

Michigan State Wheat Performance Trials: 2012

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Comments on the 2012 Wheat Crop

Generally wheat fields were planted on time with some planted later in 2011 due to the late harvest of the row crops. Mild winter conditions resulted in minimal losses over the winter across Michigan. High temperatures in March (day temperatures over 80 and night temperatures over 60) hastened the development of the crop. Flowering was several weeks earlier than usual due to the warm March temperatures. These early warm temperatures also shortened the height of the wheat. The cold freeze in April caused some leaf damage and sterility. Several diseases were evident this year including powdery mildew, leaf blotches (see below for more information), barley yellow dwarf virus, leaf rust, glume blotch, stripe rust and Fusarium head blight. Stripe rust appeared in several parts of the state this year. Dry conditions during flowering resulted in a low incidence of Fusarium head blight (scab) in the majority of the state. Army worms were a concern but were reported infrequently. Conditions during harvest were dry for most of the state. The USDA/NASS office reported on July 1 a state wide average yield projection of 72 bushels per acre.

Multi-Year Performance Summary (Tables 1 - 5)

Tables 1 through 5 summarize performance of the trial. The full trial included 92 entries (38 of which were experimental lines) from 21 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 54 commercially available varieties from 18 organizations only. The “including experimentals” version (online only) includes all 92 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 2012. In some instances (e.g. yield), data columns to the right of the 2012 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 2012. 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 2012 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 (23 blocks of 4 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 cooperators 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.

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 flowering date, plant height, powdery mildew, septoria leaf blotch, freeze injury, black point, and lodging. Lodging data are reported from prior years. 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*. Freeze injury scores are from Sanilac site where zero indicates no injury. 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 2011 harvest season.

Table 3 contains data for stripe rust, leaf rust, stem rust, Fusarium head blight (FHB, scab) and the associated mycotoxin deoxynivalenol (DON, VOM). Scab data were obtained from the Ingham misted/inoculated scab screening nursery. 2012 FHB data are scores based upon a 0-5 score where 0 indicates no visible symptoms. 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. Unusually hot and dry natural conditions resulted in the field drying quickly between misting events, and low levels of symptoms were observed this year in the inoculated trial. 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 2011 and prior crop years. Stem rust data are reported from 2009. Stripe, leaf and stem rust scores are based primarily on infection observations on the flag leaf.

Table 4 through 5 contain data for milling and baking quality. Quality data are from the 2011 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 Russ Freed (517-355-0271 ext. 1187). 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.

2012 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 2012 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)				Test Weight: lbs/Bushel				Percent Grain Moisture at Harvest				Organization			
				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages							
				2 YR	3 YR	4 YR	2012	2 YR	3 YR	4 YR	2012	2 YR	3 YR	4 YR	2012		2011-12	2010-12	2009-12
				2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12	2012		2011-12	2010-12	2009-12
Pioneer Brand 25R40	Red	White	Awned	98.8	-----	-----	-----	60.6	-----	-----	-----	13.4	-----	-----	-----	Dupont Pioneer			
Pioneer Brand 25R34	Red	White	Awned	96.8	95.5	-----	-----	58.8	59.0	-----	-----	13.9	14.0	-----	-----	Dupont Pioneer			
RS972	Red	White	Tip Awned	96.7	-----	-----	-----	59.0	-----	-----	-----	14.1	-----	-----	-----	Rupp Seeds, Inc			
RS979	Red	White	Tip Awned	94.2	-----	-----	-----	58.2	-----	-----	-----	13.9	-----	-----	-----	Rupp Seeds, Inc			
AgriMAXX EXP1215	Red	White	Tip Awned	94.1	-----	-----	-----	58.0	-----	-----	-----	14.1	-----	-----	-----	AgriMAXX Wheat Company			
DF105R	Red	White	Awned	94.0	93.9	-----	-----	59.1	59.1	-----	-----	13.0	12.7	-----	-----	D.F. Seeds, Inc.			
9223	Red	White	Tip Awned	93.9	-----	-----	-----	58.9	-----	-----	-----	13.7	-----	-----	-----	Dyna-Gro Seed			
DF 109R	Red	White	Tip Awned	93.8	-----	-----	-----	58.7	-----	-----	-----	13.9	-----	-----	-----	D.F. Seeds, Inc.			
RS967	Red	White	Awned	93.6	93.0	93.1	-----	60.4	60.8	60.2	-----	13.2	13.3	13.4	-----	Rupp Seeds, Inc			
Marion	Red	White	Tip Awned	93.3	-----	-----	-----	59.7	-----	-----	-----	13.0	-----	-----	-----	Steyer Seeds			
Shirley	Red	White	Awnletted	93.0	93.5	-----	-----	58.5	58.4	-----	-----	13.6	14.4	-----	-----	Dyna-Gro Seed			
Hunker	Red	White	Tip Awned	92.7	-----	-----	-----	58.3	-----	-----	-----	14.3	-----	-----	-----	Steyer Seeds			
MCIA EXP4	Red	White	Awnletted	92.4	-----	-----	-----	60.1	-----	-----	-----	14.1	-----	-----	-----	Michigan Crop Improvement Association			
W125	Red	White	Tip Awned	92.3	-----	-----	-----	58.7	-----	-----	-----	13.0	-----	-----	-----	Wellman Seeds, Inc.			
MCIA Red Dragon	Red	White	Awnletted	92.2	91.7	91.0	-----	58.3	58.9	58.5	-----	13.0	13.2	13.3	-----	Michigan Crop Improvement Association			
Sunburst	Red	White	Tip Awned	91.8	92.0	91.2	92.6	62.2	60.7	60.6	60.6	14.5	13.7	14.2	14.7	Michigan Crop Improvement Association			
W208	Red	White	Awnletted	91.8	-----	-----	-----	59.2	-----	-----	-----	14.5	-----	-----	-----	Wellman Seeds, Inc.			
Diener 506W	Red	White	Tip Awned	91.5	-----	-----	-----	58.1	-----	-----	-----	14.3	-----	-----	-----	BioTown Seeds			
AgriMAXX 413	Red	White	Awned	91.4	-----	-----	-----	59.3	-----	-----	-----	13.0	-----	-----	-----	AgriMAXX Wheat Company			
Heilman	Red	White	Tip Awned	91.4	-----	-----	-----	58.5	-----	-----	-----	13.2	-----	-----	-----	Steyer Seeds			
Edge	Red	White	Tip Awned	91.4	-----	-----	-----	60.7	-----	-----	-----	12.9	-----	-----	-----	Direct Enterprises			
DF55	Red	White	Tip Awned	91.0	88.9	88.4	90.0	59.8	59.7	59.2	59.1	13.4	13.6	13.7	14.1	D.F. Seeds, Inc.			
VA08W-294	Red	White	Tip Awned	90.9	-----	-----	-----	61.3	-----	-----	-----	13.8	-----	-----	-----	Virginia Crop Improvement Association / Virginia Tech			
RS935	Red	White	Awned	90.5	91.0	91.2	-----	59.1	59.0	58.3	-----	13.1	12.9	12.9	-----	Rupp Seeds, Inc			
Pioneer Brand 25R39	Red	White	Tip Awned	90.4	90.7	88.0	89.2	60.0	60.1	59.0	58.8	13.5	13.8	13.9	14.2	Dupont Pioneer			
W123	Red	White	Awnletted	90.4	92.1	89.8	-----	58.6	59.0	58.4	-----	13.2	13.0	13.1	-----	Wellman Seeds, Inc.			
9042	Red	White	Awnletted	90.2	91.2	90.1	-----	59.6	59.7	59.1	-----	13.1	13.1	13.3	-----	Dyna-Gro Seed			
MCIA EXP2R	Red	White	Awnletted	90.1	-----	-----	-----	61.1	-----	-----	-----	13.3	-----	-----	-----	Michigan Crop Improvement Association			
MCIA Red Devil	Red	White	Awned	89.8	91.9	92.9	-----	60.3	60.4	59.8	-----	13.7	13.8	13.9	-----	Michigan Crop Improvement Association			
WBX700	Red	White	Awnletted	89.7	-----	-----	-----	58.7	-----	-----	-----	14.8	-----	-----	-----	Westbred			
Sienna	Red	White	Awnless	89.6	93.3	-----	-----	58.4	58.9	-----	-----	13.0	13.1	-----	-----	Direct Enterprises			
Diener 492W	Red	White	Awned	89.5	-----	-----	-----	58.8	-----	-----	-----	13.0	-----	-----	-----	BioTown Seeds			
W124	Red	White	Awnletted	89.1	90.0	-----	-----	60.5	60.7	-----	-----	13.2	13.1	-----	-----	Wellman Seeds, Inc.			
MH07-7483	Red	White	Tip Awned	89.1	-----	-----	-----	59.0	-----	-----	-----	14.9	-----	-----	-----	Syngenta			
9053	Red	White	Awned	88.9	88.6	-----	-----	58.5	58.1	-----	-----	12.9	12.9	-----	-----	Dyna-Gro Seed			
Pioneer Brand 25R32	Red	White	Awned	88.8	87.6	-----	-----	61.2	61.1	-----	-----	13.3	13.3	-----	-----	Dupont Pioneer			
MCIA Blazer	Red	White	Awnletted	88.7	-----	-----	-----	61.4	-----	-----	-----	13.3	-----	-----	-----	Michigan Crop Improvement Association			
Merl	Red	White	Tip Awned	88.4	89.6	86.6	88.6	60.9	60.8	60.2	60.0	14.3	14.4	14.4	14.7	Virginia Crop Improvement Association / Virginia Tech			
9922	Red	White	Awned	88.4	91.1	91.2	-----	60.2	60.1	59.6	-----	13.5	13.8	14.0	-----	Dyna-Gro Seed			
W1104	Red	White	Tip Awned	88.3	91.2	90.7	-----	58.7	59.0	58.2	-----	13.3	13.6	13.6	-----	Syngenta			
MCIA Butch	Red	White	Awnletted	87.6	89.3	88.8	89.7	58.5	58.5	57.5	57.2	13.1	13.0	13.0	13.2	Michigan Crop Improvement Association			
VA06W-412	Red	White	Tip Awned	87.6	-----	-----	-----	61.2	-----	-----	-----	14.5	-----	-----	-----	Virginia Crop Improvement Association / Virginia Tech			
Attack	Red	White	Awnletted	87.5	-----	-----	-----	59.2	-----	-----	-----	13.4	-----	-----	-----	D.F. Seeds, Inc.			

