Michigan State Wheat Performance Trials: 2013

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Comments on the 2013 Wheat Growing Season

The Michigan wheat crop experienced weather-related stress during 2013 that affected the pace of crop development. With the exception of the southern tier counties, repeated ice sheeting and ponding during the early spring months causing some pockets of marginal stands. Cool spring temperatures delayed green-up, prompted the crop to develop quickly in subsequent months. In some cases the accelerated development affected tiller development and stalk strength. In some areas, excess water influenced timing of nitrogen and fungicide applications. Cooler temperatures during June extended the grain fill period and delayed maturity resulting in a later harvest. High temperatures about 90°F in the second and third weeks of July brought ideal harvest conditions.

Other than a low level of Septoria leaf spot, leaf diseases were surprisingly absent during the early season. However, throughout the grain-fill period, various diseases developed. In particular, Septoria leaf spot, stripe rust, and leaf rust could readily be found on unprotected flag leaves of susceptible varieties. Fusarium head blight was clearly more evident this season compared to the past few years. Particularly through the central growing region of the state, excessive DON levels were not uncommon.

Current harvest reports across the state have mostly emphasized concern with lodging, excessive DON levels, and higher than anticipated grain yields. In general, reported test weights have been fair to good. Falling number scores have been acceptable and slightly lower than previous years.

Multi-Year Performance Summary (Tables 1 - 5)

Tables 1 through 5 summarize performance of the trial. The full trial included 93 entries (28 of which were experimental lines) from 20 organizations, including Michigan State University, and data analyses were conducted using all of these entries. For ease of viewing, two versions of the report are available. The “commercial only” version (available online and in the “Michigan Farm News” publication) includes the data of 63 commercially available varieties from 18 organizations only. The “including experimentals” version (online only) includes all 93 commercial and experimental lines. Attached to this narrative is a list of the names and contact information for those organizations. Each line 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** (not across columns for a single trait). Tables 1 through 5 are sorted first by entry grain color, and then in descending order by yield for 2013. In some instances (e.g. yield), data columns to the right of the 2013 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’ 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. The CV is indicative of a trial’s precision. Trials with low levels of error variation have lower CV values. Traits for which scores on a 0-9 scale are employed generally have very high CV values.

Single Site Yield Performance Summary (Table 6)

Table 6 contains yield (adjusted to 13.5% moisture), test weight, and harvest moisture data from each of the six sites harvested for yield in 2013. Each row in the table represents a single entry in the test. It is recommended that single site / single year data should not be used to make variety choice decisions. Table 6 is sorted first by organization and then by variety or brand name.

Choosing Varieties

Growers should be aware that the grain of varieties with equal yield and test weight are not necessarily of equal value when delivered for sale. DON content and shriveled grain can result in significant discounts at the point of sale. This report provides across site and single site data for test weight which gives some indication of the degree to which a variety avoided shriveled grain. It is, however, possible for two varieties to have identical and acceptable test weight but differ in degree of grain shriveling.

Although wheat producers are always interested in how varieties perform in a given year and location, performance in a single year and location should never be used in selecting a variety to plant. It is best to select a variety on the basis of data from at least three years of testing. Varieties selected with such comparisons are more likely to perform well under a wide range of conditions. In any given year or at any given site, several varieties will usually fall into the group of 'highest yielding' varieties. The composition of that group, and the identity of the absolute "winner", can and does change from location to location and year to year. This means that the single best variety cannot be determined in advance for a specific site. However, you can identify a group of varieties that is likely to contain the winners in the upcoming season. We recommend that you plant two or more varieties, and where possible, choose varieties which will flower at different times in order to reduce the risk of scab infection which is most likely to occur when rain coincides with flowering.

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

Experimental

The 2013 State Wheat Performance Trial entries were planted at seven sites in 6 counties: Allegan, Huron, Ingham (2), Lenawee, Sanilac, and Tuscola. Appendix A (below) presents information on each of these sites. Each plot was 6 rows at 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. The trial was designed and executed as four replication alpha-lattice (31 blocks of 3 plots each) at all sites. 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 cooperator practice. Spring nitrogen was applied as urea (90 lbs/acre actual N) at green-up. No foliar fungicides were applied at any site. Weeds were chemically controlled as needed. All plots at a site were harvested on a single day. For all sites, yield was calculated using the entire area of the plot including the wheel tracks between plots. This approach tends to underestimate yield. For data reported on a 0-9 scale, 0 is the best possible score.

High-Management

High-management testing was conducted in 2013 in Tuscola county. Both conventional and high-management trials were conducted at this site. Seeding rate, early-spring nitrogen applications and weed control were the same for the conventional and high-management trials. A pre-plant fertilizer was applied (300 lbs. 13-8-24 +7% S + 0.83% Zn + 0.47% Mn + 0.13% Cu +0.13% B) and trials were planted September 28, 2012 at a rate equivalent to 2.0 million seeds per acre. At Feekes 4-5, 90 lbs. of Nitrogen was applied using an Orbital Air Gandy unit at a rate of 196 lbs. per acre. Weed

control was done at Feekes 5-6 with Affinity BroadSpec at 8 oz per acre and a Non-Ionic Surfactant at 0.25%. For both conventional and high-management trials, lodging notes were taken at Feekes 11.4 on a 0 to 9 scale. Both trials were harvested on July 15, 2013.

The high-management trial received additional nitrogen and fungicide applications. At Feekes 6-7, 50 lbs. of nitrogen was applied to the high-management trial in the form of 28% liquid nitrogen using streamer bars on 5" centers. To control lower-canopy and early-season fungal disease, Quilt Xcel was applied to the high-management trial at Feekes 8.5-9 using 12 oz. of product and 20 gallons per acre. To control Fusarium Head Blight, Prosaro was applied at flowering, Feekes 10.5.1. Timing of Prosaro application coincided with flowering date of each variety. Prosaro was applied at 7.4 oz. of product and 20 gallons per acre with Non-Ionic Surfactant at 0.25%. Both Quilt Xcel and Prosaro were applied using TeeJet Turbo TwinJet Flat Spray Tips.

Funding for the high-management trial addition was provided by the Michigan Wheat Program.

Table 1 contains data for yield, test weight, and grain moisture. These data were acquired electronically on the plot combine at the time of harvest. Yield data is standardized to 13.5% moisture. In addition, grain color, chaff color and degree of awnedness are indicated. For degree of awnedness, "tip awned" (known as "apically awnletted" elsewhere, awns only present at the tip of the spike), "awnletted" (short awns on the spike), or "awned" (long awns on the entire spike) were indicated. Prior to 2009, "tip awned" and "awnletted" were recorded as "awnless".

Table 2 contains data for lodging, flowering date, plant height, powdery mildew, septoria leaf blotch, and Barley Yellow Dwarf. Lodging scores were taken at the Lenawee and Tuscola sites where 0 = no lodging and 9 = entire plot lodged. The flowering date indicates the average number of days past January 1st that a given entry reached the point where ½ of its heads were flowering. Plant height is reported as the distance in inches from the ground to the tip of average heads in a plot. Powdery mildew and leaf blotch scores are recorded as "0 = no visual symptoms of disease present". Powdery mildew scores are based on observations of the entire plant including the flag leaf. The causal organism(s) of the leaf blotching were not identified, but were likely a combination of *Septoria tritici* and *Stagonospora nodorum*. Barley Yellow Dwarf scores were taken at the Allegan site where 0 indicates Barley Yellow Dwarf was not present.

Table 3 contains data for stripe rust, leaf rust, stem rust, Fusarium head blight (FHB, scab) and the associated mycotoxin deoxynivalenol (DON, VOM), and Percent Black Point (tip) on the grain. Stripe rust and leaf rust scores are based primarily on infection observations on the flag leaf. Stem rust data are reported from 2009. Scab data were obtained from the Ingham misted/inoculated scab screening nursery. The Ingham scab nursery was inoculated (from lab-produced infected grain spread onto the field), and artificial misting was employed throughout the entire flowering period. Each wheat head (i.e., 'spike') is comprised of roughly 14-22 "spikelets", which bear the developing seed. Spikelets that prematurely die because of scab infection are called "scabby" spikelets. Field symptom data reported here are based on: 1) the percent of spikes showing any scabby spikelets (incidence); 2) the percent of scabby spikelets within infected spikes (severity); and 3) the percent of scabby spikelets considering all spikes (scab index). The scab index is derived from multiplying the incidence and severity, and is a measure of the extent of damage to entire plots due to scab infection. 2012 FHB Score data are scores based upon a 0-5 score were 0 indicates no visible symptoms. Deoxynivalenol data is from harvested grain in the inoculated, mist irrigated, scab screening nursery and is reported in parts per million (ppm). The grain was analyzed for DON at the University of Minnesota using gas chromatography mass spectrometry, DON data is from the 2012 and prior crop years. Black point is reported on a percentage basis (percent of seeds with visible black point). Black point is the discoloration of the embryo (germ) end and surrounding areas of the wheat kernel. The embryo tip shows a black to brown discoloration that may extend into the crease of the kernel. Visual observations consisted of 500 seed lots from one rep at each location observed. The data presented is the average percent of kernels discolored from the 2012 harvest season.

Table 4 through 5 contain data for milling and baking quality. Quality data are from the 2012 harvest season and prior. Data were generated by the USDA Eastern Soft Wheat Quality Laboratory in Wooster, Ohio on grain harvested from the 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. Softness equivalent percent is the softness of the flour, with higher values indicating softer grained wheats. 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. Water SRC is correlated to and intended to predict Farinograph water absorption. Sucrose SRC is a measure of pentosan content, which can strongly affect water absorption in baked products. Soft wheat flours 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%. 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.

Table 6 contains yield, test weight and percent moisture from each location for each entry. These entries are sorted first by cooperating organization, and then by the entry name.

Six 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. Questions and comments regarding the research reported here should be directed to Eric Olson (517) 355-0271 Ext. 1142. This information, along with results from previous years, may also be accessed through the Web at http://www.css.msu.edu/varietytrials/wheat/Variety_Results.html.

ORGANIZATIONS PARTICIPATING IN THE 2013 MICHIGAN STATE UNIVERSITY WHEAT PERFORMANCE TRIALS

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

BioTown Seeds
P.O. Box 299
Reynolds, IN 47980
Phone: 219-984-6038

Co-op Elevator, Pigeon
7211 E. Michigan Ave
Pigeon, MI 48755
Phone: 989-453-4500

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

Direct Enterprises, Inc.
P.O. Box 978
Westfield, IN 46074
Phone: 317-867-2238

Dupont Pioneer
59 Greif Parkway, Suite 200
Delaware, OH 43015
Phone: 740-657-6143

Dyna-Gro Seed
6221 Riverside Drive, Suite One
Dublin, OH 43017-0477
Phone: 614-761-4110

G.B. Seed & Service
5453 136th Ave.
Hamilton, MI 49419
616-836-4185

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

Hyland Seeds
5 Hyland Drive
Blenheim, Ontario N0PIA0
Phone: 519-676-8146

Limagrain Cereal Seeds
9020 Grant Road
Battle Ground, IN 47920
Phone 765-426-5207

Michigan Crop Improvement Association
P.O. Box 21008
Lansing, MI 48909
Phone: 517-332-3546

Ohio Seed Improvement Association
6150 Avery Road, P.O. Box 477
Dublin, OH 43017-0477
Phone: 614-889-1136

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

Seed Consultants, Inc.
P.O. Box 370
Washington Court House, OH 43160
740-333-8644

Steyer Seeds
6154 N. Co. Rd. 33
Tiffin, OH 44883
Phone: 800-231-4274

Sunstar Hybrids
14993 State Road 17
Culver, IN 46511-9642
574-842-2775

Syngenta
2426 Webster Rd RR1
Monroeville, IN 46773
Phone: 260-248-1700

Virginia Tech / VCIA
2229 Menokin Road
Warsaw, VA 22572
Phone: 804-333-3485

Wellman Seeds, Inc.
23778 Delphos Jennings Road
Delphos, OH 45833
Phone: 419-695-9010

2013 Michigan State University Wheat Performance Trials

Appendix A. Trial Site Descriptions for 2013 MSU Wheat Performance Trials.

	ALLEGAN COUNTY	HURON COUNTY	INGHAM COUNTY		LENAWEE COUNTY	SANILAC COUNTY	TUSCOLA COUNTY	
			YIELD TRIAL	SCAB NURSERY			REGULAR MANGEMENT	HIGH MANAGEMENT
COOPERATOR	Harvey Jipping	Darwin Sneller	Charles Dietz	Michigan State University	Woods Seed Farm	Stoutenburg Farms	Stuart Bierlein	Stuart Bierlein
NEAREST CITY	Hamilton	Sebewaing	Webberville	East Lansing	Britton	Sandusky	Richville	Richville
PLANTING DATE	Oct. 8, 2012	Oct. 2, 2012	Oct. 1, 2012	Oct. 15, 2012	Oct. 4, 2012	Sept. 21, 2012	Sept. 28, 2012	Sept. 28, 2012
HARVEST DATE	July 16, 2013	July 17, 2013	July 18, 2013	N/A	July 14, 2013	July 19, 2013	July 15, 2013	July 15, 2013
SOIL TYPE	Capac loam, 0 to 6 percent slopes	Kilmanagh loam; 0 to 1 percent slopes	Aubbeenaubbee-Capac sandy loams, 0 to 3 percent slopes	Capac sandy loams, 0 to 3 percent slopes and Colwood-Brookston loams, 0 to 2 percent slopes	Lenawee silty clay loam, 0 to 3 percent slopes	Parkhill loam and clay loam, 0 to 2 percent slopes	Tappan-Londo Loam, 0-2 percent slope	Tappan-Londo Loam, 0-2 percent slope
PRE-PLANT FERTILIZER	None	350# 6-15-35 + 1% Zn + 6% S	165# 6-24-24	150# 19-19-19	250# 9-23-30	210# 5-16-37 +4% S + 4%Z	300# 13-8-24 +7% S + 0.83% Zn + 0.47% Mn + 0.13% Cu +0.13% B	300# 13-8-24 +7% S + 0.83% Zn + 0.47% Mn + 0.13% Cu +0.13% B
COMMENTS	Barley Yellow Dwarf, Leaf Rust, Stripe Rust, Light Powdery Mildew, Moderate Head Scab, Some Sprouting.	Some Early Spring Water Logging.		Inoculated / Misted Fusarium Head Blight Screening Nursery.	Moderate Head Scab, Some Sprouting, Lodging, Hail Damage.		Some Early Spring Water Logging, Lodging.	Some Early Spring Water Logging, Lodging.
AVERAGE YIELD (BUSHELS / ACRE)	78.8	102.3	71.2	N/A	79.8	84.2	95.2	112.3
AVERAGE TEST WEIGHT (LBS. / BUSHEL)	57.9	57.9	57.3	N/A	56.0	57.6	59.2	59.9
AVERAGE PERCENT GRAIN MOISTURE	13.0	14.2	12.7	N/A	12.7	13.4	12.1	12.6
2013 DATA RECORDED (NUMBER OF REPS)	LRUST (2); SRUST (3); PM (1); BYD (2)		FD (4)	%INC.(4); %SEV. (4); INDEX (4)	PL_HT (4); LODGE (4)	PL_HT (4)	FD (4); LODGE (4)	FD (4); LODGE (4)

