	17.9	34.9	61.3	8.7	42.2	3554	22803
LEGACY SEEDS LC413-203110A	91	C250	1,2,4,6	37.1	19.4	6.8	83.8	21.5	39.5	59.0	8.4	38.8	3437	23267	42.9	13.1	5.6	85.2	19.2	36.6	61.9	8.4	40.6	3567	19905
LEGACY SEEDS LC-3517 VT2P	95	P250	1,2	38.9	23.5	8.9	84.2	20.7	39.7	60.1	8.3	38.8	3466	30792	43.9	19.0	8.3	84.8	21.9	41.1	62.9	8.5	36.6	3509	29223
LG SEEDS LG44C27V2RIB	94	P500	1,2	41.1	22.3	9.0*	85.2	18.8	36.7	60.9	8.0	40.7	3541	32400	46.0	17.3	8.1	87.0	17.5	35.6	63.4	8.7	39.0	3667	29590
LOCAL SEED LC86075222EZ	86	P500	1,2,3,4,6	41.7	21.6	8.9	83.5	20.8	39.0	58.6	8.4	38.7	3425	31079	47.0	18.4	8.7	84.7	19.9	38.1	61.7	8.6	38.7	3526	30562
LOCAL SEED LC9108 VT2PRIB	91	P500	1,2	43.6	21.1	9.0*	84.1	21.0	39.2	59.4	8.1	39.7	3466	30254	49.3	17.4	8.6	84.6	21.6	40.4	61.9	8.7	38.7	3503	28329
LOCAL SEED ZS95985222EZ	95	P500	1,2,3,4,6	35.0	25.5	8.7	83.0	20.9	39.6	60.8	8.2	37.5	3396	30567	41.3	20.7	8.6	85.2	19.4	37.9	63.9	8.5	37.8	3558	30701
LOCAL SEED ZS97963220EZ	97	P500	1,2,4,6	36.5	22.1	8.4	82.5	21.5	38.1	56.1	8.6	38.1	3369	26764	38.6	17.3	7.3	83.7	22.3	40.7	60.0	9.0	33.7	3450	23769
AVERAGE				39.9	22.0	8.6	83.9	20.5	38.7	59.5	8.2	39.2	3449	29707	44.5	17.7	8.0	85.1	20.0	38.4	62.4	8.6	37.7	3542	28238
HIGHEST				47.3	26.6	9.6	85.5	23.2	41.9	61.3	8.6	42.4	3568	32400	50.3	22.3	9.4	87.0	24.5	41.1	63.9	9.1	43.8	3667	32367
LOWEST				35.0	15.9	6.8	82.3	17.7	35.8	56.1	7.6	36.1	3332	23267	38.6	12.4	5.6	83.7	17.3	34.1	60.0	8.0	33.3	3419	19905
CV (%)				6.6	6.3	8.4	2.5	8.4	7.7	3.5	4.5	7.3	4	7	6.0	6.4	6.8	2.2	7.4	6.7	2.9	4.3	5.8	3	6
LSD (5%)				2.2	1.2	0.6	1.7	1.4	2.5	1.7	0.3	2.4	105	1605	3.1	1.3	0.6	2.2	1.8	3.1	2.2	0.4	2.6	130	1847

