

Michigan State Wheat Variety Trial: 2005

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August 4, 2005*

Comments on the 2005 Wheat Crop

The 2004/2005 winter wheat stands were reduced slightly by 'winter kill' apparently caused by a combination of low temperatures at crown depth, and heaving. Lack of snow cover during low temperature events, and alternating episodes of thawing and freezing contributed to these conditions. Severe stand losses like those witnessed in the 95/96 crop were avoided through the generally universal use of superior planting practices. Specifically, high plant populations, timely sowing, and uniformity of placement all contributed to mitigating the winter kill threat. Varieties differ substantially in their sensitivity to adverse winter conditions (see Table 2), but again, good planting practices minimize risks.

Disease pressure was generally light to moderate, though leaf blotches caused pre-mature loss of foliage in some areas. Most of the state escaped Fusarium Head Blight (and consequently deoxynivalenol or DON). Extensive rain starting immediately after flowering caused concern in the Thumb area, but disease threat prediction software correctly determined that those rains came too late to generate the inoculum needed for infection. When considering the entire wheat production area, flowering was unusually synchronized, with sites in the upper Thumb flowering soon after sites in the southern tier of counties. Harvest was likewise compressed into a briefer period state-wide than is normal. Temperatures during grain fill were higher than is considered optimal for wheat, but yields and test weight were more than reasonable.

Multi-Year Performance Summary (Tables 1 and 2)

Tables 1 and 2 summarize performance of 86 varieties and experimental lines from 16 organizations including the Michigan State University wheat breeding program. 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 several entries in this trial are not presented here. However, the averages and statistical parameters in this report are based on the entire set of evaluated materials. **Comparisons among entries are only valid within a column.** Tables 1 and 2 are sorted first by entry grain color, and then in descending order on yield for 2005. In some instances (e.g. yield), data columns to the right of the 2005 data columns are multi-year averages. Only data for entries included in the relevant years' tests are found here. Not all entries have been tested in all years so the table has several blank cells. See the section titled 'Experimental' for details on how the trials were conducted and more detail on what the data in each column's data represent.

At the bottom of most columns in both tables is the 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, you 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 3)

The first six columns in table 3 each contain yield and test weight data from one of the six sites harvested for yield this year. The last column contains the same across-site yield average found in Table 1. Each row in the table represents a single entry in the test.

Choosing Varieties

MSU makes no endorsement of any wheat variety or brand. 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. This general concept applies to pre-harvest sprouting as well.

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.

Experimental

The 2005 State Wheat Variety Trial entries were planted at eight sites in 6 counties: Huron, Lenawee, Saginaw, Sanilac, Midland, and Ingham, Two of the Ingham sites were used for disease screening or other observations but not yield. Appendix A (below) presents information on each of these sites. Plots were 12 feet long and had 6 rows at 7.5" row spacing. The trial was designed and executed as four replication alpha-lattice (10 blocks of 9 plots each) at all sites except the Ingham observation and scab screening nursery. 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. Yield was calculated using the entire area of the plot including the wheel tracks between plots. This approach tends to underestimate yield.

Yield, test weight, and grain moisture data were acquired electronically on the plot combine at the time of harvest. Yield data are standardized to 13% moisture. Data reported as scores are based on a 0-9 scale, where 0 is the best possible score. Plant height is reported as the distance in inches from the ground to the tip of average heads in a plot. These data were obtained at the Ingham and Midland county sites. Flowering date data was obtained at the Midland and Ingham observation sites. 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. Leaf blotch complex disease scores were taken at the Huron, Lenawee, and Sanilac County

plots. The causal organism(s) of the leaf blotching were not identified, but were likely a combination of *Stagonospora tritici*, (formerly known as *Septoria tritici*), and *S. nordorum*. Sprouting data is based on greenhouse evaluation of 5 heads from two replications from the Ingham observation site and three replications at the Saginaw and Midland county sites. Heads were collected within 48 hours of harvest and dried for seven days. Scores were taken after the heads were subjected to near-continuous misting for four days, where zero indicates that there was no sprouting present. Lodging scores are 0 = all plants fully erect and were recorded from the Sanilac county site. Leaf rust and powdery mildew scores are recorded as 0 = no visual symptoms of disease. Leaf rust was recorded from Lenawee and Midland counties. Powdery mildew was reported from Ingham and Lenawee Counties. Winter kill scores were based on the following scoring system: 0 = minimal to no leaf damage; 1 = no dead plants but significant lower leaf damage; 2 = some dead plants visible; 3 = several dead plants visible; 4-9 = visible degree of scoring based upon the amount of dead plants.

