

# 2020 Michigan State Wheat Performance Trials

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# 2020 Michigan State Wheat Performance Trials

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*July 31, 2020*

Fall planting conditions were variable. Three of our sites were planted in September on prevent plant ground, with the last site being planted on October 20. The early planted sites emerged quickly and reached 2-6 tillers last fall. Two sites were added: one to the south (Wood County, OH) and one to the north (Montmorency County, MI - Hillman). Heavy rainfall followed by extended ponding at Lenawee, Wood County and Gratiot caused significant damage to the trials and data were therefore not published from these locations. Sanilac County produced as much as 6-8 tillers in the fall; this, combined with high seeding rate (2.0 mil seeds per acre) and excess nitrogen uptake resulted in severe lodging pressure. Some varieties that normally do not lodge did not remain standing. The lodging data in Table 3 is taken from this location.

Heavy rainfall last fall in central MI delayed soybean and drybean harvest, resulting lower acreage of wheat being planted. Farmers in this area were evaluating if spring wheat could fill the void and provide straw and a place to spread manure in July. Spring temperatures across the state were unusually cool, which helped late planted wheat to tiller out. Several late season killing frosts in second week of May caused some leaf discoloration, but overall had little impact on yields since most of the wheat was at Feekes 5 to 6 (growing point at or just below soil surface). The weather suddenly changed to hot and dry in late June and July with eight days in a row above 90 degrees F at Mason (Figure 1). When temperatures go above 85 F grain fill slows and when it reaches 90 F grain fill is shut down and 100% of photosynthates are used to cool the plant. Some parts of MI were starting to show up on the U.S. Drought Monitor before a storm front with straight line winds came through bringing much needed rainfall, but causing some severe lodging in a few fields. 2020 brought hot and dry which shortened the grain fill period, reducing yield potential.

Overall, the quality of the wheat crop was good. There were little or no reports of vomitoxin problems and falling numbers were generally above 300. However, there were a few loads of wheat rejected in the thumb for stinking smut. Reports of wheat yields across the state have been variable ranging from the low 70's to 130 bushels per acre with sandy soils taking the biggest hit during the hot, dry period. The northern location, Hillman, did quite well with a trial average of 109.2 bushels per acre. This goes to show that high yields can be achieved even at northern climates.

Figure 1. Number of days above 90 F, 85 F and rainfall data from Michigan Automated Weather Station Network, MSU for three of the MSU Wheat Variety Trial Locations for the 2019 and 2020 growing seasons.

	2019			2020		
	Pigeon	Richville	Mason	Pigeon	Richville	Mason
Above 90 F	1	3	3	10	13	10
Above 85 F	14	12	16	30	33	30
April (in)	3.8	2.3	2.9	2.2	2.1	2.6
May (in)	2.8	5.0	3.4	3.3	3.8	4.2
June (in)	3.6	7.0	4.5	1.9	1.4	5.8
July (in)	1.9	2.4	2.3	2.8	3.2	2.1

## Choosing Varieties

Variety selection is best made using at least three years of data. Varieties selected using data across all locations and multiple years will likely perform well under a wide range of conditions; although, performance of a given variety will vary based on testing location. In selecting varieties for a specific location, it is important to identify varieties that perform well near the location where the variety will be grown. Table 1 provides information on which varieties are top performers in each of the five trial locations in 2018 through 2020. Selection and planting of two or more varieties is recommended. As an example, planting varieties that differ in flowering date can allow for staggering of management applications, specifically, fungicides to control Fusarium head blight. When selecting varieties, look at disease resistance as well as yield potential.

**Disclaimer: MSU makes no endorsement of any wheat variety or brand.**

## Experimental Design

The 2020 State Wheat Performance Trial entries were planted at 8 sites in 7 counties: Gratiot, Hillman, Ingham, Huron, Lenawee, Sanilac, Tuscola and Wood Co, OH. Appendix A (below) presents information on each of these sites. Each plot contained 6 rows with 7.5" row spacing and was planted to a length of 18 feet. Plots were trimmed to a length of 12 feet long in the spring for harvesting purposes. Sites were designed as Alpha Lattice with three replications. All seed was treated, but the chemicals and rates used varied according to the preferences of the originating organization. Seeding rates per linear foot of row were standardized to the rate that would equate with a stand of 2.0 million seeds per acre in a solid stand planted in 7.5" rows. Fall fertilizer application varied with cooperators practice. Spring nitrogen was applied as urea (90 lbs/acre actual N) at green-up and Affinity BroadSpec was used for weed control at all sites.

All sites were coordinated under high management with the exception of an additional conventionally managed trial at Tuscola County. Under high management, an additional 30 pounds of nitrogen was applied using streamer nozzles and 28% UAN. Delaro fungicide was tank mixed with herbicide and applied at Feekes 6. ProSaro fungicide was applied to control late season fungal diseases with application coinciding with the average flowering date of the trial location.

All plots within a location were harvested on a single day. Yield was calculated using the entire area of the plot including the wheel tracks between plots leading to an underestimation of yield. For data reported on a 0-9 scale 0 is the best possible score.

Seven of our experimental sites are on private farmland. We are extremely grateful to those growers for accommodating our work and all of the associated inconveniences. Funding for the high-management trial inputs was provided by the Michigan Wheat Program. Questions and comments regarding the research reported here should be directed to Dennis Pennington at [pennin34@msu.edu](mailto:pennin34@msu.edu) or (269) 832-0497. This report and previous reports, may also be accessed through the Web at <http://www.varietytrials.msu.edu/wheat>.

## Multi-Year Performance Summary

The full trial included 113 entries (51 of which were experimental lines) from 13 organizations, including Michigan State University, and data analyses were conducted using all of these entries. Attached to this narrative is a list of the names and contact information for those organizations. Each row in these tables has data for a single entry. The columns contain averages for a given trait and time period. Data for all of the entries in this trial are not presented here. However, the averages and statistical parameters in this report are based on the entire set of evaluated materials. **Comparisons among entries are only valid within a column.** Tables 1 and 2 are sorted first by grain color, and then in descending order by yield for 2020. Tables 3, 4 and 5 are sorted in alphabetic order by company and entry name. In some instances (e.g. yield), data columns to the right of the 2020 data columns are multi-year averages. Only data for entries included in all of the relevant years' tests are found here. Not all entries have been tested in all years, so the tables have several blank cells. See the section titled 'Experimental Design' for details on how the trials were conducted and for more detail on what the data in each column represents.

At the bottom of most columns in the tables is the trial average (mean), LSD (least significant difference), and CV (coefficient of variation) for data in that column. LSD values vary among traits and data sets (combinations of sites and years). Differences between the means for two entries that are greater than the LSD for that column are very likely to reflect a genuine difference between the two varieties. If the difference between two means is smaller than the LSD for that column, one should conclude that there is **no evidence that those entries are different for that trait** in the years and sites considered.

**Table 1** contains yield data. This data was acquired electronically on the plot combine at the time of harvest. Yield data is standardized to 13.5% moisture. The 2020 yield data contains the multi-site yield averages of only the high management sites and does not include the conventionally managed yield data from Tuscola County. The conventionally managed data can be found in Table 4 in the conventional vs. high management results.

**Table 2** contains test weight and percent moisture for all locations along with the overall average across locations.

**Table 3** contains data on resistance to Fusarium Head Blight (FHB, scab). The 2018 deoxynivalenol (DON, VOM) numbers are reported. 2019 samples were submitted to the lab last winter, but the samples are still being processed due to COVID-19 associated laboratory closures. Scab data were obtained from heavy disease pressure in an inoculated scab screening nursery. FHB infected grain is spread to provide inoculum and artificial misting provides disease-promoting conditions throughout the entire flowering period. 2020 grain samples will be submitted for DON analysis and will be reported later. **Septoria** and **powdery mildew** ratings were taken at the Tuscola County location from the conventionally managed plots. **Preharvest sprouting (PHS)** samples were collected from Ingham County and subjected to misting in the greenhouse for three days and rated for the degree of sprouting. PHS ratings were conducted using a 0-9 scale with 0 having no sprouting and 9 having fully emerged radicle and roots from over 80% of the spike.

The **flowering date** indicates the average number of days past January 1st that a given entry reached the point where 1/2 of its heads were flowering. **Physiological maturity** was recorded as the date when 50% of the peduncles in a plot were turning yellow. **Plant height** is reported as the distance in inches from the ground to the tip of average heads in a plot.

### **FHB Resistance Traits**

Severity: The average percent of infected spikelets in each head.

Incidence: The percent of all spikes in a plot showing infection.

FHB index: The overall infection considering severity and incidence.

DON: Levels of mycotoxin (ppm) present in grain. DON data is from the 2018 crop year.

Levels of DON and severity are the most reliable traits to be used in selecting FHB-resistant varieties.

### **High Management vs. Conventional Management Performance**

**Table 4** provides a comparison of variety performance under intensive management and conventional management practices. Data on yield, test weight, grain moisture at harvest are provided from conventional management and high management trials at Tuscola County. Conventional management received 90 pounds of N per acre only. The high management received an additional 30 pounds of N per acre applied at Feekes 6 plus Delaro fungicide at Feekes 6.0, followed by Prosaro fungicide applied at Feekes 10.5.1. The last two columns present the yield advantage of high management in bushels per acre as well as a ranking of the response. A positive number indicates a yield response to high management. A negative number indicates the higher management actually produced a lower yield. Overall means were 5.8 bushels per acre higher for the high management treatment.

### **Milling and Baking Quality**

**Table 5** contains data for milling and baking quality. Quality data are from the 2019 harvest season and prior. Data were generated by the USDA Eastern Soft Wheat Quality Laboratory in Wooster, Ohio on grain harvested from the Michigan State Variety trial each year. Flour yield is the ratio of the weight of extractable flour to the weight of milled grain, expressed as a percentage. Percent protein in flour is adjusted at 14% moisture. Softness equivalent percent is the softness of the flour, with higher values indicating softer grained wheat. For cookie diameter, a larger diameter is better. Whole grain protein (%) and whole grain hardness are being reported with 0-100, and higher values indicating harder wheat. The quality lab test weight is not identical to the test weight at harvest due to grain drying and grain cleaning prior to quality laboratory test weight evaluation. Solvent Retention Capacity (SRC) can be conducted on flour using several different solvents and reflects different characteristics of flour quality. Soft wheat flour for cookies typically have a target of 95% or less when used by the US baking industry for biscuits and crackers. Sodium carbonate SRC increases as starch damage due to milling increases. Normal values for good milling soft varieties are 68% or less. Lactic acid measures gluten strength with "weak" soft varieties having values below 85% and strong gluten soft varieties having values, typically, above 105% or 110%.