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Table 1 : Multi-Year Performance Summary (Note: Tables sorted by 2012 Yield, red wheats grouped before white)

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				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages						
				2 YR	3 YR	4 YR	2012	2011-12	2010-12	2009-12	2 YR	3 YR	4 YR	2012	2011-12		2010-12	2009-12
				2012	2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12			
Hopewell	Red	Bronze	Awnletted	87.4	88.2	88.6	90.0	59.9	60.3	59.4	59.0	13.5	13.6	13.7	13.8	Michigan Crop Improvement Association		
OH06-159-6	Red	White	Awnletted	86.6	-----	-----	-----	59.7	-----	-----	-----	13.7	-----	-----	-----	Michigan State University		
Red Ruby	Red	White	Awned	86.2	88.1	88.7	91.0	60.4	60.6	59.8	59.4	13.1	13.2	13.5	14.0	Michigan Crop Improvement Association		
MSU Line E9021R	Red	White	Awned	86.1	-----	-----	-----	60.4	-----	-----	-----	13.7	-----	-----	-----	Michigan State University		
VA08W-176	Red	White	Tip Awned	86.0	-----	-----	-----	62.0	-----	-----	-----	14.2	-----	-----	-----	Virginia Crop Improvement Association / Virginia Tech		
Quest	Red	White	Awnletted	85.0	85.3	-----	-----	58.1	58.5	-----	-----	12.8	12.9	-----	-----	Direct Enterprises		
DF75	Red	White	Tip Awned	84.8	85.5	84.3	87.1	60.1	60.1	59.3	59.2	13.6	13.7	13.7	14.2	D.F. Seeds, Inc.		
MCIA EXP3R	Red	White	Awnletted	84.8	-----	-----	-----	60.3	-----	-----	-----	13.2	-----	-----	-----	Michigan Crop Improvement Association		
Bromfield	Red	White	Awnletted	84.5	-----	-----	-----	60.1	-----	-----	-----	13.3	-----	-----	-----	Michigan Crop Improvement Association		
Malabar	Red	White	Awnletted	83.9	87.3	87.3	88.9	59.7	60.1	59.6	59.2	13.3	13.4	13.5	13.7	Ohio Seed Improvement Association		
TW412-011	Red	White	Awnletted	83.7	-----	-----	-----	58.6	-----	-----	-----	18.1	-----	-----	-----	Hyland Seeds		
LCS 3103	Red	White	Awnletted	82.6	-----	-----	-----	60.2	-----	-----	-----	13.3	-----	-----	-----	Limagrain Cereal Seeds		
LCS 4101	Red	White	Awnletted	82.4	-----	-----	-----	60.3	-----	-----	-----	13.6	-----	-----	-----	Limagrain Cereal Seeds		
LCS 4103	Red	White	Awnletted	82.4	-----	-----	-----	60.1	-----	-----	-----	13.5	-----	-----	-----	Limagrain Cereal Seeds		
LCS 5114	Red	White	Awned	81.7	-----	-----	-----	59.5	-----	-----	-----	14.7	-----	-----	-----	Limagrain Cereal Seeds		
Emmit	Red	White	Awnletted	80.9	85.9	86.0	88.1	58.8	59.0	58.5	58.4	14.0	14.4	14.5	14.7	Hyland Seeds		
OH05-200-74	Red	Bronze	Awnletted	80.7	-----	-----	-----	58.8	-----	-----	-----	13.9	-----	-----	-----	Michigan State University		
LCS 4123	Red	White	Awned	80.5	-----	-----	-----	59.2	-----	-----	-----	14.6	-----	-----	-----	Limagrain Cereal Seeds		
HY116-SRW	Red	White	Awnletted	80.4	84.8	84.2	85.6	58.1	58.7	58.0	57.9	13.5	13.5	13.5	13.7	Hyland Seeds		
MCIA 2011-22W	White	White	Tip Awned	91.2	-----	-----	-----	60.8	-----	-----	-----	13.3	-----	-----	-----	Michigan Crop Improvement Association		
VA09W-188WS	White	White	Awned	90.6	-----	-----	-----	59.0	-----	-----	-----	13.3	-----	-----	-----	Virginia Crop Improvement Association / Virginia Tech		
DF 110W	White	White	Awned	90.5	-----	-----	-----	60.5	-----	-----	-----	13.5	-----	-----	-----	D.F. Seeds, Inc.		
9242W	White	White	Awnletted	89.3	87.6	-----	-----	60.0	60.1	-----	-----	13.3	13.3	-----	-----	Dyna-Gro Seed		
Ambassador	White	White	Awnletted	89.1	88.2	88.7	90.9	58.2	58.4	57.9	57.3	12.9	12.8	13.0	13.0	D.F. Seeds, Inc. / Cooperative Elevator Co.		
AC Mountain	White	White	Awnletted	87.8	87.5	86.0	87.7	57.6	58.1	57.9	57.6	13.2	13.1	13.2	13.3	Michigan Crop Improvement Association		
Pioneer Brand 25W43	White	White	Tip Awned	87.2	86.9	85.4	87.7	59.3	59.1	58.4	57.9	13.4	13.4	13.4	13.6	Dupont Pioneer		
Jupiter	White	Bronze	Awnletted	86.3	87.8	87.6	89.1	58.3	58.6	57.9	57.4	14.1	13.8	13.7	14.0	Michigan Crop Improvement Association		
MSU Line E6012	White	White	Awned	85.2	85.3	85.9	87.1	60.6	60.4	59.6	59.1	13.2	13.1	13.2	13.3	Michigan State University		
Aubrey	White	White	Awnletted	83.7	84.3	86.3	87.7	59.7	60.7	60.1	59.7	13.4	13.5	13.8	13.9	D.F. Seeds, Inc. / Cooperative Elevator Co. / Farmers Co-op Grain Co.		
MSU Line E8052	White	White	Awned	82.1	83.9	-----	-----	59.7	59.2	-----	-----	13.4	13.5	-----	-----	Michigan State University		
Ava	White	White	Awnletted	80.8	83.3	83.2	86.6	56.7	57.5	57.0	57.0	16.4	16.4	16.3	16.1	Hyland Seeds		
TW319-SWW	White	White	Awnletted	80.5	83.5	84.6	-----	59.9	60.1	59.3	-----	13.4	13.4	13.6	-----	Hyland Seeds		
W1062	White	White	Tip Awned	80.1	84.1	84.1	85.8	57.9	58.4	57.8	57.4	14.6	14.9	15.1	15.3	Syngenta		
Linebacker	White	White	Awnletted	80.0	84.0	84.0	85.0	57.5	58.0	57.2	56.9	15.1	15.4	16.0	16.0	D.F. Seeds, Inc.		
Coral	White	Bronze	Awnletted	79.6	83.1	83.5	86.1	58.0	58.5	58.0	57.9	14.3	14.6	14.8	14.8	Michigan Crop Improvement Association		
Caledonia	White	White	Awnletted	78.4	81.7	81.3	83.5	58.3	58.5	57.8	57.4	14.0	13.9	14.0	14.1	Harrington Seeds, Inc.		
TW528-003	White	White	Awnletted	77.7	-----	-----	-----	58.8	-----	-----	-----	14.1	-----	-----	-----	Hyland Seeds		
MSU Line E5024	White	White	Awned	76.6	81.1	82.3	85.2	60.3	60.2	59.5	59.2	13.1	13.5	13.6	14.0	Michigan Crop Improvement Association		
MSU D8006	White	White	Awned	76.6	79.4	81.8	84.4	59.2	59.1	58.7	58.2	13.1	13.1	13.2	13.5	Michigan Crop Improvement Association		
Envoy	White	White	Awned	75.8	82.4	84.8	86.8	59.8	60.0	59.5	59.2	13.7	13.6	13.7	13.9	Platinum Genetics, LLC		
MEAN (2012 = 92 Entries)				87.8	87.8	87.1	87.8	59.5	59.4	58.8	58.4	13.7	13.6	13.8	14.2			
LSD (0.05)				3.8	5.6	4.7	4.0	0.5	1.1	0.9	0.8	0.5	0.7	0.6	0.6			
CV (%)				5.4	3.2	3.3	3.2	1.1	0.9	0.9	1.0	4.1	2.6	2.5	3.2			