Data on Fusarium Head Blight (scab) 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; 2) the percentage of scabby spikelets within infected spikes; and 3) the percent of scabby spikelets considering all spikes (scab index.) The scab index is a measure of the extent of damage to entire plots due to scab infection, and generally relates to the effect of scab on yield. The milling and baking quality data were generated by the USDA Eastern Soft Wheat Quality Laboratory in Wooster, Ohio, and are based on grain from the 2004 State Variety trial. Flour yield is the ratio of the weight of extractable flour to the weight of milled grain, expressed as a percentage. Lactic Acid Retention is used by some soft wheat processors as a measure of protein strength.

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 Rick Ward (517-285-9725). This information, along with results from previous years, can also be accessed through the Web at http://www.css.msu.edu/varietytrials/wheat/Variety_Results.html.

2005 Michigan State University Wheat Variety Trials

Multi-year data are the most informative.

Table 1 : Multi-Year Performance Summary (Note: Tables sorted by 2005 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Awns	Yield: Bushels/Acre (adj. to 13% moisture)				Test Weight: lbs/Bushel				% Grain Moisture @ Harvest		Plant Height (Inches)		Flowering Date Days Past Jan 1		Lodging Score (0-9)
			Multi-Year Averages				Multi-Year Averages				2005	04-05	2005	04-05	2005	04-05	
			2005	2 YR 04-05	3 YR 03-05	4 YR 02-05	2005	2 YR 04-05	3 YR 03-05	4 YR 02-05							
Pioneer Brand 25R47	Red	Yes	89.3	83.0	89.6	----	58.6	56.4	57.0	----	13.9	14.5	31.1	31.5	154.9	153.1	2.6
AgriPro Douglas	Red	Yes	87.7	81.3	85.0	----	58.2	56.7	56.9	----	12.8	14.1	33.1	33.4	155.7	155.0	3.0
RS 947	Red	No	87.2	84.8	----	----	58.5	58.3	----	----	14.4	15.7	35.3	35.1	154.5	153.9	3.9
Jentes	Red	No	85.3	----	----	----	58.6	----	----	----	14.4	----	35.5	----	154.5	----	4.4
Cedar	Red	No	85.0	84.1	87.1	86.6	58.9	58.2	58.4	58.6	14.5	15.7	35.2	34.7	155.5	154.4	3.4
Hopewell	Red	No	84.9	80.6	85.2	85.2	58.7	58.1	58.6	58.9	13.9	14.9	34.1	33.8	155.5	154.3	1.8
Genesis R055	Red	No	84.7	----	----	----	59.3	----	----	----	13.8	----	32.3	----	155.4	----	2.3
Vigoro V9512	Red	No	84.6	----	----	----	58.8	----	----	----	13.2	----	36.1	----	154.0	----	5.1
Genesis R036	Red	No	84.3	78.3	80.9	79.5	58.1	56.1	56.6	57.4	13.1	14.0	34.8	34.4	154.7	152.9	3.1
Excel 392	Red	No	84.3	----	----	----	59.1	----	----	----	13.7	----	34.9	----	155.2	----	4.1
Excel 352tw	Red	No	84.2	----	----	----	58.6	----	----	----	13.0	----	35.3	----	154.5	----	5.1
Excel 450	Red	No	84.1	----	----	----	58.8	----	----	----	14.3	----	34.7	----	155.0	----	2.9
Coffman	Red	No	84.1	----	----	----	58.3	----	----	----	12.9	----	33.8	----	154.0	----	3.7
TW044-094	Red	No	84.0	80.4	----	----	59.0	58.5	----	----	14.2	15.4	33.7	33.7	155.0	154.5	2.3
DF 101R	Red	No	83.9	----	----	----	59.7	----	----	----	13.6	----	33.3	----	153.4	----	3.4