*****DATA: **FD** – Flowering Date (Days Past Jan. 01), **PL_HT** - Plant Height in Inches, **BYD** - Barley Yellow Dwarf Score (0-9), **LODGE** - Lodging Score (0-9), **LRUST** - Leaf Rust Score (0-9), **SRUST** - Stripe Rust Score (0-9), **PM** - Powdery Mildew Score (0-9), **%INC** - Percent Incidence of FHB, **%SEV** - Percent of Severity of FHB, **INDEX** - Product of the Incidence X Severity / 100

****** SCORING INFORMATION: Score of 0 = Best Rating - Score of 9 = Poor Rating

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

Table 1 : Multi-Year Performance Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Chaff Color	Awns	Yield: Bushels/Acre (Adjusted to 13.5% Moisture) 2013	Yield: Multi-Year Averages 2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	Test Weight: lbs/Bushel 2013	Test Weight: Multi-Year Averages 2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	Percent Grain Moisture at Harvest 2013	Percent Grain Moisture: Multi-Year Averages 2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	Organization
DF EX-2	Red	White	Awned	94.9	-----	-----	-----	56.8	-----	-----	-----	12.6	-----	-----	-----	D.F. Seeds, Inc.
RS 972	Red	White	Tip Awned	92.2	94.5	-----	-----	57.1	58.0	-----	-----	13.5	13.8	-----	-----	Rupp Seeds, Inc.
Pioneer 25R40	Red	White	Awned	92.0	95.4	-----	-----	58.3	59.4	-----	-----	12.9	13.2	-----	-----	DuPont Pioneer
DF 109R	Red	White	Tip Awned	91.9	92.9	-----	-----	57.4	58.1	-----	-----	13.2	13.6	-----	-----	D.F. Seeds, Inc.
MCIA Red Dragon	Red	White	Tip Awned	91.2	91.7	91.5	91.1	57.5	57.9	58.4	58.2	13.1	13.1	13.1	13.3	Michigan Crop Improvement Association
W 123	Red	White	Awnletted	91.2	90.8	91.8	-----	57.9	58.3	58.6	-----	12.8	13.0	12.9	-----	Wellman Seeds, Inc.
HS 284R	Red	White	Tip Awned	91.0	-----	-----	-----	57.5	-----	-----	-----	12.7	-----	-----	-----	Harrington Seeds, Inc.
MCIA EXP A	Red	White	Tip Awned	91.0	-----	-----	-----	57.7	-----	-----	-----	13.0	-----	-----	-----	Michigan Crop Improvement Association
RS 907	Red	White	Awned	90.9	-----	-----	-----	59.1	-----	-----	-----	13.4	-----	-----	-----	Rupp Seeds, Inc.
W 206	Red	White	Awned	90.7	-----	-----	-----	59.5	-----	-----	-----	13.1	-----	-----	-----	Wellman Seeds, Inc.
MCIA EXP B	Red	White	Tip Awned	90.4	-----	-----	-----	57.2	-----	-----	-----	13.0	-----	-----	-----	Michigan Crop Improvement Association
W 125	Red	White	Tip Awned	90.0	91.2	-----	-----	57.4	58.0	-----	-----	12.9	13.0	-----	-----	Wellman Seeds, Inc.
W 207	Red	White	Tip Awned	90.0	-----	-----	-----	57.0	-----	-----	-----	13.8	-----	-----	-----	Wellman Seeds, Inc.
DF Sienna	Red	White	Awnless	89.9	-----	-----	-----	57.5	-----	-----	-----	13.0	-----	-----	-----	D.F. Seeds, Inc.
9223	Red	White	Tip Awned	89.9	91.9	-----	-----	57.3	58.1	-----	-----	13.3	13.5	-----	-----	Dyna-Gro Seed
Heilman	Red	White	Tip Awned	89.7	90.6	-----	-----	57.4	58.0	-----	-----	12.8	13.0	-----	-----	Steyer Seeds
Hunker	Red	White	Tip Awned	89.6	91.2	-----	-----	57.3	57.8	-----	-----	13.4	13.9	-----	-----	Steyer Seeds
W 205	Red	White	Awnless	89.5	-----	-----	-----	57.9	-----	-----	-----	13.6	-----	-----	-----	Wellman Seeds, Inc.
AgriMAXX 438	Red	White	Tip Awned	89.2	-----	-----	-----	57.3	-----	-----	-----	13.4	-----	-----	-----	AgriMAXX Wheat Company
SC 1342™	Red	White	Awnletted	88.8	-----	-----	-----	56.9	-----	-----	-----	13.2	-----	-----	-----	Seed Consultants, Inc.
D 512W	Red	White	Tip Awned	88.7	-----	-----	-----	57.0	-----	-----	-----	13.8	-----	-----	-----	Bio-Town Seeds, Inc.
LCS 38686	Red	White	Tip Awned	88.7	-----	-----	-----	58.7	-----	-----	-----	13.4	-----	-----	-----	Limagrain Cereal Seeds
Sienna	Red	White	Awnless	88.5	89.1	91.7	-----	57.2	57.8	58.3	-----	12.9	13.0	13.0	-----	Direct Enterprises
Pioneer 25R34	Red	White	Awned	88.5	92.7	93.1	-----	57.0	57.9	58.3	-----	13.2	13.6	13.7	-----	DuPont Pioneer
DF EX-23	Red	White	Awned	88.4	-----	-----	-----	58.0	-----	-----	-----	12.9	-----	-----	-----	D.F. Seeds, Inc.
LCS 34969	Red	White	Tip Awned	88.3	-----	-----	-----	58.3	-----	-----	-----	13.0	-----	-----	-----	Limagrain Cereal Seeds
AgriMAXX 413	Red	White	Awned	88.2	89.8	-----	-----	57.0	58.2	-----	-----	12.3	12.7	-----	-----	AgriMAXX Wheat Company
MCIA EXP4	Red	White	Awnletted	88.2	90.3	-----	-----	58.9	59.5	-----	-----	13.4	13.8	-----	-----	Michigan Crop Improvement Association
Sunburst	Red	White	Tip Awned	88.0	89.9	90.6	90.4	61.0	61.6	60.8	60.7	13.6	14.1	13.6	14.1	Michigan Crop Improvement Association
DF EX-L1	Red	White	Tip Awned	87.9	-----	-----	-----	59.4	-----	-----	-----	13.7	-----	-----	-----	D.F. Seeds, Inc.
DF 111R EX	Red	White	Awned	87.8	-----	-----	-----	58.5	-----	-----	-----	13.2	-----	-----	-----	D.F. Seeds, Inc.
MCIA Whale	Red	White	Tip Awned	87.4	-----	-----	-----	57.7	-----	-----	-----	14.1	-----	-----	-----	Michigan Crop Improvement Association
RS 979	Red	White	Tip Awned	87.3	90.8	-----	-----	56.4	57.3	-----	-----	13.1	13.5	-----	-----	Rupp Seeds, Inc.
9042	Red	White	Awnletted	86.5	88.4	89.6	89.2	58.1	58.8	59.2	58.9	12.7	12.9	12.9	13.2	Dyna-Gro Seed
GB 1202	Red	White	Awned	86.5	-----	-----	-----	57.2	-----	-----	-----	12.4	-----	-----	-----	G.B. Seeds and Service
W 208	Red	White	Tip Awned	86.3	89.1	-----	-----	58.0	58.6	-----	-----	13.5	14.0	-----	-----	Wellman Seeds, Inc.
AgriMAXX 427	Red	White	Tip Awned	86.2	-----	-----	-----	56.5	-----	-----	-----	13.3	-----	-----	-----	AgriMAXX Wheat Company
MCIA Blazer	Red	White	Awnletted	86.1	87.4	-----	-----	60.0	60.7	-----	-----	13.2	13.3	-----	-----	Michigan Crop Improvement Association
AgriMAXX 434	Red	White	Awned	86.0	-----	-----	-----	56.5	-----	-----	-----	12.6	-----	-----	-----	AgriMAXX Wheat Company
SY 483	Red	White	Tip Awned	85.7	-----	-----	-----	57.4	-----	-----	-----	13.1	-----	-----	-----	Syngenta
DF 105R	Red	White	Awned	85.3	89.7	91.0	-----	57.0	58.0	58.4	-----	12.2	12.6	12.5	-----	D.F. Seeds, Inc.
EXP 101	Red	White	Tip Awned	85.3	-----	-----	-----	58.1	-----	-----	-----	13.4	-----	-----	-----	Direct Enterprises
D 492W	Red	White	Awned	85.1	87.3	-----	-----	57.3	58.1	-----	-----	12.4	12.7	-----	-----	Bio-Town Seeds, Inc.
SC 1321™	Red	White	Awned	85.1	-----	-----	-----	56.9	-----	-----	-----	12.4	-----	-----	-----	Seed Consultants, Inc.
MCIA Red Devil	Red	White	Awned	85.0	87.4	89.6	91.0	58.4	59.4	59.7	59.5	13.1	13.4	13.6	13.7	Michigan Crop Improvement Association
Emmit	Red	White	Awnletted	84.9	82.9	85.5	85.7	57.8	58.3	58.6	58.3	13.3	13.7	14.0	14.2	Hyland Seeds

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Name	Grain Color	Chaff Color	Awns	Yield: Bushels/Acre (Adjusted to 13.5% Moisture) 2013	Yield: Multi-Year Averages 2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	Test Weight: lbs/Bushel 2013	Test Weight: Multi-Year Averages 2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	Percent Grain Moisture at Harvest 2013	Percent Grain Moisture: Multi-Year Averages 2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	Organization
LCS 37773	Red	White	Tip Awned	84.9	-----	-----	-----	61.1	-----	-----	-----	13.5	-----	-----	-----	Limagrain Cereal Seeds
S-1100	Red	White	Awned	84.9	-----	-----	-----	57.2	-----	-----	-----	12.2	-----	-----	-----	Sunstar Hybrids
S-1200	Red	White	Tip Awned	84.9	-----	-----	-----	56.5	-----	-----	-----	13.2	-----	-----	-----	Sunstar Hybrids
Pierson	Red	White	Awnletted	84.8	-----	-----	-----	58.0	-----	-----	-----	13.4	-----	-----	-----	Steyer Seeds
Branson	Red	White	Awnletted	84.4	-----	-----	-----	57.8	-----	-----	-----	13.2	-----	-----	-----	Syngenta
GB 1102	Red	White	Tip Awned	84.2	-----	-----	-----	56.8	-----	-----	-----	13.0	-----	-----	-----	G.B. Seeds and Service
9053	Red	White	Awned	83.8	86.4	87.0	-----	55.5	57.0	57.2	-----	12.6	12.8	12.8	-----	Dyna-Gro Seed
Hopewell	Red	Bronze	Awnletted	83.6	85.5	86.7	87.3	58.3	59.1	59.6	59.1	12.9	13.2	13.3	13.5	Michigan Crop Improvement Association
MSU Line F0036R	Red	White	Tip Awned	83.6	-----	-----	-----	57.0	-----	-----	-----	12.6	-----	-----	-----	Michigan State University
Malabar	Red	White	Tip Awned	83.5	83.7	86.0	86.3	58.0	58.8	59.4	59.1	12.9	13.1	13.2	13.4	Ohio Seed Improvement Association
SC 1302™	Red	White	Awnletted	83.4	-----	-----	-----	60.6	-----	-----	-----	13.3	-----	-----	-----	Seed Consultants, Inc.
DANW1001	Red	White	Awnletted	82.5	-----	-----	-----	58.2	-----	-----	-----	14.6	-----	-----	-----	Hyland Seeds
D 506W	Red	White	Tip Awned	82.3	86.9	-----	-----	56.1	57.1	-----	-----	13.6	14.0	-----	-----	Bio-Town Seeds, Inc.
DF 55R	Red	White	Tip Awned	82.3	86.7	86.7	86.9	59.0	59.4	59.5	59.1	13.2	13.3	13.5	13.6	D.F. Seeds, Inc.
Pioneer 25R39	Red	White	Tip Awned	82.3	86.4	87.9	86.6	57.4	58.7	59.2	58.6	13.3	13.4	13.6	13.8	DuPont Pioneer
DF EX R-1	Red	White	Tip Awned	82.2	-----	-----	-----	55.2	-----	-----	-----	12.3	-----	-----	-----	D.F. Seeds, Inc.
Shirley	Red	White	Awnletted	81.8	87.4	89.6	-----	56.6	57.5	57.8	-----	12.9	13.3	13.9	-----	Dyna-Gro Seed
AgriMAXX Exp 1342	Red	White	Awned	81.5	-----	-----	-----	58.2	-----	-----	-----	13.1	-----	-----	-----	AgriMAXX Wheat Company
MSU Line F0051R	Red	White	Awned	80.8	-----	-----	-----	59.3	-----	-----	-----	13.3	-----	-----	-----	Michigan State University
Red Ruby	Red	White	Awned	79.8	83.0	85.3	86.5	57.9	59.2	59.7	59.3	13.0	13.1	13.1	13.4	Michigan Crop Improvement Association
VA09W-73	Red	White	Tip Awned	79.7	-----	-----	-----	59.0	-----	-----	-----	13.5	-----	-----	-----	Virginia Crop Improvement Assc. / VA Tech
Merl	Red	White	Tip Awned	78.9	83.7	86.0	84.7	59.5	60.2	60.4	60.0	13.4	13.9	14.1	14.2	Virginia Crop Improvement Assc. / VA Tech
DF 45R	Red	White	Tip Awned	78.3	-----	-----	-----	58.9	-----	-----	-----	13.0	-----	-----	-----	D.F. Seeds, Inc.
HY116-SRW	Red	White	Awnletted	77.7	79.1	82.4	82.6	56.2	57.2	57.9	57.6	12.8	13.2	13.2	13.3	Hyland Seeds
SC 1341™	Red	White	Awned	77.2	-----	-----	-----	56.1	-----	-----	-----	12.4	-----	-----	-----	Seed Consultants, Inc.
AC Mountain	White	White	Awnletted	86.1	87.0	87.0	86.0	56.3	56.9	57.5	57.5	12.6	12.9	12.9	13.1	Michigan Crop Improvement Association
Pioneer 25W43	White	White	Tip Awned	84.4	85.8	86.1	85.2	56.5	57.9	58.3	57.9	12.4	12.9	13.0	13.2	DuPont Pioneer
DF 110W	White	White	Awned	84.1	87.3	-----	-----	57.6	59.0	-----	-----	12.7	13.1	-----	-----	D.F. Seeds, Inc.
MSU Line E6012	White	White	Awned	84.1	84.7	84.9	85.5	57.5	59.0	59.4	59.1	12.3	12.8	12.8	13.0	Michigan State University
Linebacker	White	White	Awnletted	84.0	82.0	84.0	84.0	56.7	57.1	57.5	57.1	13.1	14.1	14.6	15.3	D.F. Seeds, Inc.
Jupiter	White	Bronze	Awnletted	83.8	85.1	86.5	86.7	56.5	57.4	57.9	57.5	12.5	13.3	13.3	13.4	Michigan Crop Improvement Association
Ambassador	White	White	Awnletted	83.5	86.3	86.6	87.4	55.2	56.7	57.3	57.2	12.0	12.5	12.5	12.7	D.F. Seeds, Inc. & Co-op Elevevator, Pigeon
HY319-SWW	White	White	Awnletted	82.5	81.5	83.1	84.1	57.5	58.7	59.3	58.9	12.9	13.2	13.2	13.5	Hyland Seeds
VA09W-188WS	White	White	Awned	82.4	86.5	-----	-----	56.8	57.9	-----	-----	12.9	13.1	-----	-----	Virginia Crop Improvement Assc. / VA Tech
Ava	White	White	Awnletted	82.2	81.5	82.9	83.0	57.6	57.2	57.5	57.1	13.4	14.9	15.4	15.6	Hyland Seeds
MSU Line F0039	White	White	Awnletted	81.1	-----	-----	-----	56.4	-----	-----	-----	12.4	-----	-----	-----	Michigan State University
MSU Line F0065	White	White	Awnletted	80.9	-----	-----	-----	55.8	-----	-----	-----	12.5	-----	-----	-----	Michigan State University
MSU Line F0014	White	White	Awnletted	80.6	-----	-----	-----	56.6	-----	-----	-----	12.3	-----	-----	-----	Michigan State University
9242W	White	White	Awnletted	80.4	84.9	85.2	-----	57.4	58.7	59.2	-----	13.0	13.2	13.2	-----	Dyna-Gro Seed
W1062	White	White	Tip Awned	80.4	80.3	82.9	83.2	57.2	57.5	58.0	57.6	13.3	14.0	14.4	14.7	Syngenta
9362W	White	White	Tip Awned	78.8	-----	-----	-----	58.3	-----	-----	-----	13.1	-----	-----	-----	Dyna-Gro Seed
Aubrey	White	White	Awnletted	78.1	80.9	82.2	84.3	58.3	59.0	59.9	59.7	13.0	13.2	13.3	13.6	D.F. Seeds, Inc.
SY 901	White	White	Awned	77.3	-----	-----	-----	56.5	-----	-----	-----	12.5	-----	-----	-----	Syngenta
MEAN (2013 93 Entries)				**85.3**	**87.2**	**87.0**	**86.2**	**57.6**	**58.4**	**58.7**	**58.6**	**13.0**	**13.3**	**13.4**	**13.7**	
LSD (0.05)				**2.7**	**5.5**	**4.3**	**3.8**	**0.3**	**1.1**	**1.1**	**0.9**	**0.3**	**0.7**	**0.8**	**0.7**	
CV (%)				**5.6**	**3.1**	**3.0**	**3.1**	**1.0**	**0.9**	**1.1**	**1.1**	**3.9**	**2.8**	**3.5**	**3.4**	

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

MSU makes no endorsement of any variety or brand.