2 Year Averages 2020 - 2019		TRIAL AVERAGE										Iosco - Early													
BRAND / HYBRID	RM	TRT	TRAIT	YIELD			% QUALITY			IVD	ADF	NDF	NDFD	YIELD			% QUALITY			IVD	ADF	NDF	NDFD	MILK 2006	
				%DM	GTIA	DTIA	%STD	%DM	GTIA					DTIA	%STD	%DM	GTIA	DTIA	%STD					MKLT	MK/A
DAIRYLAND SEED DS-3715AM	97	P250	1,3,4	25.0	25.0	25.0	83.9	19.3	35.8	58.9	7.8	41.5	3430	34719	24.3	24.3	24.3	84.4	19.5	35.8	57.6	7.9	41.0		
DAIRYLAND SEED HIF-3197RA	97	P250	1,2,3,4	25.5	25.5	25.5	82.6	21.3	40.1	57.1	8.3	36.1	3309	41661	24.3	24.3	24.3	82.7	21.0	39.8	57.4	8.4	36.8		
GOLDEN HARVEST G6A5D32-3220	95	C250	1,2,4,6	23.0	23.0	23.0	83.7	18.6	35.8	58.1	8.4	40.9	3327	36868	21.7	21.7	21.7	85.0	16.6	33.0	58.0	8.5	44.5		
LG SEEDS LG44C27V2RIB	94	P500	1,2	24.2	24.2	24.2	84.0	19.1	37.4	57.2	8.0	39.6	3363	40869	22.6	22.6	22.6	85.3	18.2	36.2	58.0	8.3	39.9		
LOCAL SEED ZS95985222EZ	95	P500	1,2,3,4,6	26.7	26.7	26.7	82.2	19.6	39.3	58.5	8.2	36.7	3275	33028	25.8	25.8	25.8	82.7	18.5	37.6	58.8	8.4	38.6		
AVERAGE				24.9	24.9	24.9	83.3	19.6	37.7	58.6	8.1	39.0	3341	37409	23.4	23.4	23.4	83.9	18.7	36.5	58.9	8.3	40.1		
HIGHEST				26.7	26.7	26.7	84.0	21.3	40.1	57.2	8.4	41.5	3430	41661	25.8	25.8	25.8	85.3	21.0	39.8	58.0	8.5	44.5		
LOWEST				23.0	23.0	23.0	82.2	18.6	35.8	55.1	7.8	36.1	3275	33028	21.7	21.7	21.7	82.7	16.6	33.0	55.8	7.9	36.8		
CV (%)				6.1	6.1	6.1	2.6	8.8	8.0	3.3	4.7	7.9	0	0	5.3	5.3	5.3	2.3	8.4	7.2	2.9	4.2	7.5		
LSD (5%)				0.7	0.7	0.7	1.2	0.9	1.6	1.0	0.2	1.6	0	0	0.9	0.9	0.9	1.6	1.4	2.3	1.4	0.3	2.4		

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

Osceola - Early										Presque Isle - Early																			
YIELD					% QUALITY					MILK 2006					YIELD					% QUALITY					MILK 2006				
BRAND / HYBRID	RM	TRT	TRAIT	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MK/A				
BLUE RIVER 14A91	82	MXL	Conv.												44.3	19.4	8.6		83.6	18.1	41.1	58.4	8.2	42.7	3391	29623			
BLUE RIVER 22K32	86	MXL	Conv.												35.1	25.2	8.8		83.2	19.8	36.7	56.4	8.0	42.7	3407	30106			
BLUE RIVER 26B78	88	MXL	Conv.												34.9	26.2	9.1		84.5	20.6	37.6	58.8	8.0	41.1	3475	31709			
DAIRYLAND SEED HIDF-3044Q	90	P250	1,2,3,4												38.9	23.9	9.4		84.4	19.8	36.7	57.3	7.6	43.7	3480	32622			
DAIRYLAND SEED DS-3162Q	91	P250	1,2,3,4												35.7	25.9	9.2		81.0	22.0	39.7	55.5	7.6	40.0	3259	31200			
DAIRYLAND SEED DS-3715AM	97	P250	1,3,4												36.8	26.6	9.7		83.6	21.3	37.5	56.2	7.1	42.6	3427	32038			
DAIRYLAND SEED HIDF-3197RA	97	P250	1,2,3,4												37.7	27.1	10.3		83.0	21.3	41.3	58.9	7.7	38.5	3388	32128			
GOLDEN HARVEST 091V51-3110F	91	C250	1,2,4,6,16												34.4	27.4	9.5		81.4	18.2	34.1	55.8	7.9	46.6	3318	33391			
GOLDEN HARVEST 090Y04-3220F	92	C250	1,2,4,6,16												29.6	30.9	9.1		80.8	24.2	43.8	56.0	8.1	35.0	3207	29180			
GOLDEN HARVEST 095D32-3220	95	C250	1,2,4,6												35.2	25.7	9.0		82.3	22.6	39.2	54.6	8.2	36.7	3310	29885			
LEGACY SEEDS LC413-20-3110A	91	C250	1,2,4,6												31.3	25.8	8.1		82.4	23.8	42.5	56.1	8.4	37.1	3307	26660			
LEGACY SEEDS LC-3517 VT2P	95	P250	1,2												34.0	28.0	9.5		83.7	19.6	38.2	57.3	8.1	41.0	3423	32362			
LG SEEDS LG44C27V2RIB	94	P500	1,2												36.1	27.3	9.9		83.4	20.1	37.8	58.4	7.3	42.4	3416	35211			
LOCAL SEED LC8607-522EZ	86	P500	1,2,3,4,6												36.3	24.9	9.1		82.2	21.8	40.0	55.6	8.3	36.8	3324	31596			
LOCAL SEED LC9108-VT2PRB	91	P500	1,2												38.0	24.8	9.4		83.7	20.5	37.9	57.0	7.5	42.6	3429	32179			
LOCAL SEED ZS9598-522EZ	95	P500	1,2,3,4,6												28.7	30.2	8.7		80.9	22.5	41.3	57.6	7.9	37.3	3235	30433			
LOCAL SEED ZS9796-322IEZ	97	P500	1,2,4,6												34.4	27.0	9.4		81.2	20.8	37.5	52.3	8.1	42.5	3287	29759			
AVERAGE															35.4	26.2	9.2		82.7	21.0	39.0	56.6	7.9	40.7	3356	31175			
HIGHEST															44.3	30.9	10.3		84.5	24.2	43.8	58.9	8.4	46.6	3480	35211			
LOWEST															28.7	19.4	8.1		80.8	18.1	34.1	52.3	7.1	35.0	3207	26630			
CV (%)															6.9	5.6	7.6		2.7	6.6	6.6	3.1	4.5	7.2	4	7			
LSD (5%)															2.9	1.7	0.8		2.6	1.6	3.1	2.1	0.4	3.5	169	2679			