2012 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

Table 2 : Multi-Year Performance Summary (Note: Tables sorted by 2012 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Flowering Date (Days Past Jan. 1)				Plant Height (Inches)				Powdery Mildew Score (0-9)				Septoria Leaf Blotch Score (0-9)				Freeze Injury Score (0-9)	Black Point Percent	Lodging Score (0-9) (0=none) 2 YR 2009-10
		Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages						
		2 YR	3 YR	4 YR		2 YR	3 YR	4 YR		2 YR	3 YR	4 YR		2 YR	3 YR	4 YR				
		2012	2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12			
Pioneer Brand 25R40	Red	142.6	----	----	----	29.1	----	----	----	0.2	----	----	----	1.0	----	----	----	0.7	----	----
Pioneer Brand 25R34	Red	141.8	147.6	----	----	31.2	32.6	----	----	5.1	4.6	----	----	1.1	2.1	----	----	1.9	6.2	----
RS972	Red	143.1	----	----	----	31.0	----	----	----	4.2	----	----	----	1.3	----	----	----	1.1	----	----
RS979	Red	141.6	----	----	----	30.5	----	----	----	4.8	----	----	----	2.6	----	----	----	0.6	----	----
AgriMAXX EXP1215	Red	142.5	----	----	----	30.7	----	----	----	1.1	----	----	----	1.9	----	----	----	0.9	----	----
DF105R	Red	141.2	147.5	----	----	28.6	30.6	----	----	5.5	4.1	----	----	3.6	4.6	----	----	1.5	22.8	----
9223	Red	143.5	----	----	----	31.8	----	----	----	4.6	----	----	----	2.0	----	----	----	2.1	----	----
DF 109R	Red	143.7	----	----	----	31.2	----	----	----	2.8	----	----	----	1.9	----	----	----	1.3	----	----
RS967	Red	141.6	147.4	147.3	----	30.1	31.5	32.9	----	1.0	2.2	2.1	----	1.1	2.0	1.9	----	0.8	18.5	----
Marion	Red	142.0	----	----	----	30.0	----	----	----	0.6	----	----	----	4.0	----	----	----	0.0	----	----
Shirley	Red	142.9	148.8	----	----	28.1	29.9	----	----	0.0	0.0	----	----	2.7	2.7	----	----	0.8	37.3	----
Hunker	Red	143.3	----	----	----	31.6	----	----	----	3.1	----	----	----	0.8	----	----	----	0.5	----	----
MCIA EXP4	Red	144.2	----	----	----	33.5	----	----	----	0.0	----	----	----	3.0	----	----	----	1.8	----	----
W125	Red	142.3	----	----	----	33.9	----	----	----	2.3	----	----	----	2.5	----	----	----	0.3	----	----
MCIA Red Dragon	Red	142.3	147.7	147.2	----	33.8	36.1	36.4	----	0.1	0.4	1.4	----	1.0	3.1	2.9	----	1.3	8.1	----
Sunburst	Red	143.1	148.2	148.5	150.9	27.4	30.7	31.0	31.8	0.1	1.0	0.9	0.8	1.9	2.2	2.6	2.8	1.9	13.2	3.0
W208	Red	143.2	----	----	----	34.0	----	----	----	0.1	----	----	----	1.8	----	----	----	4.7	----	----
Diener 506W	Red	142.1	----	----	----	30.6	----	----	----	2.6	----	----	----	2.3	----	----	----	1.4	----	----
AgriMAXX 413	Red	141.1	----	----	----	30.1	----	----	----	3.6	----	----	----	4.1	----	----	----	0.7	----	----
Heilman	Red	141.9	----	----	----	34.1	----	----	----	0.0	----	----	----	2.2	----	----	----	1.1	----	----
Edge	Red	142.5	----	----	----	32.4	----	----	----	1.9	----	----	----	2.8	----	----	----	0.2	----	----
DF55	Red	142.8	148.8	148.4	150.6	31.1	32.5	33.3	35.3	0.0	0.7	0.9	1.1	3.1	3.4	3.1	3.1	1.6	20.1	6.5
VA08W-294	Red	141.4	----	----	----	31.1	----	----	----	0.0	----	----	----	1.6	----	----	----	2.0	----	----
RS935	Red	141.5	147.8	147.5	----	28.8	30.2	31.1	----	3.8	3.6	3.1	----	2.6	3.8	3.4	----	0.4	33.3	----
Pioneer Brand 25R39	Red	143.3	149.2	149.3	151.6	30.3	32.3	33.1	35.0	3.3	2.8	3.4	3.5	2.6	3.8	3.3	3.3	0.0	5.2	5.8
W123	Red	141.3	147.2	147.1	----	33.7	33.4	33.6	----	3.1	1.4	1.4	----	2.3	3.4	2.9	----	1.6	22.9	----
9042	Red	141.9	148.1	148.0	----	29.9	31.2	31.4	----	3.7	2.8	2.7	----	4.3	3.5	2.9	----	0.6	11.3	----
MCIA EXP2R	Red	140.6	----	----	----	30.9	----	----	----	0.0	----	----	----	1.7	----	----	----	0.0	----	----
MCIA Red Devil	Red	142.3	148.1	147.7	----	30.3	33.0	33.4	----	1.1	1.1	0.8	----	1.3	1.6	1.7	----	2.5	30.6	----
WBX700	Red	142.7	----	----	----	34.0	----	----	----	1.4	----	----	----	2.6	----	----	----	4.6	----	----
Sienna	Red	142.3	147.8	----	----	33.8	36.9	----	----	0.6	0.7	----	----	2.1	2.6	----	----	2.5	11.1	----
Diener 492W	Red	142.1	----	----	----	28.8	----	----	----	2.9	----	----	----	2.1	----	----	----	0.4	----	----
W124	Red	142.3	147.8	----	----	32.7	34.5	----	----	3.1	2.5	----	----	1.4	2.9	----	----	0.5	35.8	----
MH07-7483	Red	144.8	----	----	----	31.7	----	----	----	1.3	----	----	----	4.0	----	----	----	0.6	----	----
9053	Red	142.7	148.6	----	----	30.0	31.8	----	----	6.1	4.1	----	----	3.2	4.2	----	----	1.1	24.4	----
Pioneer Brand 25R32	Red	142.6	148.5	----	----	29.6	31.6	----	----	0.2	1.6	----	----	2.4	2.5	----	----	0.7	18.6	----
MCIA Blazer	Red	140.7	----	----	----	31.5	----	----	----	1.4	----	----	----	1.9	----	----	----	0.5	----	----
Merl	Red	140.7	146.8	146.7	148.8	31.0	32.4	32.4	33.9	0.0	1.1	1.1	1.0	4.3	3.6	3.6	3.3	4.4	19.9	5.7
9922	Red	142.1	148.2	147.9	----	29.7	32.7	33.5	----	0.4	1.2	0.9	----	2.8	2.4	2.2	----	3.4	14.6	----
W1104	Red	143.3	148.8	148.4	----	30.6	32.7	33.3	----	0.0	0.0	0.4	----	2.0	3.0	2.6	----	0.9	23.2	----
MCIA Butch	Red	143.1	148.8	148.4	150.8	27.7	30.1	30.9	32.0	0.1	1.3	1.5	1.6	2.3	2.4	2.6	2.7	0.2	6.8	3.9
VA06W-412	Red	141.7	----	----	----	29.9	----	----	----	0.0	----	----	----	1.2	----	----	----	0.0	----	----
Attack	Red	144.2	----	----	----	34.2	----	----	----	4.9	----	----	----	2.8	----	----	----	1.4	----	----

2012 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.

Table 2 : Multi-Year Performance Summary (Note: Tables sorted by 2012 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Flowering Date (Days Past Jan. 1)				Plant Height (Inches)				Powdery Mildew Score (0-9)				Septoria Leaf Blotch Score (0-9)				Freeze Injury Score (0-9) 2012	Black Point Percent 2011	Lodging Score (0-9) (0=none) 2 YR 2009-10
		Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages						
		2 YR	3 YR	4 YR		2 YR	3 YR	4 YR		2 YR	3 YR	4 YR		2 YR	3 YR	4 YR				
		2012	2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12	2012	2011-12	2010-12	2009-12			
Hopewell	Red	143.8	149.4	148.9	151.1	32.4	33.7	34.4	35.7	0.3	0.9	1.4	1.7	4.4	5.0	3.9	3.5	1.2	5.3	2.9
OH06-159-6	Red	140.9	-----	-----	-----	31.2	-----	-----	-----	0.0	-----	-----	-----	1.2	-----	-----	-----	0.8	-----	-----
Red Ruby	Red	143.0	148.8	148.8	151.0	31.1	32.9	33.9	35.4	1.8	1.1	1.6	1.8	4.4	4.8	3.6	3.4	0.5	8.8	4.0
MSU Line E9021R	Red	142.3	-----	-----	-----	33.0	-----	-----	-----	1.6	-----	-----	-----	4.8	-----	-----	-----	0.8	-----	-----
VA08W-176	Red	142.1	-----	-----	-----	29.8	-----	-----	-----	0.3	-----	-----	-----	1.1	-----	-----	-----	2.5	-----	-----
Quest	Red	143.4	148.9	-----	-----	31.6	33.3	-----	-----	1.9	2.8	-----	-----	6.1	5.4	-----	-----	2.3	6.4	-----
DF75	Red	142.2	147.8	147.6	149.9	31.3	32.4	32.6	34.1	6.1	5.3	4.7	4.6	4.8	4.9	4.1	3.7	1.1	29.2	3.5
MCIA EXP3R	Red	140.9	-----	-----	-----	31.1	-----	-----	-----	0.0	-----	-----	-----	2.0	-----	-----	-----	0.7	-----	-----
Bromfield	Red	143.6	-----	-----	-----	32.4	-----	-----	-----	0.0	-----	-----	-----	1.3	-----	-----	-----	1.9	-----	-----
Malabar	Red	145.1	149.3	149.0	151.0	32.7	35.1	35.8	37.2	1.1	0.6	1.4	1.7	3.8	4.6	3.8	3.4	0.5	5.3	2.9
TW412-011	Red	147.8	-----	-----	-----	32.3	-----	-----	-----	0.9	-----	-----	-----	2.4	-----	-----	-----	0.5	-----	-----
LCS 3103	Red	140.7	-----	-----	-----	31.0	-----	-----	-----	0.0	-----	-----	-----	1.9	-----	-----	-----	0.0	-----	-----
LCS 4101	Red	142.7	-----	-----	-----	31.0	-----	-----	-----	7.0	-----	-----	-----	3.1	-----	-----	-----	3.2	-----	-----
LCS 4103	Red	142.9	-----	-----	-----	29.8	-----	-----	-----	7.6	-----	-----	-----	2.3	-----	-----	-----	2.0	-----	-----
LCS 5114	Red	144.9	-----	-----	-----	29.0	-----	-----	-----	0.0	-----	-----	-----	2.9	-----	-----	-----	1.7	-----	-----
Emmit	Red	144.9	150.1	149.7	151.8	31.3	34.3	35.0	36.7	0.4	1.9	2.6	2.7	3.2	3.3	3.0	3.0	0.7	46.0	4.5
OH05-200-74	Red	145.1	-----	-----	-----	32.2	-----	-----	-----	0.8	-----	-----	-----	2.4	-----	-----	-----	5.1	-----	-----
LCS 4123	Red	144.6	-----	-----	-----	30.1	-----	-----	-----	0.3	-----	-----	-----	2.0	-----	-----	-----	3.6	-----	-----
HY116-SRW	Red	145.3	150.2	150.0	152.0	31.7	34.8	35.2	36.9	0.3	1.1	0.7	0.8	2.1	2.3	2.0	1.9	0.6	18.5	5.9
MCIA 2011-22W	White	142.6	-----	-----	-----	30.3	-----	-----	-----	1.1	-----	-----	-----	2.8	-----	-----	-----	2.0	-----	-----
VA09W-188WS	White	140.8	-----	-----	-----	32.0	-----	-----	-----	0.8	-----	-----	-----	3.9	-----	-----	-----	1.2	-----	-----
DF 110W	White	143.0	-----	-----	-----	28.9	-----	-----	-----	0.8	-----	-----	-----	2.6	-----	-----	-----	0.2	-----	-----
9242W	White	142.8	148.4	-----	-----	30.7	33.1	-----	-----	0.6	1.2	-----	-----	1.7	2.3	-----	-----	0.1	48.2	-----
Ambassador	White	141.6	147.7	147.5	149.8	31.2	33.0	34.1	35.7	0.0	0.1	1.1	1.4	6.4	6.0	4.8	4.3	0.9	8.2	5.5
AC Mountain	White	145.5	150.2	149.9	151.7	34.5	35.5	36.5	38.6	0.0	1.6	2.0	2.5	2.9	4.1	3.4	3.3	0.8	29.6	5.3
Pioneer Brand 25W43	White	142.3	148.0	147.7	150.1	29.5	31.3	31.9	33.5	4.9	3.9	3.7	4.0	3.2	3.1	2.8	2.9	0.0	9.7	5.8
Jupiter	White	145.1	150.2	149.9	151.9	30.3	31.7	31.9	33.6	0.1	1.2	1.3	1.4	5.6	6.1	4.9	4.4	1.8	7.4	5.3
MSU Line E6012	White	142.6	148.6	148.4	150.8	31.4	32.2	33.0	34.5	2.4	2.8	2.5	2.6	2.1	2.8	2.7	2.8	3.4	4.7	5.6
Aubrey	White	141.8	147.6	147.3	149.3	32.3	34.1	34.7	36.5	0.0	0.3	0.5	0.7	4.3	3.9	3.3	3.1	1.5	28.6	4.0
MSU Line E8052	White	143.3	149.0	-----	-----	29.5	31.7	-----	-----	5.0	2.7	-----	-----	3.9	4.4	-----	-----	1.3	4.6	-----
Ava	White	146.2	151.2	151.0	152.9	34.5	36.4	36.4	38.5	0.0	0.7	1.4	1.8	1.7	2.8	2.7	2.9	1.5	47.0	4.6
TW319-SWW	White	145.8	150.7	150.3	-----	33.7	35.7	36.6	-----	0.3	1.4	1.9	-----	2.4	2.3	2.0	-----	1.9	25.8	-----
W1062	White	144.3	149.7	149.3	151.5	31.6	33.5	34.1	36.1	2.5	1.7	2.2	2.4	2.6	3.0	2.7	2.8	1.0	15.4	5.9
Linebacker	White	145.4	150.6	150.1	152.1	33.0	34.6	35.6	37.3	0.8	2.5	3.0	3.2	2.1	3.3	3.0	3.2	1.5	11.6	5.2
Coral	White	146.1	150.9	150.5	152.4	33.2	34.9	35.7	37.2	1.0	2.5	2.8	3.1	2.1	2.9	2.7	2.9	2.1	11.5	5.3
Caledonia	White	144.5	149.9	149.5	151.5	30.3	32.4	33.4	35.2	1.1	2.1	2.5	2.6	2.8	4.0	3.4	3.3	1.3	12.8	4.6
TW528-003	White	145.8	-----	-----	-----	33.6	-----	-----	-----	0.0	-----	-----	-----	1.3	-----	-----	-----	0.8	-----	-----
MSU Line E5024	White	145.3	150.2	150.0	152.2	28.3	30.3	31.0	32.7	1.0	1.3	1.0	0.9	5.6	4.5	3.8	3.4	0.5	14.3	4.5
MSU D8006	White	142.5	148.4	148.0	150.2	32.1	34.1	35.0	36.5	1.6	2.3	2.3	2.2	6.1	4.8	4.0	3.8	1.2	30.3	5.3
Envoy	White	144.2	149.7	149.5	151.6	29.9	31.7	33.2	34.5	1.6	0.8	0.8	1.2	3.9	4.4	3.7	3.5	3.0	8.7	3.8
MEAN (2012 = 92 Entries)		142.9	148.8	148.7	151.1	31.2	33.0	33.7	35.4	1.6	1.9	1.9	2.1	2.7	3.5	3.1	3.2	1.3	18.3	4.8
LSD (0.05)		0.9	1.4	1.0	0.8	1.4	1.9	1.5	1.3	1.7	3.0	1.9	1.4	1.3	2.0	1.7	1.3	1.2	23.9	1.9
CV (%)		0.5	0.5	0.4	0.4	3.5	2.8	2.8	2.6	77.7	78.9	62.1	47.2	29.0	29.1	32.4	29.2	79.8	65.5	20.1