Table 2 : Multi-Year Performance Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

Name	Grain Color	Lodging Score (0-9) (0=none) 2013	Flowering Date (Days Past Jan. 1) 2013	Flowering Date Multi-Year Averages 2 YR 2012-13	Flowering Date Multi-Year Averages 3 YR 2011-13	Flowering Date Multi-Year Averages 4 YR 2010-13	Plant Height (Inches) 2013	Plant Height Multi-Year Averages 2 YR 2012-13	Plant Height Multi-Year Averages 3 YR 2011-13	Plant Height Multi-Year Averages 4 YR 2010-13	Powdery Mildew Score (0-9) 2013	Powdery Mildew Multi-Year Averages 2 YR 2012-13	Powdery Mildew Multi-Year Averages 3 YR 2011-13	Powdery Mildew Multi-Year Averages 4 YR 2010-13	Septoria Leaf Blotch Score (0-9) 2012	Septoria Leaf Blotch Multi-Year Averages 2 YR 2011-12	Septoria Leaf Blotch Multi-Year Averages 3 YR 2010-12	Septoria Leaf Blotch Multi-Year Averages 4 YR 2009-12	Barley Yellow Dwarf Score (0-9) 2013
DF EX-2	Red	3.1	153.5	-----	-----	-----	32.2	-----	-----	-----	1.0	-----	-----	-----	-----	-----	-----	-----	0.4
RS 972	Red	3.1	154.7	148.9	-----	-----	34.0	32.5	-----	-----	2.0	3.1	-----	-----	1.3	-----	-----	-----	1.5
Pioneer 25R40	Red	1.8	154.7	148.7	-----	-----	31.5	30.3	-----	-----	0.0	0.1	-----	-----	1.0	-----	-----	-----	2.1
DF 109R	Red	3.2	155.1	149.4	-----	-----	34.1	32.7	-----	-----	2.0	2.4	-----	-----	1.9	-----	-----	-----	2.0
MCIA Red Dragon	Red	2.0	154.0	148.2	149.8	148.9	38.1	36.0	36.8	36.9	3.0	1.6	1.3	1.8	1.0	3.1	2.9	-----	1.2
W 123	Red	3.1	153.4	147.4	149.2	-----	39.2	36.5	35.3	-----	3.0	3.1	2.0	-----	2.3	3.4	-----	-----	1.9
HS 284R	Red	1.8	154.1	-----	-----	-----	38.4	-----	-----	-----	2.0	-----	-----	-----	-----	-----	-----	-----	1.9
MCIA EXP A	Red	4.4	153.1	-----	-----	-----	34.2	-----	-----	-----	4.0	-----	-----	-----	-----	-----	-----	-----	2.8
RS 907	Red	2.6	153.6	-----	-----	-----	33.2	-----	-----	-----	1.0	-----	-----	-----	-----	-----	-----	-----	2.0
W 206	Red	1.6	153.6	-----	-----	-----	35.4	-----	-----	-----	1.0	-----	-----	-----	-----	-----	-----	-----	1.2
MCIA EXP B	Red	3.3	153.5	-----	-----	-----	34.4	-----	-----	-----	4.0	-----	-----	-----	-----	-----	-----	-----	3.3
W 125	Red	2.1	154.0	148.2	-----	-----	38.3	36.1	-----	-----	2.0	2.2	-----	-----	2.5	-----	-----	-----	2.7
W 207	Red	2.2	155.3	-----	-----	-----	35.1	-----	-----	-----	4.0	-----	-----	-----	-----	-----	-----	-----	2.5
DF Sienna	Red	1.7	153.6	-----	-----	-----	39.3	-----	-----	-----	2.0	-----	-----	-----	-----	-----	-----	-----	2.1
9223	Red	2.6	154.8	149.2	-----	-----	34.1	33.0	-----	-----	3.0	3.8	-----	-----	2.0	-----	-----	-----	3.8
Heilman	Red	2.7	154.2	148.1	-----	-----	39.1	36.6	-----	-----	0.0	0.0	-----	-----	2.2	-----	-----	-----	1.3
Hunker	Red	2.8	155.5	149.4	-----	-----	34.9	33.3	-----	-----	0.0	1.6	-----	-----	0.8	-----	-----	-----	2.3
W 205	Red	1.0	157.6	-----	-----	-----	34.3	-----	-----	-----	2.0	-----	-----	-----	-----	-----	-----	-----	1.0
AgriMAXX 438	Red	3.9	154.3	-----	-----	-----	34.9	-----	-----	-----	2.0	-----	-----	-----	-----	-----	-----	-----	3.1
SC 1342™	Red	1.9	154.2	-----	-----	-----	34.8	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	2.1
D 512W	Red	2.7	154.7	-----	-----	-----	34.2	-----	-----	-----	4.0	-----	-----	-----	-----	-----	-----	-----	1.3
LCS 38686	Red	4.8	152.6	-----	-----	-----	33.8	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	2.0
Sienna	Red	1.7	153.6	148.0	149.7	-----	38.5	36.2	37.4	-----	2.0	1.3	1.1	-----	2.1	2.6	-----	-----	0.9
Pioneer 25R34	Red	4.3	154.0	147.9	149.7	-----	35.3	33.3	33.5	-----	5.0	5.1	4.7	-----	1.1	2.1	-----	-----	1.3
DF EX-23	Red	1.0	153.1	-----	-----	-----	32.2	-----	-----	-----	4.0	-----	-----	-----	-----	-----	-----	-----	1.1
LCS 34969	Red	3.5	152.8	-----	-----	-----	35.9	-----	-----	-----	3.0	-----	-----	-----	-----	-----	-----	-----	1.1
AgriMAXX 413	Red	2.8	152.8	147.0	-----	-----	32.1	31.1	-----	-----	0.0	1.8	-----	-----	4.1	-----	-----	-----	2.9
MCIA EXP4	Red	2.4	156.2	150.2	-----	-----	36.3	34.9	-----	-----	0.0	0.0	-----	-----	3.0	-----	-----	-----	1.5
Sunburst	Red	1.9	156.1	149.6	150.8	150.4	31.6	29.5	31.0	31.2	0.0	0.1	0.6	0.7	1.9	2.2	2.6	2.8	2.5
DF EX-L1	Red	5.2	154.0	-----	-----	-----	36.4	-----	-----	-----	1.0	-----	-----	-----	-----	-----	-----	-----	2.2
DF 111R EX	Red	1.3	154.5	-----	-----	-----	35.5	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	1.9
MCIA Whale	Red	1.2	156.7	-----	-----	-----	34.9	-----	-----	-----	4.0	-----	-----	-----	-----	-----	-----	-----	2.0
RS 979	Red	4.1	153.2	147.4	-----	-----	33.9	32.2	-----	-----	2.0	3.4	-----	-----	2.6	-----	-----	-----	1.8
9042	Red	1.5	153.9	147.9	150.0	149.5	32.5	31.2	31.6	31.7	1.0	2.4	2.2	2.3	4.3	3.5	2.9	-----	2.1
GB 1202	Red	2.8	152.9	-----	-----	-----	31.7	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	2.0
W 208	Red	3.2	154.2	148.7	-----	-----	35.1	34.6	-----	-----	1.0	0.6	-----	-----	1.8	-----	-----	-----	1.2
AgriMAXX 427	Red	4.2	153.4	-----	-----	-----	34.0	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	1.6
MCIA Blazer	Red	2.9	153.2	147.0	-----	-----	33.4	32.5	-----	-----	0.0	0.7	-----	-----	1.9	-----	-----	-----	2.0
AgriMAXX 434	Red	2.9	153.6	-----	-----	-----	32.0	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	1.4
SY 483	Red	3.0	155.9	-----	-----	-----	34.6	-----	-----	-----	1.0	-----	-----	-----	-----	-----	-----	-----	1.0
DF 105R	Red	2.1	153.0	147.1	149.3	-----	32.4	30.5	31.2	-----	1.0	3.3	3.1	-----	3.6	4.6	-----	-----	2.9
EXP 101	Red	2.9	154.4	-----	-----	-----	35.6	-----	-----	-----	4.0	-----	-----	-----	-----	-----	-----	-----	1.8
D 492W	Red	2.6	153.2	147.7	-----	-----	33.1	31.0	-----	-----	1.0	2.0	-----	-----	2.1	-----	-----	-----	3.4
SC 1321™	Red	2.2	153.5	-----	-----	-----	32.0	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	2.8
MCIA Red Devil	Red	2.3	154.9	148.6	150.4	149.5	34.3	32.3	33.4	33.6	0.0	0.6	0.7	0.6	1.3	1.6	1.7	-----	1.8
Emmit	Red	3.7	156.4	150.7	152.2	151.4	36.6	34.0	35.1	35.4	1.0	0.7	1.6	2.2	3.2	3.3	3.0	3.0	2.9

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

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Table 2 : Multi-Year Performance Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

Name	Grain Color	Lodging Score (0-9) (0=none) 2013	Flowering Date (Days Past Jan. 1) 2013	Flowering Date Multi-Year Averages 2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	Plant Height (Inches) 2013	Plant Height Multi-Year Averages 2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	Powdery Mildew Score (0-9) 2013	Powdery Mildew Multi-Year Averages 2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	Septoria Leaf Blotch Score (0-9) 2012	Septoria Leaf Blotch Multi-Year Averages 2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	Barley Yellow Dwarf Score (0-9) 2013
LCS 37773	Red	6.4	152.4	-----	-----	-----	34.5	-----	-----	-----	3.0	-----	-----	-----	-----	-----	-----	-----	2.2
S-1100	Red	2.3	153.2	-----	-----	-----	32.0	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	2.6
S-1200	Red	4.6	153.5	-----	-----	-----	34.6	-----	-----	-----	3.0	-----	-----	-----	-----	-----	-----	-----	1.1
Pierson	Red	3.3	153.8	-----	-----	-----	35.6	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	3.2
Branson	Red	3.4	153.5	-----	-----	-----	33.0	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	1.4
GB 1102	Red	4.6	153.2	-----	-----	-----	33.5	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	1.3
9053	Red	2.8	154.9	148.8	150.7	-----	32.5	31.3	32.0	-----	2.0	4.1	3.4	-----	3.2	4.2	-----	-----	1.6
Hopewell	Red	1.6	154.7	149.3	151.1	150.4	35.9	34.2	34.4	34.8	1.0	0.7	0.9	1.3	4.4	5.0	3.9	3.5	3.5
MSU Line F0036R	Red	1.1	155.1	-----	-----	-----	30.6	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	1.6
Malabar	Red	1.8	153.9	149.5	150.8	150.2	37.2	35.0	35.8	36.2	3.0	2.1	1.4	1.8	3.8	4.6	3.8	3.4	1.1
SC 1302™	Red	4.1	153.0	-----	-----	-----	32.5	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	2.1
DANW1001	Red	2.2	158.7	-----	-----	-----	35.2	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	3.2
D 506W	Red	3.7	153.7	147.9	-----	-----	34.1	32.4	-----	-----	0.0	1.3	-----	-----	2.3	-----	-----	-----	1.2
DF 55R	Red	4.9	155.3	149.1	150.9	150.2	34.9	33.0	33.3	33.7	0.0	0.0	0.5	0.8	3.1	3.4	3.1	3.1	4.1
Pioneer 25R39	Red	3.9	156.8	150.1	151.7	151.2	34.5	32.4	33.0	33.5	5.0	4.2	3.5	3.8	2.6	3.8	3.3	3.3	1.1
DF EX R-1	Red	2.2	155.2	-----	-----	-----	35.3	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	2.6
Shirley	Red	1.2	156.3	149.6	151.3	-----	30.5	29.3	30.1	-----	0.0	0.0	0.0	-----	2.7	2.7	-----	-----	1.2
AgriMAXX Exp 1342	Red	1.3	156.0	-----	-----	-----	31.3	-----	-----	-----	1.0	-----	-----	-----	-----	-----	-----	-----	1.7
MSU Line F0051R	Red	1.4	156.0	-----	-----	-----	33.7	-----	-----	-----	1.0	-----	-----	-----	-----	-----	-----	-----	4.1
Red Ruby	Red	2.2	155.2	149.1	150.9	150.4	33.6	32.4	33.1	33.9	0.0	0.9	0.7	1.2	4.4	4.8	3.6	3.4	0.9
VA09W-73	Red	2.0	155.8	-----	-----	-----	32.6	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	0.2
Merl	Red	1.0	153.4	147.1	149.0	148.4	32.5	31.8	32.4	32.5	1.0	0.5	1.1	1.1	4.3	3.6	3.6	3.3	3.7
DF 45R	Red	2.6	153.9	-----	-----	-----	33.9	-----	-----	-----	3.0	-----	-----	-----	-----	-----	-----	-----	1.5
HY116-SRW	Red	4.1	155.9	150.6	152.1	151.5	36.3	34.0	35.3	35.5	0.0	0.2	0.7	0.6	2.1	2.3	2.0	1.9	4.4
SC 1341™	Red	3.3	153.9	-----	-----	-----	30.4	-----	-----	-----	3.0	-----	-----	-----	-----	-----	-----	-----	0.0
AC Mountain	White	3.9	155.8	150.7	152.0	151.4	38.9	36.7	36.6	37.1	1.0	0.5	1.4	1.8	2.9	4.1	3.4	3.3	3.1
Pioneer 25W43	White	3.9	154.2	148.3	150.0	149.3	33.6	31.6	32.0	32.3	2.0	3.5	3.2	3.3	3.2	3.1	2.8	2.9	3.4
DF 110W	White	2.7	155.3	149.2	-----	-----	32.8	30.9	-----	-----	1.0	0.9	-----	-----	2.6	-----	-----	-----	1.2
MSU Line E6012	White	3.1	154.3	148.5	150.5	149.9	33.5	32.5	32.6	33.2	0.0	1.2	1.8	1.9	2.1	2.8	2.7	2.8	0.2
Linebacker	White	2.8	156.9	151.2	152.7	151.8	37.0	35.0	35.4	36.0	3.0	1.9	2.6	3.0	2.1	3.3	3.0	3.2	0.0
Jupiter	White	2.3	156.0	150.6	152.1	151.4	33.2	31.8	32.2	32.2	3.0	1.6	1.8	1.7	5.6	6.1	4.9	4.4	0.8
Ambassador	White	2.2	154.7	148.2	150.0	149.3	34.4	32.8	33.4	34.2	0.0	0.0	0.1	0.9	6.4	6.0	4.8	4.3	2.1
HY319-SWW	White	2.3	156.2	151.0	152.5	151.8	36.7	35.2	36.0	36.6	1.0	0.7	1.2	1.7	2.4	2.3	2.0	-----	3.8
VA09W-188WS	White	2.9	153.8	147.3	-----	-----	35.1	33.6	-----	-----	0.0	0.4	-----	-----	3.9	-----	-----	-----	0.0
Ava	White	3.6	158.0	152.1	153.4	152.8	37.1	35.8	36.6	36.6	3.0	1.5	1.5	1.9	1.7	2.8	2.7	2.9	2.5
MSU Line F0039	White	0.9	155.7	-----	-----	-----	33.6	-----	-----	-----	3.0	-----	-----	-----	-----	-----	-----	-----	1.4
MSU Line F0065	White	2.1	156.1	-----	-----	-----	34.5	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	1.9
MSU Line F0014	White	1.5	155.2	-----	-----	-----	31.7	-----	-----	-----	1.0	-----	-----	-----	-----	-----	-----	-----	2.9
9242W	White	2.0	155.3	149.1	150.7	-----	34.2	32.5	33.4	-----	0.0	0.3	0.8	-----	1.7	2.3	-----	-----	2.7
W1062	White	4.4	155.6	150.0	151.7	150.9	34.8	33.2	33.9	34.3	3.0	2.8	2.1	2.4	2.6	3.0	2.7	2.8	1.0
9362W	White	1.7	155.6	-----	-----	-----	33.0	-----	-----	-----	3.0	-----	-----	-----	-----	-----	-----	-----	1.7
Aubrey	White	1.9	153.8	147.8	149.7	149.0	35.1	33.7	34.4	34.8	0.0	0.0	0.8	0.8	4.3	3.9	3.3	3.1	2.7
SY 901	White	4.0	156.4	-----	-----	-----	33.4	-----	-----	-----	0.0	-----	-----	-----	-----	-----	-----	-----	2.1
MEAN (2013 93 Entries)		**2.7**	**154.6**	**148.9**	**150.9**	**150.4**	**34.3**	**33.1**	**33.8**	**34.4**	**1.3**	**1.5**	**1.6**	**1.7**	**2.7**	**3.4**	**3.1**	**3.2**	**1.9**
LSD (0.05)		**1.0**	**0.6**	**1.2**	**1.1**	**0.9**	**1.2**	**1.5**	**1.6**	**1.1**	**1.0**	**2.6**	**2.2**	**1.6**	**1.3**	**1.9**	**1.7**	**1.3**	**1.1**
CV (%)		**39.4**	**0.4**	**0.4**	**0.4**	**0.4**	**3.7**	**2.2**	**2.9**	**2.3**	**108.5**	**86.3**	**83.0**	**66.8**	**29.0**	**26.8**	**32.8**	**28.5**	**33.8**