Osceola - Early										Presque Isle - Early																			
YIELD					% QUALITY					MILK 2006					YIELD					% QUALITY					MILK 2006				
BRAND / HYBRID	RM	TRT	TRAIT	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFD	CP	STR	MK/A				
DAIRYLAND SEED DS-3715AM	97	P250	1,3,4												41.2	25.7	10.6		83.5	19.1	35.8	56.3	7.6	42.0	3430	34719			
DAIRYLAND SEED HIDF-3197RA	97	P250	1,2,3,4												47.8	26.7	12.9		82.6	21.6	40.5	56.9	8.2	35.5	3309	41561			
GOLDEN HARVEST 095D32-3220	95	C250	1,2,4,6												45.5	24.3	11.1		82.3	20.5	38.6	54.2	8.2	37.2	3327	36668			
LG SEEDS LG44C27V2RIB	94	P500	1,2												46.1	25.9	12.0		82.7	20.1	38.6	56.4	7.8	39.4	3363	40889			
LOCAL SEED ZS9598-522EZ	95	P500	1,2,3,4,6												36.0	27.5	9.7		81.6	20.8	41.1	56.1	8.0	34.8	3275	33028			
AVERAGE															44.1	25.9	11.4		82.4	20.3	38.6	55.6	8.0	38.3	3335	37763			
HIGHEST															47.9	27.5	12.9		83.5	21.6	41.1	56.9	8.2	42.0	3430	41561			
LOWEST															36.0	24.3	9.7		81.6	19.1	35.8	53.9	7.6	34.8	3275	33028			
CV (%)															7.1	5.5	8.3		2.8	6.7	7.2	2.8	5.0	6.6	4	7			
LSD (5%)															2.4	1.2	0.7		1.9	1.2	2.3	1.3	0.3	2.2	123	2084			