Genesis R047	Red	No	83.7	78.2	----	----	58.8	57.2	----	----	13.2	14.2	32.8	32.0	155.0	153.1	2.4
MSU Line E1007R	Red	Yes	83.7	78.9	83.8	----	59.7	57.8	58.5	----	13.7	14.6	32.8	33.7	155.5	153.6	2.0
Bravo	Red	No	82.8	78.6	83.5	84.2	59.5	58.1	58.9	59.4	13.5	14.6	35.9	34.9	153.7	151.6	3.2
OH 708	Red	No	81.8	78.9	----	----	58.5	57.2	----	----	13.9	15.0	35.4	35.2	155.4	154.3	2.8
Merrel	Red	No	81.8	----	----	----	57.5	----	----	----	13.4	----	32.5	----	154.3	----	2.5
Vigoro Tribute	Red	No	81.6	79.3	83.6	84.0	61.1	60.4	61.0	61.3	14.8	16.2	30.7	30.4	154.0	151.7	3.8
Vigoro V9412	Red	No	81.3	----	----	----	59.1	----	----	----	13.6	----	32.8	----	153.2	----	3.7
DF 102R	Red	No	81.1	----	----	----	58.2	----	----	----	13.3	----	32.6	----	154.5	----	3.8
9 XP 30	Red	No	81.1	----	----	----	59.6	----	----	----	13.6	----	32.3	----	153.8	----	3.3
AgriPro Cooper	Red	No	80.8	----	----	----	58.4	----	----	----	13.6	----	31.7	----	154.8	----	2.9
Cecil	Red	No	80.7	78.9	----	----	58.8	57.9	----	----	14.4	15.4	33.3	33.3	154.9	154.0	4.4
HS X04R	Red	No	80.5	----	----	----	57.9	----	----	----	13.6	----	36.5	----	154.5	----	3.1
Wiley	Red	No	80.5	78.4	----	----	59.2	59.1	----	----	13.7	15.1	32.9	32.1	153.6	151.2	3.1
Kristy	Red	No	80.3	----	----	----	58.9	----	----	----	13.2	----	33.7	----	154.4	----	3.3
MSU Line D8006R	Red	Yes	80.2	80.6	----	----	58.9	57.8	----	----	13.8	14.8	34.1	34.8	155.5	154.0	2.1
Excel 333	Red	No	79.9	----	----	----	58.3	----	----	----	13.2	----	34.3	----	153.8	----	5.4
HS X257R	Red	No	79.9	----	----	----	59.3	----	----	----	13.5	----	32.7	----	153.4	----	3.1
Pioneer Brand 25R37	Red	No	79.9	80.7	84.0	83.9	59.0	59.0	59.4	59.7	14.2	15.7	31.7	30.8	155.5	154.0	2.1
RS 949	Red	Yes	79.9	----	----	----	60.2	----	----	----	13.3	----	32.3	----	155.0	----	3.4
Genesis R035	Red	No	79.6	75.4	79.8	----	58.7	57.8	58.2	----	13.8	14.9	35.1	34.5	154.7	153.0	4.2
Besecker	Red	No	79.6	----	----	----	59.8	----	----	----	14.3	----	35.1	----	154.9	----	2.1
B980416	Red	No	79.5	----	----	----	59.1	----	----	----	13.8	----	30.4	----	154.0	----	4.2
MSU Line E2021	Red	No	79.4	----	----	----	59.0	----	----	----	13.5	----	33.5	----	155.0	----	2.9
Excel 399	Red	No	79.3	----	----	----	58.5	----	----	----	13.4	----	35.3	----	154.5	----	4.4
Genesis R045	Red	No	79.1	77.5	----	----	58.7	57.9	----	----	14.2	15.2	31.9	31.9	154.9	153.7	4.1
AgriPro COKER 9375	Red	No	78.7	76.3	79.6	----	56.8	55.3	56.0	----	12.8	13.7	36.0	35.5	154.9	153.1	4.0
Pioneer Brand 25R35	Red	Yes	78.6	75.2	----	----	58.6	57.6	----	----	12.9	14.2	32.7	32.8	155.0	153.9	2.1
Harvard	Red	No	78.5	----	----	----	60.6	----	----	----	14.6	----	36.3	----	154.0	----	2.0
AgriPro COKER 9663	Red	No	78.4	76.3	80.0	78.5	59.4	58.5	59.1	59.3	14.6	15.7	37.2	36.5	154.0	153.0	4.5
McCormick	Red	No	77.5	74.7	79.0	79.7	60.3	59.7	60.4	61.0	14.4	15.6	29.2	29.3	154.5	152.5	3.6

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Table 1 : Multi-Year Performance Summary (Note: Tables sorted by 2005 Yield, red wheats grouped before white)