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

MSU makes no endorsement of any variety or brand.

Table 3 : Multi-Year Performance Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

Name	Grain Color	Stripe Rust Score (0-9)				Leaf Rust Score (0-9)			Stem Rust Score (0-9)	FHB (Scab) : Field Observation				DON (ppm) in grain				Black Point (tip) Percent	
			Multi-Year Averages				Multi-Year Averages			Incidence (% of spikes)	Severity (% within spikes)	Index (% overall infection)	FHB Score (0-5)		Multi-Year Averages				Multi-Yr
		2013	2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	2013	2 YR 2012-13	3 YR 2011-13	2009	2013	2013	2013	2012	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12
DF EX-2	Red	0.3	-----	-----	-----	2.2	-----	-----	-----	55.2	42.4	21.5	-----	-----	-----	-----	-----	-----	-----
RS 972	Red	1.6	0.8	-----	-----	1.2	2.0	-----	-----	27.9	32.7	7.9	2.4	0.3	-----	-----	-----	2.3	-----
Pioneer 25R40	Red	0.0	0.2	-----	-----	0.1	0.8	-----	-----	51.9	53.2	24.3	1.5	0.4	-----	-----	-----	5.7	-----
DF 109R	Red	0.0	0.1	-----	-----	0.1	1.0	-----	-----	40.5	40.0	18.1	1.4	0.3	-----	-----	-----	5.6	-----
MCIA Red Dragon	Red	3.2	3.1	2.1	2.0	0.9	1.8	2.0	-----	13.5	46.4	8.8	2.0	0.2	0.4	4.0	-----	3.2	5.7
W 123	Red	3.8	3.8	2.5	-----	0.8	1.4	2.5	-----	12.1	60.3	8.2	1.4	0.4	0.6	-----	-----	5.4	14.2
HS 284R	Red	2.5	-----	-----	-----	2.4	-----	-----	-----	10.0	36.2	4.7	-----	-----	-----	-----	-----	-----	-----
MCIA EXP A	Red	1.5	-----	-----	-----	0.9	-----	-----	-----	24.5	38.7	7.5	-----	-----	-----	-----	-----	-----	-----
RS 907	Red	1.3	-----	-----	-----	0.6	-----	-----	-----	40.0	33.1	15.5	-----	-----	-----	-----	-----	-----	-----
W 206	Red	3.2	-----	-----	-----	0.0	-----	-----	-----	15.8	29.5	6.6	-----	-----	-----	-----	-----	-----	-----
MCIA EXP B	Red	0.0	-----	-----	-----	0.0	-----	-----	-----	32.8	32.1	12.5	-----	-----	-----	-----	-----	-----	-----
W 125	Red	2.2	2.5	-----	-----	0.6	1.5	-----	-----	17.9	39.3	8.6	1.4	0.3	-----	-----	-----	2.3	-----
W 207	Red	1.0	-----	-----	-----	0.5	-----	-----	-----	38.9	39.4	14.0	-----	-----	-----	-----	-----	-----	-----
DF Sienna	Red	2.4	-----	-----	-----	1.0	-----	-----	-----	12.9	56.2	10.3	-----	-----	-----	-----	-----	-----	-----
9223	Red	0.3	1.0	-----	-----	1.2	1.6	-----	-----	26.7	46.0	12.8	1.5	0.3	-----	-----	-----	4.8	-----
Heilman	Red	3.2	3.6	-----	-----	0.8	2.4	-----	-----	8.2	32.0	2.5	1.8	0.2	-----	-----	-----	3.2	-----
Hunker	Red	0.5	0.8	-----	-----	0.2	0.4	-----	-----	27.7	37.4	12.0	1.4	0.2	-----	-----	-----	3.0	-----
W 205	Red	0.8	-----	-----	-----	0.4	-----	-----	-----	35.5	25.9	10.7	-----	-----	-----	-----	-----	-----	-----
AgriMAXX 438	Red	1.2	-----	-----	-----	1.3	-----	-----	-----	54.4	47.3	26.2	-----	-----	-----	-----	-----	-----	-----
SC 1342™	Red	0.8	-----	-----	-----	0.0	-----	-----	-----	44.3	42.5	20.3	-----	-----	-----	-----	-----	-----	-----
D 512W	Red	0.0	-----	-----	-----	0.2	-----	-----	-----	10.7	26.2	0.0	-----	-----	-----	-----	-----	-----	-----
LCS 38686	Red	1.4	-----	-----	-----	0.3	-----	-----	-----	30.1	44.2	14.3	-----	-----	-----	-----	-----	-----	-----
Sienna	Red	5.1	4.3	2.9	-----	0.3	1.1	1.9	-----	44.4	53.5	23.7	1.5	0.3	0.4	-----	-----	4.3	7.7
Pioneer 25R34	Red	0.2	1.0	0.6	-----	0.0	0.5	1.0	-----	36.7	41.2	19.6	2.4	0.0	0.2	-----	-----	0.9	3.6
DF EX-23	Red	4.5	-----	-----	-----	0.3	-----	-----	-----	40.1	30.9	12.5	-----	-----	-----	-----	-----	-----	-----
LCS 34969	Red	2.8	-----	-----	-----	0.7	-----	-----	-----	18.0	45.2	6.1	-----	-----	-----	-----	-----	-----	-----
AgriMAXX 413	Red	0.0	0.0	-----	-----	1.9	1.5	-----	-----	45.0	46.9	24.2	0.8	0.2	-----	-----	-----	3.5	-----
MCIA EXP4	Red	2.1	2.0	-----	-----	0.4	1.5	-----	-----	30.3	43.2	14.0	1.7	0.2	-----	-----	-----	2.0	-----
Sunburst	Red	0.0	0.4	0.2	0.4	1.6	1.5	2.5	0.0	53.8	38.6	21.6	2.0	0.3	0.7	3.4	3.4	4.2	8.7
DF EX-L1	Red	3.1	-----	-----	-----	0.2	-----	-----	-----	5.8	29.9	6.0	-----	-----	-----	-----	-----	-----	-----
DF 111R EX	Red	4.8	-----	-----	-----	0.4	-----	-----	-----	2.2	18.0	0.0	-----	-----	-----	-----	-----	-----	-----
MCIA Whale	Red	0.0	-----	-----	-----	0.0	-----	-----	-----	37.0	38.4	17.5	-----	-----	-----	-----	-----	-----	-----
RS 979	Red	0.9	0.9	-----	-----	0.7	1.2	-----	-----	34.7	22.8	11.8	1.9	0.1	-----	-----	-----	2.2	-----
9042	Red	0.5	0.3	0.2	0.1	1.5	3.0	2.8	-----	50.3	41.8	23.5	1.2	0.2	0.3	3.0	-----	3.2	7.3
GB 1202	Red	0.0	-----	-----	-----	1.9	-----	-----	-----	30.1	45.1	12.7	-----	-----	-----	-----	-----	-----	-----
W 208	Red	5.3	6.1	-----	-----	0.0	0.5	-----	-----	0.0	31.3	0.2	2.0	0.2	-----	-----	-----	4.7	-----
AgriMAXX 427	Red	1.2	-----	-----	-----	1.3	-----	-----	-----	37.6	48.0	20.2	-----	-----	-----	-----	-----	-----	-----
MCIA Blazer	Red	0.8	1.9	-----	-----	0.2	0.5	-----	-----	51.3	36.3	20.3	1.9	0.2	-----	-----	-----	2.8	-----
AgriMAXX 434	Red	2.9	-----	-----	-----	0.0	-----	-----	-----	40.1	29.0	15.4	-----	-----	-----	-----	-----	-----	-----
SY 483	Red	0.0	-----	-----	-----	0.5	-----	-----	-----	23.4	33.5	9.5	-----	-----	-----	-----	-----	-----	-----
DF 105R	Red	0.6	0.7	0.4	-----	1.4	1.4	1.2	-----	34.8	22.0	9.0	1.1	0.2	0.5	-----	-----	3.2	13.0
EXP 101	Red	4.0	-----	-----	-----	0.0	-----	-----	-----	0.0	18.1	0.0	-----	-----	-----	-----	-----	-----	-----
D 492W	Red	0.0	0.2	-----	-----	0.4	0.8	-----	-----	37.6	37.0	9.3	1.5	0.2	-----	-----	-----	2.7	-----
SC 1321™	Red	0.0	-----	-----	-----	1.1	-----	-----	-----	23.5	50.1	12.1	-----	-----	-----	-----	-----	-----	-----
MCIA Red Devil	Red	1.0	1.6	1.7	1.4	0.0	0.4	0.5	-----	16.5	31.0	8.2	2.0	0.1	0.4	4.5	-----	3.6	17.1
Emmit	Red	5.3	6.3	4.7	4.5	0.0	0.9	1.6	1.9	13.6	32.7	6.0	1.3	0.3	0.5	4.1	4.2	8.5	27.3

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

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Table 3 : Multi-Year Performance Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