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

2020			TRIAL AVERAGE										Iosco - Late												
BRAND / HYBRID	RM	TRT	TRAIT	YIELD			% QUALITY			Iosco - Late			YIELD			% QUALITY			MILK 2006						
				%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/A	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR
DAIRYLAND SEED HIDF-3099RA	99	P250	1,2,3,4	34.4	26.5	9.0	82.0	23.5	41.7	58.5	8.5	30.5	3163	28828	39.1	20.2	8.2 *	84.1	22.0	41.5	61.8	8.9	35.2	3475	28488
DYNAGRO D39/C40	99	P250	1,2	40.3	23.0	9.0	84.5	20.8	39.9	61.3	8.4	37.5	3492	32114	43.6	17.5	7.6	85.9	20.9	39.7	64.4	9.0	36.0	3586	27167
DYNAGRO D43SS81	103	P500	1,2,3,4	37.0	23.9	8.6	82.3	22.7	42.4	59.6	7.8	36.2	3333	29590	42.0	19.5	8.1 *	85.1	20.7	39.1	61.9	8.0	39.2	3553	28782
LEGACY SEEDS LC484-20 SSX	98	P500	1,2,3,4	35.8	25.2	8.6	82.9	22.9	41.4	59.1	8.6	30.3	3292	27554	41.7	19.3	7.9	85.1	18.4	36.2	62.1	9.1	30.4	3397	25160
LEGACY SEEDS LC-5217 VT2P	103	P250	1,2	36.7	24.6	8.8	82.7	21.9	40.4	60.7	8.2	37.1	3372	31929	40.8	20.4	8.2 *	85.0	20.8	40.5	63.0	8.4	35.4	3531	30186
LG SEEDS LG6605VT2RIB	100	P500	1,2	38.6	24.5	9.2 *	84.1	21.7	41.9	61.3	8.5	34.6	3442	29916	42.3	18.8	7.9	85.6	22.1	42.0	63.8	8.6	33.6	3551	25939
LOCAL SEED LC9888 VT2PRIB	98	P500	1,2	43.7	20.2	8.6	84.0	19.7	37.6	59.2	9.1	38.1	3469	30634	48.4	15.9	7.7	86.6	17.8	35.1	61.8	9.5	41.7	3661	28273
LOCAL SEED ZS0396 522EZ	103	P500	1,2,3,4,6	39.2	22.6	8.6	80.8	23.6	45.1	59.3	8.7	29.7	3197	27421	42.3	16.3	6.8	81.6	21.7	43.8	61.5	8.9	29.1	3255	21953
LOCAL SEED LC488 VT2PRIB	104	P500	1,2	39.5	25.4	9.8 **	82.8	23.1	40.4	60.4	7.9	36.5	3355	31704	41.0	21.5	8.8 **	84.8	20.9	40.1	62.1	8.3	37.2	3526	30916
AVERAGE				38.3	24.0	8.9	82.9	22.2	41.2	59.9	8.4	34.5	3343	29888	42.3	18.8	7.9	84.9	20.6	39.8	62.5	8.7	35.3	3504	27429
HIGHEST				43.7	26.5	9.8	84.5	23.6	45.1	61.3	9.1	38.1	3482	32114	48.4	21.5	8.8	86.6	22.1	43.8	64.4	9.5	41.7	3661	30916
LOWEST				34.4	20.2	8.6	80.8	19.7	37.6	58.5	7.8	29.7	3153	27421	39.1	15.9	6.8	81.6	17.8	35.1	61.5	8.0	29.1	3255	21953
CV (%)				5.5	6.1	9.1	3.3	8.4	7.7	3.1	4.3	8.4	5	6	5.1	8.9	8.4	2.3	6.5	6.1	2.7	4.0	7.9	4	7
LSD (5%)				1.8	1.2	0.7	2.3	1.6	2.7	1.5	0.3	2.4	135	1508	2.6	2.1	0.8	2.3	1.6	2.9	2.0	0.4	3.4	166	2201

2 Year Averages 2020 - 2019			TRIAL AVERAGE										Iosco - Late												
BRAND / HYBRID	RM	TRT	TRAIT	YIELD			% QUALITY			Iosco - Late			YIELD			% QUALITY			MILK 2006						
				%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/A	MK/A	%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR
DAIRYLAND SEED HIDF-3099RA	99	P250	1,2,3,4	34.5	27.9	10.0	81.7	22.3	40.3	55.4	8.5	33.5	3059	31958	26.4	26.4		82.8	20.7	39.3	55.9	8.6	37.9		
LOCAL SEED LC9888 VT2PRIB	98	P500	1,2	42.9	22.3	10.1 **	83.2	18.7	36.8	55.9	9.0	38.8	3315	35157	20.7	20.7		84.5	17.1	34.4	56.6	9.1	42.2		
AVERAGE				38.7	25.1	10.1	82.5	20.5	38.6	55.7	8.8	36.2	3187	33258	23.5	23.5		83.7	18.9	36.8	56.3	8.9	40.1		
HIGHEST				42.9	27.9	10.1	83.2	22.3	40.3	55.9	9.0	38.8	3315	35157	26.4	26.4		84.5	20.7	39.3	56.6	9.1	42.2		
LOWEST				34.5	22.3	10.0	81.7	18.7	36.8	55.4	8.5	33.5	3059	31958	20.7	20.7		82.8	17.1	34.4	55.9	8.6	37.9		
CV (%)				0.0	7.2	0.0	2.8	8.0	7.0	3.0	4.1	8.3	0	0	8.2	8.2		2.2	7.5	6.5	2.7	3.8	7.9		
LSD (5%)				0.0	0.9	0.0	1.2	0.9	1.5	0.9	0.2	1.6	0	0	1.4	1.4		1.5	1.3	2.1	1.4	0.3	2.4		