2012 Michigan State University Wheat Performance Trials (Including Experimentals)

Multi-year data are the most informative.
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Table 3 : Multi-Year Performance Summary (Note: Tables sorted by 2012 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 SCORE (0-5)	Fusarium Head Blight (Scab) Data : Field Observation Symptoms									DON (ppm) in grain		
		Multi-Year Averages				2 YR		2009	2012	Incidence (% of spikes)			Severity (% within spikes)			Index (% overall infection)			Multi-Year Averages		
		2 YR	3 YR	4 YR	2011-12	2010-12	2009-12			2 YR	3 YR	2 YR	3 YR	2 YR	3 YR	2 YR	3 YR	2 YR	3 YR	2 YR	3 YR
		2012	2011-12	2010-12	2009-12	2012	2011-12			2011	2010-11	2009-11	2011	2010-11	2009-11	2011	2010-11	2009-11	2011	2010-11	2009-11
Hopewell	Red	3.9	1.9	1.4	1.1	3.8	3.5	1.5	1.2	16.6	51.5	62.8	14.5	37.0	36.1	4.1	27.7	28.9	1.1	9.8	9.3
OH06-159-6	Red	1.1	----	----	----	2.2	----	----	2.7	----	----	----	----	----	----	----	----	----	----	----	----
Red Ruby	Red	7.6	5.1	4.4	3.5	3.8	3.5	4.4	1.6	22.7	58.7	71.4	21.0	40.8	38.6	6.2	31.9	32.0	0.9	7.6	7.5
MSU Line E9021R	Red	0.9	----	----	----	2.1	----	----	2.6	----	----	----	----	----	----	----	----	----	----	----	----
VA08W-176	Red	0.2	----	----	----	0.1	----	----	2.1	----	----	----	----	----	----	----	----	----	----	----	----
Quest	Red	0.7	0.4	----	----	3.3	2.2	----	1.0	11.9	----	----	19.5	----	----	3.5	----	----	0.3	----	----
DF75	Red	7.6	4.3	4.6	4.0	1.4	1.8	0.8	1.8	23.4	55.4	60.3	32.5	40.9	39.6	9.0	26.1	26.5	1.2	5.6	5.3
MCIA EXP3R	Red	2.4	----	----	----	1.3	----	----	2.1	----	----	----	----	----	----	----	----	----	----	----	----
Bromfield	Red	6.3	----	----	----	1.9	----	----	2.4	----	----	----	----	----	----	----	----	----	----	----	----
Malabar	Red	6.1	3.0	2.8	2.3	3.1	4.8	5.3	1.6	12.1	45.7	55.9	10.9	23.7	22.9	2.5	15.7	15.6	0.2	4.6	4.2
TW412-011	Red	2.6	----	----	----	0.5	----	----	1.9	----	----	----	----	----	----	----	----	----	----	----	----
LCS 3103	Red	0.8	----	----	----	2.1	----	----	1.1	----	----	----	----	----	----	----	----	----	----	----	----
LCS 4101	Red	3.4	----	----	----	1.9	----	----	1.0	----	----	----	----	----	----	----	----	----	----	----	----
LCS 4103	Red	5.1	----	----	----	2.3	----	----	1.2	----	----	----	----	----	----	----	----	----	----	----	----
LCS 5114	Red	0.8	----	----	----	1.5	----	----	0.7	----	----	----	----	----	----	----	----	----	----	----	----
Emmit	Red	7.3	4.5	4.2	3.4	1.7	2.4	1.9	1.3	13.6	47.4	57.1	26.2	41.8	39.7	4.7	25.6	26.4	0.7	6.1	5.2
OH05-200-74	Red	7.8	----	----	----	1.2	----	----	1.0	----	----	----	----	----	----	----	----	----	----	----	----
LCS 4123	Red	0.7	----	----	----	1.2	----	----	1.3	----	----	----	----	----	----	----	----	----	----	----	----
HY116-SRW	Red	6.2	4.9	3.8	3.0	0.6	0.9	0.0	2.3	24.9	56.2	63.1	14.2	27.3	30.2	4.8	20.0	22.0	0.8	6.0	5.0
MCIA 2011-22W	White	4.3	----	----	----	1.9	----	----	1.2	----	----	----	----	----	----	----	----	----	----	----	----
VA09W-188WS	White	0.5	----	----	----	1.1	----	----	2.3	----	----	----	----	----	----	----	----	----	----	----	----
DF 110W	White	2.3	----	----	----	4.3	----	----	2.3	----	----	----	----	----	----	----	----	----	----	----	----
9242W	White	5.6	3.8	----	----	1.7	1.6	----	1.6	10.2	----	----	8.1	----	----	2.4	----	----	0.6	----	----
Ambassador	White	7.3	3.6	3.3	2.6	1.7	2.1	4.9	2.7	27.0	56.6	65.8	47.3	59.3	56.7	13.5	37.4	39.1	2.4	11.3	11.3
AC Mountain	White	6.3	4.9	4.0	3.2	1.6	2.5	4.2	2.6	20.9	49.6	57.4	35.2	51.4	49.1	8.7	30.5	31.0	1.7	9.6	8.7
Pioneer Brand 25W43	White	3.7	1.9	1.1	0.8	0.8	1.4	0.0	1.3	17.6	51.9	56.4	17.9	32.8	28.6	4.8	23.0	20.5	0.8	5.2	4.8
Jupiter	White	4.5	2.3	1.6	1.3	2.1	2.4	4.4	1.9	26.5	60.7	72.4	41.7	47.2	46.9	13.6	32.0	36.0	2.1	8.4	8.0
MSU Line E6012	White	0.4	0.2	0.2	0.3	4.2	3.9	3.2	1.5	22.9	56.0	65.1	13.9	34.5	30.9	5.1	27.1	24.7	0.6	5.7	5.2
Aubrey	White	6.0	3.0	2.3	1.7	3.2	2.9	3.9	2.1	28.3	54.9	56.9	27.6	38.3	38.0	9.5	24.8	24.7	1.6	9.1	7.5
MSU Line E8052	White	0.0	0.0	----	----	2.7	2.1	----	2.1	20.5	----	----	12.3	----	----	4.4	----	----	1.3	----	----
Ava	White	2.0	1.0	1.0	0.7	1.3	1.5	4.0	1.2	19.5	43.9	49.4	28.6	39.6	37.7	6.9	20.3	19.9	0.8	3.0	2.8
TW319-SWW	White	4.1	2.1	1.6	----	0.2	0.4	----	3.1	13.6	52.3	----	31.7	45.9	----	5.6	30.1	----	2.1	11.9	----
W1062	White	0.0	0.0	0.0	0.0	0.4	1.0	4.1	2.7	29.2	58.9	69.0	40.3	48.3	44.3	13.4	31.8	31.8	2.1	8.2	7.8
Linebacker	White	6.1	3.1	2.6	2.1	3.8	3.9	4.4	0.9	10.4	46.1	57.7	33.7	44.7	42.8	4.7	25.4	27.6	1.0	6.1	5.5
Coral	White	6.8	5.2	4.1	3.4	1.5	1.4	6.1	0.6	20.6	53.6	59.4	32.1	43.0	42.5	8.0	27.4	27.5	1.3	7.6	6.4
Caledonia	White	6.6	3.4	2.8	2.3	3.2	3.4	5.5	2.0	34.5	61.6	67.0	47.4	56.1	53.4	18.8	38.2	38.9	3.0	13.0	11.9
TW528-003	White	5.1	----	----	----	2.0	----	----	1.0	----	----	----	----	----	----	----	----	----	----	----	----
MSU Line E5024	White	8.3	5.5	5.0	3.9	0.9	1.2	0.4	0.7	13.5	54.1	66.0	8.0	25.9	26.2	0.9	21.3	22.3	1.4	7.8	6.8
MSU D8006	White	5.7	2.9	2.2	1.7	0.3	1.4	4.0	1.8	23.4	56.5	63.9	34.5	47.3	43.4	8.7	31.2	30.3	1.7	7.0	6.8
Envoy	White	7.1	4.4	3.2	2.7	0.0	1.3	4.2	1.7	25.5	59.3	70.3	19.4	36.1	35.6	6.2	27.7	29.4	2.5	9.3	9.2
MEAN (2012 = 92 Entries)		3.2	2.3	2.2	2.0	1.8	2.1	2.6	1.7	19.1	53.8	62.5	24.8	40.5	40.1	6.3	26.7	28.3	1.1	7.1	6.9
LSD (0.05)		1.2	3.6	2.5	1.8	1.2	1.8	1.1	0.9	14.2	10.6	10.3	8.4	14.2	9.7	3.9	11.1	8.0	0.4	5.7	3.6
CV (%)		27.3	77.1	70.6	63.7	52.8	42.1	25.7	38.4	35.8	9.7	10.1	43.8	17.4	14.8	51.2	20.6	17.2	34.0	39.3	31.2