## 2020 Michigan State University Wheat Performance Trials

Appendix A. Trial Site Descriptions for 2020 MSU Wheat Performance Trials.

	FUSARIUM HEAD BLIGHT NURSERY	HURON COUNTY	Gratiot COUNTY		LENAWEE COUNTY	SANILAC COUNTY	TUSCOLA COUNTY		MASON	Montmorency
			CONV. MANAGED	HIGH MANAGED			CONV. MANAGED	HIGH MANAGED		
<b>COOPERATOR</b>	Michigan State University	Darwin Sneller	Crumbaugh Legacy Inc.		Woods Seed Farm	JGDM Farms	Stuart Bierlein		Michigan State University	Todd Ableidinger
<b>NEAREST CITY</b>	Lansing	Seabwing	St. Louis		Britton	Sandusky	Reese		Meridian TWP	Hillman
<b>PLANTING DATE</b>	October 10, 2019	October 9, 2019	October 20, 2019		September 24, 2019	September 21, 2019	October 9, 2019		October 7, 2019	September 20, 2019
<b>HARVEST DATE</b>	N/A	July 18, 2020	N/A		N/A	July 21, 2020	July 15, 2020		July 8, 2020	July 24, 2020
<b>SOIL TYPE</b>	Capac loam, 0 to 4 percent slopes & Colwood-Brookston loams	Shebeon loam, 0 to 2 percent slopes	Parkhill loam, 0 to 1 percent slopes		Lenawee silty clay loam, 0 to 1 percent slopes	Parkhill loam and clay loam, 0 to 1 percent slopes	Tappan-Londo loams, 0 to 1 percent slopes		Conover loam, 0 to 4 percent slopes	Negwegon silt loam, 2 to 6 percent slopes
<b>PRE-PLANT FERTILIZER</b>	N/A	250# 12-26-18 2.5% S	333# 6-24-24		300# 9-23-30	100# Mes-Z 80# Potash, 20# Urea	250# 13-13-21 5%S 1%B 5%M 9%Zn		297# 10-20-18-7% S	200# Potash
<b>COMMENTS</b>	Inoculated / Misted Fusarium Head Blight Screening Nursery.	Additional 30 lbs. Nitrogen and Fungicides were applied	90 lbs. Nitrogen and no Fungicides were applied		Dropped Site due to severe winter kill damage	Additional 30 lbs. Nitrogen and Fungicides were applied	90 lbs. Nitrogen and no Fungicides were applied		Additional 30 lbs. Nitrogen and Fungicides were applied	Additional 30 lbs. Nitrogen were applied
<b>AVERAGE YIELD (BUSHEL / ACRE)</b>	N/A	106.7	N/A	N/A	N/A	93.8	90.5	96.1	86.6	109.2
<b>AVERAGE GRAIN MOISTURE AT HARVEST (%)</b>	N/A	14.3	N/A	N/A	N/A	14.4	14.5	14.4	14.1	16.3
<b>AVERAGE TEST WEIGHT (LBS. / BUSHEL)</b>	N/A	58.0	N/A	N/A	N/A	55.7	59.9	59.9	61.0	59.5
<b>2020 DATA RECORDED (NUMBER OF REPS)</b>		3	0	0	0	3	3		3	3
<b>FLAG LEAF FUNGICIDE APPLICATION DATE</b>	N/A	April 27, 2020	N/A	May 22, 2020	May 6, 2020	April 27, 2020	N/A	April 22, 2020	April 22, 2020	N/A
<b>FLOWERING FUNGICIDE APPLICATION DATE</b>	N/A	June 8, 2020	N/A	June 8, 2020	June 4, 2020	June 8, 2020	N/A	June 8, 2020	June 6, 2020	June 25, 2020
<b>GREEN-UP FERTILIZER</b>	90lbs Nitrogen	90lbs Nitrogen	90lbs Nitrogen	90lbs Nitrogen	90lbs Nitrogen	90lbs Nitrogen	90lbs Nitrogen	90lbs Nitrogen	90lbs Nitrogen	75lbs Nitrogen

## 2020 Michigan State University Wheat Performance Trials

**Table 1 : Multi-Year Performance Summary (Note: Tables sorted by 2020 High Management Yield, white wheat's grouped before red)**

Line	Company	Color	Awns	Chaff Color	Yield (Bu/A adjusted to 13.5% Moisture)				Hillman		Ingham		Huron			Sanilac				Tuscola					
					2020	Rank	2 Yr Avg	3 Yr Avg	Bu/A	Rank	2020	2 Yr Avg	2020	2 Yr Avg	3 Yr Avg	2020	2 Yr Avg	3 Yr Avg	2020	2 Yr Avg	3 Yr Avg	2020	2 Yr Avg	3 Yr Avg	
							19-20	18-20							19-20	18-20	Bu/A	Rank	19-20	18-20	Bu/A	Rank	19-20	18-20	Bu/A
KWS317	KWS Cereals	W	Awnletted	White	109.3	1	---	---	120.1	1	101.1	1	---	111.1	2	---	---	114.8	2	---	---	99.6	5	---	---
Whitetail	MCIA	W	Awnletted	White	105.9	2	105.7	98.4	109.1	8	88.2	8	86.8	107.4	9	114.8	107.1	125.1	1	116.5	108.7	99.9	3	108.4	97.7
AgriMAXX Exp. 6020W	AgriMAXX Wheat Company	W	Awnless	White	102.4	3	---	---	112.4	4	91.2	5	---	110.4	3	---	---	100.6	5	---	---	97.4	11	---	---
Dyna-Gro 9362W	Dyna-Gro	W	Awnless	White	100.8	4	99.4	94.5	109.2	7	88.4	7	92.3	104.7	14	107.9	99.8	103.6	4	96.2	95.6	98.2	8	104.2	94.3
MI16W0133	MSU	W	Awnletted	White	100.7	5	105.3	---	110.3	6	92.2	3	94.0	104.3	15	109.8	---	97.1	8	100.3	---	99.7	4	108.2	---
MI17W0224	MSU	W	Awnletted	White	100.5	6	---	---	111.9	5	79.6	15	---	113.3	1	---	---	97.4	6	---	---	100.6	1	---	---
DF 218 W	DF SEEDS, LLC	W	Awnletted	White	100.2	7	98.7	91.1	115.2	3	91.3	4	90.6	109.0	5	109.5	99.1	88.1	15	91.9	85.7	97.1	12	105.9	95.4
Dyna-Gro 9242W	Dyna-Gro	W	Awnletted	White	99.2	8	103.1	95.9	116.5	2	86.6	9	90.6	105.2	13	108.5	100.1	89.2	13	94.0	92.8	98.3	7	109.5	97.3
MI16W0528	MSU	W	Awnless	White	99.0	9	101.6	---	108.8	10	88.9	6	85.7	106.6	10	109.3	---	94.9	9	97.8	---	96.1	15	107.6	---
AgriMAXX EXP 2055W	AgriMAXX Wheat Company	W	Awnletted	White	98.0	10	---	---	107.4	11	85.2	10	---	105.3	12	---	---	92.9	10	---	---	99.2	6	---	---
Jupiter	MCIA	W	Awnletted	Bronze	97.2	11	100.4	95.4	106.2	13	84.7	11	84.5	109.2	4	110.4	100.4	91.0	11	98.9	99.0	94.8	16	105.6	97.8
MI16W0522	MSU	W	Awnless	White	96.8	12	100.8	---	106.7	12	80.4	14	81.6	102.2	18	109.1	---	104.0	3	99.7	---	90.7	19	103.9	---
Ambassador	DF SEEDS, LLC	W	Awnless	White	96.7	13	101.1	93.6	105.3	14	78.1	17	82.7	108.4	7	113.0	102.6	97.2	7	105.0	97.4	94.7	17	103.6	93.6
MI17W0235	MSU	W	Awnletted	Bronze	95.9	14	---	---	99.4	18	92.7	2	---	104.2	16	---	---	87.3	16	---	---	96.1	14	---	---
MI17W0100	MSU	W	Awnless	White	95.8	15	---	---	108.8	9	79.0	16	---	108.9	6	---	---	84.5	18	---	---	97.7	10	---	---
KWS316	KWS Cereals	W	Awnletted	White	95.6	16	---	---	102.9	17	83.6	12	---	105.9	11	---	---	88.8	14	---	---	96.6	13	---	---
Moonlight	MCIA	W	Awnletted	White	94.9	17	98.7	92.9	104.2	15	77.6	18	81.6	107.5	8	108.6	99.1	86.7	17	91.5	92.1	98.2	8	106.7	96.7
MI17W0133	MSU	W	Awnletted	White	93.7	18	---	---	103.7	16	72.5	19	---	101.3	19	---	---	90.7	12	---	---	100.2	2	---	---
AC Mountain	MCIA	W	Awnletted	White	90.5	19	94.6	90.5	96.9	19	82.3	13	80.4	104.2	17	104.2	99.4	75.3	19	82.8	88.1	94.0	18	104.1	95.2
MI17R0357	MSU	R	Awnletted	White	108.7	1	---	---	118.0	4	75.8	65	---	119.6	1	---	---	125.5	1	---	---	104.6	1	---	---
SY Viper	AgriPro	R	Awnletted	White	105.7	2	103.1	---	120.4	2	87.7	35	83.4	112.4	8	114.2	---	105.9	12	100.3	---	101.9	8	109.5	---
MI16R0906	MSU	R	Awnletted	White	105.1	3	---	---	110.1	38	90.1	27	---	109.9	19	---	---	116.5	5	---	---	99.3	21	---	---
SY 547	AgriPro	R	Awnletted	White	104.6	4	100.5	94.0	115.8	8	88.4	32	87.3	106.7	33	106.4	97.2	119.2	3	107.9	103.5	93.0	55	104.9	94.4
MCIA Wharf	MCIA	R	Awnletted	White	104.6	5	106.4	---	111.8	24	92.3	14	92.6	112.3	9	113.2	---	108.1	11	107.0	---	98.2	29	113.4	---
MCIA Flipper	MCIA	R	Awnless	White	104.3	6	104.9	---	122.0	1	85.5	46	87.3	115.6	2	119.4	---	95.7	32	97.4	---	102.7	5	109.6	---
DF 119 R	DF SEEDS, LLC	R	Awnletted	White	104.3	7	108.1	---	110.0	40	78.9	60	99.4	115.5	3	120.8	---	113.1	9	111.9	---	103.9	2	118.9	---
W 305	Wellman Seeds	R	Awnless	White	104.1	8	103.7	94.5	103.3	61	95.3	5	99.8	104.3	49	108.3	98.0	117.7	4	106.6	96.4	100.0	16	108.0	95.3
KWS283	KWS Cereals	R	Awnletted	White	103.8	9	---	---	112.7	19	83.8	48	---	106.3	34	---	---	121.1	2	---	---	94.9	46	---	---
RS 912	Rupp Seeds, Inc.	R	Awnless	White	103.7	10	---	---	118.0	3	90.6	24	---	108.9	21	---	---	102.9	18	---	---	98.1	30	---	---
Dyna-Gro 9070	Dyna-Gro	R	Awned	White	103.4	11	---	---	110.1	39	81.7	57	---	110.9	14	---	---	113.7	8	---	---	100.7	11	---	---
RS 961	Rupp Seeds, Inc.	R	Awnletted	White	102.6	12	103.9	95.1	104.9	57	92.9	13	95.2	103.7	52	106.8	96.9	114.3	7	105.2	93.3	97.2	35	106.0	94.4
SY 100	AgriPro	R	Awnletted	White	102.5	13	104.8	98.4	110.0	41	86.7	38	93.8	105.8	37	113.3	102.4	111.4	10	107.2	102.8	98.5	25	112.4	99.9
WEX 106	Wellman Seeds	R	Awned	White	102.0	14	---	---	104.1	59	94.0	10	---	110.0	17	---	---	103.4	16	---	---	98.3	28	---	---
Dyna-Gro 9151	Dyna-Gro	R	Awned	White	101.7	15	---	---	113.2	16	93.1	11	---	105.9	36	---	---	103.8	15	---	---	92.6	57	---	---
MI17R0438	MSU	R	Awnless	White	101.7	16	---	---	111.8	25	94.0	9	---	112.0	11	---	---	86.7	49	---	---	103.8	3	---	---
MCIA Whale	MCIA	R	Awnless	White	101.3	17	96.9	91.9	112.8	18	94.6	6	94.1	107.9	25	108.6	98.5	97.7	24	97.0	89.0	93.6	54	103.2	92.3
LW2867	Local Seed Company LLC	R	Awnless	White	101.3	18	---	---	105.8	55	94.3	8	---	103.1	56	---	---	105.8	13	---	---	97.4	34	---	---
AgriMAXX 503	AgriMAXX Wheat Company	R	Awnless	White	101.3	19	---	---	117.1	6	89.3	30	---	104.8	46	---	---	96.3	29	---	---	98.8	24	---	---
Dyna-Gro 9172	Dyna-Gro	R	Awned	White	101.1	20	---	---	109.6	42	92.2	15	---	112.2	10	---	---	95.7	33	---	---	95.7	43	---	---
AgriMAXX 505	AgriMAXX Wheat Company	R	Awned	White	101.0	21	---	---	111.3	30	89.3	29	---	108.3	24	---	---	101.4	19	---	---	94.4	48	---	---
AgriMAXX EXP 2003	AgriMAXX Wheat Company	R	Awned	White	100.9	22	---	---	108.7	47	97.2	2	---	106.8	31	---	---	93.7	36	---	---	98.3	26	---	---