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

2020										Presque Isle - Late														
Oceola - Late					YIELD					% QUALITY					MILK 2006									
BRAND / HYBRID	RM	TRT	TRAIT	%DM	GT/A	DT/A	%STD	IND	ADF	NDF	NDFFD	CP	STR	MK/A	MK/A	MK/A	IND	ADF	NDF	NDFFD	CP	STR	MK/T	MK/A
DAIRYLAND SEED HIF-3099RA	99	P250	1,2,3,4														79.9	25.0	41.9	55.2	8.1	25.8	2832	29169
DYNAGRO D39V/C40	99	P250	1,2														83.2	20.8	40.1	58.2	7.8	36.9	3379	37060
DYNAGRO D43SS81	103	P500	1,2,3,4														79.4	24.7	45.7	57.3	7.7	33.2	3112	30098
LEGACY SEEDS LC484-20 S5X	98	P500	1,2,3,4														80.6	27.4	46.7	56.1	8.1	30.2	3168	29949
LEGACY SEEDS LC-5217 VT2P	103	P250	1,2														80.4	23.0	40.4	58.5	8.0	38.8	3213	32472
LG SEEDS LG505V/T2RIB	100	P500	1,2														82.7	21.2	41.9	58.8	8.4	35.6	3332	33893
LOCAL SEED LC9888 VT2PRIB	98	P500	1,2														81.5	21.6	40.2	56.5	8.8	34.5	3277	32796
LOCAL SEED ZS0398.522EZ	103	P500	1,2,3,4,6														80.1	25.5	46.5	57.1	8.6	30.4	3138	32890
LOCAL SEED LC488 VT2PRIB	104	P500	1,2														80.9	25.4	40.7	58.6	7.5	35.8	3185	32492
AVERAGE																	81.0	23.8	42.7	57.4	8.1	33.7	3182	32347
HIGHEST																	83.2	27.4	46.7	58.8	8.8	36.9	3379	37060
LOWEST																	79.4	20.8	40.1	55.2	7.5	25.8	2832	29169
CV (%)																	4.2	7.3	7.5	2.2	4.2	5.8	6	5
LSD (5%)																	4.1	2.1	3.8	1.5	0.4	2.4	219	2150

2 Year Averages 2020 - 2019										Presque Isle - Late														
Oceola - Late					YIELD					% QUALITY					MILK 2006									
BRAND / HYBRID	RM	TRT	TRAIT	%DM	GT/A	DT/A	%STD	IND	ADF	NDF	NDFFD	CP	STR	MK/A	MK/A	MK/A	IND	ADF	NDF	NDFFD	CP	STR	MK/T	MK/A
DAIRYLAND SEED HIF-3099RA	99	P250	1,2,3,4														80.7	23.9	41.3	54.8	8.5	29.2	3059	31558
LOCAL SEED LC9888 VT2PRIB	98	P500	1,2														81.9	20.2	39.3	55.2	8.9	35.3	3315	35157
AVERAGE																	81.3	22.1	40.3	55.0	8.7	32.3	3187	33258
HIGHEST																	81.9	23.9	41.3	55.2	8.9	35.3	3315	35157
LOWEST																	80.7	20.2	39.3	54.8	8.5	29.2	3059	31558
CV (%)																	3.3	6.7	6.8	2.5	4.3	6.7	5	6
LSD (5%)																	2.3	1.3	2.4	1.2	0.3	1.9	134	1623

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

TABLE 7E - Continued from page 37. HURON, INGHAM & OTTAWA COUNTY SILAGE TRIALS - EARLY (104 Day and Earlier) ZONE 2 - 3