2012 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 2012 Yield, red wheats grouped before white)

Name	Grain Color	Milling and Baking Properties (2011 Crop and Earlier)																			
		Percent Flour Yield				Percent Protein In Flour				Softness Equivalent Percent				Cookie Diameter (cm)				Whole Grain Protein %		Whole Grain Hardness (0-100)	
		Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				2 YR		2 YR	
		2 YR	3 YR	4 YR	2011	2 YR	3 YR	4 YR	2011	2 YR	3 YR	4 YR	2011	2 YR	3 YR	4 YR	2011	2010-11	2010-11	2 YR	2 YR
		2011	2010-11	2009-11	2008-11	2011	2010-11	2009-11	2008-11	2011	2010-11	2009-11	2008-11	2011	2010-11	2009-11	2008-11	2011	2010-11	2011	2010-11
Hopewell	Red	68.5	68.4	68.5	68.6	6.9	6.8	6.8	7.0	60.5	61.9	61.6	60.6	19.7	19.5	19.3	19.1	8.8	9.0	15.2	18.4
OH06-159-6	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Red Ruby	Red	69.9	70.0	70.0	70.2	6.7	6.7	6.7	6.7	62.7	62.6	62.2	61.5	19.3	19.5	19.4	19.3	8.8	8.7	7.2	12.3
MSU Line E9021R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
VA08W-176	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Quest	Red	71.0	-----	-----	-----	6.6	-----	-----	-----	63.3	-----	-----	-----	19.5	-----	-----	-----	8.5	-----	9.6	-----
DF75	Red	71.7	71.6	71.6	71.6	6.6	6.4	6.3	6.5	63.2	63.6	63.0	62.0	19.3	19.1	19.1	19.2	8.5	8.5	15.0	19.3
MCIA EXP3R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Bromfield	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Malabar	Red	69.5	69.7	69.8	70.0	6.2	6.4	6.4	6.5	59.8	60.0	59.3	58.6	19.3	19.2	19.2	19.1	8.1	8.4	9.1	12.0
TW412-011	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 3103	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 4101	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 4103	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 5114	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Emmit	Red	71.3	71.5	71.8	71.8	6.4	6.5	6.6	6.6	59.1	58.6	57.7	57.6	19.4	19.4	19.4	19.3	8.7	8.7	12.2	16.6
OH05-200-74	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 4123	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
HY116-SRW	Red	67.5	67.6	67.9	-----	6.6	6.7	6.8	-----	55.8	56.3	54.6	-----	19.4	19.5	19.3	-----	8.8	8.8	17.9	21.1
MCIA 2011-22W	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
VA09W-188WS	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DF 110W	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9242W	White	70.1	-----	-----	-----	6.4	-----	-----	-----	62.2	-----	-----	-----	19.8	-----	-----	-----	8.3	-----	2.3	-----
Ambassador	White	73.0	72.3	72.4	72.3	6.2	6.2	6.4	6.6	62.4	62.6	61.3	59.9	19.8	19.7	19.6	19.4	8.2	8.1	-4.1	1.6
AC Mountain	White	71.5	71.3	71.4	71.2	6.5	6.4	6.4	6.4	60.8	61.4	61.8	60.4	19.6	19.6	19.7	19.7	8.2	8.2	4.5	7.3
Pioneer Brand 25W43	White	70.3	70.3	70.1	70.2	6.7	6.9	6.9	7.0	59.0	58.8	59.0	58.0	19.3	19.2	19.3	19.1	8.4	8.6	8.5	11.6
Jupiter	White	71.9	71.9	71.7	71.5	5.6	5.7	5.7	5.9	63.6	63.2	63.4	60.5	19.7	19.6	19.5	19.5	7.4	7.5	9.6	12.7
MSU Line E6012	White	72.0	71.8	71.7	-----	6.7	6.7	6.5	-----	62.8	63.0	62.2	-----	19.8	19.3	19.4	-----	8.5	8.5	14.0	17.4
Aubrey	White	70.9	71.4	71.3	71.3	7.2	7.0	7.2	7.2	58.6	61.3	61.2	60.4	18.6	18.7	18.8	18.7	9.1	8.9	9.5	10.7
MSU Line E8052	White	70.4	-----	-----	-----	6.8	-----	-----	-----	63.4	-----	-----	-----	19.6	-----	-----	-----	8.7	-----	14.4	-----
Ava	White	70.2	70.2	70.2	70.1	6.2	6.3	6.2	6.3	64.1	63.4	63.2	61.9	19.7	19.7	19.7	19.6	7.9	8.1	0.5	7.2
TW319-SWW	White	70.2	70.0	-----	-----	6.6	6.8	-----	-----	58.9	59.1	-----	-----	19.2	19.2	-----	-----	8.6	8.7	17.8	20.3
W1062	White	73.0	72.7	72.6	72.5	6.3	6.2	6.3	6.4	64.6	64.7	64.9	62.8	20.1	20.3	20.3	20.1	8.0	7.9	10.2	15.8
Linebacker	White	71.1	70.8	70.7	-----	6.6	6.7	6.6	-----	61.1	60.6	61.4	-----	19.9	19.6	19.7	-----	8.2	8.3	9.5	14.9
Coral	White	71.8	71.8	71.5	71.5	6.5	6.6	6.4	6.5	62.3	61.9	62.3	60.5	19.7	19.6	19.5	19.4	8.0	8.1	7.5	12.4
Caledonia	White	71.6	71.8	71.5	71.4	6.4	6.5	6.5	6.7	62.3	62.0	61.7	59.6	19.9	19.7	19.4	19.4	8.6	8.5	8.6	13.9
TW528-003	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MSU Line E5024	White	70.3	70.1	70.2	69.9	6.4	6.4	6.6	6.8	57.3	57.5	56.3	53.9	19.4	19.3	19.1	18.9	8.5	8.3	16.0	18.4
MSU D8006	White	72.8	73.1	72.9	72.9	6.6	6.6	6.8	6.8	63.3	63.4	62.7	61.7	19.8	19.8	19.8	19.7	8.5	8.5	10.8	11.6
Envoy	White	71.3	70.7	70.8	70.9	6.7	6.8	7.0	7.2	57.8	56.9	56.1	53.8	19.2	19.1	19.3	19.1	8.7	8.7	8.2	12.2
MEAN (2012 = 92 Entries)		70.8	70.5	70.6	70.7	6.5	6.6	6.6	6.7	60.9	61.0	60.3	59.2	19.5	19.4	19.3	19.2	8.4	8.4	11.8	15.5
LSD (0.05)		-----	1.8	1.4	1.2	-----	0.4	0.4	0.3	-----	3.4	3.3	3.4	-----	0.5	0.6	0.5	-----	0.5	-----	5.2
CV (%)		-----	1.3	1.2	1.2	-----	2.9	3.4	3.6	-----	2.7	3.3	4.0	-----	1.2	1.8	1.8	-----	3.0	-----	16.5

2012 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 5 : Multi-Year Performance Summary (Note: Tables sorted by 2012 Yield, red wheats grouped before white)