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**Table 1 : Multi-Year Performance Summary (Note: Tables sorted by 2020 High Management Yield, white wheat's grouped before red)**

Line	Company	Color	Awns	Chaff Color	Yield (Bu/A adjusted to 13.5% Moisture)				Hillman				Ingham				Huron				Sanilac				Tuscola			
					2020	Rank	2 Yr Avg	3 Yr Avg	Bu/A	Rank	Bu/A	Rank	2 Yr Avg	2020	Rank	Bu/A	Rank	2 Yr Avg	3 Yr Avg	Bu/A	Rank	2 Yr Avg	3 Yr Avg	Bu/A	Rank	2 Yr Avg	3 Yr Avg	
					19-20	18-20	Bu/A	Rank	19-20	18-20	Bu/A	Rank	19-20	18-20	Bu/A	Rank	19-20	18-20	Bu/A	Rank	19-20	18-20	Bu/A	Rank	19-20	18-20		
W 310	Wellman Seeds	R	Awned	White	100.7	23	---	---	110.3	36	99.7	1	---	103.7	51	---	---	95.0	34	---	---	94.9	47	---	---			
W 314	Wellman Seeds	R	Awned	White	100.6	24	99.5	---	108.1	49	91.9	17	87.5	109.9	18	104.9	---	103.3	17	95.8	---	89.9	63	105.4	---			
LWX20C	Local Seed Company LLC	R	Awned	White	100.5	25	---	---	111.2	31	91.6	20	---	108.7	23	---	---	95.7	31	---	---	95.4	44	---	---			
W 313	Wellman Seeds	R	Awnless	White	100.2	26	---	---	115.8	9	86.3	42	---	108.8	22	---	---	94.3	35	---	---	95.8	42	---	---			
HS338R	Harrington Seeds, Inc	R	Awnletted	White	100.1	27	102.9	95.7	113.7	14	86.2	44	95.9	107.0	29	103.1	---	91.2	42	106.9	---	102.4	6	115.2	---			
AgriMAXX 485	AgriMAXX Wheat Company	R	Awnless	White	99.9	28	101.0	95.0	109.1	46	88.2	33	88.3	103.5	53	108.0	102.5	100.7	20	98.1	93.7	97.9	32	104.3	94.7			
Dyna-Gro 9002	Dyna-Gro	R	Awned	White	99.8	29	---	---	110.4	35	85.8	45	---	110.1	16	---	---	96.9	26	---	---	95.9	40	---	---			
KWS291	KWS Cereals	R	Awnletted	White	99.8	30	---	---	107.0	53	87.2	36	---	100.4	64	---	---	116.0	6	---	---	88.2	66	---	---			
Dyna-Gro WX20737	Dyna-Gro	R	Awned	White	99.7	31	---	---	102.7	62	88.1	34	---	107.7	26	---	---	100.2	21	---	---	100.0	18	---	---			
Dyna-Gro 9182	Dyna-Gro	R	Awnless	White	99.7	32	---	---	115.4	10	90.2	26	---	107.2	28	---	---	92.1	40	---	---	93.7	53	---	---			
ISF 718	Irrer Seed Farm	R	Awnletted	White	99.6	33	101.9	96.5	115.9	7	86.4	40	86.4	107.0	30	104.2	97.8	86.9	47	94.3	95.5	101.9	7	108.2	97.3			
RS 977	Rupp Seeds, Inc.	R	Awned	White	99.5	34	104.4	---	109.4	44	96.9	3	95.7	103.3	54	109.5	---	96.8	27	93.5	---	90.9	61	108.0	---			
MCIA Jonah	MCIA	R	Awnless	White	99.4	35	102.8	---	113.5	15	92.2	16	90.8	103.1	55	111.4	---	86.6	51	95.4	---	101.5	9	109.9	---			
MI16R0592	MSU	R	Awnletted	White	99.3	36	103.4	---	112.1	22	85.0	47	90.0	111.1	13	116.5	---	88.5	44	97.6	---	100.0	17	106.7	---			
AgriMAXX 438	AgriMAXX Wheat Company	R	Awnless	White	99.3	37	102.0	97.2	114.7	12	92.9	12	94.6	102.6	59	107.3	102.4	87.1	46	87.2	87.7	99.3	20	109.3	99.5			
ISF 727	Irrer Seed Farm	R	Awned	White	99.1	38	101.6	---	110.6	33	89.3	31	83.1	110.1	15	107.5	---	86.5	52	96.5	---	99.1	23	110.6	---			
W 304	Wellman Seeds	R	Awned	White	99.1	39	103.2	97.5	111.7	27	91.8	18	93.2	109.4	20	113.8	103.8	88.7	43	90.1	90.9	94.0	49	107.1	96.2			
DF 105 R	DF SEEDS, LLC	R	Awned	White	99.0	40	99.4	93.7	114.6	13	90.6	23	90.0	113.8	5	108.1	98.5	78.2	61	88.6	85.1	98.0	31	108.1	98.2			
KWS333	KWS Cereals	R	Awned	White	98.8	41	---	---	110.5	34	86.3	41	---	115.2	4	---	---	81.7	58	---	---	100.2	14	---	---			
AgriMAXX 496	AgriMAXX Wheat Company	R	Awned	White	98.6	42	---	---	110.7	32	95.6	4	---	99.9	66	---	---	98.2	23	---	---	88.4	65	---	---			
RS 902	Rupp Seeds, Inc.	R	Awned	White	98.6	43	105.3	98.8	115.1	11	91.4	21	94.5	107.7	27	113.3	104.4	82.3	57	93.2	93.6	96.4	38	110.9	98.6			
MI16R0898	MSU	R	Awnletted	White	98.5	44	102.3	---	101.1	64	86.2	43	88.6	101.6	63	105.0	---	105.1	14	107.3	---	98.3	27	105.2	---			
Sunburst	MCIA	R	Awnless	White	97.9	45	---	---	111.7	26	94.4	7	---	102.9	58	---	---	84.8	53	---	---	95.8	41	---	---			
AgriMAXX 413	AgriMAXX Wheat Company	R	Awned	White	97.9	46	96.8	92.7	113.1	17	86.4	39	86.3	113.4	6	108.6	99.5	86.8	48	89.1	90.3	89.6	64	101.1	92.8			
DF 109 R	DF SEEDS, LLC	R	Awnless	White	97.7	47	103.6	98.3	107.3	50	91.4	22	96.5	105.4	39	109.7	100.8	83.7	54	94.9	95.9	100.5	12	107.3	97.4			
MI16R0742	MSU	R	Awned	White	97.4	48	---	---	109.5	43	83.5	50	---	105.3	41	---	---	91.4	41	---	---	97.5	33	---	---			
AgriMAXX 498	AgriMAXX Wheat Company	R	Awnless	White	97.3	49	102.6	---	112.2	21	91.7	19	93.4	101.8	61	110.0	---	80.6	59	86.9	---	100.2	15	110.6	---			
W 312	Wellman Seeds	R	Awned	White	97.0	50	96.9	91.8	105.1	56	90.4	25	86.2	102.9	57	110.0	99.9	96.0	30	92.0	92.3	90.4	62	101.6	92.3			
MI16R0720	MSU	R	Awnletted	White	96.7	51	---	---	109.1	45	75.1	67	---	112.5	7	---	---	83.2	55	---	---	103.6	4	---	---			
MI17R0138	MSU	R	Awnletted	White	96.0	52	---	---	103.7	60	81.9	56	---	106.8	32	---	---	87.7	45	---	---	99.7	19	---	---			
LW2068	Local Seed Company LLC	R	Awnletted	White	95.9	53	---	---	104.5	58	83.2	52	---	105.1	45	---	---	92.7	37	---	---	93.9	50	---	---			
MI17R0484	MSU	R	Awned	White	95.8	54	---	---	108.7	48	75.9	64	---	102.2	60	---	---	97.2	25	---	---	95.2	45	---	---			
DF 129 R	DF SEEDS, LLC	R	Awned	White	95.5	55	101.9	---	107.2	52	82.6	55	102.1	100.0	65	112.2	---	96.7	28	98.9	---	91.0	60	112.2	---			
MCIA Harpoon	MCIA	R	Awnless	White	95.1	56	97.9	92.7	98.2	67	83.4	51	85.6	105.2	43	104.5	97.4	92.3	39	91.6	89.2	96.4	36	107.4	96.2			
KWS280	KWS Cereals	R	Awned	White	94.8	57	---	---	111.6	28	79.2	59	---	104.7	47	---	---	86.6	50	---	---	91.9	58	---	---			
Dyna-Gro 9941	Dyna-Gro	R	Awned	White	94.8	58	98.9	---	107.3	51	87.1	37	88.6	105.2	42	107.9	---	82.8	56	92.1	---	91.4	59	106.3	---			
MI17R0435	MSU	R	Awnletted	White	94.7	59	---	---	110.3	37	76.6	63	---	111.9	12	---	---	74.0	66	---	---	100.9	10	---	---			
MI16R0737	MSU	R	Awned	White	94.6	60	---	---	101.5	63	83.6	49	---	101.7	62	---	---	92.5	38	---	---	93.7	51	---	---			
DF 112 R	DF SEEDS, LLC	R	Awned	White	94.6	61	101.1	95.5	112.4	20	81.6	58	84.0	104.7	48	111.7	102.9	77.8	63	88.9	88.8	96.4	37	109.2	98.7			
Viking Volla SRW	Albert Lea Seed	R	Awned	White	94.5	62	---	---	112.0	23	83.1	53	---	105.7	38	---	---	72.4	67	---	---	99.2	22	---	---			
MCIA Red Dragon	MCIA	R	Awnless	White	94.4	63	99.2	94.1	117.3	5	77.4	62	76.6	103.9	50	110.7	101.1	79.6	60	83.9	85.1	93.7	52	107.6	95.7			