2 Year Averages 2020 - 2019										Huron - Early																	
BRAND / HYBRID	RM	TRT	TRAIT	YIELD				% QUALITY				MILK 2006				% QUALITY				MILK 2006							
				%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/A	MK/T	IVD	ADF	NDF	NDFFD	CP	STR	MK/A	MK/T				
DAIRYLAND SEED DS-3715AM	97	P250	1,3,4	52.4	22.7	11.7**		83.6	20.0	38.7	58.9	7.1	41.0	3407	41165	45.2	22.2	10.2*		85.4	16.9	35.1	60.8	7.5	43.7	3527	37465
DAIRYLAND SEED HIDF-3197RA	97	P250	1,2,3,4	49.9	23.0	11.4*		83.6	20.7	39.4	58.6	7.8	40.1	3415	38865	47.0	21.9	10.2*		85.7	18.7	36.6	59.8	8.0	42.9	3566	36059
DAIRYLAND SEED HIDF-3099RA	99	P250	1,2,3,4	40.0	25.7	10.3		82.0	20.9	39.9	56.4	7.5	37.5	3311	33558	37.3	25.3	9.4		81.8	20.8	39.8	57.5	7.7	35.3	3294	31001
DAIRYLAND SEED HIDF-3802Q	102	P250	1,2,3,4	37.4	29.2	10.9		83.2	20.8	40.5	60.5	7.3	37.0	3382	36825	35.4	28.4	10.1*		83.6	18.7	38.4	61.0	7.4	39.8	3445	36290
DYNAGRO D43SS81	103	P500	1,2,3,4	42.1	24.8	10.3		83.8	20.7	40.7	59.3	7.1	38.2	3458	35866	39.4	23.8	9.3		85.2	18.2	37.3	60.6	7.4	40.5	3533	32786
GOLDEN HARVEST G04S19-3122	104	C250	1,2,3,4	39.6	27.2	10.7		82.0	22.6	43.0	57.8	7.2	34.1	3275	34071	36.9	26.7	9.5		83.6	19.4	39.7	60.3	7.2	38.6	3424	32506
INTEGRA 4810 STP	98	P500	1	44.3	24.0	10.7		80.1	25.4	46.3	57.0	8.0	30.3	3157	32572	42.0	23.7	10.1*		83.2	21.5	41.1	58.6	8.5	34.5	3378	32762
LEGACY SEEDS LC-5217 VT2P	103	P250	1,2	42.2	26.0	11.1		83.2	19.3	38.7	59.0	7.0	40.7	3409	35993	39.4	24.8	9.8*		85.1	16.8	35.9	60.6	7.3	43.3	3551	34475
LG SEEDS LG5505VT2RIB	100	P500	1,2	42.9	26.0	11.1		83.8	20.1	38.6	58.6	7.8	41.0	3385	36286	40.2	25.8	10.4**		85.3	17.5	35.5	60.5	8.0	40.7	3452	34270
AVERAGE				43.4	25.4	10.9		82.8	21.1	40.7	58.5	7.4	37.8	3356	36133	40.3	24.7	9.9		84.3	18.7	37.7	60.0	7.7	39.9	3463	34180
HIGHEST				52.4	29.2	11.7		83.8	25.4	46.3	60.5	8.0	41.0	3458	41165	47.0	28.4	10.4		85.7	21.5	41.1	61.0	8.5	43.9	3566	37465
LOWEST				37.4	22.7	10.3		80.1	19.3	38.6	56.4	7.0	30.3	3157	32572	35.4	21.9	9.3		81.8	16.8	35.1	57.5	7.2	34.5	3294	31001
CV (%)				7.9	7.0	9.8		2.9	9.3	7.9	4.0	5.8	7.6	4	7	7.1	6.5	8.6		2.7	7.6	7.1	4.1	5.4	6.3	4	7
LSD (5%)				1.7	0.9	0.5		1.3	1.0	1.6	1.3	0.2	1.6	75	1224	2.3	1.3	0.7		1.9	1.1	2.2	2.1	0.4	2.2	113	1892

2 Year Averages 2020 - 2019										Ingham - Early										Ottawa - Early									
BRAND / HYBRID	RM	TRT	TRAIT	YIELD				% QUALITY				MILK 2006				% QUALITY				MILK 2006									
				%DM	GT/A	DT/A	%STD	IVD	ADF	NDF	NDFFD	CP	STR	MK/A	MK/T	IVD	ADF	NDF	NDFFD	CP	STR	MK/A	MK/T						
DAIRYLAND SEED DS-3715AM	97	P250	1,3,4																										
DAIRYLAND SEED HIDF-3197RA	97	P250	1,2,3,4																										
DAIRYLAND SEED HIDF-3099RA	99	P250	1,2,3,4																										
DAIRYLAND SEED HIDF-3802Q	102	P250	1,2,3,4																										
DYNAGRO D43SS81	103	P500	1,2,3,4																										
GOLDEN HARVEST G04S19-3122	104	C250	1,2,3,4																										
INTEGRA 4810 STP	98	P500	1																										
LEGACY SEEDS LC-5217 VT2P	103	P250	1,2																										
LG SEEDS LG5505VT2RIB	100	P500	1,2																										
AVERAGE																													
HIGHEST																													
LOWEST																													
CV (%)																													
LSD (5%)																													

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

CORN DISEASE RESEARCH UPDATE

Martin Chilvers, Jill Check, and Adam Byrne
Department of Plant, Soil and Microbial Sciences

Identifying Tar Spot

In terms of identifying a tar spot lesion, it is relatively distinct with a hard black raised spot (1/16 – 3/4 inch diameter) that will not rub off the leaf surface. Tar spot lesions form on the top side of the leaf but will often protrude through the bottom side of the leaf. Again, this season there was some confusion with insect frass (bug poop), however these are easy to distinguish as frass will dissolve and wipe off the leaf with some water, while tar spot will not. Late season rust pustules can also take on a dark color and look similar to tar spot, but upon close inspection rust pustules erupt through the leaf leaving a torn margin, and rust spores will wipe off the leaf onto your finger. If in doubt send a sample into the MSU Plant and Pest Diagnostic Services <https://pestid.msu.edu/>. Tar spot pictures can be sent via email chilvers@msu.edu or via twitter @MartinChilvers1.