Name	Grain Color	Milling and Baking Properties (2011 Crop and Earlier)																			
		Water SRC (%)				Sodium Carbonate SRC (%)				Sucrose SRC (%)				As Is Lactic Acid SRC (%)SRC (%)				Quality Lab Test Weight			
		Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages				Multi-Year Averages			
		2 YR	3 YR	4 YR	2011	2 YR	3 YR	4 YR	2011	2 YR	3 YR	4 YR	2011	2 YR	3 YR	4 YR	2011	2 YR	3 YR	4 YR	2011
Hopewell	Red	54.9	54.3	54.1	54.0	69.3	68.5	68.4	69.2	82.5	83.1	83.1	84.1	100.5	98.5	100.1	103.7	63.3	62.5	62.5	62.8
OH06-159-6	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Red Ruby	Red	54.6	54.4	54.3	54.1	67.4	66.9	67.2	67.9	83.3	82.9	83.2	84.3	98.8	94.7	97.4	101.2	62.9	62.6	62.7	63.1
MSU Line E9021R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
VA08W-176	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Quest	Red	53.7	-----	-----	-----	66.8	-----	-----	-----	84.3	-----	-----	-----	83.4	-----	-----	-----	60.9	-----	-----	-----
DF75	Red	58.4	57.2	57.1	57.3	71.0	69.9	70.0	71.2	86.7	84.0	83.5	84.4	77.8	74.2	79.3	82.7	63.4	63.2	63.2	63.8
MCIA EXP3R	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Bromfield	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Malabar	Red	55.8	55.0	54.6	54.8	68.6	67.6	67.6	68.6	82.2	83.0	83.4	84.3	91.1	90.6	94.9	98.7	62.2	62.0	62.3	62.6
TW412-011	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 3103	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 4101	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 4103	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 5114	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Emmit	Red	53.8	54.1	53.5	53.6	67.9	66.3	66.2	67.2	83.7	81.9	80.9	82.6	79.5	72.7	74.7	79.6	62.7	62.3	62.3	62.7
OH05-200-74	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
LCS 4123	Red	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
HY116-SRW	Red	56.0	55.6	55.1	-----	69.9	68.6	68.5	-----	87.0	84.5	84.2	-----	79.6	76.3	79.0	-----	62.2	61.8	62.3	-----
MCIA 2011-22W	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
VA09W-188WS	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DF 110W	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9242W	White	54.1	-----	-----	-----	66.8	-----	-----	-----	82.9	-----	-----	-----	86.2	-----	-----	-----	62.0	-----	-----	-----
Ambassador	White	51.8	51.6	51.2	51.4	66.1	65.1	64.8	65.7	80.4	79.4	78.9	80.0	78.6	75.6	79.0	83.0	61.0	60.5	60.6	60.9
AC Mountain	White	51.4	51.5	51.7	51.7	64.7	63.6	63.4	64.5	79.8	78.4	78.2	79.7	78.9	74.6	78.9	82.8	61.3	61.0	60.7	61.0
Pioneer Brand 25W43	White	53.2	52.9	52.5	52.7	64.9	64.2	64.8	65.8	83.7	82.4	82.4	83.6	97.8	98.1	97.9	101.9	62.0	62.0	61.9	62.4
Jupiter	White	56.1	55.4	55.7	55.9	67.9	66.9	67.5	68.9	80.4	79.7	79.9	81.0	86.2	82.4	90.5	95.3	61.8	61.4	61.3	62.2
MSU Line E6012	White	53.3	53.1	53.1	-----	64.8	64.7	65.6	-----	80.2	80.9	80.9	-----	93.5	91.5	92.2	-----	62.3	62.2	62.5	-----
Aubrey	White	53.2	52.9	52.1	52.4	69.7	68.3	67.5	67.9	87.5	86.0	84.2	84.9	95.4	93.2	93.9	94.0	63.8	63.0	63.2	63.3
MSU Line E8052	White	53.7	-----	-----	-----	68.0	-----	-----	-----	83.4	-----	-----	-----	112.7	-----	-----	-----	61.9	-----	-----	-----
Ava	White	52.7	52.6	52.0	52.0	64.7	64.3	64.0	65.1	81.5	80.5	79.7	81.8	76.3	70.6	75.3	79.9	62.7	62.0	61.8	62.4
TW319-SWW	White	56.5	55.8	-----	-----	70.4	69.2	-----	-----	85.0	83.5	-----	-----	85.3	82.3	-----	-----	63.2	63.1	-----	-----
W1062	White	52.1	51.5	51.4	51.3	64.2	63.0	62.9	64.0	78.4	78.0	77.7	79.5	98.7	92.0	96.3	100.9	62.8	62.3	62.0	62.8
Linebacker	White	51.6	51.3	51.4	-----	65.0	63.8	64.0	-----	80.8	79.5	78.9	-----	83.0	77.9	83.5	-----	61.8	61.3	60.6	-----
Coral	White	50.9	51.7	51.1	51.4	64.5	63.5	63.4	64.5	79.3	78.4	77.6	78.6	84.9	82.4	86.9	91.7	62.0	62.1	61.8	62.5
Caledonia	White	51.7	52.0	52.0	52.0	65.7	64.4	64.5	65.4	79.4	78.2	77.7	79.6	88.8	84.0	88.1	92.4	62.0	61.7	61.5	62.2
TW528-003	White	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MSU Line E5024	White	54.7	55.1	54.8	55.4	69.1	67.8	68.1	69.6	82.5	83.2	83.2	85.0	79.7	78.3	80.3	83.8	62.5	62.2	62.4	63.0
MSU D8006	White	53.2	53.0	52.5	52.5	65.0	64.8	64.8	65.6	78.1	78.7	79.4	80.3	97.3	95.1	98.2	101.6	61.2	61.4	61.6	62.1
Envoy	White	54.4	53.7	53.2	54.1	68.4	66.5	66.2	68.0	85.4	84.3	83.5	85.2	101.5	94.1	93.8	97.3	62.0	61.7	62.1	62.9
MEAN (2012 = 92 Entries)		54.2	54.0	53.5	53.6	67.6	66.7	66.5	67.4	83.2	82.2	81.7	83.0	88.9	85.9	88.2	92.9	62.2	62.1	62.1	62.6
LSD (0.05)		-----	2.4	1.8	1.7	-----	3.0	2.4	2.2	-----	4.0	3.3	3.1	-----	5.8	6.9	6.1	-----	1.0	1.1	1.0
CV (%)		-----	2.2	2.1	2.3	-----	2.2	2.2	2.3	-----	2.4	2.5	2.6	-----	3.3	4.7	4.6	-----	0.8	1.1	1.1

2012 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.