## 2020 Michigan State University Wheat Performance Trials

**Table 1 : Multi-Year Performance Summary (Note: Tables sorted by 2020 High Management Yield, white wheat's grouped before red)**

Line	Company	Color	Awns	Chaff Color	Yield (Bu/A adjusted to 13.5% Moisture)				Hillman			Ingham				Huron				Sanilac				Tuscola					
					2020	Rank	2 Yr Avg	3 Yr Avg	Bu/A	Rank	Bu/A	Rank	2 Yr Avg	2020	Rank	2 Yr Avg	3 Yr Avg	Bu/A	Rank	2 Yr Avg	3 Yr Avg	2020	Rank	2 Yr Avg	3 Yr Avg	Bu/A	Rank	2 Yr Avg	3 Yr Avg
							19-20	18-20					19-20				19-20	18-20			19-20	18-20			19-20	18-20			19-20
Harbor	MCIA	R	Awnletted	White	94.1	64	98.5	92.8	111.4	29	77.6	61	80.9	105.1	44	109.1	100.7	76.1	64	86.5	88.6	100.3	13	106.4	95.5				
Erisman	Albert Lea Seed	R	Awnletted	White	93.2	65	---	---	106.2	54	82.8	54	---	106.2	35	---	---	74.5	65	---	---	96.3	39	---	---				
LCS3334	Albert Lea Seed	R	Awnletted	White	93.2	66	94.1	---	100.1	65	89.7	28	84.8	105.4	40	108.2	---	77.9	62	82.6	---	92.8	56	102.6	---				
MCIA Red Devil	MCIA	R	Awned	White	91.6	67	97.7	90.6	99.4	66	75.1	66	78.0	98.0	67	98.6	91.9	99.5	22	97.1	94.4	86.1	67	104.9	91.1				
				Mean	98.5		100.6	94.4	109.2		86.6		87.8	106.7		109.1	99.9	93.8		95.4	92.9	96.1		106.7	95.7				
				CV	4.5		9.3	9.4	2.4		1.4		4.8	1.7		5.3	5.7	7.8		10.5	13.1	3.9		2.9	2.9				
				LSD	3.2		4.5	3.4	4.2		1.9		4.8	2.9		6.6	5.3	11.8		11.5	11.3	6.0		3.5	2.6				



## 2020 Michigan State University Wheat Performance Trials

**Table 2. Multi-Location Performance Summary for Test Weight and Percent Moisture.**

Line	Color	Overall		Hillman		Ingham		Huron		Sanilac		Tuscola	
		% Moist	TW	% Moist	TW	% Moist	TW	% Moist	TW	% Moist	TW	% Moist	TW
AC Mountain	W	14.3	57.6	15.8	58.5	14.3	58.7	14.1	57.3	13.5	54.5	14.1	59.0
AgriMAXX 413	R	14.3	57.7	16.0	59.2	13.4	58.9	14.3	57.6	13.8	52.9	14.2	59.3
AgriMAXX 438	R	14.6	57.9	16.5	57.9	14.0	59.7	13.7	57.5	14.4	54.7	14.4	59.6
AgriMAXX 485	R	15.0	59.6	16.5	59.9	14.4	62.1	14.6	58.6	15.1	56.1	14.6	61.0
AgriMAXX 496	R	14.9	60.2	16.4	61.0	14.1	62.6	14.6	58.9	14.5	57.4	14.7	60.7
AgriMAXX 498	R	14.4	57.7	16.4	59.4	13.5	60.1	14.1	57.0	14.2	53.1	14.0	59.4
AgriMAXX 503	R	15.2	59.8	16.8	60.8	14.4	62.4	14.5	58.9	15.4	56.7	14.8	60.3
AgriMAXX 505	R	14.9	60.1	16.3	61.3	14.2	62.5	14.6	58.8	15.4	57.6	14.4	60.9
AgriMAXX EXP 2003	R	14.4	58.3	16.0	59.2	14.3	60.5	13.7	57.2	14.4	55.5	13.8	59.2
AgriMAXX EXP 2055W	W	14.7	57.8	16.3	58.0	14.3	59.7	13.7	57.3	15.0	54.8	14.0	58.9
AgriMAXX Exp. 6020W	W	14.7	58.1	16.4	58.1	14.5	60.5	13.6	57.3	14.7	55.4	14.1	59.0
Ambassador	W	14.5	58.2	16.0	59.2	13.2	59.3	14.8	57.3	14.6	55.9	14.2	59.2
DF 105 R	R	14.2	57.5	15.9	58.9	14.1	60.3	13.9	57.2	13.0	52.1	14.1	58.8
DF 109 R	R	14.6	57.6	16.0	58.7	14.0	59.8	14.6	56.2	14.4	54.0	14.1	59.4
DF 112 R	R	14.0	57.1	15.4	58.5	14.0	60.1	13.8	55.5	12.9	52.8	13.7	58.3
DF 119 R	R	15.2	59.6	16.3	60.2	15.3	60.2	15.0	59.0	15.0	57.9	14.5	60.5
DF 129 R	R	14.3	57.9	15.9	58.9	13.2	58.5	14.3	57.3	14.3	55.8	13.8	59.2
DF 218 W	W	15.3	60.2	16.9	60.8	15.5	62.3	14.6	59.6	14.9	56.7	14.7	61.6
Dyna-Gro 9002	R	14.9	58.5	16.6	59.3	14.1	60.3	14.5	57.9	14.6	55.3	14.5	59.7
Dyna-Gro 9070	R	14.6	58.5	16.4	59.5	14.1	60.1	14.0	57.6	14.2	56.3	14.2	59.4
Dyna-Gro 9151	R	14.8	60.2	16.5	61.3	13.9	62.7	14.5	58.9	14.4	57.2	14.6	60.8
Dyna-Gro 9172	R	15.1	59.0	16.5	60.2	15.0	60.8	14.6	57.9	15.1	56.0	14.4	60.1
Dyna-Gro 9182	R	15.1	59.9	16.7	60.8	14.0	61.9	15.3	59.3	14.6	57.0	14.7	60.3
Dyna-Gro 9242W	W	15.1	59.8	17.1	60.9	14.2	61.9	15.1	59.3	14.3	56.0	14.6	60.6
Dyna-Gro 9362W	W	15.2	60.8	16.6	61.1	14.4	62.6	15.0	59.9	15.5	59.2	14.7	61.1
Dyna-Gro 9941	R	14.5	57.7	16.4	58.2	14.1	60.3	14.0	56.6	14.1	54.8	14.0	58.8
Dyna-Gro WX20737	R	15.3	61.1	17.1	61.4	14.5	64.3	15.0	59.9	14.9	58.3	14.8	61.4
Erisman	R	14.6	59.1	16.0	58.5	13.2	59.4	14.3	60.8	14.8	55.2	14.6	61.7
HS338R	R	14.8	59.3	17.1	60.7	14.2	63.1	14.0	57.7	14.6	54.9	14.3	59.9
ISF 718	R	14.9	59.1	16.6	60.3	15.3	62.5	14.0	57.7	14.3	55.3	14.5	59.8
ISF 727	R	15.0	59.1	16.4	60.2	14.2	62.1	14.7	57.3	15.3	56.3	14.2	59.6
Jupiter	W	14.6	58.4	16.4	58.8	13.8	59.8	14.4	57.7	14.3	55.5	14.3	60.1
KWS280	R	14.5	60.2	16.4	61.6	13.8	62.5	13.6	59.4	13.9	56.2	14.8	61.3
KWS283	R	14.8	58.9	15.9	59.2	14.6	60.1	14.0	57.7	15.2	57.8	14.2	59.9
KWS291	R	14.8	58.4	15.7	57.3	14.1	59.4	14.7	58.1	15.2	56.6	14.5	60.9
KWS316	W	14.6	57.2	16.3	58.1	13.4	59.0	14.7	57.0	14.5	53.4	14.2	58.6
KWS317	W	14.6	58.8	15.9	59.8	14.5	61.2	14.2	57.9	14.3	56.4	14.0	59.0
KWS333	R	14.8	60.2	16.2	61.4	14.2	63.8	14.5	59.2	14.7	56.0	14.6	60.2
LCS3334	R	14.7	58.3	15.6	58.2	14.0	59.8	14.7	58.5	14.0	54.5	14.9	60.7
LW2068	R	14.3	57.7	16.1	58.5	13.9	59.2	14.0	56.8	13.3	54.4	14.1	59.5
LW2867	R	15.2	59.8	16.6	59.6	14.3	62.1	14.6	58.9	15.8	57.3	14.6	61.2
LWX20C	R	14.9	58.9	16.4	60.0	14.7	60.8	14.7	57.4	14.4	55.9	14.3	60.1
MCIA Flipper	R	14.8	58.3	16.2	59.3	14.2	61.3	14.6	58.0	14.6	54.4	14.5	58.6
Harbor	R	14.7	59.2	16.9	60.5	13.6	61.7	14.6	58.7	14.0	55.7	14.4	59.6
MCIA Harpoon	R	14.5	58.3	15.6	58.6	13.6	60.4	14.1	57.7	15.0	55.9	14.2	59.0
MCIA Jonah	R	14.6	58.0	16.5	58.8	13.7	59.7	14.0	57.0	14.6	55.0	14.3	59.5
Moonlight	W	14.1	58.1	15.8	59.6	13.4	59.3	14.1	57.5	13.5	55.2	13.9	58.9