Name	Grain Color	Stripe Rust Score (0-9)				Leaf Rust Score (0-9)			Stem Rust Score (0-9)	FHB (Scab) : Field Observation				DON (ppm) in grain				Black Point (tip) Percent	
			Multi-Year Averages				Multi-Year Averages			Incidence (% of spikes)	Severity (% within spikes)	Index (% overall infection)	FHB Score (0-5)		Multi-Year Averages				Multi-Yr
		2013	2 YR 2012-13	3 YR 2011-13	4 YR 2010-13	2013	2 YR 2012-13	3 YR 2011-13	2009	2013	2013	2013	2012	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12
LCS 37773	Red	0.0	-----	-----	-----	1.0	-----	-----	-----	33.3	51.6	12.8	-----	-----	-----	-----	-----	-----	-----
S-1100	Red	1.4	-----	-----	-----	0.5	-----	-----	-----	23.8	28.1	6.4	-----	-----	-----	-----	-----	-----	-----
S-1200	Red	0.7	-----	-----	-----	0.9	-----	-----	-----	44.2	25.8	14.0	-----	-----	-----	-----	-----	-----	-----
Pierson	Red	6.5	-----	-----	-----	0.0	-----	-----	-----	8.1	20.5	2.5	-----	-----	-----	-----	-----	-----	-----
Branson	Red	0.4	-----	-----	-----	0.0	-----	-----	-----	32.6	44.8	14.4	-----	-----	-----	-----	-----	-----	-----
GB 1102	Red	1.1	-----	-----	-----	0.0	-----	-----	-----	51.9	42.6	22.8	-----	-----	-----	-----	-----	-----	-----
9053	Red	0.0	1.1	0.7	-----	1.1	1.6	1.6	-----	35.6	38.0	13.2	1.9	0.4	0.8	-----	-----	5.6	15.0
Hopewell	Red	3.0	3.5	2.3	1.9	0.7	2.3	2.6	1.5	28.0	41.2	10.7	1.2	0.5	0.8	6.6	7.1	3.1	4.2
MSU Line F0036R	Red	0.0	-----	-----	-----	0.1	-----	-----	-----	33.1	48.4	15.0	-----	-----	-----	-----	-----	-----	-----
Malabar	Red	6.7	6.4	4.3	3.8	1.5	2.3	3.7	5.3	20.2	14.7	1.9	1.6	0.2	0.2	3.1	3.3	2.2	3.8
SC 1302™	Red	2.0	-----	-----	-----	0.0	-----	-----	-----	51.6	46.0	21.3	-----	-----	-----	-----	-----	-----	-----
DANW1001	Red	2.4	-----	-----	-----	0.4	-----	-----	-----	0.0	19.7	0.0	-----	-----	-----	-----	-----	-----	-----
D 506W	Red	1.3	1.0	-----	-----	0.6	1.2	-----	-----	27.9	40.4	8.7	0.7	0.1	-----	-----	-----	5.8	-----
DF 55R	Red	4.8	5.1	3.4	2.9	0.3	0.5	0.6	0.7	56.7	52.2	29.3	2.2	0.2	0.5	2.9	2.8	4.4	12.3
Pioneer 25R39	Red	0.0	0.1	0.5	0.6	0.9	1.2	1.4	0.6	22.9	40.2	11.8	1.6	0.3	0.4	3.8	4.2	1.9	3.6
DF EX R-1	Red	6.2	-----	-----	-----	0.0	-----	-----	-----	30.7	64.5	24.7	-----	-----	-----	-----	-----	-----	-----
Shirley	Red	4.1	5.4	4.4	-----	0.3	1.5	1.3	-----	45.5	42.5	19.7	3.2	0.4	1.0	-----	-----	15.1	26.2
AgriMAXX Exp 1342	Red	6.4	-----	-----	-----	1.0	-----	-----	-----	20.7	34.5	10.3	-----	-----	-----	-----	-----	-----	-----
MSU Line F0051R	Red	0.0	-----	-----	-----	0.8	-----	-----	-----	16.3	28.7	4.8	-----	-----	-----	-----	-----	-----	-----
Red Ruby	Red	6.0	6.8	5.4	4.8	0.2	2.0	2.4	4.4	47.0	50.6	23.8	1.6	0.2	0.5	5.1	5.7	7.4	8.1
VA09W-73	Red	1.5	-----	-----	-----	0.0	-----	-----	-----	37.2	46.8	19.3	-----	-----	-----	-----	-----	-----	-----
Merl	Red	0.0	1.2	0.8	0.9	0.1	0.4	0.8	1.8	40.5	65.4	27.0	2.9	0.6	0.7	5.3	6.5	3.8	11.9
DF 45R	Red	8.5	-----	-----	-----	0.0	-----	-----	-----	18.5	56.7	9.6	-----	-----	-----	-----	-----	-----	-----
HY116-SRW	Red	5.2	5.7	5.0	4.2	0.2	0.4	0.6	0.0	13.0	20.0	3.1	2.3	0.4	0.6	4.1	3.5	2.2	10.4
SC 1341™	Red	1.2	-----	-----	-----	0.7	-----	-----	-----	12.7	43.5	3.7	-----	-----	-----	-----	-----	-----	-----
AC Mountain	White	5.8	6.1	5.2	4.4	0.4	1.0	1.8	4.2	19.9	43.6	10.2	2.6	0.5	1.1	6.6	6.6	5.6	17.6
Pioneer 25W43	White	1.4	2.6	1.7	1.3	0.5	0.7	1.1	0.0	35.2	41.7	14.5	1.3	0.2	0.5	3.5	3.6	2.6	6.2
DF 110W	White	0.6	1.5	-----	-----	0.4	2.4	-----	-----	22.5	25.4	4.6	2.3	0.2	-----	-----	-----	3.6	-----
MSU Line E6012	White	0.0	0.2	0.1	0.2	1.6	2.9	3.1	3.2	21.8	37.8	6.4	1.5	0.2	0.4	3.9	3.7	1.8	3.3
Linebacker	White	4.9	5.5	3.7	3.2	0.4	2.1	2.7	4.4	24.6	37.2	12.4	0.9	0.2	0.6	4.1	4.3	4.1	7.9
Jupiter	White	2.2	3.4	2.2	1.7	0.1	1.1	1.6	4.4	36.3	35.1	10.1	1.9	0.8	1.5	5.9	6.1	4.0	5.7
Ambassador	White	5.4	6.4	4.2	3.9	0.6	1.2	1.6	4.9	36.5	60.8	23.7	2.7	0.7	1.5	7.8	8.4	3.1	5.7
HY319-SWW	White	4.6	4.4	2.9	2.3	0.3	0.3	0.3	-----	0.0	34.0	0.0	3.1	1.2	1.6	8.3	-----	5.5	15.7
VA09W-188WS	White	0.1	0.3	-----	-----	0.2	0.7	-----	-----	47.8	47.0	20.5	2.3	0.4	-----	-----	-----	1.1	-----
Ava	White	4.1	3.1	2.0	1.8	0.6	1.0	1.2	4.0	0.0	10.1	0.0	1.2	0.1	0.5	2.0	2.1	3.7	25.4
MSU Line F0039	White	5.6	-----	-----	-----	0.6	-----	-----	-----	21.4	42.3	6.6	-----	-----	-----	-----	-----	-----	-----
MSU Line F0065	White	3.9	-----	-----	-----	0.0	-----	-----	-----	35.2	41.7	17.4	-----	-----	-----	-----	-----	-----	-----
MSU Line F0014	White	0.0	-----	-----	-----	0.7	-----	-----	-----	49.9	47.2	23.7	-----	-----	-----	-----	-----	-----	-----
9242W	White	4.4	5.0	4.0	-----	1.5	1.6	1.6	-----	0.0	13.9	0.0	1.6	0.1	0.3	-----	-----	1.9	25.1
W1062	White	0.0	0.0	0.0	0.0	0.0	0.2	0.7	4.1	33.5	41.4	16.6	2.7	2.1	2.1	6.2	6.6	1.2	8.3
9362W	White	0.6	-----	-----	-----	0.5	-----	-----	-----	7.5	17.3	1.4	-----	-----	-----	-----	-----	-----	-----
Aubrey	White	5.6	5.8	3.9	3.1	0.2	1.7	2.0	3.9	29.1	48.2	11.6	2.1	0.1	0.8	6.0	5.4	1.4	15.0
SY 901	White	0.0	-----	-----	-----	1.3	-----	-----	-----	41.9	32.8	15.2	-----	-----	-----	-----	-----	-----	-----
MEAN (2013 93 Entries)		**2.1**	**2.7**	**2.5**	**2.2**	**0.5**	**1.3**	**1.7**	**2.6**	**27.9**	**37.7**	**11.7**	**1.7**	**0.3**	**0.7**	**4.8**	**4.9**	**3.9**	**11.6**
LSD (0.05)		**2.5**	**1.5**	**2.2**	**1.9**	**0.9**	**1.5**	**1.4**	**1.1**	**17.6**	**14.6**	**9.4**	**0.9**	**0.4**	**0.6**	**3.7**	**2.8**	**4.1**	**17.9**
CV (%)		**86.3**	**28.2**	**54.9**	**59.5**	**104.9**	**60.5**	**51.8**	**25.7**	**54.1**	**33.2**	**68.4**	**38.4**	**106.3**	**41.7**	**47.4**	**40.5**	**64.4**	**75.5**

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

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Table 4 : Multi-Year Performance Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

Name	Grain Color	Milling and Baking Properties (2012 Crop and Earlier)																		
		Percent Flour Yield				Percent Protein In Flour (at 14%)				Softness Equivalent Percent				Cookie Diameter (cm)				Whole Grain Protein (at 12%)		
			Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages	
		2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	2 YR 2010-12
DF EX-2	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
RS 972	Red	72.4	-----	-----	-----	6.1	-----	-----	-----	65.6	-----	-----	-----	19.5	-----	-----	-----	7.2	-----	-----
Pioneer 25R40	Red	69.4	-----	-----	-----	6.3	-----	-----	-----	61.8	-----	-----	-----	18.7	-----	-----	-----	7.8	-----	-----
DF 109R	Red	72.1	-----	-----	-----	6.5	-----	-----	-----	65.7	-----	-----	-----	19.1	-----	-----	-----	8.0	-----	-----
MCIA Red Dragon	Red	71.4	71.2	71.2	-----	6.3	6.3	6.3	-----	64.2	63.9	63.7	-----	18.3	18.9	18.9	-----	7.9	8.0	8.1
W 123	Red	71.5	71.8	-----	-----	6.2	6.3	-----	-----	64.5	64.9	-----	-----	18.5	19.2	-----	-----	7.8	8.0	-----
HS 284R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA EXP A	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
RS 907	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
W 206	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA EXP B	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
W 125	Red	71.5	-----	-----	-----	6.6	-----	-----	-----	64.4	-----	-----	-----	19.1	-----	-----	-----	7.9	-----	-----
W 207	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DF Sienna	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9223	Red	72.5	-----	-----	-----	6.1	-----	-----	-----	66.3	-----	-----	-----	19.3	-----	-----	-----	7.6	-----	-----
Heilman	Red	70.9	-----	-----	-----	6.4	-----	-----	-----	63.6	-----	-----	-----	19.0	-----	-----	-----	8.0	-----	-----
Hunker	Red	72.1	-----	-----	-----	5.9	-----	-----	-----	65.2	-----	-----	-----	19.4	-----	-----	-----	7.3	-----	-----
W 205	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
AgriMAXX 438	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
SC 1342™	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
D 512W	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 38686	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sienna	Red	71.4	71.6	-----	-----	6.5	6.5	-----	-----	64.3	63.6	-----	-----	18.9	19.2	-----	-----	8.2	8.3	-----
Pioneer 25R34	Red	70.7	71.0	-----	-----	5.8	6.2	-----	-----	63.9	63.7	-----	-----	19.5	19.8	-----	-----	7.2	7.6	-----
DF EX-23	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 34969	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
AgriMAXX 413	Red	71.7	-----	-----	-----	6.7	-----	-----	-----	58.7	-----	-----	-----	19.4	-----	-----	-----	8.4	-----	-----
MCIA EXP4	Red	69.5	-----	-----	-----	7.0	-----	-----	-----	57.1	-----	-----	-----	18.5	-----	-----	-----	9.0	-----	-----
Sunburst	Red	65.4	68.7	67.5	67.0	6.7	6.6	6.6	6.7	51.1	58.2	57.4	55.3	17.3	18.4	18.4	18.2	8.5	8.4	8.4
DF EX-L1	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DF 111R EX	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA Whale	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
RS 979	Red	69.6	-----	-----	-----	5.7	-----	-----	-----	65.6	-----	-----	-----	19.8	-----	-----	-----	7.2	-----	-----
9042	Red	69.6	69.6	69.4	-----	6.7	6.6	6.5	-----	59.6	60.4	60.8	-----	18.6	18.9	18.9	-----	7.9	7.8	7.9
GB 1202	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
W 208	Red	69.0	-----	-----	-----	6.5	-----	-----	-----	62.2	-----	-----	-----	19.0	-----	-----	-----	7.8	-----	-----
AgriMAXX 427	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA Blazer	Red	67.8	-----	-----	-----	7.0	-----	-----	-----	48.1	-----	-----	-----	17.5	-----	-----	-----	9.1	-----	-----
AgriMAXX 434	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
SY 483	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DF 105R	Red	71.2	71.7	-----	-----	6.5	6.4	-----	-----	59.6	60.2	-----	-----	19.1	19.5	-----	-----	7.9	7.9	-----
EXP 101	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
D 492W	Red	71.2	-----	-----	-----	6.5	-----	-----	-----	60.7	-----	-----	-----	19.6	-----	-----	-----	8.1	-----	-----
SC 1321™	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA Red Devil	Red	68.2	68.6	68.8	-----	6.2	6.2	6.3	-----	62.6	63.8	62.7	-----	18.8	19.1	19.1	-----	7.7	7.6	7.9
Emmit	Red	70.9	71.1	71.3	71.6	6.8	6.6	6.6	6.7	57.8	58.5	58.3	57.8	18.7	19.0	19.2	19.2	8.8	8.8	8.8

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

MSU makes no endorsement of any variety or brand.

Table 4 : Multi-Year Performance Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

Name	Grain Color	Milling and Baking Properties (2012 Crop and Earlier)																		
		Percent Flour Yield				Percent Protein In Flour (at 14%)				Softness Equivalent Percent				Cookie Diameter (cm)				Whole Grain Protein (at 12%)		
			Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages	
		2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	2 YR 2010-12
LCS 37773	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
S-1100	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
S-1200	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Pierson	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Branson	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
GB 1102	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9053	Red	69.7	69.8	-----	-----	6.5	6.3	-----	-----	62.1	63.0	-----	-----	19.1	19.4	-----	-----	7.7	7.6	-----
Hopewell	Red	68.6	68.6	68.4	68.5	6.5	6.7	6.7	6.7	61.9	61.2	61.9	61.7	18.8	19.2	19.3	19.2	8.5	8.6	8.8
MSU Line F0036R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Malabar	Red	70.3	69.9	69.9	69.9	6.2	6.2	6.3	6.4	60.3	60.0	60.1	59.6	18.9	19.1	19.1	19.2	8.0	8.0	8.2
SC 1302™	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DANW1001	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
D 506W	Red	69.5	-----	-----	-----	6.6	-----	-----	-----	64.7	-----	-----	-----	18.5	-----	-----	-----	8.4	-----	-----
DF 55R	Red	71.4	71.5	71.3	71.4	6.9	6.7	6.7	6.8	57.7	58.6	59.1	58.7	19.0	19.2	19.4	19.3	9.3	9.0	8.9
Pioneer 25R39	Red	69.6	69.8	69.6	69.6	5.9	6.2	6.1	6.2	60.3	59.5	59.5	59.1	18.4	18.8	18.8	18.6	7.5	7.9	8.0
DF EX R-1	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Shirley	Red	70.1	70.2	-----	-----	6.6	6.5	-----	-----	57.0	57.2	-----	-----	19.3	19.5	-----	-----	8.7	8.6	-----
AgriMAXX Exp 1342	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MSU Line F0051R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Red Ruby	Red	70.2	70.0	70.0	70.1	6.2	6.5	6.6	6.6	64.3	63.5	63.1	62.7	18.9	19.1	19.3	19.3	8.1	8.4	8.5
VA09W-73	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Merl	Red	70.0	70.3	70.4	70.5	6.5	6.7	6.8	6.9	60.4	59.7	59.3	59.1	19.1	19.2	19.2	19.2	7.7	8.1	8.3
DF 45R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
HY116-SRW	Red	67.6	67.6	67.6	67.8	6.4	6.5	6.6	6.7	56.2	56.0	56.3	55.0	18.4	18.9	19.1	19.1	8.5	8.7	8.7
SC 1341™	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
AC Mountain	White	70.7	71.1	71.1	71.2	6.1	6.3	6.3	6.3	63.4	62.1	62.1	62.2	19.1	19.3	19.4	19.5	7.6	7.9	8.0
Pioneer 25W43	White	69.7	70.0	70.1	70.0	6.5	6.6	6.8	6.8	61.3	60.1	59.6	59.6	19.3	19.3	19.2	19.3	7.8	8.1	8.3
DF 110W	White	71.3	-----	-----	-----	7.0	-----	-----	-----	58.9	-----	-----	-----	18.8	-----	-----	-----	9.1	-----	-----
MSU Line E6012	White	71.6	71.8	71.8	71.7	6.4	6.6	6.6	6.5	63.7	63.2	63.2	62.5	19.1	19.5	19.2	19.4	7.9	8.2	8.3
Linebacker	White	69.9	70.5	70.5	70.5	6.7	6.6	6.7	6.6	62.0	61.5	61.1	61.6	19.2	19.6	19.5	19.6	8.5	8.4	8.4
Jupiter	White	71.6	71.7	71.8	71.7	5.5	5.6	5.6	5.7	63.6	63.6	63.4	63.4	19.2	19.4	19.4	19.4	7.0	7.2	7.3
Ambassador	White	73.0	73.0	72.5	72.5	6.1	6.1	6.2	6.3	63.2	62.8	62.8	61.8	19.6	19.7	19.7	19.6	7.8	8.0	8.0
HY319-SWW	White	69.2	69.7	69.7	-----	6.6	6.6	6.7	-----	58.7	58.8	59.0	-----	18.3	18.8	18.9	-----	8.5	8.6	8.7
VA09W-188WS	White	71.5	-----	-----	-----	6.1	-----	-----	-----	59.6	-----	-----	-----	18.2	-----	-----	-----	7.7	-----	-----
Ava	White	69.7	69.9	70.0	70.1	6.0	6.1	6.2	6.2	65.9	65.0	64.2	63.9	19.2	19.5	19.6	19.6	7.5	7.7	7.9
MSU Line F0039	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MSU Line F0065	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MSU Line F0014	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9242W	White	69.5	69.8	-----	-----	5.9	6.2	-----	-----	63.6	62.9	-----	-----	19.5	19.7	-----	-----	7.8	8.0	-----
W1062	White	72.2	72.6	72.5	72.5	6.0	6.1	6.2	6.2	66.6	65.6	65.4	65.3	19.2	19.6	19.9	20.0	7.4	7.7	7.8
9362W	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Aubrey	White	70.2	70.6	71.0	71.1	6.6	6.9	6.9	7.0	62.8	60.7	61.8	61.6	18.2	18.4	18.5	18.6	8.6	8.8	8.8
SY 901	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MEAN (2013 93 Entries)		**70.4**	**70.5**	**70.3**	**70.4**	**6.4**	**6.4**	**6.5**	**6.5**	**61.5**	**61.5**	**61.1**	**60.6**	**18.9**	**19.2**	**19.2**	**19.2**	**8.0**	**8.1**	**8.3**
LSD (0.05)		-----	**1.8**	**1.5**	**1.2**	-----	**0.5**	**0.3**	**0.3**	-----	**4.5**	**3.3**	**3.0**	-----	**0.6**	**0.5**	**0.5**	-----	**0.5**	**0.4**
CV (%)		-----	**1.3**	**1.3**	**1.2**	-----	**3.6**	**2.8**	**3.1**	-----	**3.6**	**3.2**	**3.4**	-----	**1.4**	**1.5**	**1.7**	-----	**3.2**	**3.0**