Name	Grain Color	Commercially Available	ALLEGAN			HURON			INGHAM			LENAWEE			TUSCOLA			SANILAC			Organization
			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.	
AgriMAXX 413	Red	Yes	97.8	60.0	13.3	84.6	59.4	12.9	87.5	59.2	13.2	94.6	59.8	12.1	101.8	59.5	12.9	83.5	58.4	13.1	AgriMAXX Wheat Company
AgriMAXX EXP1215	Red	No	101.6	58.8	14.7	86.9	58.2	13.8	86.4	57.6	15.6	86.4	56.0	12.0	108.4	58.7	13.2	91.1	57.6	14.4	AgriMAXX Wheat Company
Diener 492W	Red	Yes	91.2	60.1	13.1	88.1	58.8	12.9	79.1	58.2	13.4	91.6	59.5	12.0	101.0	59.0	12.9	87.2	57.9	13.2	BioTown Seeds
Diener 506W	Red	No	99.4	58.4	14.8	86.5	58.6	13.7	85.0	57.5	16.0	86.6	58.0	12.4	104.5	58.6	13.2	84.4	57.4	14.5	BioTown Seeds
Attack	Red	Yes	86.6	58.9	13.5	82.0	59.5	12.9	81.1	58.9	14.5	93.5	60.2	12.2	104.4	59.6	13.1	80.4	58.6	13.7	D.F. Seeds, Inc.
DF 110W	White	No	91.3	60.5	14.0	82.4	61.1	13.3	79.2	60.2	14.2	102.2	60.7	12.4	108.5	60.9	13.0	85.3	59.6	13.6	D.F. Seeds, Inc.
DF 109R	Red	Yes	91.5	59.1	14.4	87.8	59.5	13.8	90.2	58.1	14.1	96.8	57.6	12.6	109.3	59.8	13.5	88.9	57.7	14.2	D.F. Seeds, Inc.
DF105R	Red	Yes	96.0	59.8	13.7	82.2	59.2	12.8	97.5	59.6	13.1	90.6	59.5	11.8	107.1	59.4	12.6	88.8	57.1	13.2	D.F. Seeds, Inc.
Linebacker	White	Yes	77.8	56.0	16.3	72.8	59.0	13.9	73.0	56.7	16.4	78.3	56.6	13.0	95.9	58.4	15.5	81.1	58.0	14.7	D.F. Seeds, Inc.
DF55	Red	Yes	90.1	59.6	12.9	85.5	59.4	13.4	89.1	59.9	14.2	87.0	59.7	12.6	102.9	60.5	12.8	89.6	59.4	14.1	D.F. Seeds, Inc.
DF75	Red	Yes	86.9	60.2	13.6	83.2	60.0	13.2	70.9	59.1	14.8	90.9	61.3	12.3	103.1	60.8	13.2	76.6	59.6	13.6	D.F. Seeds, Inc.
Ambassador	White	Yes	89.3	57.9	13.3	77.2	57.5	12.9	88.0	58.2	12.8	82.7	57.8	12.0	100.9	59.0	12.5	93.5	58.3	13.3	D.F. Seeds, Inc. / Cooperative Elevator Co.
Aubrey	White	Yes	90.1	60.3	13.5	78.9	59.6	13.6	82.5	59.5	13.7	80.8	60.0	12.3	93.5	60.5	12.5	74.9	58.7	14.2	D.F. Seeds, Inc. / Cooperative Elevator Co. / Farmers Co-op Grain Co.
Edge	Red	No	92.0	61.0	13.1	86.0	59.8	13.3	93.9	62.4	12.7	97.1	60.4	12.4	99.0	60.5	12.5	83.4	59.8	13.3	Direct Enterprises
Quest	Red	Yes	89.4	58.1	13.3	70.2	58.0	12.7	90.6	58.9	13.2	94.1	58.7	11.9	100.1	58.6	12.1	70.1	56.7	13.1	Direct Enterprises
Sienna	Red	Yes	93.5	58.8	13.1	82.7	58.2	13.2	80.8	58.2	13.7	96.9	58.8	12.1	103.9	58.8	12.4	83.5	57.7	13.3	Direct Enterprises
9042	Red	Yes	98.0	60.3	13.5	77.0	59.2	12.9	80.2	59.5	13.7	91.9	59.8	12.1	104.9	60.1	12.2	90.2	58.7	13.7	Dyna-Gro Seed
9053	Red	Yes	91.2	58.7	13.1	80.2	58.7	12.8	90.9	58.8	13.2	84.5	57.3	12.0	107.1	59.4	12.6	77.5	57.4	13.4	Dyna-Gro Seed
9922	Red	Yes	96.8	60.0	13.7	82.0	61.0	13.3	77.9	60.9	13.8	100.6	60.6	12.2	103.4	60.3	13.0	75.6	58.5	14.1	Dyna-Gro Seed
9242W	White	Yes	89.4	60.0	13.8	84.3	60.1	13.3	78.0	60.2	13.8	88.8	59.6	12.3	105.1	60.2	12.5	90.0	59.5	13.6	Dyna-Gro Seed
Shirley	Red	Yes	84.6	57.0	13.6	86.6	58.7	13.2	87.0	58.1	14.1	93.5	59.8	12.3	99.7	58.6	13.9	106.9	59.3	13.8	Dyna-Gro Seed
9223	Red	Yes	96.5	59.2	13.8	86.8	59.5	13.7	84.8	58.5	14.4	92.9	56.9	12.3	111.9	60.0	13.1	90.0	58.1	14.1	Dyna-Gro Seed
Caledonia	White	Yes	78.0	57.9	14.0	73.1	59.4	13.4	76.8	57.9	15.1	83.7	58.5	12.2	93.0	59.0	14.4	68.2	57.2	14.0	Harrington Seeds, Inc.
Ava	White	Yes	82.6	54.7	18.5	77.4	58.7	14.3	67.8	55.0	18.6	80.6	56.3	13.7	95.9	57.7	17.1	80.6	57.7	14.7	Hyland Seeds
Emmit	Red	Yes	88.3	59.0	13.8	69.5	59.1	14.0	71.5	58.7	15.5	83.0	58.5	12.2	95.7	59.4	13.7	78.4	58.2	14.0	Hyland Seeds
HY116-SRW	Red	Yes	79.0	57.8	13.3	69.3	58.2	13.5	71.0	57.5	14.6	92.5	60.2	12.3	90.7	57.7	13.2	85.7	58.4	13.7	Hyland Seeds
TW319-SWW	White	Yes	84.7	59.3	13.8	69.2	59.5	13.1	78.6	59.9	14.1	89.3	61.1	12.5	93.9	61.0	13.0	71.8	59.5	13.6	Hyland Seeds
TW412-011	Red	No	84.2	57.2	20.0	76.4	59.7	16.6	76.4	58.0	19.0	73.3	58.7	14.4	95.0	57.6	21.4	91.5	60.4	15.1	Hyland Seeds
TW528-003	White	No	81.9	58.4	14.8	71.2	59.2	13.5	72.4	58.8	15.6	81.6	58.5	12.7	88.8	59.8	13.6	72.0	58.2	13.9	Hyland Seeds
LCS 4123	Red	No	85.1	58.5	15.1	71.6	59.1	13.9	71.9	59.0	16.1	90.7	61.5	12.9	90.5	59.4	13.4	78.4	58.9	15.4	Limagrain Cereal Seeds
LCS 4101	Red	No	81.5	60.5	13.9	74.5	60.0	13.3	78.6	60.5	14.0	86.9	59.9	12.5	98.4	60.1	13.3	76.6	60.4	14.2	Limagrain Cereal Seeds
LCS 4103	Red	No	82.5	60.4	13.7	79.0	60.3	13.4	77.7	59.3	13.9	88.3	61.4	12.3	96.0	60.3	13.3	73.9	59.7	14.0	Limagrain Cereal Seeds
LCS 3103	Red	No	88.8	60.8	13.5	70.3	59.1	13.2	71.9	60.8	14.0	89.5	61.1	12.2	98.0	60.8	12.7	80.7	59.0	13.4	Limagrain Cereal Seeds
LCS 5114	Red	No	83.7	59.7	14.6	77.0	60.1	14.3	69.3	57.9	17.2	86.3	61.3	12.7	95.7	59.2	13.7	80.7	59.8	14.6	Limagrain Cereal Seeds
AC Mountain	White	Yes	86.0	56.3	13.6	83.4	58.2	13.2	85.3	57.4	13.8	81.9	57.0	11.9	96.3	58.3	12.6	91.1	58.1	13.5	Michigan Crop Improvement Association
Coral	White	Yes	80.9	56.6	14.8	75.0	59.0	13.9	73.9	56.9	14.9	79.1	56.9	12.3	96.7	59.6	15.3	71.7	58.1	13.8	Michigan Crop Improvement Association
Hopewell	Red	Yes	86.8	59.8	13.8	81.9	59.7	13.2	87.4	60.1	14.8	82.6	59.6	12.6	96.4	60.8	12.9	87.1	59.5	13.5	Michigan Crop Improvement Association
Jupiter	White	Yes	93.2	57.8	15.7	77.8	58.9	13.1	80.1	58.1	15.3	84.2	57.6	12.5	99.6	58.8	13.5	81.8	58.3	13.5	Michigan Crop Improvement Association
MCIA Blazer	Red	No	87.9	61.4	13.6	77.4	60.8	13.2	85.7	62.1	14.0	89.6	61.6	12.3	103.0	61.8	12.7	88.8	60.5	13.6	Michigan Crop Improvement Association
MCIA Butch	Red	Yes	85.5	58.8	13.7	83.0	57.9	13.0	86.6	58.0	13.7	91.5	59.6	12.3	100.2	59.4	12.3	80.9	57.8	13.4	Michigan Crop Improvement Association
Bromfield	Red	No	83.2	59.7	14.2	79.9	60.6	12.6	82.6	59.5	14.0	89.2	60.0	12.1	93.5	60.8	12.6	81.0	60.0	13.5	Michigan Crop Improvement Association
MCIA EXP2R	Red	No	87.8	61.5	13.3	77.5	60.6	13.3	87.2	60.9	14.0	85.4	61.5	12.4	104.9	61.4	12.5	95.4	60.7	13.7	Michigan Crop Improvement Association
MCIA EXP3R	Red	No	89.1	61.2	13.3	77.1	60.1	13.2	79.4	61.0	13.7	79.8	59.7	12.3	97.8	60.6	12.9	82.9	59.0	13.4	Michigan Crop Improvement Association

2012 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.