## 2020 Michigan State University Wheat Performance Trials

**Table 2. Multi-Location Performance Summary for Test Weight and Percent Moisture.**

Line	Color	Overall		Hillman		Ingham		Huron		Sanilac		Tuscola	
		% Moist	TW	% Moist	TW	% Moist	TW	% Moist	TW	% Moist	TW	% Moist	TW
MCIA Red Devil	R	14.9	59.2	16.5	60.1	14.1	60.6	14.1	58.8	15.1	56.3	14.6	60.6
MCIA Red Dragon	R	14.8	59.2	16.6	60.2	13.7	60.5	14.3	58.2	15.0	57.0	14.7	59.9
MCIA Whale	R	14.9	58.9	16.3	59.1	14.4	60.8	14.5	58.1	14.7	56.2	14.6	60.0
MCIA Wharf	R	14.2	58.1	15.5	58.7	14.0	59.3	13.7	57.4	13.6	55.4	14.1	59.6
MI16R0592	R	14.8	59.0	16.6	59.8	13.9	60.9	13.7	58.0	15.3	57.0	14.1	59.0
MI16R0720	R	13.9	56.0	16.0	57.7	13.6	58.7	13.3	55.0	13.4	52.1	13.4	56.2
MI16R0737	R	15.0	58.9	16.6	59.5	14.4	61.6	14.5	57.7	15.0	55.9	14.7	59.9
MI16R0742	R	15.0	59.5	16.9	60.1	14.3	62.7	14.6	58.9	14.7	55.5	14.4	60.5
MI16R0898	R	15.5	59.5	16.8	58.7	14.3	61.2	15.3	59.0	15.9	57.1	15.0	61.3
MI16R0906	R	14.7	57.9	15.3	56.8	14.1	59.7	14.3	57.6	15.1	55.9	14.5	59.7
MI16W0133	W	13.9	57.6	15.5	57.7	13.7	60.4	13.7	57.3	12.5	53.2	14.2	59.3
MI16W0522	W	14.5	59.1	16.1	58.8	13.6	60.6	14.1	58.8	14.1	56.6	14.5	60.6
MI16W0528	W	14.4	57.8	15.5	57.9	14.0	59.6	13.7	57.6	14.2	54.6	14.4	59.5
MI17R0138	R	15.3	61.1	16.7	62.2	14.3	63.3	15.3	60.5	15.1	57.4	15.1	61.9
MI17R0357	R	14.9	58.9	16.7	59.6	14.4	60.0	14.9	58.6	14.3	56.8	14.4	59.3
MI17R0435	R	14.8	59.8	16.6	61.0	14.3	62.9	14.5	59.8	14.2	55.6	14.5	60.1
MI17R0438	R	14.9	59.9	16.3	61.2	14.4	63.2	14.6	58.9	14.7	56.2	14.3	60.2
MI17R0484	R	14.9	59.7	16.6	61.3	14.6	62.4	14.5	58.0	14.3	57.1	14.4	59.5
MI17W0100	W	14.3	58.0	15.7	58.9	13.7	59.8	13.7	57.8	14.1	54.6	14.2	59.1
MI17W0133	W	14.3	57.4	15.8	58.3	13.4	59.5	13.8	56.1	14.4	54.3	14.0	58.4
MI17W0224	W	15.0	57.9	16.9	58.6	14.4	60.0	15.0	57.2	14.1	54.4	14.7	59.2
MI17W0235	W	14.3	57.7	16.0	57.8	13.6	61.2	13.9	56.8	13.8	53.9	14.1	58.5
RS 902	R	14.8	58.5	16.4	59.9	14.5	62.0	14.3	56.9	14.5	54.4	14.2	59.4
RS 912	R	15.1	59.8	16.6	60.6	13.8	59.8	15.1	59.0	14.7	56.9	14.6	60.3
RS 961	R	15.0	60.1	16.2	59.0	14.3	62.3	14.7	59.5	15.1	58.5	14.8	61.0
RS 977	R	14.4	58.4	15.7	59.2	13.9	60.6	13.9	56.7	14.4	55.6	13.9	59.7
Sunburst	R	15.3	60.9	16.6	60.7	14.5	63.3	14.6	60.3	15.8	58.1	15.0	62.4
SY 100	R	14.0	56.3	16.0	57.1	13.2	58.6	13.6	55.3	13.4	53.1	14.0	57.5
SY 547	R	14.8	60.0	16.0	60.0	14.5	61.0	14.2	59.4	14.7	58.6	14.8	61.1
SY Viper	R	15.3	59.7	17.0	60.9	13.9	62.2	15.0	58.8	16.0	56.7	14.6	60.1
Viking Volla SRW	R	14.2	57.0	16.1	58.0	13.5	59.8	14.2	55.3	13.4	53.6	13.9	58.3
W 304	R	14.8	58.4	16.5	60.1	14.4	61.6	14.5	57.0	14.4	54.0	14.3	59.1
W 305	R	15.0	59.9	16.4	59.2	14.6	62.5	14.4	58.3	15.0	58.3	14.4	61.1
W 310	R	14.4	58.4	15.8	59.7	14.3	60.7	13.8	57.0	14.1	55.1	14.1	59.5
W 312	R	14.2	57.7	15.9	58.2	13.5	59.5	14.0	56.8	13.7	55.2	14.0	58.9
W 313	R	15.3	59.9	16.9	60.6	14.3	62.1	15.1	59.1	15.3	57.0	14.8	60.3
W 314	R	14.9	60.1	16.8	60.0	14.7	62.9	14.5	59.2	13.6	56.9	14.9	61.6
WEX 106	R	14.9	58.8	16.4	59.4	14.7	61.3	14.7	57.5	14.5	56.0	14.3	60.1
Whitetail	W	14.5	58.3	16.2	59.0	14.0	59.4	13.6	56.8	14.6	57.3	14.1	58.9
	Mean	14.7	58.8	16.3	59.5	14.1	61.0	14.3	58.0	14.4	55.7	14.4	59.9
	CV	6.9	0.9	3.3	0.9	4.1	0.6	3.7	1.1	5.7	1.5	2.3	0.8
	LSD	0.7	0.4	0.9	0.8	0.9	0.6	0.8	1.0		11.8	0.5	0.5

## 2020 Michigan State University Wheat Performance Trials

**Table 3. Fusarium Head Blight Resistance, lodging, septoria, powdery mildew, plant height and flowering data.**

Line	Color	Fusarium Head Blight					Lodging (0-9)**	Septoria (0-9)**	Powdery Mildew (0-9)**	Preharvest Sprouting (0-9)**	Plant Height (inches)	Flowering Date Days past Jan. 1	Physiological Maturity Days past Jan. 1	Grain Fill Period # of days
		Severity 2020	Incidence 2020	Index 2020	DON ppm 2018	FHB Rating*								
AC Mountain	W	36.7	40.0	14.5	5.9	S	8.7	3.7	0.5	8.0	39.9	153	177	24
AgriMAXX 413	R	23.3	30.0	7.2	6.6	S	7.0	4.4	3.8	2.0	32.5	151	178	27
AgriMAXX 438	R	21.7	40.0	8.8	6.0	S	7.7	3.8	3.5	0.0	34.1	151	179	28
AgriMAXX 485	R	10.0	21.7	2.3	2.1	MR	2.7	2.7	1.0	0.5	31.7	153	177	24
AgriMAXX 496	R	15.0	33.3	4.8	---	---	1.0	3.8	3.5	2.0	33.0	152	179	27
AgriMAXX 498	R	30.0	35.0	11.5	---	---	8.3	3.5	3.5	0.0	34.3	152	180	28
AgriMAXX 503	R	11.7	16.7	2.9	---	---	6.3	3.8	4.0	2.5	34.2	153	178	24
AgriMAXX 505	R	21.7	30.0	6.6	---	---	4.3	2.2	0.0	4.0	33.6	153	177	24
AgriMAXX EXP 2003	R	15.0	36.7	4.8	---	---	1.3	2.3	0.0	6.0	34.1	153	177	24
AgriMAXX EXP 2055W	W	16.7	53.3	8.8	---	---	5.7	3.5	3.0	8.0	33.6	153	180	26
AgriMAXX Exp. 6020W	W	18.3	31.7	6.0	---	---	3.7	3.9	0.0	8.0	32.4	152	178	26
Ambassador	W	62.7	56.1	36.5	10.7	VS	4.3	5.6	0.5	8.0	35.7	152	176	24
DF 105 R	R	30.0	45.0	13.5	6.6	S	8.7	4.6	2.3	1.5	33.3	152	176	24
DF 109 R	R	23.3	35.0	8.5	4.3	S	8.7	4.0	5.0	0.0	34.2	151	179	28
DF 112 R	R	28.5	39.5	11.6	5.9	S	9.0	3.5	0.5	5.0	31.2	150	175	25
DF 119 R	R	18.3	30.0	6.8	---	---	0.7	3.2	0.5	1.0	34.8	154	176	22
DF 129 R	R	10.0	22.7	3.0	---	---	0.3	3.3	0.0	4.0	35.2	153	180	27
DF 218 W	W	13.3	31.7	4.3	---	---	8.0	3.2	2.5	8.5	33.1	154	178	24
Dyna-Gro 9002	R	30.0	46.7	14.0	---	---	6.3	3.5	3.5	4.0	33.8	151	179	28
Dyna-Gro 9070	R	25.0	30.0	8.5	---	---	2.0	3.9	2.5	2.0	32.7	151	175	24
Dyna-Gro 9151	R	13.3	31.7	4.2	---	---	5.3	4.1	0.5	4.5	33.9	151	177	26
Dyna-Gro 9172	R	6.7	10.0	0.8	---	---	1.3	4.4	1.5	3.5	32.7	151	179	28
Dyna-Gro 9182	R	18.3	23.3	4.0	---	---	4.0	4.5	5.0	2.5	35.8	152	177	25
Dyna-Gro 9242W	W	17.9	37.1	8.2	5.6	S	3.7	3.5	3.5	5.0	35.6	153	177	24
Dyna-Gro 9362W	W	18.3	38.3	6.6	7.1	VS	0.0	4.5	3.0	8.0	35.5	152	176	24
Dyna-Gro 9941	R	13.3	20.0	3.2	---	---	1.0	3.9	4.5	3.5	32.5	152	177	25
Dyna-Gro WX20737	R	3.7	6.7	0.3	---	---	0.0	5.2	2.0	1.0	30.3	150	176	26
Erisman	R	4.3	9.3	0.4	---	---	7.7	4.7	3.0	8.5	33.5	154	180	26
HS338R	R	21.7	40.0	8.7	---	---	8.7	4.6	3.5	0.0	33.7	150	175	25
ISF 718	R	28.3	51.7	14.7	4.2	MS	6.7	4.5	2.0	0.0	34.8	150	176	26
ISF 727	R	26.7	56.7	14.8	---	---	3.7	3.4	0.8	2.5	31.3	151	176	25
Jupiter	W	66.7	73.3	48.8	6.5	VS	7.3	5.6	4.5	8.0	33.8	154	181	27