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

Table 5 : Multi-Year Performance Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

		Milling and Baking Properties (2012 Crop and Earlier)																		
		Water SRC (%)				Sodium Carbonate SRC (%)				Sucrose SRC (%)				As Is Lactic Acid SRC (%)				Whole Grain Hardness (0-100)		
			Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages	
Name	Grain Color	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	2 YR 2010-12
DF EX-2	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
RS 972	Red	51.2	-----	-----	-----	63.9	-----	-----	-----	79.1	-----	-----	-----	97.8	-----	-----	-----	7.6	-----	-----
Pioneer 25R40	Red	54.4	-----	-----	-----	68.8	-----	-----	-----	87.0	-----	-----	-----	102.6	-----	-----	-----	12.4	-----	-----
DF 109R	Red	51.3	-----	-----	-----	65.1	-----	-----	-----	78.8	-----	-----	-----	99.9	-----	-----	-----	9.5	-----	-----
MCIA Red Dragon	Red	51.6	53.6	53.3	-----	66.4	66.5	66.5	-----	86.4	84.3	83.8	-----	102.7	96.4	92.2	-----	3.9	4.0	7.0
W 123	Red	52.9	52.7	-----	-----	67.6	66.9	-----	-----	87.1	84.5	-----	-----	99.4	98.9	-----	-----	5.3	9.2	-----
HS 284R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA EXP A	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
RS 907	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
W 206	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA EXP B	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
W 125	Red	52.3	-----	-----	-----	66.4	-----	-----	-----	86.1	-----	-----	-----	107.2	-----	-----	-----	5.4	-----	-----
W 207	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DF Sienna	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9223	Red	51.9	-----	-----	-----	65.6	-----	-----	-----	80.9	-----	-----	-----	99.2	-----	-----	-----	8.0	-----	-----
Heilman	Red	51.7	-----	-----	-----	65.7	-----	-----	-----	85.7	-----	-----	-----	101.6	-----	-----	-----	5.1	-----	-----
Hunker	Red	51.9	-----	-----	-----	65.4	-----	-----	-----	80.4	-----	-----	-----	96.0	-----	-----	-----	7.1	-----	-----
W 205	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
AgriMAXX 438	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
SC 1342™	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
D 512W	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 38686	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sienna	Red	52.4	52.6	-----	-----	67.5	66.7	-----	-----	84.7	85.1	-----	-----	108.3	101.2	-----	-----	5.4	4.3	-----
Pioneer 25R34	Red	51.3	51.9	-----	-----	64.7	64.6	-----	-----	84.2	81.2	-----	-----	93.4	92.7	-----	-----	7.9	7.1	-----
DF EX-23	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 34969	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
AgriMAXX 413	Red	51.9	-----	-----	-----	65.5	-----	-----	-----	80.2	-----	-----	-----	85.4	-----	-----	-----	20.8	-----	-----
MCIA EXP4	Red	52.8	-----	-----	-----	65.8	-----	-----	-----	88.6	-----	-----	-----	118.3	-----	-----	-----	20.2	-----	-----
Sunburst	Red	59.4	56.0	57.0	57.6	77.1	71.3	72.1	73.0	96.2	89.1	89.5	90.4	98.0	98.0	93.2	92.3	30.9	22.0	24.4
DF EX-L1	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DF 111R EX	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA Whale	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
RS 979	Red	54.4	-----	-----	-----	66.9	-----	-----	-----	81.9	-----	-----	-----	81.0	-----	-----	-----	15.5	-----	-----
9042	Red	54.7	55.4	55.5	-----	72.9	72.2	72.2	-----	92.0	90.7	89.7	-----	112.2	111.0	108.1	-----	19.4	17.3	19.7
GB 1202	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
W 208	Red	54.0	-----	-----	-----	64.8	-----	-----	-----	84.0	-----	-----	-----	82.3	-----	-----	-----	7.4	-----	-----
AgriMAXX 427	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA Blazer	Red	57.7	-----	-----	-----	70.8	-----	-----	-----	95.3	-----	-----	-----	106.7	-----	-----	-----	17.6	-----	-----
AgriMAXX 434	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
SY 483	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DF 105R	Red	51.8	52.3	-----	-----	66.6	66.8	-----	-----	79.6	80.7	-----	-----	86.9	82.0	-----	-----	21.6	19.6	-----
EXP 101	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
D 492W	Red	51.4	-----	-----	-----	66.3	-----	-----	-----	80.6	-----	-----	-----	86.3	-----	-----	-----	20.7	-----	-----
SC 1321™	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MCIA Red Devil	Red	54.7	55.2	55.3	-----	69.3	68.6	68.0	-----	87.9	85.0	84.9	-----	91.7	89.1	87.1	-----	17.6	15.3	17.0
Emmit	Red	53.6	53.7	54.0	53.5	67.9	67.9	66.8	66.6	83.6	83.6	82.5	81.6	79.1	79.3	74.8	75.8	20.5	16.4	17.9

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

Table 5 : Multi-Year Performance Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Milling and Baking Properties (2012 Crop and Earlier)																		
		Water SRC (%) Multi-Year Averages				Sodium Carbonate SRC (%) Multi-Year Averages				Sucrose SRC (%) Multi-Year Averages				As Is Lactic Acid SRC (%) Multi-Year Averages				Whole Grain Hardness (0-100) Multi-Year Averages		
		2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	3 YR 2010-12	4 YR 2009-12	2012	2 YR 2011-12	2 YR 2010-12
LCS 37773	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
S-1100	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
S-1200	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Pierson	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Branson	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
GB 1102	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9053	Red	53.3	53.7	-----	-----	69.4	70.0	-----	-----	88.5	87.9	-----	-----	89.8	90.1	-----	-----	18.8	15.6	-----
Hopewell	Red	54.3	54.6	54.3	54.1	69.1	69.2	68.7	68.6	83.9	83.2	83.3	83.3	102.4	101.4	99.8	100.7	16.9	16.1	17.9
MSU Line F0036R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Malabar	Red	55.2	55.5	55.0	54.7	68.8	68.7	68.0	67.9	84.9	83.5	83.6	83.8	93.0	92.0	91.4	94.4	10.7	9.9	11.6
SC 1302™	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DANW1001	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
D 506W	Red	52.0	-----	-----	-----	66.3	-----	-----	-----	80.9	-----	-----	-----	87.6	-----	-----	-----	21.3	-----	-----
DF 55R	Red	53.2	53.7	53.4	53.1	64.8	65.6	64.7	64.7	82.7	84.5	83.8	83.2	95.3	92.3	90.0	90.4	8.1	6.2	9.5
Pioneer 25R39	Red	56.8	57.2	56.8	56.5	71.9	71.1	70.3	70.2	87.9	86.3	84.8	85.1	86.1	85.7	82.3	83.8	10.5	10.6	11.8
DF EX R-1	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Shirley	Red	55.0	55.6	-----	-----	69.6	70.1	-----	-----	86.7	86.4	-----	-----	77.1	77.7	-----	-----	19.5	17.7	-----
AgriMAXX Exp 1342	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MSU Line F0051R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Red Ruby	Red	53.3	54.0	54.0	54.1	67.7	67.6	67.2	67.3	84.1	83.7	83.3	83.5	94.2	96.5	94.5	96.6	7.8	7.5	10.8
VA09W-73	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Merl	Red	53.9	54.8	54.8	54.6	70.3	70.0	69.8	69.8	85.1	84.5	83.4	83.6	87.0	87.2	86.5	88.3	22.3	22.6	24.5
DF 45R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
HY116-SRW	Red	55.2	55.6	55.5	55.1	68.8	69.4	68.7	68.5	85.0	86.0	84.7	84.4	83.8	81.7	78.8	80.2	19.8	18.8	20.6
SC 1341™	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
AC Mountain	White	51.0	51.2	51.4	51.5	63.4	64.1	63.5	63.4	79.2	79.5	78.7	78.5	81.9	80.4	77.0	79.6	9.1	6.8	7.9
Pioneer 25W43	White	53.4	53.3	53.0	52.7	66.6	65.7	65.0	65.3	83.7	83.7	82.8	82.7	99.3	98.6	98.5	98.2	9.4	9.0	10.9
DF 110W	White	53.1	-----	-----	-----	66.4	-----	-----	-----	82.6	-----	-----	-----	80.1	-----	-----	-----	15.9	-----	-----
MSU Line E6012	White	52.7	53.0	53.0	53.0	66.4	65.6	65.3	65.8	82.7	81.4	81.5	81.3	95.0	94.2	92.7	92.9	14.1	14.1	16.3
Linebacker	White	50.8	51.2	51.1	51.3	63.6	64.3	63.7	63.9	77.8	79.3	79.0	78.6	85.2	84.1	80.3	83.9	9.7	9.6	13.2
Jupiter	White	54.9	55.5	55.2	55.5	68.8	68.4	67.6	67.8	81.2	80.8	80.2	80.2	82.8	84.5	82.5	88.6	10.1	9.9	11.8
Ambassador	White	51.7	51.7	51.6	51.3	64.7	65.4	64.9	64.8	77.8	79.1	78.8	78.7	83.3	81.0	78.2	80.1	-0.1	-2.1	1.1
HY319-SWW	White	54.5	55.5	55.4	-----	69.5	70.0	69.3	-----	84.7	84.8	83.9	-----	89.0	87.1	84.5	-----	18.0	17.9	19.6
VA09W-188WS	White	55.6	-----	-----	-----	70.0	-----	-----	-----	85.7	-----	-----	-----	82.6	-----	-----	-----	14.5	-----	-----
Ava	White	51.5	52.1	52.2	51.9	64.6	64.7	64.4	64.2	80.3	80.9	80.4	79.8	78.1	77.2	73.1	76.0	0.3	0.4	4.9
MSU Line F0039	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MSU Line F0065	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MSU Line F0014	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9242W	White	55.3	54.7	-----	-----	67.8	67.3	-----	-----	81.1	82.0	-----	-----	83.5	84.8	-----	-----	3.7	3.0	-----
W1062	White	50.8	51.4	51.3	51.2	63.2	63.7	63.1	62.9	78.5	78.5	78.2	77.9	92.3	95.5	92.1	95.3	10.0	10.1	13.9
9362W	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Aubrey	White	53.2	53.2	53.0	52.4	67.8	68.7	68.1	67.6	83.1	85.3	85.0	83.9	93.2	94.3	93.2	93.7	8.5	9.0	10.0
SY 901	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MEAN (2013 93 Entries)		**53.3**	**53.8**	**53.9**	**53.6**	**67.3**	**67.6**	**67.2**	**66.8**	**84.0**	**83.6**	**83.0**	**82.3**	**92.4**	**90.2**	**87.8**	**88.4**	**12.5**	**11.3**	**13.7**
LSD (0.05)		**-----**	**2.5**	**1.8**	**1.5**	**-----**	**3.6**	**2.5**	**2.1**	**-----**	**5.4**	**3.5**	**3.0**	**-----**	**6.6**	**5.0**	**5.8**	**-----**	**6.0**	**4.4**
CV (%)		**-----**	**2.2**	**2.0**	**2.0**	**-----**	**2.6**	**2.3**	**2.3**	**-----**	**3.1**	**2.6**	**2.5**	**-----**	**3.6**	**3.4**	**4.6**	**-----**	**26.0**	**19.3**

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

Table 6 : Single Site: Yield, Test Weight and Moisture Performance Summary (Note: Tables sorted alphabetically by organization)

MSU makes no endorsement of any variety or brand.