Name	Grain Color	Commercially Available	ALLEGAN			HURON			INGHAM			LENAWEE			TUSCOLA			SANILAC			Organization
			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.	
MCIA EXP4	Red	No	96.6	59.9	13.6	86.4	60.3	13.9	89.5	60.1	15.6	90.8	60.1	12.6	102.1	59.7	14.2	88.1	60.5	14.1	Michigan Crop Improvement Association
MCIA Red Devil	Red	Yes	97.0	60.4	14.1	83.3	60.7	13.4	80.9	60.2	14.6	95.9	60.3	12.5	104.7	60.5	13.1	80.1	59.7	14.0	Michigan Crop Improvement Association
MCIA Red Dragon	Red	Yes	97.5	58.6	13.1	79.7	58.5	13.2	87.6	59.1	13.7	90.7	57.1	12.1	106.9	58.7	12.3	89.9	57.1	13.3	Michigan Crop Improvement Association
MSU D8006	White	Yes	84.2	59.1	13.7	67.3	59.3	12.8	71.1	59.7	13.3	87.4	60.2	12.2	91.4	59.7	12.9	63.4	57.5	13.4	Michigan Crop Improvement Association
MSU Line E5024	White	Yes	81.3	60.5	13.1	68.2	60.9	12.8	58.6	60.4	14.1	85.6	59.3	12.2	90.9	60.3	12.3	79.5	59.7	13.6	Michigan Crop Improvement Association
Red Ruby	Red	Yes	84.5	60.5	13.4	82.1	61.0	13.2	84.2	60.7	13.5	91.0	60.4	12.3	94.6	60.5	12.5	83.4	59.7	13.4	Michigan Crop Improvement Association
Sunburst	Red	Yes	95.8	62.6	15.2	87.7	62.6	13.9	89.2	62.2	15.0	93.9	63.4	13.0	103.9	62.0	14.4	81.4	61.1	14.5	Michigan Crop Improvement Association
MCIA 2011-22W	White	No	96.4	61.0	13.8	85.0	61.0	13.3	91.3	60.8	13.7	92.5	61.1	12.4	104.4	61.5	12.4	78.5	59.8	13.9	Michigan Crop Improvement Association
MSU Line E6012	White	No	91.6	61.4	13.6	78.8	60.4	13.0	78.2	60.7	14.2	85.1	60.8	12.3	96.8	60.4	12.4	80.6	60.0	13.5	Michigan State University
MSU Line E8052	White	No	90.3	60.2	13.6	73.9	60.6	13.1	75.2	59.3	14.1	87.1	58.7	12.2	91.9	60.1	13.4	76.7	58.9	13.6	Michigan State University
MSU Line E9021R	Red	No	87.7	60.7	13.5	79.2	60.1	13.2	81.8	60.3	14.3	94.0	61.1	13.0	97.1	60.7	13.9	80.8	59.8	13.9	Michigan State University
OH05-200-74	Red	No	81.6	58.1	14.0	75.1	59.0	13.6	82.0	59.7	14.7	85.8	59.8	12.5	97.9	59.1	13.7	64.5	57.8	14.2	Michigan State University
OH06-159-6	Red	No	91.7	60.4	14.0	76.3	59.4	13.3	77.5	58.8	14.3	87.8	61.0	12.3	100.6	59.9	13.4	86.3	59.6	14.1	Michigan State University
Malabar	Red	Yes	81.0	58.3	14.0	77.0	59.6	13.3	80.6	60.2	13.8	80.3	59.8	12.4	99.1	60.4	12.3	83.4	59.6	13.7	Ohio Seed Improvement Association
Pioneer Brand 25R32	Red	Yes	90.3	62.2	13.5	79.1	60.2	13.4	83.3	61.4	14.0	83.0	60.9	12.4	102.9	61.8	12.5	91.4	60.6	13.8	Dupont Pioneer
Pioneer Brand 25R34	Red	Yes	97.8	58.1	14.3	93.3	58.9	13.7	92.8	58.9	14.3	88.4	60.0	12.6	111.9	59.1	13.6	92.5	58.7	14.4	Dupont Pioneer
Pioneer Brand 25R39	Red	Yes	88.5	59.4	14.6	85.3	60.6	13.4	89.2	60.1	13.7	90.3	59.9	12.4	106.9	60.5	13.0	82.2	59.3	13.4	Dupont Pioneer
Pioneer Brand 25R40	Red	Yes	101.7	60.5	13.7	89.1	60.5	13.3	93.1	60.6	14.0	96.1	60.7	12.3	115.3	61.3	12.7	95.9	59.9	13.9	Dupont Pioneer
Pioneer Brand 25W43	White	Yes	90.2	59.6	13.8	81.1	59.3	13.6	82.9	59.8	14.0	85.0	58.6	12.3	105.4	60.0	12.8	77.6	58.0	13.5	Dupont Pioneer
Envoy	White	Yes	73.0	58.8	14.7	72.5	60.6	13.2	75.1	60.5	14.0	76.4	59.8	12.5	89.6	59.5	13.6	68.4	59.6	13.8	Platinum Genetics, LLC
RS972	Red	Yes	99.8	59.3	14.8	85.3	58.8	13.9	93.1	59.6	14.6	97.3	58.6	12.6	114.0	59.9	13.9	90.8	57.3	14.3	Rupp Seeds, Inc
RS979	Red	Yes	101.5	58.3	14.2	87.2	58.8	13.7	84.8	58.1	14.8	95.1	58.1	12.2	107.0	58.1	13.3	89.8	57.5	14.5	Rupp Seeds, Inc
RS935	Red	Yes	95.5	59.8	13.3	84.3	59.4	12.8	87.5	58.8	14.4	94.3	59.0	12.2	102.8	59.8	12.2	80.5	57.8	13.1	Rupp Seeds, Inc
RS967	Red	Yes	93.8	60.4	13.7	88.2	60.6	13.1	85.5	60.3	13.4	91.6	60.3	12.2	108.8	61.1	12.5	92.7	59.8	13.8	Rupp Seeds, Inc
Heilman	Red	No	95.3	59.2	13.3	78.5	57.5	12.8	90.8	59.9	13.6	93.1	59.0	12.0	104.7	58.8	13.2	87.1	56.9	13.5	Steyer Seeds
Hunker	Red	No	92.3	58.6	14.1	87.1	59.3	13.8	90.8	57.8	15.5	97.5	57.0	12.4	106.7	59.2	14.5	84.1	57.3	14.3	Steyer Seeds
Marion	Red	Yes	101.3	59.9	13.2	81.3	59.4	13.1	88.1	60.2	13.4	87.7	58.4	12.0	108.1	60.7	12.4	90.5	58.9	13.6	Steyer Seeds
MH07-7483	Red	No	96.8	58.8	15.7	76.1	59.9	14.0	90.2	59.3	16.9	96.0	59.9	12.8	100.6	58.5	14.8	78.6	58.0	14.3	Syngenta
W1062	White	Yes	89.3	58.3	14.8	65.2	58.8	13.8	78.3	58.8	17.4	80.7	57.2	12.6	94.2	57.9	13.8	73.4	55.9	14.3	Syngenta
W1104	Red	Yes	95.5	58.4	13.6	78.4	59.1	13.4	86.5	60.1	13.8	92.1	58.8	12.5	99.6	58.3	12.8	79.5	57.8	13.5	Syngenta
Merl	Red	Yes	101.7	61.8	14.1	81.7	61.0	14.0	85.8	60.7	14.9	99.9	63.8	12.7	103.3	60.9	13.9	63.5	58.7	15.4	Virginia Crop Improvement Association / Virginia Tech
VA06W-412	Red	No	91.7	62.0	14.6	85.9	62.0	13.9	81.2	60.2	15.3	87.9	62.3	12.7	96.8	60.5	14.8	82.3	60.4	14.8	Virginia Crop Improvement Association / Virginia Tech
VA08W-176	Red	No	87.0	61.9	14.3	77.8	62.1	14.2	86.4	62.5	14.7	86.4	62.8	12.9	99.3	61.6	13.9	79.3	61.5	14.8	Virginia Crop Improvement Association / Virginia Tech
VA08W-294	Red	No	93.5	61.6	14.1	82.6	61.0	13.5	96.3	61.1	14.0	84.4	61.4	12.7	100.3	61.4	13.5	85.1	61.2	14.5	Virginia Crop Improvement Association / Virginia Tech
VA09W-188WS	White	No	97.2	59.8	13.4	83.9	58.8	13.0	84.4	59.1	14.1	87.5	58.5	12.4	102.9	59.2	12.6	86.2	58.4	13.9	Virginia Crop Improvement Association / Virginia Tech
W123	Red	Yes	93.5	59.5	12.6	83.2	58.3	13.3	82.1	57.4	14.6	89.3	59.8	12.3	104.8	59.0	12.4	88.9	58.3	13.5	Wellman Seeds, Inc.
W124	Red	Yes	97.7	60.6	13.8	78.6	60.7	13.2	87.3	60.7	13.3	95.3	61.8	12.2	103.0	60.3	12.7	75.9	59.4	13.4	Wellman Seeds, Inc.
W125	Red	Yes	97.8	59.0	12.8	82.0	58.3	13.1	86.6	59.1	13.9	93.4	58.2	12.1	108.4	59.6	12.2	86.3	57.5	13.2	Wellman Seeds, Inc.
W208	Red	Yes	94.9	58.7	14.9	88.7	59.6	14.3	86.3	59.3	15.5	94.2	58.9	12.6	109.7	60.2	14.2	78.0	58.3	14.8	Wellman Seeds, Inc.
WBX700	Red	No	92.5	58.5	15.6	79.3	59.2	14.3	88.2	58.4	15.8	100.3	60.0	12.7	106.3	58.9	14.2	77.1	57.8	15.3	Westbred
MEAN (2012 = 92 Entries)			90.6	59.5	14.0	80.4	59.6	13.4	82.9	59.4	14.5	89.6	59.6	12.4	101.4	59.8	13.3	82.8	58.8	13.9	
LSD (0.05)			5.4	0.8	0.8	4.3	0.7	0.2	6.7	1.0	1.0	4.6	0.8	0.2	5.2	0.7	0.7	6.6	0.8	0.3	
CV (%)			5.1	1.1	5.0	4.6	1.0	1.5	6.9	1.5	6.1	3.1	0.8	1.0	4.4	1.0	4.5	6.8	1.2	2.1	

2012 Michigan State University Wheat Performance Trials

Appendix A. Trial Site Descriptions for 2012 MSU Wheat Performance Trials.

	ALLEGAN COUNTY	HURON COUNTY	INGHAM COUNTY		LENAWEE COUNTY	SANILAC COUNTY	TUSCOLA COUNTY
			YIELD TRIAL	SCAB NURSERY			
COOPERATOR	Harvey Jipping	Darwin Sneller	Charles Dietz	Michigan State University	Woods Seed Farm	Stoutenburg Farms	Stuart Bierlein
NEAREST CITY	Hamilton	Sebewaing	Webberville	East Lansing	Britton	Sandusky	Richville
PLANTING DATE	Oct. 11, 2011	Oct. 9, 2011	Oct. 10, 2011	Oct. 13, 2011	Oct. 18, 2011	Oct. 8, 2011	Oct. 7, 2011
HARVEST DATE	June 29, 2012	July 6, 2012	July 3, 2012	N/A	June 30, 2012	July 9, 2012	July 2, 2012
SOIL TYPE	Colwood silt loam; 0 to 2 percent slopes	Kilmanagh loam; 0 to 1 percent slopes	Capac loam; 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 mucky loam, 0 to 2 percent slopes	Tappan-Londo Loam, 0-2 percent slope
PRE-PLANT FERTILIZER	300# 7-8-19	250# 5-16-24 + 6% Mg + 4% S	150# 19-19-19	150# 19-19-19	300# 9-23-30	200# 5.4-18-34.3 + 4.5%S + 0.5%Z	275# 14-7-21
COMMENTS	Leaf Rust, Stripe Rust, Leaf Blotch, Powdery Mildew	Stripe and Leaf Rust	Stripe and Leaf Rust	Inoculated / Misted Fusarium Head Blight Screening Nursery	Stripe and Leaf Rust	Stripe and Leaf Rust	Septoria Leaf Blotch, Stripe Rust, Leaf Rust
AVERAGE YIELD (BUSHELS / ACRE)	90.6	80.4	82.9	N/A	89.6	82.8	101.4
AVERAGE TEST WEIGHT (LBS. / BUSHEL)	59.9	59.6	59.4	N/A	59.6	58.8	59.8
AVERAGE PERCENT GRAIN MOISTURE	14.0	13.4	14.5	N/A	12.4	13.9	13.3
2012 DATA RECORDED (NUMBER OF REPS)	PL_HT (4); LRUST (3); PM (3); SRUST (3)	PL_HT (4)	FD (4)	FHB SCORE (3)		F_INJ (4)	FD (4), SEPT (2)

*OTHER DATA: **FD** – Flowering Date (Days Past Jan. 01), **PL_HT** - Plant Height in Inches, **LRUST** - Leaf Rust Score (0-9), **SRUST** - Stripe Rust Score (0-9), **PM** - Powdery Mildew Score (0-9), **SEPT** - Septoria Leaf Blotch Complex Scores (0-9), **F_INJ** - Freeze Injury Score (0-9), **FHB SCORE** - Fusarium Head Blight Score (0-5)

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

**ORGANIZATIONS PARTICIPATING IN THE 2012
MICHIGAN STATE UNIVERSITY WHEAT PERFORMANCE TRIALS**

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

Cooperative Elevator Company
P.O. Box 619, 7211 Michigan Ave.
Pigeon, MI 48755
Phone: 800-968-0601

Direct Enterprises
P.O. Box 978
Westfield, IN 46074
Phone: 317-910-2140

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

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

Limagrain Cereal Seeds
257 E. Hail
Bushnell, IL 61422
Phone-309-772-2070

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

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

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

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

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

Dupont Pioneer
59 Greif Parkway, Suite 200
Delaware, OH 43015
Phone: 740-657-6142

Farmer's Cooperative Grain Co.
338 Main Street
Kinde, MI 48445-9500
Phone: 989-874-4200

Hyland Seeds
5 Hyland Drive
Blenheim, Ontario NOPIA0
Phone: 519-676-8146

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

Platinum Genetics, LLC
3490 Belle Chase Way, Suite 210
Lansing, MI 48911
Phone: 517-272-1514

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

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

Westbred
6025 W. 300 S.
Lafayette, IN 47909
Phone: 765-572-2905