Tar Spot in 2020

The 2020 season, much like 2019 saw a slow start to tar spot disease development and generally low levels of disease and yield loss. However, there still were pockets across the state where tar spot reduced yield and resulted in lodging concerns. Some of these areas of greater concern included irrigated fields, but also rainfed fields that appear to have caught timely rainfall events. Despite the generally low levels of tar spot, the disease continued spreading across the region including into Ontario, Canada and Pennsylvania (Figure 1). The fungus (*Phyllachora maydis*) responsible for tar spot is able to overwinter on corn residue and release spores to initiate new infections. The spread of inoculum sets up the potential for significant yield losses in the future if conditions for disease are favorable, such as they were in 2018 with frequent summer rainfall events.

Tracking Tar Spot Disease Development

Plots were established in six locations across the state to track the development of tar spot for the purposes of disease modelling and improving management. The Van Buren, Branch, Ingham and Ottawa County locations were irrigated fields, while Lenawee and Montcalm were rainfed. Two hybrids with different susceptibility levels to tar spot were planted and the plots were monitored for disease development. Tar spot was first observed at the Van Buren location with one lesion being found across 10 acres on July 16, however, disease progressed rapidly at that location, with nearly all plants having some level of disease by the end of July. At other locations, disease was slower to initiate with disease generally picking up toward the end of August. The Lenawee location saw no tar spot disease development, however, other fields in that county developed some tar spot late in the season. In terms of disease severity, (i.e. the average amount of tar spot lesions on plants), the Van Buren location developed the greatest amount of tar spot. Although tar spot stroma (black spots) only covered an estimated 22% of the leaf area, it resulted in premature senescence of plants and stalk quality issues.

Fungicide Timing Study

A study was conducted at the Van Buren location to determine fungicide timings that maximize disease control. Tar spot was first detected in this irrigated field on July 16 at very low levels, with rapid increase in disease severity during August and September. Figure 2 on page 45 illustrates the amount of disease recorded on the ear leaf during the course of the season.

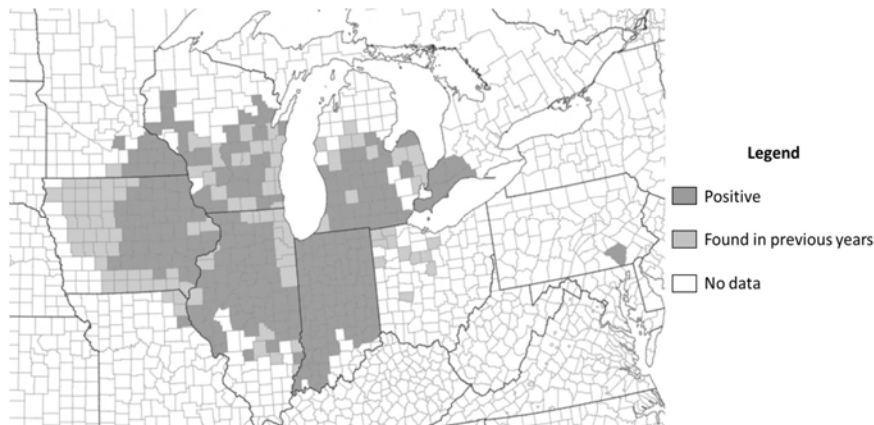


Figure 1: Map of historical tar spot confirmations in light grey and 2020 tar spot confirmations in dark grey (www.corn.ipmpipe.org).

Disease ratings on August 27 revealed that fungicide applications on July 24 (R2), July 31 (R3), August 11 (R4) and the double application on June 24 + July 17 (V8 + R1) resulted in lower levels of disease, while those applied earlier and later did not differ from the untreated check. By September 9, almost two weeks later, the amount of disease on the ear leaf had increased substantially. The only treatments significantly different from the untreated check were those applied on August 11 (R4) and 21 (R5), indicating that the residual fungicide from earlier timings was no longer effective. However, in this situation (and probably most others) delaying a fungicide until R5 allowed disease to develop earlier in the season. Such a late application will often be too late for adequate disease suppression, and will likely not see a ROI. No significant differences were found in yield between the treatments in this trial, due to variability in the field. However, another fungicide efficacy trial conducted in the same field demonstrated that all products significantly reduced tar spot development and protected between 24 to 48 bu/A when applied on July 17 (R1). Additional fungicide timing and efficacy trials will help us optimize fungicide timing and the likelihood of ROI based on disease pressure and forecast.