			ALLEGAN			HURON			INGHAM			LENAWEE			TUSCOLA			SANILAC			
Name	Grain Color	Commercially Available	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Organization
AgriMAXX 413	Red	Yes	87.7	57.1	12.3	99.6	57.1	13.3	74.4	56.1	11.9	86.1	55.9	12.0	97.0	59.3	11.6	84.3	56.3	12.7	AgriMAXX Wheat Company
AgriMAXX 427	Red	Yes	90.7	57.4	13.1	100.4	55.8	15.3	69.6	56.7	13.0	75.3	54.5	12.7	97.5	58.6	12.1	83.5	56.0	13.5	AgriMAXX Wheat Company
AgriMAXX 434	Red	Yes	88.5	56.8	12.4	99.5	57.0	13.6	65.4	56.1	12.2	76.7	55.0	12.4	98.6	58.5	11.8	87.2	55.8	12.9	AgriMAXX Wheat Company
AgriMAXX 438	Red	Yes	81.1	57.2	13.0	112.9	57.6	15.4	76.1	57.2	13.1	81.6	56.3	13.0	101.0	58.3	12.3	82.6	56.9	13.5	AgriMAXX Wheat Company
AgriMAXX Exp 1342	Red	No	70.1	57.0	12.7	101.2	58.8	14.6	68.6	57.7	12.6	75.8	57.5	13.0	87.0	59.5	12.3	86.3	58.7	13.4	AgriMAXX Wheat Company
D 492W	Red	Yes	77.1	57.2	12.3	104.0	57.8	13.3	68.4	56.5	12.0	83.8	56.4	12.1	95.3	59.1	11.7	81.8	56.6	12.7	Bio-Town Seeds, Inc.
D 506W	Red	Yes	82.2	56.6	13.1	100.3	55.7	16.9	69.8	56.6	13.2	69.3	54.8	12.8	89.7	57.8	12.2	82.2	55.3	13.2	Bio-Town Seeds, Inc.
D 512W	Red	Yes	81.8	57.5	13.1	100.7	55.5	17.4	79.4	56.8	12.9	85.1	56.3	13.3	101.8	58.7	12.2	83.5	57.0	13.7	Bio-Town Seeds, Inc.
Ambassador	White	Yes	74.5	55.2	12.3	97.4	56.5	12.1	74.2	55.6	11.9	77.3	51.5	11.3	93.8	57.1	11.5	83.8	55.2	12.7	D.F. Seeds, Inc. & Co-op Elevevator, Pigeon
Aubrey	White	Yes	68.5	59.0	13.1	95.5	59.0	13.5	63.5	58.0	13.0	74.4	57.1	12.9	90.7	59.0	12.1	75.7	57.6	13.5	D.F. Seeds, Inc.
DF 105R	Red	Yes	80.6	57.9	12.1	102.9	57.6	12.7	74.2	56.1	11.9	78.9	55.9	12.2	96.3	59.3	11.7	78.9	55.3	12.6	D.F. Seeds, Inc.
DF 109R	Red	Yes	83.7	57.0	13.1	112.5	58.0	14.1	82.0	57.7	13.1	83.7	55.8	13.0	101.3	58.7	12.2	88.0	57.1	13.6	D.F. Seeds, Inc.
DF 110W	White	Yes	82.0	58.4	12.6	97.1	58.4	14.0	69.8	57.3	12.6	79.7	54.4	12.1	93.7	59.7	11.8	82.1	57.5	13.2	D.F. Seeds, Inc.
DF 111R EX	Red	Yes	66.8	57.4	12.6	110.1	58.6	15.7	68.3	58.0	12.5	87.1	57.8	12.7	101.2	60.0	12.1	93.5	59.0	13.4	D.F. Seeds, Inc.
DF 45R	Red	Yes	65.9	58.1	13.0	97.0	59.6	13.8	61.8	58.5	12.8	74.3	57.8	13.0	88.4	60.5	12.1	82.5	59.1	13.3	D.F. Seeds, Inc.
DF 55R	Red	Yes	78.0	59.9	13.2	95.1	58.8	14.1	63.3	58.2	12.7	79.9	57.7	13.0	92.3	60.4	12.4	85.3	59.1	13.7	D.F. Seeds, Inc.
DF EX R-1	Red	No	75.0	55.7	12.5	97.3	55.4	13.0	70.8	55.9	12.4	80.7	52.2	11.6	89.8	56.7	11.6	79.6	55.2	12.6	D.F. Seeds, Inc.
DF EX-2	Red	No	93.5	56.5	12.5	112.3	57.6	13.2	78.9	55.4	12.4	83.9	55.6	12.5	105.4	58.8	11.7	95.3	56.7	13.0	D.F. Seeds, Inc.
DF EX-23	Red	No	84.0	59.1	12.8	102.2	58.1	13.9	76.3	57.0	12.5	79.9	55.9	12.8	100.8	60.3	12.0	87.0	57.5	13.4	D.F. Seeds, Inc.
DF EX-L1	Red	Yes	88.6	60.9	13.5	107.5	59.1	15.3	76.6	59.3	13.6	71.3	57.5	13.3	99.5	60.4	12.5	84.1	59.2	13.8	D.F. Seeds, Inc.
DF Sienna	Red	Yes	67.8	57.2	13.0	113.8	57.6	14.1	79.0	57.2	12.7	87.2	56.3	12.7	100.6	58.8	12.0	91.0	58.0	13.2	D.F. Seeds, Inc.
Linebacker	White	Yes	70.2	55.6	13.1	104.3	57.7	13.9	72.6	56.5	12.6	82.5	54.3	12.8	94.1	58.4	12.4	80.2	57.6	13.6	D.F. Seeds, Inc.
EXP 101	Red	No	74.5	57.5	13.3	102.8	58.1	13.9	68.0	57.6	13.3	86.2	57.4	13.5	93.7	59.4	12.6	86.4	58.3	13.8	Direct Enterprises
Sienna	Red	Yes	72.8	57.4	12.7	111.0	57.6	14.0	72.8	56.7	12.7	82.2	55.8	12.9	97.1	58.1	12.0	95.0	57.3	13.3	Direct Enterprises
Pioneer 25R34	Red	Yes	83.0	57.9	13.2	110.3	56.6	14.1	77.5	56.5	13.1	76.3	55.4	12.9	98.4	59.0	12.2	85.3	56.3	13.5	DuPont Pioneer
Pioneer 25R39	Red	Yes	80.4	58.1	13.0	101.3	56.9	16.0	59.2	56.5	12.5	71.7	55.6	12.8	92.7	58.6	12.1	88.3	58.4	13.4	DuPont Pioneer
Pioneer 25R40	Red	Yes	88.3	59.6	12.9	106.7	58.0	13.5	72.9	57.4	12.5	87.0	57.3	12.8	101.4	59.2	12.0	95.8	58.4	13.4	DuPont Pioneer
Pioneer 25W43	White	Yes	77.2	56.7	13.0	97.7	57.5	12.4	79.9	56.4	12.4	75.1	51.9	11.5	97.8	58.7	11.9	78.8	57.9	13.2	DuPont Pioneer
9042	Red	Yes	81.3	58.0	12.9	103.8	58.8	12.6	73.6	57.1	12.7	85.1	57.3	12.7	94.7	59.2	12.0	80.2	58.0	13.2	Dyna-Gro Seed
9053	Red	Yes	84.0	55.4	12.5	97.6	55.5	13.8	73.5	55.8	12.3	81.4	54.3	12.4	91.2	56.9	11.6	75.2	55.2	12.9	Dyna-Gro Seed
9223	Red	Yes	76.7	57.8	13.2	113.2	57.8	14.4	78.5	57.6	13.1	82.0	56.2	13.2	100.8	58.0	12.2	88.3	56.4	13.4	Dyna-Gro Seed
9242W	White	Yes	70.4	57.5	12.5	97.9	58.0	15.6	57.8	57.2	12.3	79.9	55.1	12.4	95.1	58.5	12.0	81.5	57.9	13.4	Dyna-Gro Seed
9362W	White	No	70.6	58.7	12.9	99.6	59.2	14.5	60.2	58.8	13.2	71.1	54.7	12.3	90.1	59.8	12.3	81.0	58.4	13.2	Dyna-Gro Seed
Shirley	Red	Yes	66.8	56.2	12.2	101.6	56.5	15.4	69.1	55.8	11.9	80.2	55.8	12.5	93.3	58.7	12.2	79.8	56.7	13.4	Dyna-Gro Seed
GB 1102	Red	Yes	79.3	57.7	13.2	106.1	57.4	13.6	73.5	56.6	12.8	69.4	54.7	12.8	94.9	58.3	12.1	81.9	56.3	13.6	G.B. Seeds and Service
GB 1202	Red	Yes	87.4	57.3	12.2	99.7	57.8	13.4	73.7	57.1	12.1	81.6	56.2	12.2	95.6	58.5	11.6	80.9	56.0	12.6	G.B. Seeds and Service
HS 284R	Red	Yes	78.4	57.3	12.7	116.8	58.5	13.0	68.3	56.5	12.6	86.9	56.6	12.8	99.6	58.4	12.0	96.2	57.8	13.2	Harrington Seeds, Inc.
Ava	White	Yes	67.7	57.1	13.6	105.6	57.5	13.9	68.2	57.1	13.0	76.0	55.2	13.0	87.2	59.3	12.7	88.5	59.2	13.9	Hyland Seeds
DANW1001	Red	No	70.6	57.5	14.1	99.8	57.6	19.0	70.3	58.0	13.3	72.7	56.0	13.6	91.7	59.9	12.8	90.1	60.2	14.6	Hyland Seeds
Emmit	Red	Yes	72.3	57.3	13.0	108.9	58.5	14.0	66.3	57.4	13.4	73.4	55.8	13.0	95.8	59.7	12.3	92.5	58.2	13.9	Hyland Seeds
HY116-SRW	Red	Yes	59.3	55.5	12.8	90.6	55.9	14.2	70.6	56.0	12.5	71.6	54.8	12.6	93.3	58.1	12.0	80.7	56.8	12.9	Hyland Seeds
HY319-SWW	White	Yes	70.8	58.1	12.9	104.3	59.0	14.0	75.5	57.3	12.6	78.5	54.0	12.4	84.7	58.4	11.9	81.1	57.9	13.3	Hyland Seeds
LCS 34969	Red	No	83.3	58.8	13.2	107.3	59.0	13.5	74.8	57.5	13.2	79.5	56.4	12.9	97.3	60.1	12.2	87.4	57.8	13.2	Limagrain Cereal Seeds
LCS 37773	Red	No	78.6	61.6	13.3	110.2	60.9	14.2	58.5	60.9	13.4	79.1	60.1	13.5	98.6	62.2	12.7	84.5	60.7	13.8	Limagrain Cereal Seeds
LCS 38686	Red	No	81.1	58.7	13.6	106.2	58.7	13.3	68.0	58.0	13.1	85.2	57.2	13.6	103.5	61.0	12.6	88.1	58.4	13.9	Limagrain Cereal Seeds
AC Mountain	White	Yes	68.4	56.3	12.9	103.1	57.4	13.5	75.4	56.7	12.6	83.3	54.5	12.1	95.9	57.3	11.8	90.4	55.6	12.8	Michigan Crop Improvement Association

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

Table 6 : Single Site: Yield, Test Weight and Moisture Performance Summary (Note: Tables sorted alphabetically by organization)

MSU makes no endorsement of any variety or brand.

			ALLEGAN			HURON			INGHAM			LENAWEE			TUSCOLA			SANILAC			
Name	Grain Color	Commercially Available	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Yield bu/acre	Test Weight	Moist.	Organization
Hopewell	Red	Yes	74.9	58.8	12.8	96.8	59.0	13.9	75.6	57.9	12.7	76.2	56.4	12.6	94.4	59.8	12.1	83.5	58.1	13.1	Michigan Crop Improvement Association
Jupiter	White	Yes	81.2	57.3	13.0	91.6	57.3	12.9	75.1	56.4	12.2	82.2	54.6	12.2	93.0	58.3	11.8	79.5	55.2	12.8	Michigan Crop Improvement Association
MCIA Blazer	Red	Yes	81.8	60.7	13.2	97.7	60.0	13.6	71.5	58.8	12.8	81.4	58.9	13.3	97.3	61.4	12.4	87.0	60.4	13.6	Michigan Crop Improvement Association
MCIA EXP A	Red	No	90.2	57.8	13.0	110.7	58.3	13.1	69.6	57.1	12.6	84.9	56.2	13.0	99.1	59.1	12.4	91.5	57.9	13.7	Michigan Crop Improvement Association
MCIA EXP B	Red	No	87.0	57.3	13.0	104.0	56.8	13.2	72.4	56.7	13.0	84.0	55.7	12.9	103.4	58.9	12.2	91.4	57.5	13.6	Michigan Crop Improvement Association
MCIA EXP C	Red	No	78.2	57.9	13.6	104.0	56.2	18.5	73.5	57.4	12.8	91.6	56.9	13.3	94.1	59.5	12.4	82.9	58.0	13.7	Michigan Crop Improvement Association
MCIA EXP4	Red	Yes	85.8	59.6	13.2	104.3	58.7	14.3	69.4	57.9	12.9	88.5	58.5	13.6	95.4	59.6	12.4	85.5	58.9	14.0	Michigan Crop Improvement Association
MCIA Red Devil	Red	Yes	82.7	58.5	13.0	101.2	58.0	14.4	64.8	57.9	13.0	81.4	58.1	12.7	91.5	59.1	12.0	88.2	58.5	13.4	Michigan Crop Improvement Association
MCIA Red Dragon	Red	Yes	78.5	57.6	12.9	111.2	57.2	14.9	68.7	57.1	12.7	90.3	56.2	12.8	104.2	59.0	12.0	94.4	57.7	13.2	Michigan Crop Improvement Association
Red Ruby	Red	Yes	70.3	57.2	12.7	94.9	58.4	14.9	69.3	57.9	12.6	82.7	56.7	12.6	87.6	59.4	12.0	73.9	57.6	13.2	Michigan Crop Improvement Association
Sunburst	Red	Yes	77.8	60.6	13.5	104.2	62.1	15.5	77.4	59.4	13.1	81.7	58.6	13.3	101.6	63.1	12.4	85.1	62.1	13.9	Michigan Crop Improvement Association
MSU Line E6012	White	No	83.6	58.1	12.9	95.5	59.0	12.0	76.8	57.3	12.5	75.2	53.6	11.6	96.3	59.1	11.9	77.4	57.7	13.0	Michigan State University
MSU Line F0014	White	No	76.2	57.1	12.4	89.8	56.9	13.3	68.6	57.5	12.4	70.5	51.9	11.2	98.2	59.1	11.6	80.2	57.3	12.9	Michigan State University
MSU Line F0036R	Red	No	85.3	57.9	12.8	95.8	57.1	13.1	67.1	56.8	12.3	79.7	55.3	12.3	89.3	58.7	11.8	84.3	56.2	13.0	Michigan State University
MSU Line F0039	White	No	70.5	56.6	12.5	93.8	57.6	12.7	78.2	55.9	12.4	69.8	52.4	11.8	88.9	58.3	11.9	85.4	57.5	13.2	Michigan State University
MSU Line F0051R	Red	No	83.3	60.1	12.9	89.5	58.3	15.2	65.0	59.1	12.9	74.5	57.6	13.0	91.5	61.3	12.4	80.9	59.6	13.5	Michigan State University
MSU Line F0065	White	No	82.9	56.9	12.7	93.1	55.9	13.4	64.4	54.9	12.1	71.8	53.8	12.2	93.0	57.9	11.7	80.4	55.1	12.7	Michigan State University
Malabar	Red	Yes	71.8	58.7	12.9	103.0	58.7	13.5	71.4	57.0	12.8	68.3	55.3	12.7	98.4	59.5	12.2	88.0	58.7	13.5	Ohio Seed Improvement Association
RS 907	Red	Yes	85.9	59.1	13.3	111.4	59.3	15.1	71.7	58.2	12.7	90.3	58.3	13.4	100.3	60.2	12.3	85.6	59.5	13.5	Rupp Seeds, Inc.
RS 972	Red	Yes	92.1	57.6	13.0	112.1	57.1	15.5	82.3	57.1	13.3	85.0	55.6	13.1	99.2	57.9	12.5	82.6	57.0	13.5	Rupp Seeds, Inc.
RS 979	Red	Yes	87.5	57.0	13.1	104.9	56.9	14.5	75.6	56.4	12.9	79.6	54.8	12.7	91.9	58.1	12.2	84.3	55.4	13.3	Rupp Seeds, Inc.
SC 1302™	Red	Yes	75.5	61.1	13.2	94.1	60.7	13.9	67.0	59.4	13.0	83.6	59.6	13.5	91.7	62.0	12.5	88.3	60.8	13.5	Seed Consultants, Inc.
SC 1321™	Red	Yes	80.3	57.3	12.3	98.2	56.7	13.2	71.0	56.9	12.0	85.8	55.8	12.3	90.7	58.1	11.8	84.6	56.3	12.7	Seed Consultants, Inc.
SC 1341™	Red	Yes	79.7	58.5	12.6	89.6	55.6	12.4	68.8	56.0	12.1	75.9	55.0	12.6	89.2	57.2	11.6	59.7	54.5	12.9	Seed Consultants, Inc.
SC 1342™	Red	Yes	77.2	56.5	13.2	113.9	56.9	14.2	82.8	57.1	12.9	76.7	55.8	13.1	100.7	58.3	12.2	81.3	56.9	13.5	Seed Consultants, Inc.
Heilman	Red	Yes	70.3	57.3	13.0	111.4	58.0	13.5	75.4	56.8	12.6	88.7	56.2	12.6	102.2	58.4	12.0	90.2	57.7	13.2	Steyer Seeds
Hunker	Red	Yes	83.1	57.5	13.1	107.5	57.7	15.4	77.3	57.0	13.1	79.9	56.1	13.3	102.1	58.6	12.4	87.8	56.8	13.3	Steyer Seeds
Pierson	Red	No	76.0	57.4	13.5	100.2	58.6	14.1	72.3	57.2	13.4	84.6	57.4	13.2	92.7	59.7	12.3	83.0	57.8	13.7	Steyer Seeds
S-1100	Red	Yes	82.2	57.8	12.0	99.9	57.6	12.6	71.2	56.1	12.0	79.6	56.4	12.3	94.7	59.1	11.7	81.6	56.4	12.7	Sunstar Hybrids
S-1200	Red	Yes	85.2	57.1	13.2	101.9	56.6	14.4	68.5	56.2	12.9	75.0	55.0	12.9	92.5	58.0	12.2	86.1	56.0	13.3	Sunstar Hybrids
Branson	Red	Yes	83.1	58.6	13.3	100.3	58.0	14.0	69.7	57.1	13.0	75.5	56.6	13.2	91.5	58.7	12.1	86.3	57.6	13.4	Syngenta
SY 483	Red	No	77.9	57.6	13.2	99.8	57.5	14.9	73.7	57.1	12.5	87.8	56.3	12.6	94.1	58.8	12.0	80.6	57.1	13.3	Syngenta
SY 901	White	No	83.8	57.3	12.3	91.6	57.0	14.3	58.5	56.8	12.3	71.1	53.3	11.6	88.9	58.2	11.8	69.6	56.2	12.8	Syngenta
W1062	White	Yes	77.9	57.2	13.5	95.7	57.9	14.4	71.1	57.7	13.0	68.1	54.0	12.6	91.6	58.8	12.3	77.9	57.6	13.8	Syngenta
Merl	Red	Yes	82.3	60.1	13.2	96.1	59.6	14.1	62.5	59.4	13.2	68.4	58.7	13.6	84.4	60.4	12.4	79.6	58.9	13.8	Virginia Crop Improvement Assc. / VA Tech
VA09W-188WS	White	No	93.0	57.7	12.8	97.4	56.7	14.6	65.8	56.2	12.5	74.5	54.4	12.3	89.3	58.4	11.9	74.5	57.4	13.1	Virginia Crop Improvement Assc. / VA Tech
VA09W-73	Red	No	80.5	60.2	13.6	86.3	58.4	13.9	65.6	58.0	13.3	74.3	58.2	13.6	86.7	60.2	12.6	84.7	59.2	13.9	Virginia Crop Improvement Assc. / VA Tech
W 123	Red	Yes	85.8	57.9	12.8	116.3	58.6	13.3	76.9	57.6	12.6	82.9	56.8	12.6	93.7	59.0	12.0	91.7	57.6	13.2	Wellman Seeds, Inc.
W 125	Red	Yes	72.5	57.3	12.9	116.7	57.4	14.1	72.6	57.3	12.7	85.0	55.9	12.7	102.0	59.1	11.9	91.4	57.5	13.3	Wellman Seeds, Inc.
W 205	Red	No	85.1	57.6	13.3	104.4	57.7	16.1	77.0	57.1	12.8	88.5	57.6	13.3	96.7	60.0	12.3	85.2	57.6	13.8	Wellman Seeds, Inc.
W 206	Red	Yes	83.6	59.5	13.2	106.7	60.4	14.2	77.3	58.0	12.7	86.1	58.6	12.9	102.2	61.1	12.2	88.1	59.1	13.4	Wellman Seeds, Inc.
W 207	Red	Yes	84.4	57.4	13.4	107.0	56.1	17.3	74.6	57.1	13.2	85.1	55.8	13.1	101.9	58.5	12.2	87.0	57.1	13.6	Wellman Seeds, Inc.
W 208	Red	Yes	81.1	56.9	13.4	105.9	58.7	14.3	69.1	57.9	13.3	84.3	57.3	13.4	95.9	59.4	12.6	81.4	57.9	13.9	Wellman Seeds, Inc.
MEAN (2013 93 Entries)			**78.8**	**57.9**	**13.0**	**102.3**	**57.9**	**14.2**	**71.2**	**57.3**	**12.7**	**79.8**	**56.0**	**12.7**	**95.2**	**59.2**	**12.1**	**84.2**	**57.6**	**13.4**	
LSD (0.05)			**6.7**	**0.8**	**0.3**	**4.9**	**0.8**	**1.4**	**6.5**	**0.7**	**0.3**	**4.5**	**0.6**	**0.2**	**4.9**	**0.5**	**0.2**	**5.4**	**0.5**	**0.2**	
CV (%)			**7.3**	**1.2**	**1.9**	**4.1**	**1.2**	**8.2**	**7.8**	**1.0**	**2.1**	**4.8**	**1.0**	**1.6**	**4.4**	**0.7**	**1.2**	**5.5**	**0.8**	**1.3**	