Name	Grain Color	Awns	Yield: Bushels/Acre (adj. to 13% moisture)				Test Weight: lbs/Bushel				% Grain Moisture @ Harvest		Plant Height (Inches)		Flowering Date Days Past Jan 1		Lodging Score (0-9)
			Multi-Year Averages				Multi-Year Averages				2005	04-05	2005	04-05	2005	04-05	
			2005	04-05	03-05	02-05	2005	04-05	03-05	02-05							
Roane	Red	No	77.0	72.7	77.7	79.2	60.3	59.7	60.3	60.7	14.3	15.6	30.1	30.2	155.0	153.1	4.4
Daisy	Red	No	76.7	73.3	-----	-----	57.1	55.8	-----	-----	12.8	13.9	32.0	31.9	154.0	152.7	2.2
Excel 412tw	Red	No	76.3	-----	-----	-----	59.4	-----	-----	-----	13.9	-----	36.5	-----	154.6	-----	6.5
Warwick	Red	No	76.1	73.2	-----	-----	57.8	57.3	-----	-----	13.0	14.2	35.2	35.1	155.7	153.5	4.2
FT Wonder	Red	Yes	75.8	74.0	-----	-----	59.1	58.4	-----	-----	13.6	14.8	33.7	35.0	153.9	153.1	4.4
Excel 354tw	Red	No	75.2	-----	-----	-----	60.5	-----	-----	-----	14.3	-----	31.9	-----	154.5	-----	4.0
HS 243R	Red	No	74.9	70.3	76.4	-----	58.2	57.0	57.7	-----	13.3	14.5	33.8	33.4	154.5	152.7	5.7
Excel 388	Red	No	74.7	-----	-----	-----	58.2	-----	-----	-----	13.4	-----	36.0	-----	153.7	-----	5.2
Sisson	Red	No	74.5	69.9	75.7	76.9	59.0	57.3	57.7	58.3	13.6	14.5	30.9	30.3	153.7	151.5	4.4
Truman	Red	No	74.3	75.7	-----	-----	59.5	59.9	-----	-----	14.1	15.8	33.2	34.3	156.4	156.1	3.2
B980582	Red	No	74.3	-----	-----	-----	60.4	-----	-----	-----	14.0	-----	33.2	-----	154.0	-----	2.7
VA00W-526	Red	No	73.1	-----	-----	-----	59.1	-----	-----	-----	13.5	-----	29.4	-----	155.8	-----	2.3
MSU Line E2043	White	Yes	83.6	-----	-----	-----	59.6	-----	-----	-----	13.6	-----	34.9	-----	157.1	-----	1.9
Aubrey	White	No	83.2	79.2	82.2	-----	59.8	59.1	59.6	-----	14.1	15.4	33.8	33.4	154.5	152.9	2.1
MSU Line E0027	White	Yes	82.2	75.8	-----	-----	57.4	56.3	-----	-----	12.2	13.5	32.4	32.5	155.5	154.5	1.9
MSU Line E0028	White	No	82.2	77.1	-----	-----	57.3	55.5	-----	-----	12.8	13.6	32.8	32.8	154.8	152.8	2.5
MSU Line E2017	White	No	82.1	-----	-----	-----	59.0	-----	-----	-----	14.0	-----	33.7	-----	155.7	-----	2.8
MSU Line E1008	White	Yes	81.6	79.0	-----	-----	60.2	58.6	-----	-----	14.3	15.3	32.6	33.4	155.6	153.8	2.0
Whitby	White	No	81.3	79.1	-----	-----	58.4	57.5	-----	-----	13.2	14.8	36.7	38.2	155.5	155.9	2.6
Pearl	White	No	81.0	78.4	82.2	82.2	59.0	57.9	58.5	58.6	14.2	15.2	33.5	33.9	155.5	154.2	4.0
Alpine	White	No	80.8	-----	-----	-----	56.5	-----	-----	-----	13.3	-----	33.3	-----	155.5	-----	2.0
MSU Line D8006	White	Yes	80.8	77.7	83.3	82.4	57.8	55.8	56.8	57.1	13.1	13.8	33.4	34.0	155.5	153.5	3.4
MSU Line E1007W	White	Yes	80.6	78.1	-----	-----	59.3	57.7	-----	-----	13.5	14.5	34.1	34.4	155.2	153.3	2.1
MSU D6234	White	No	80.3	78.0	82.6	81.8	59.3	59.1	59.3	59.6	13.8	15.4	34.8	35.0	155.5	154.7	2.7
MSU Line D9044	White	No	80.3	75.0	81.1	-----	58.7	57.1	57.9	-----	13.3	14.4	31.5	31.3	155.9	154.9	1.8