Managing Tar Spot

Managing virtually any disease should start with selection of the most resistant hybrids available; however, no hybrid is completely resistant, so it will be important to talk with your seed dealer in selecting the most resistant (aka tolerant) hybrids available. It should also be understood that even when using a partially resistant hybrid it is still possible to incur losses if conditions favor the disease. The same is true of fungicide use.

A fungicide applied at the most optimal timing will reduce disease and protect leaves for a couple of weeks, but it is not a silver bullet. To date the best fungicide timings appear to be those timed during early to mid-reproductive stages, and in some instances applications as late as R4. As we work with colleagues analyze data from across the region we will be updating a foliar fungicide efficacy table at the following webpage:

www.cropprotectionnetwork.org

Even with crop rotation or use of tillage, the tar spot pathogen can blow in from neighboring fields, and potentially from many miles away. Although corn-on-corn fields will be at slightly higher risk, tillage and crop rotation appear to only play a small part in managing this disease. The main drivers of tar spot development is presence of inoculum or disease (which is essential for infection), a susceptible hybrid (none are immune) and weather. Tar spot has the ability to progress rapidly within a field. It appears that once a plant is infected it takes about 10 days to 2 weeks for the tar spot structure to develop and new spores to be released. Conditions that favor disease include moderate temperatures and leaf moisture. Irrigated fields are at particular risk to disease due to increased number of leaf wetness events. We have noted higher levels of disease development in fields frequently irrigated vs those irrigated less frequently, and in fields irrigated at night vs during the day, presumably due to a longer leaf wetness period.

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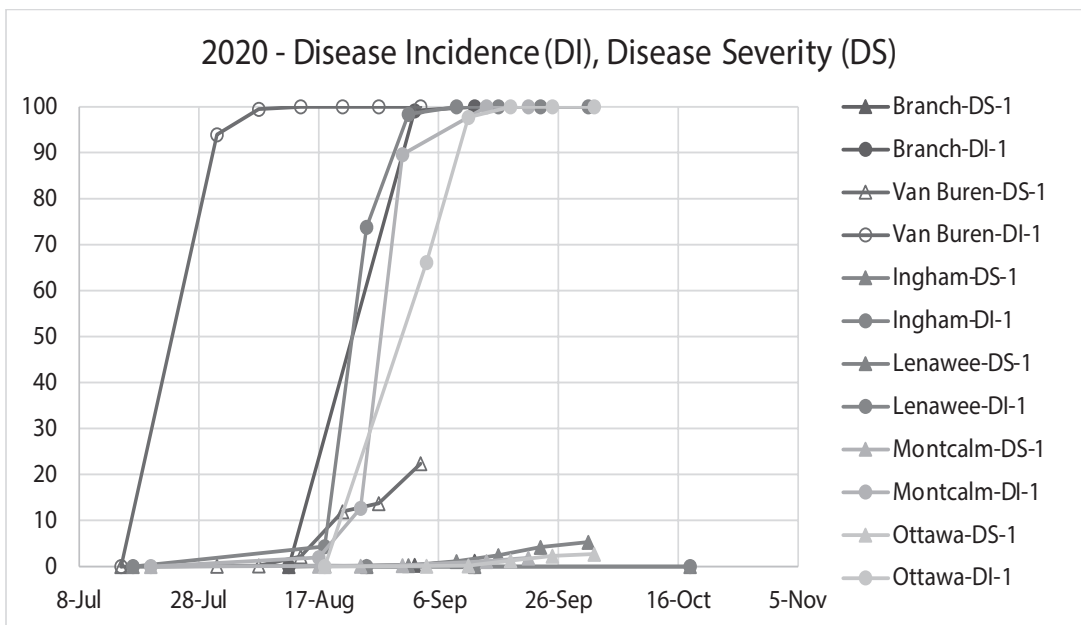


Figure 2: Number of plants infected (disease incidence - circles) and amount of tar spot stroma (black spots) on plants (disease severity - triangles) tracked over time.

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ZONE 1

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OSU NW Experiment Station, Matt Davis &
Richard Minyo Hoytville, Ohio
Kyle Huff, Coldwater
Tim Stutzman, Senica

ZONE 2

Adam Geertman, West Olive
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