## 2020 Michigan State University Wheat Performance Trials

**Table 3. Fusarium Head Blight Resistance, lodging, septoria, powdery mildew, plant height and flowering data.**

Line	Color	Fusarium Head Blight					Lodging (0-9)**	Septoria (0-9)**	Powdery Mildew (0-9)**	Preharvest Sprouting (0-9)**	Plant Height (inches)	Flowering Date Days past Jan. 1	Physiological Maturity Days past Jan. 1	Grain Fill Period # of days
		Severity 2020	Incidence 2020	Index 2020	DON ppm 2018	FHB Rating*								
KWS280	R	14.4	32.2	4.7	---	---	8.7	2.2	0.0	0.5	32.4	155	179	24
KWS283	R	15.7	25.3	2.9	---	---	0.3	3.7	0.5	1.5	32.8	151	175	23
KWS291	R	10.3	19.2	1.4	---	---	3.7	1.6	0.5	2.5	32.1	155	181	26
KWS316	W	14.8	57.1	7.5	---	---	8.0	3.1	2.0	6.5	33.3	154	179	25
KWS317	W	17.1	29.5	4.7	---	---	0.7	4.3	0.5	8.0	31.8	152	180	27
KWS333	R	17.8	30.4	5.0	---	---	7.7	3.4	1.0	2.0	34.7	150	175	25
LCS3334	R	18.3	20.0	4.0	---	---	9.0	3.0	1.0	8.5	33.7	153	180	27
LW2068	R	13.3	25.0	3.5	---	---	6.3	2.6	0.5	8.0	33.4	154	179	25
LW2867	R	15.0	18.3	3.0	---	---	0.0	2.8	2.0	2.5	33.1	154	178	24
LWX20C	R	11.7	26.7	3.1	---	---	4.7	3.3	1.5	3.5	34.0	152	178	26
MCIA Flipper	R	41.7	53.3	22.3	9.8	VS	7.7	3.3	3.0	0.5	32.5	150	175	25
Harbor	R	18.3	36.7	7.0	4.9	MS	9.0	4.7	0.0	0.5	36.8	152	174	22
MCIA Harpoon	R	5.0	6.7	0.3	3.4	MR	0.0	3.5	1.5	2.0	32.3	150	175	25
MCIA Jonah	R	28.3	35.0	10.2	5.1	S	7.7	2.9	3.5	0.0	33.4	151	179	28
Moonlight	W	35.0	50.0	17.5	6.8	S	8.0	4.7	0.8	5.0	35.8	153	175	22
MCIA Red Devil	R	31.7	21.7	7.5	5.4	S	5.7	2.6	0.5	2.0	34.0	153	178	25
MCIA Red Dragon	R	40.0	31.7	12.7	3.3	MS	5.7	2.4	0.8	2.0	39.0	151	175	23
MCIA Whale	R	18.3	25.0	5.5	4.8	MS	0.3	2.9	6.0	3.5	36.0	154	180	26
MCIA Wharf	R	11.7	20.0	2.7	---	---	5.0	3.9	0.5	1.5	29.6	153	179	26
MI16R0592	R	50.1	59.9	28.8	9.5	---	0.3	5.6	0.5	1.0	31.9	151	177	26
MI16R0720	R	47.8	36.4	17.8	---	---	7.0	4.7	1.5	1.5	31.5	149	175	26
MI16R0737	R	32.7	46.0	16.5	---	---	2.3	4.3	3.0	0.0	31.9	151	179	28
MI16R0742	R	30.9	51.4	15.9	---	---	7.0	5.1	5.0	1.5	34.0	152	175	23
MI16R0898	R	19.7	39.1	9.6	2.8	---	0.3	4.5	0.5	1.0	35.2	153	179	25
MI16R0906	R	57.2	42.0	22.8	---	---	2.0	3.0	0.0	3.5	32.0	151	178	27
MI16W0133	W	45.0	38.3	17.1	10.6	---	7.7	2.6	1.5	8.0	33.9	152	179	27
MI16W0522	W	35.0	46.7	16.3	10.0	---	6.0	3.8	0.8	8.0	36.9	152	177	25
MI16W0528	W	51.7	38.3	18.9	5.3	---	7.0	3.8	1.0	8.5	35.5	152	177	25
MI17R0138	R	28.2	34.4	12.0	---	---	8.7	3.8	0.0	0.0	38.7	151	175	24
MI17R0357	R	27.5	46.1	12.0	---	---	0.7	3.0	1.5	0.0	28.3	150	175	25
MI17R0435	R	32.7	32.3	11.7	---	---	8.7	3.9	3.5	3.5	35.0	152	174	22
MI17R0438	R	33.4	33.5	11.8	---	---	6.7	4.2	5.0	2.0	36.2	151	174	23

## 2020 Michigan State University Wheat Performance Trials

**Table 3. Fusarium Head Blight Resistance, lodging, septoria, powdery mildew, plant height and flowering data.**

Line	Color	Fusarium Head Blight					Lodging (0-9)**	Septoria (0-9)**	Powdery Mildew (0-9)**	Preharvest Sprouting (0-9)**	Plant Height (inches)	Flowering Date Days past Jan. 1	Physiological Maturity Days past Jan. 1	Grain Fill Period # of days
		Severity 2020	Incidence 2020	Index 2020	DON ppm 2018	FHB Rating*								
MI17R0484	R	30.2	52.9	18.6	---	---	3.0	3.9	0.8	0.0	31.7	150	175	25
MI17W0100	W	59.6	52.4	31.0	---	---	8.3	4.9	5.5	8.0	35.7	150	175	25
MI17W0133	W	41.6	59.7	25.4	---	---	6.7	7.3	2.5	4.0	32.2	150	176	26
MI17W0224	W	34.1	42.1	15.1	---	---	6.3	3.8	3.5	8.0	31.5	151	179	28
MI17W0235	W	42.5	59.3	28.6	---	---	3.7	4.8	0.0	8.0	35.2	151	178	27
RS 902	R	18.3	36.7	6.8	3.8	S	8.7	4.4	5.0	0.0	34.9	151	177	26
RS 912	R	8.3	21.7	2.4	---	---	4.0	4.7	5.5	1.5	34.7	153	176	23
RS 961	R	18.3	25.0	5.3	2.3	S	0.3	3.0	2.5	2.5	32.7	154	178	24
RS 977	R	8.3	23.3	2.3	---	---	0.0	2.6	0.0	3.0	34.0	153	180	27
Sunburst	R	26.7	48.3	14.0	---	---	0.7	3.4	1.5	2.5	31.5	154	181	27
SY 100	R	28.6	35.7	10.1	6.8	S	8.3	2.6	0.0	6.5	32.3	152	178	26
SY 547	R	10.0	8.3	0.8	7.3	S	1.0	2.4	0.5	3.0	35.3	151	176	25
SY Viper	R	26.7	45.0	12.2	---	---	4.0	2.9	0.0	1.0	36.2	151	175	24
Viking Volla SRW	R	30.0	53.3	16.3	---	---	8.7	4.3	4.0	1.5	32.8	150	178	27
W 304	R	28.3	43.3	12.4	3.4	MS	8.0	4.3	6.0	1.5	34.2	152	178	26
W 305	R	16.7	16.7	3.0	2.7	MR	0.0	3.4	1.0	1.5	34.1	154	179	25
W 310	R	11.0	20.0	2.8	---	---	1.0	2.6	0.0	1.5	33.6	153	179	26
W 312	R	8.3	21.7	2.1	5.9	S	0.0	4.2	3.0	4.0	34.2	153	177	24
W 313	R	10.0	20.0	2.3	---	---	6.7	3.8	2.3	1.5	35.1	153	178	24
W 314	R	15.0	26.7	4.7	---	---	6.0	3.1	0.0	1.5	35.3	150	175	25
WEX 106	R	6.7	10.0	0.8	---	---	3.7	3.8	1.5	4.0	33.7	151	177	26
Whitetail	W	45.8	52.5	26.5	4.8	MS	0.0	5.0	0.8	6.5	34.5	153	178	25
						Mean	4.9	3.8	2.0	3.7	33.7	151.9	177.2	25.2
						CV	35.6	0.9	0.8	30.1	4.3	0.5	0.5	
						LSD	2.8	1.4		2.2	2.4	1.1	1.9	

\* R=Resistant, MR=Moderately Resistant, MS=Moderately Susceptible, S=Susceptible, VS=Very Susceptible.