2013 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

Table 6 : Tuscola High Management: Single Site Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Commercially Available	Yield: Bushels/Acre	Test Weight: lbs/Bushel	% Grain Moisture at Harvest	Lodging Score (0-9) (0=none)	Organization
MCIA Red Dragon	Red	Yes	123.4	59.6	12.5	2.4	Michigan Crop Improvement Association
MCIA Whale	Red	No	122.4	61.0	13.3	2.2	Michigan Crop Improvement Association
DF Sienna	Red	Yes	121.8	59.7	12.5	1.6	D.F. Seeds, Inc.
Sienna	Red	Yes	120.2	59.9	12.6	2.1	Direct Enterprises
GB 1202	Red	Yes	120.0	60.5	11.8	1.7	G.B. Seeds and Service
Sunburst	Red	Yes	120.0	63.2	13.2	1.3	Michigan Crop Improvement Association
D 492W	Red	Yes	119.8	59.2	12.5	2.2	Bio-Town Seeds, Inc.
W 206	Red	Yes	119.7	61.9	12.7	1.5	Wellman Seeds, Inc.
DF 111R EX	Red	Yes	119.5	61.3	12.4	3.1	D.F. Seeds, Inc.
AgriMAXX 434	Red	Yes	119.4	59.9	12.2	1.7	AgriMAXX Wheat Company
W 125	Red	Yes	119.3	60.1	12.3	1.7	Wellman Seeds, Inc.
LCS 38686	Red	No	118.3	61.7	12.6	5.0	Limagrain Cereal Seeds
W 205	Red	No	118.3	60.5	13.6	2.5	Wellman Seeds, Inc.
Heilman	Red	Yes	118.1	59.8	12.2	4.3	Steyer Seeds
DF EX R-1	Red	No	117.7	58.6	11.9	3.8	D.F. Seeds, Inc.
AgriMAXX 438	Red	Yes	117.2	58.9	12.7	5.0	AgriMAXX Wheat Company
Pioneer 25R34	Red	Yes	117.1	59.6	12.4	5.1	DuPont Pioneer
W 207	Red	Yes	117.1	58.3	12.8	3.8	Wellman Seeds, Inc.
D 512W	Red	No	116.9	59.3	12.7	4.6	Bio-Town Seeds, Inc.
DF EX-23	Red	No	116.9	61.3	12.3	0.9	D.F. Seeds, Inc.
SC 1342™	Red	Yes	116.7	58.3	12.9	7.2	Seed Consultants, Inc.
9042	Red	Yes	116.6	60.9	11.8	2.7	Dyna-Gro Seed
DF EX-2	Red	No	116.5	59.1	11.9	5.9	D.F. Seeds, Inc.
HS 284R	Red	Yes	116.5	59.8	12.4	3.0	Harrington Seeds, Inc.
DF 105R	Red	Yes	115.8	59.8	12.0	2.5	D.F. Seeds, Inc.
S-1100	Red	Yes	115.7	60.1	11.9	2.4	Sunstar Hybrids
9223	Red	Yes	115.3	58.3	14.0	4.6	Dyna-Gro Seed
SY 483	Red	No	114.9	60.3	12.9	2.6	Syngenta
LCS 34969	Red	No	114.1	60.3	12.4	4.0	Limagrain Cereal Seeds
Malabar	Red	Yes	114.1	60.6	12.5	1.9	Ohio Seed Improvement Association
RS 907	Red	Yes	114.1	61.2	12.5	5.0	Rupp Seeds, Inc.
Pioneer 25R40	Red	Yes	113.8	60.8	12.5	2.5	DuPont Pioneer
Shirley	Red	Yes	113.6	59.1	13.0	1.9	Dyna-Gro Seed
RS 972	Red	Yes	113.6	58.8	12.6	6.5	Rupp Seeds, Inc.
SC 1321™	Red	Yes	113.5	59.7	12.0	3.1	Seed Consultants, Inc.
W 208	Red	Yes	113.2	60.1	13.3	3.2	Wellman Seeds, Inc.
AgriMAXX 413	Red	Yes	113.1	59.3	12.2	2.9	AgriMAXX Wheat Company
Hopewell	Red	Yes	112.6	60.9	12.6	2.0	Michigan Crop Improvement Association
EXP 101	Red	No	112.4	60.2	13.1	3.2	Direct Enterprises
MCIA EXP B	Red	No	112.2	58.9	12.4	3.8	Michigan Crop Improvement Association
Pierson	Red	No	112.0	60.9	12.6	4.1	Steyer Seeds
DF 55R	Red	Yes	111.8	61.7	12.8	3.8	D.F. Seeds, Inc.
MSU Line F0036R	Red	No	111.6	60.1	12.3	2.0	Michigan State University
DF 109R	Red	Yes	111.5	58.2	12.4	7.1	D.F. Seeds, Inc.
Merl	Red	Yes	110.9	62.2	13.2	0.4	Virginia Crop Improvement Assc. / VA Tech
MCIA EXP4	Red	Yes	110.5	59.7	13.3	2.3	Michigan Crop Improvement Association

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Multi-year data are the most informative.

Table 6 : Tuscola High Management: Single Site Summary (Note: Tables sorted by 2013 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Commercially Available	Yield: Bushels/Acre	Test Weight: lbs/Bushel	% Grain Moisture at Harvest	Lodging Score (0-9) (0=none)	Organization
GB 1102	Red	Yes	110.0	58.9	12.6	4.6	G.B. Seeds and Service
9053	Red	Yes	109.8	57.8	11.9	2.4	Dyna-Gro Seed
MSU Line F0051R	Red	No	109.6	61.5	12.5	2.1	Michigan State University
LCS 37773	Red	No	109.4	62.7	12.8	6.5	Limagrain Cereal Seeds
W 123	Red	Yes	109.4	59.7	12.2	3.9	Wellman Seeds, Inc.
D 506W	Red	Yes	109.2	58.3	12.9	4.2	Bio-Town Seeds, Inc.
Branson	Red	Yes	108.9	59.7	12.3	4.9	Syngenta
AgriMAXX 427	Red	Yes	108.8	58.4	12.8	6.2	AgriMAXX Wheat Company
Pioneer 25R39	Red	Yes	108.7	59.7	12.5	5.7	DuPont Pioneer
RS 979	Red	Yes	108.6	58.1	12.8	5.1	Rupp Seeds, Inc.
DF EX-L1	Red	Yes	108.5	60.8	12.8	5.4	D.F. Seeds, Inc.
DF 45R	Red	Yes	108.4	61.4	12.7	2.4	D.F. Seeds, Inc.
Red Ruby	Red	Yes	107.9	60.4	12.4	3.0	Michigan Crop Improvement Association
MCIA EXP A	Red	No	107.9	60.3	12.3	7.2	Michigan Crop Improvement Association
Hunker	Red	Yes	107.5	58.9	12.6	6.6	Steyer Seeds
VA09W-73	Red	No	107.2	60.7	13.9	3.0	Virginia Crop Improvement Assc. / VA Tech
Emmit	Red	Yes	107.0	59.6	12.9	2.8	Hyland Seeds
DANW1001	Red	No	106.3	57.7	18.9	3.6	Hyland Seeds
MCIA Blazer	Red	Yes	105.7	62.3	12.4	3.4	Michigan Crop Improvement Association
SC 1302™	Red	Yes	105.7	62.3	12.7	3.2	Seed Consultants, Inc.
AgriMAXX Exp 1342	Red	No	105.6	59.8	12.7	3.6	AgriMAXX Wheat Company
S-1200	Red	Yes	104.5	58.4	12.7	4.2	Sunstar Hybrids
HY116-SRW	Red	Yes	104.0	58.3	12.0	7.1	Hyland Seeds
MCIA Red Devil	Red	Yes	103.2	59.8	12.3	1.9	Michigan Crop Improvement Association
SC 1341™	Red	Yes	100.4	58.7	11.8	6.5	Seed Consultants, Inc.
Jupiter	White	Yes	121.3	59.6	12.4	2.8	Michigan Crop Improvement Association
Ambassador	White	Yes	120.7	58.2	12.0	2.0	D.F. Seeds, Inc. & Co-op Elevevator, Pigeon
MSU Line F0065	White	No	117.1	59.5	12.1	2.8	Michigan State University
9242W	White	Yes	116.3	60.7	12.3	2.4	Dyna-Gro Seed
Linebacker	White	Yes	114.7	59.1	14.3	2.4	D.F. Seeds, Inc.
MSU Line F0039	White	No	114.1	60.0	12.0	1.5	Michigan State University
MSU Line F0014	White	No	112.4	60.0	12.3	1.2	Michigan State University
Pioneer 25W43	White	Yes	111.5	58.8	12.3	3.6	DuPont Pioneer
DF 110W	White	Yes	110.0	60.3	12.2	5.7	D.F. Seeds, Inc.
Aubrey	White	Yes	109.9	60.3	12.7	3.1	D.F. Seeds, Inc.
9362W	White	No	109.9	60.9	12.6	2.0	Dyna-Gro Seed
AC Mountain	White	Yes	109.4	58.7	11.7	6.8	Michigan Crop Improvement Association
MSU Line E6012	White	No	109.2	60.0	11.9	4.1	Michigan State University
SY 901	White	No	106.3	59.2	11.7	5.3	Syngenta
VA09W-188WS	White	No	102.2	58.7	12.1	2.6	Virginia Crop Improvement Assc. / VA Tech
Ava	White	Yes	102.0	58.9	13.7	6.4	Hyland Seeds
HY319-SWW	White	Yes	100.8	59.5	12.2	4.5	Hyland Seeds
W1062	White	Yes	96.3	57.7	12.4	7.8	Syngenta
MEAN (2013 93 Entries)			**112.3**	**59.9**	**12.6**	**3.6**	
LSD (0.05)			**5.1**	**0.6**	**0.5**	**1.5**	
CV (%)			**3.9**	**0.8**	**3.5**	**36.8**	