\*\* 0=none (best), 9=high (worst)

## 2020 Michigan State University Wheat Performance Trials

**Table 4. Conventional (Conv.) vs High Management (HM) Yield Result**

Line	Color	Tuscola High Management			Tuscola Conventional Management			Tuscola HM - Conv.	
		Bu/A	% Moist	TW	Bu/A	% Moist	TW	Difference	Rank
AC Mountain	W	94.0	14.1	58.9	87.1	14.4	59.0	6.9	32
AgriMAXX 413	R	89.6	14.2	59.7	85.8	14.2	58.9	3.7	66
AgriMAXX 438	R	99.3	14.4	59.5	94.5	14.4	59.7	4.7	49
AgriMAXX 485	R	97.9	14.6	60.8	90.0	15.1	61.3	7.9	21
AgriMAXX 496	R	88.4	14.7	60.9	82.8	14.7	60.5	5.6	42
AgriMAXX 498	R	100.2	14.0	58.9	93.5	14.6	59.8	6.7	34
AgriMAXX 503	R	98.8	14.8	60.4	86.6	14.6	60.2	12.2	5
AgriMAXX 505	R	94.4	14.4	60.6	91.9	14.6	61.1	2.5	76
AgriMAXX EXP 2003	R	98.3	13.8	59.2	92.9	14.2	59.2	5.5	44
AgriMAXX EXP 2055W	W	99.2	14.0	58.9	87.0	14.4	58.9	12.2	4
AgriMAXX Exp. 6020W	W	97.4	14.1	59.0	98.3	14.2	59.1	-0.9	85
Ambassador	W	94.7	14.2	59.2	91.1	14.6	59.2	3.6	68
DF 105 R	R	98.0	14.1	59.2	90.4	14.0	58.4	7.6	26
DF 109 R	R	100.5	14.1	59.3	96.6	14.5	59.5	3.9	59
DF 112 R	R	96.4	13.7	58.5	93.5	13.8	58.2	2.9	73
DF 119 R	R	103.9	14.5	60.7	96.0	14.6	60.2	7.9	22
DF 129 R	R	91.0	13.8	58.9	82.3	14.3	59.5	8.7	16
DF 218 W	W	97.1	14.7	61.7	91.8	14.8	61.5	5.4	45
Dyna-Gro 9002	R	95.9	14.5	59.7	91.9	14.5	59.7	3.9	57
Dyna-Gro 9070	R	100.7	14.2	58.9	92.9	14.4	59.8	7.8	23
Dyna-Gro 9151	R	92.6	14.6	60.6	88.7	14.6	61.0	3.9	61
Dyna-Gro 9172	R	95.7	14.4	60.3	88.4	14.8	59.8	7.3	29
Dyna-Gro 9182	R	93.7	14.7	60.5	89.0	14.7	60.1	4.7	50
Dyna-Gro 9242W	W	98.3	14.6	60.7	94.1	14.7	60.5	4.2	55
Dyna-Gro 9362W	W	98.2	14.7	61.3	89.1	14.8	60.9	9.1	15
Dyna-Gro 9941	R	91.4	14.0	58.7	89.7	14.2	58.8	1.6	80
Dyna-Gro WX20737	R	100.0	14.8	61.3	89.7	15.1	61.4	10.3	9
Erisman	R	96.3	14.6	61.6	94.1	14.8	61.8	2.2	77
HS338R	R	102.4	14.3	60.1	92.9	14.6	59.7	9.4	13
ISF 718	R	101.9	14.5	60.0	95.2	14.6	59.6	6.7	33
ISF 727	R	99.1	14.2	59.6	97.5	14.3	59.6	1.6	81
Jupiter	W	94.8	14.3	60.1	92.7	14.5	60.1	2.1	79
KWS280	R	91.9	14.8	61.3	89.2	14.6	61.3	2.8	75
KWS283	R	94.9	14.2	59.7	92.2	14.4	60.1	2.8	74
KWS291	R	88.2	14.5	60.5	84.7	15.1	61.2	3.6	69
KWS316	W	96.6	14.2	58.6	89.0	14.4	58.6	7.5	27
KWS317	W	99.6	14.0	58.8	95.7	14.3	59.2	3.8	63

## 2020 Michigan State University Wheat Performance Trials

**Table 4. Conventional (Conv.) vs High Management (HM) Yield Result**

Line	Color	Tuscola High Management			Tuscola Conventional Management			Tuscola HM - Conv.	
		Bu/A	% Moist	TW	Bu/A	% Moist	TW	Difference	Rank
KWS333	R	100.2	14.6	60.3	90.1	14.5	60.0	10.1	10
LCS3334	R	92.8	14.9	60.4	88.6	15.0	61.0	4.2	52
LW2068	R	93.9	14.1	59.5	93.0	14.2	59.4	0.9	83
LW2867	R	97.4	14.6	61.2	90.3	14.8	61.2	7.1	30
LWX20C	R	95.4	14.3	60.3	89.4	14.4	59.9	6.0	40
MCIA Flipper	R	102.7	14.5	58.5	98.9	14.2	58.7	3.8	65
Harbor	R	100.3	14.4	59.7	87.7	14.4	59.6	12.7	3
MCIA Harpoon	R	96.4	14.2	58.8	92.5	14.3	59.1	3.9	58
MCIA Jonah	R	101.5	14.3	59.6	95.3	14.6	59.5	6.2	36
Moonlight	W	98.2	13.9	59.0	90.2	14.2	58.8	8.1	20
MCIA Red Devil	R	86.1	14.6	60.4	85.3	14.7	60.9	0.8	84
MCIA Red Dragon	R	93.7	14.7	60.0	89.1	14.6	59.7	4.6	51
MCIA Whale	R	93.6	14.6	60.4	89.8	14.5	59.7	3.8	62
MCIA Wharf	R	98.2	14.1	59.6	93.2	14.4	59.6	5.0	48
MI16R0592	R	100.0	14.1	59.3	88.5	14.5	58.7	11.5	6
MI16R0720	R	103.6	13.4	56.3	96.0	13.7	56.1	7.6	24
MI16R0737	R	93.7	14.7	59.8	85.5	14.8	60.0	8.3	18
MI16R0742	R	97.5	14.4	60.5	90.0	14.7	60.5	7.5	28
MI16R0898	R	98.3	15.0	61.3	85.6	15.2	61.3	12.8	2
MI16R0906	R	99.3	14.5	59.6	91.7	14.7	59.9	7.6	25
MI16W0133	W	99.7	14.2	59.4	92.7	14.3	59.2	7.0	31
MI16W0522	W	90.7	14.5	60.6	89.6	14.5	60.6	1.1	82
MI16W0528	W	96.1	14.4	59.5	92.6	14.2	59.6	3.5	70
MI17R0138	R	99.7	15.1	62.2	89.0	15.0	61.7	10.7	7
MI17R0357	R	104.6	14.4	59.3	95.9	14.3	59.3	8.7	17
MI17R0435	R	100.9	14.5	59.9	92.7	14.8	60.2	8.2	19
MI17R0438	R	103.8	14.3	60.2	91.1	14.7	60.3	12.8	1
MI17R0484	R	95.2	14.4	59.6	85.7	14.2	59.5	9.6	12
MI17W0100	W	97.7	14.2	59.0	92.0	14.4	59.2	5.6	41
MI17W0133	W	100.2	14.0	58.8	90.3	14.1	58.0	9.9	11
MI17W0224	W	100.6	14.7	59.2	96.9	14.7	59.2	3.6	67
MI17W0235	W	96.1	14.1	58.6	92.3	14.1	58.4	3.8	64
RS 902	R	96.4	14.2	59.2	91.2	14.4	59.5	5.2	46
RS 912	R	98.1	14.6	60.3	93.0	14.9	60.3	5.1	47
RS 961	R	97.2	14.8	61.2	88.0	14.9	60.8	9.2	14
RS 977	R	90.9	13.9	59.6	87.9	14.2	59.7	3.0	72
Sunburst	R	95.8	15.0	61.9	91.9	15.3	62.9	3.9	60

## 2020 Michigan State University Wheat Performance Trials

**Table 4. Conventional (Conv.) vs High Management (HM) Yield Result**

Line	Color	Tuscola High Management			Tuscola Conventional Management			Tuscola HM - Conv.	
		Bu/A	% Moist	TW	Bu/A	% Moist	TW	Difference	Rank
SY 100	R	98.5	14.0	57.4	94.3	14.0	57.7	4.2	54
SY 547	R	93.0	14.8	61.2	90.9	14.6	61.0	2.1	78
SY Viper	R	101.9	14.6	60.0	95.8	14.8	60.2	6.1	39
Viking Volla SRW	R	99.2	13.9	58.1	93.1	14.2	58.4	6.1	37
W 304	R	94.0	14.3	59.2	89.9	14.4	59.0	4.2	56
W 305	R	100.0	14.4	60.9	93.6	14.7	61.2	6.4	35
W 310	R	94.9	14.1	59.6	90.7	14.1	59.5	4.2	53
W 312	R	90.4	14.0	58.8	84.4	14.2	59.0	6.1	38
W 313	R	95.8	14.8	60.7	85.3	14.9	60.0	10.4	8
W 314	R	89.9	14.9	61.5	93.4	14.8	61.7	-3.5	86
WEX 106	R	98.3	14.3	59.9	95.3	14.4	60.2	3.0	71
Whitetail	W	99.9	14.1	58.8	94.4	14.2	59.0	5.5	43
	Mean	96.1	14.4	59.9	90.5	14.5	59.9	5.8	
	CV	3.9	2.3	1.1	3.2	1.9	1.0		
	LSD	6.0	0.5	1.0	4.6	0.5	0.9		



## 2020 Michigan State University Wheat Performance Trials

**Table 5. Milling and baking qualities.**

Line	Color	NIR Kernel Protein (at 12%)	SKCS Kernel Hardness	Adjusted Flour Yield (%)	Softness Equivalent (%)	Flour Protein (at 14%)	Lactic Acid SRC (%)	Sodium Carbonate SRC (%)	Cookie Diameter (cm)
AC Mountain	W	10.1	4.0	70.4	60.9	7.8	85.2	61.6	20.2
AgriMAXX 413	R	9.3	14.2	70.8	63.4	7.3	85.2	63.9	20.5
AgriMAXX 438	R	9.4	3.0	71.0	66.5	7.2	101.3	64.2	20.2
AgriMAXX 485	R	10.8	46.4	74.6	50.0	9.4	92.1	69.2	17.6
AgriMAXX 496	R	---	---	---	---	---	---	---	---
AgriMAXX 498	R	---	---	---	---	---	---	---	---
AgriMAXX 503	R	---	---	---	---	---	---	---	---
AgriMAXX 505	R	---	---	---	---	---	---	---	---
AgriMAXX EXP 2003	R	---	---	---	---	---	---	---	---
AgriMAXX EXP 2055W	W	---	---	---	---	---	---	---	---
AgriMAXX Exp. 6020W	W	---	---	---	---	---	---	---	---
Ambassador	W	10.4	-2.6	71.4	60.4	7.8	93.5	63.3	19.2
DF 105 R	R	9.3	12.9	70.6	63.4	7.4	90.7	62.8	20.4
DF 109 R	R	9.6	1.4	71.1	66.0	7.2	103.7	64.5	19.9
DF 112 R	R	9.7	-0.6	71.0	65.2	7.2	109.6	69.0	19.3
DF 119 R	R	10.0	-1.3	70.6	65.0	7.6	99.0	64.1	19.8
DF 129 R	R	---	---	---	---	---	---	---	---
DF 218 W	W	9.5	2.4	69.8	62.5	7.5	88.0	67.8	19.0
Dyna-Gro 9002	R	9.7	-6.2	69.4	64.4	7.1	101.5	64.9	20.4
Dyna-Gro 9070	R	9.7	6.8	68.2	62.7	7.4	112.5	64.3	18.7
Dyna-Gro 9151	R	---	---	---	---	---	---	---	---
Dyna-Gro 9172	R	---	---	---	---	---	---	---	---
Dyna-Gro 9182	R	---	---	---	---	---	---	---	---
Dyna-Gro 9242W	W	9.9	7.3	67.8	62.8	7.4	100.3	65.3	20.5
Dyna-Gro 9362W	W	10.4	0.8	68.3	59.7	7.7	90.2	65.2	19.9
Dyna-Gro 9941	R	10.3	8.4	69.6	58.5	8.1	93.3	61.4	20.3
Dyna-Gro WX20737	R	---	---	---	---	---	---	---	---
Erisman	R	---	---	---	---	---	---	---	---
HS338R	R	---	---	---	---	---	---	---	---
ISF 718	R	9.0	-0.1	70.9	66.3	6.9	101.0	66.9	19.3
ISF 727	R	---	---	---	---	---	---	---	---
Jupiter	W	9.1	4.6	70.6	64.9	6.8	89.3	66.0	19.3
KWS280	R	---	---	---	---	---	---	---	---
KWS283	R	---	---	---	---	---	---	---	---
KWS291	R	---	---	---	---	---	---	---	---
KWS316	W	---	---	---	---	---	---	---	---
KWS317	W	---	---	---	---	---	---	---	---
KWS333	R	---	---	---	---	---	---	---	---
LCS3334	R	9.3	4.7	69.9	63.0	7.3	107.5	66.5	20.0
LW2068	R	---	---	---	---	---	---	---	---
LW2867	R	---	---	---	---	---	---	---	---
LWX20C	R	---	---	---	---	---	---	---	---
MCIA Flipper	R	9.9	7.6	70.9	62.0	7.2	87.0	64.7	19.1
Harbor	R	10.4	-1.8	71.6	59.6	8.1	96.2	65.2	19.4
MCIA Harpoon	R	10.2	6.2	67.6	60.4	7.8	88.4	65.3	19.4
MCIA Jonah	R	9.7	3.2	70.6	67.0	7.0	101.1	64.7	19.5
Moonlight	W	10.1	2.5	69.6	61.9	7.6	93.8	64.9	19.9

## 2020 Michigan State University Wheat Performance Trials

**Table 5. Milling and baking qualities.**

Line	Color	NIR Kernel Protein (at 12%)	SKCS Kernel Hardness	Adjusted Flour Yield (%)	Softness Equivalent (%)	Flour Protein (at 14%)	Lactic Acid SRC (%)	Sodium Carbonate SRC (%)	Cookie Diameter (cm)
MCIA Red Devil	R	9.5	15.3	68.5	65.8	7.6	96.3	67.9	20.1
MCIA Red Dragon	R	9.8	-4.7	70.2	63.5	7.6	101.4	64.0	19.5
MCIA Whale	R	10.1	4.5	68.6	62.4	7.5	100.7	68.1	19.7
MCIA Wharf	R	9.9	-0.2	68.3	59.6	7.3	84.5	63.5	19.7
MI16R0592	R	9.8	-2.6	68.3	62.0	7.3	84.8	67.5	19.3
MI16R0720	R	---	---	---	---	---	---	---	---
MI16R0737	R	---	---	---	---	---	---	---	---
MI16R0742	R	---	---	---	---	---	---	---	---
MI16R0898	R	9.4	8.3	68.5	63.6	6.9	105.4	67.2	20.8
MI16R0906	R	---	---	---	---	---	---	---	---
MI16W0133	W	9.9	7.5	70.4	63.3	7.5	96.1	66.5	19.0
MI16W0522	W	9.8	1.0	72.2	65.4	7.2	102.2	63.5	19.7
MI16W0528	W	9.7	1.9	70.4	64.7	7.1	100.8	63.9	20.6
MI17R0138	R	---	---	---	---	---	---	---	---
MI17R0357	R	---	---	---	---	---	---	---	---
MI17R0435	R	---	---	---	---	---	---	---	---
MI17R0438	R	---	---	---	---	---	---	---	---
MI17R0484	R	---	---	---	---	---	---	---	---
MI17W0100	W	---	---	---	---	---	---	---	---
MI17W0133	W	---	---	---	---	---	---	---	---
MI17W0224	W	---	---	---	---	---	---	---	---
MI17W0235	W	---	---	---	---	---	---	---	---
RS 902	R	9.8	-0.7	71.6	67.7	7.0	95.2	63.9	20.0
RS 912	R	---	---	---	---	---	---	---	---
RS 961	R	10.3	41.2	74.4	52.2	8.9	90.5	68.3	18.0
RS 977	R	9.5	8.4	67.8	57.8	7.3	88.5	62.6	19.6
Sunburst	R	---	---	---	---	---	---	---	---
SY 100	R	10.0	-0.3	70.0	63.9	7.2	85.9	63.1	19.7
SY 547	R	9.8	13.8	68.2	60.5	7.4	90.5	66.2	19.3
SY Viper	R	10.1	-1.2	66.6	62.4	7.7	104.7	76.2	19.1
Viking Volla SRW	R	---	---	---	---	---	---	---	---
W 304	R	9.3	-4.2	71.5	69.5	6.7	95.2	64.9	19.9
W 305	R	9.9	39.6	74.3	54.4	8.3	89.8	68.4	18.1
W 310	R	---	---	---	---	---	---	---	---
W 312	R	10.2	7.5	69.6	59.2	8.0	91.4	61.7	19.0
W 313	R	---	---	---	---	---	---	---	---
W 314	R	9.8	7.3	70.1	65.9	8.0	110.7	65.5	19.4
WEX 106	R	---	---	---	---	---	---	---	---
Whitetail	W	9.9	-0.8	70.4	65.2	7.3	98.7	65.9	19.5

# Commercially Available Varieties entered in the 2019 Michigan State University Wheat Performance Trials

**AgriMAXX Wheat Company**

AgriMAXX 413  
 AgriMAXX 438  
 AgriMAXX 485  
 AgriMAXX 496  
 AgriMAXX 498  
 AgriMAXX 503  
 AgriMAXX 505  
 AgriMAXX EXP 2003  
 AgriMAXX EXP 2055W  
 AgriMAXX Exp. 6020W

**Albert Lea Seeds**

Erisman  
 LCS3334  
 Viking Volla SRW

**DF Seeds Inc.**

Ambassador  
 DF 105 R  
 DF 109 R  
 DF 112 R  
 DF 119 R  
 DF 129 R  
 DF 218 W

**Dyna-Gro Seed**

Dyna-Gro 9002  
 Dyna-Gro 9070  
 Dyna-Gro 9151  
 Dyna-Gro 9172  
 Dyna-Gro 9182  
 Dyna-Gro 9242W  
 Dyna-Gro 9362W  
 Dyna-Gro 9941  
 Dyna-Gro WX20737

**Harrington Seeds Inc.**

HS338R

**Irrer Seed Farm**

ISF 718  
 ISF 727

**KWS Cereals**

KWS280  
 KWS283  
 KWS291  
 KWS316  
 KWS317  
 KWS333

**Local Seed Company LLC**

LW2068  
 LW2867  
 LWX20C

**Michigan Crop Improvement  
Association**

AC Mountain  
 Jupiter  
 MCIA Flipper  
 MCIA Harbor  
 MCIA Harpoon  
 MCIA Jonah  
 MCIA Moonlight  
 MCIA Red Devil  
 MCIA Red Dragon  
 MCIA Whale  
 MCIA Wharf  
 Sunburst  
 Whitetail

**Michigan State University**

MI16R0592  
 WEX 106

MI16R0720  
 MI16R0737  
 MI16R0742  
 MI16R0898  
 MI16R0906  
 MI16W0133  
 MI16W0522  
 MI16W0528  
 MI17R0138  
 MI17R0357  
 MI17R0435  
 MI17R0438  
 MI17R0484  
 MI17W0100  
 MI17W0133  
 MI17W0224  
 MI17W0235

**Rupp Seeds Inc.**

RS 902  
 RS 912  
 RS 961  
 RS 977

**Syngenta - AgriPro**

SY 100  
 SY 547  
 SY Viper

**Wellman Seeds Inc.**

W 304  
 W 305  
 W 310  
 W 312  
 W 313  
 W 314

# Organizations Participating in the 2018 Michigan State University Wheat Performance Trials

AgriMAXX Wheat Company  
7167 Highbanks Road  
Mascoutah, IL 62258  
Phone: 855-629-9432

Albert Lea Seed  
1414 W. Main  
PO Box 127  
Albert Lea, MN 56007  
Phone: 800-352-5247

D.F. Seeds, Inc.  
P.O. Box 159  
905 S. Jackson St.  
Dansville, MI 48819  
Phone: 517-623-6161

Dyna-Gro Seed  
4648 S Garfield Rd  
Auburn, MI 48611  
Phone: 989-662-0000

Harrington Seeds, Inc.  
2586 Bradleyville Road  
Reese, MI 48757  
Phone: 989-868-4750

Irrer Seed Farm  
9621 Dexter Trail  
Fowler, MI 48835  
Phone: 517-719-5710

KWS Cereals  
4101 Colleen Drive  
Champaign, IL 61822  
Phone: 330-439-3341

Local Seed Company LLC  
802 Rozelle St  
Memphis, TN 38104  
Phone: 901-260-6000

Michigan Crop Improvement  
Association  
2905 Jolly Road  
Okemos, MI 48864  
Phone: 517-332-3546

Rupp Seeds, Inc.  
17919 Co Rd. B  
Wauseon, OH 43567  
Phone: 419-337-1841

Syngenta  
14031 Trestle Road  
Highland, IL 64229  
Phone: 765-412-5420

Wellman Seeds, Inc.  
23778 Delphos Jennings Road  
Delphos, OH 45833  
Phone: 800-717-7333