Abacus	White	No	80.2	-----	-----	-----	57.5	-----	-----	-----	13.5	-----	33.9	-----	155.5	-----	1.8
AC Mountain	White	No	79.8	76.1	81.2	80.9	57.6	57.2	57.6	57.7	13.0	14.4	36.1	37.4	155.4	155.1	2.7
Caledonia	White	No	79.6	74.9	79.0	79.9	58.7	56.8	57.3	57.7	13.3	14.3	31.6	32.1	156.4	154.9	2.0
MSU Line E0025	White	Yes	79.5	75.6	-----	-----	56.9	56.4	-----	-----	12.1	13.5	31.6	32.1	155.5	154.4	1.8
Arrow	White	Yes	79.2	-----	-----	-----	58.8	-----	-----	-----	14.0	-----	34.4	-----	155.0	-----	2.6
Pioneer Brand 25W41	White	Yes	79.1	74.5	-----	-----	60.0	58.4	-----	-----	13.6	14.6	31.7	32.1	155.2	154.0	3.4
MSU Line E0009	White	No	78.2	74.6	-----	-----	59.0	58.3	-----	-----	14.6	16.4	34.5	35.7	157.5	158.0	2.2
MSU Line D9044R2	White	No	77.7	74.0	-----	-----	58.8	57.3	-----	-----	13.0	14.2	31.9	31.1	155.5	154.5	1.5
MSU Line E0001	White	No	77.5	73.9	-----	-----	59.1	57.9	-----	-----	14.5	15.8	34.7	35.5	156.2	156.0	2.5
Galaxy 501	White	No	76.0	-----	-----	-----	58.8	-----	-----	-----	13.8	-----	36.4	-----	156.3	-----	3.4
MSU Line E0029	White	No	75.7	73.9	-----	-----	58.4	57.4	-----	-----	13.0	14.2	32.9	32.8	155.5	153.7	1.0
Genesis 7388	White	No	75.6	-----	-----	-----	60.3	-----	-----	-----	14.0	-----	35.1	-----	156.1	-----	2.5
Aurora - SBE	White	No	75.5	-----	-----	-----	58.9	-----	-----	-----	13.5	-----	32.4	-----	154.5	-----	5.3
MSU Line E2052	White	No	73.5	-----	-----	-----	59.6	-----	-----	-----	14.3	-----	32.1	-----	157.7	-----	1.5
VA97W-375WS	White	No	71.2	69.1	76.5	77.4	58.8	57.0	57.8	58.4	13.3	14.2	28.2	28.0	155.2	153.6	3.3
HS X03W	White	No	69.8	70.2	-----	-----	59.8	59.4	-----	-----	14.4	16.2	33.4	35.2	156.5	157.2	2.1
Trial Mean (90 Entries)			80.0	76.8	81.6	81.4	58.9	57.7	58.3	59.0	13.6	14.8	33.5	33.4	155.0	153.8	3.1
LSD			4.3	5.1	4.5	4.0	0.8	1.8	1.2	1.1	0.5	0.8	1.6	2.0	1.2	2.0	1.1
CV			4.7	3.3	3.3	3.5	1.3	1.5	1.3	1.3	3.0	2.6	2.4	3.0	1.1	0.7	23.3

LSD = least significant difference, i.e. differences smaller than the LSD are probably due to chance. CV = low values indicated higher precision.

2005 Michigan State University Wheat Variety Trials

Multi-year data are the most informative.

Table 2 : Multi-Year Performance Summary (Note: Tables sorted by 2005 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Powdery Mildew Score (0-9)		Leaf Blotch Complex Score (0-9)		Pre-Harvest Sprout Score (0-9)		Leaf Rust Score (0-9)	Winter Kill (Injury) Score (0-9)	FHB (Scab) Data : Field Observation Symptoms						Milling and Baking Properties (2004 Crop)		
		2005	2 YR 04-05	2005	2 YR 04-05	2005	2 YR 04-05	2005	2005	Incidence (% of spikes)		Severity (% within spikes)		Index (% overall infection)		Percent Flour Yield	Percent Protein In Flour	Lactic Acid Retention
										2005	2 YR 04-05	2005	2 YR 04-05	2005	2 YR 04-05			
Pioneer Brand 25R47	Red	3.6	4.0	3.7	4.0	6.5	6.8	1.0	1.3	72.5	84.5	41.6	44.5	27.6	36.9	72.0	6.2	110.5
AgriPro Douglas	Red	4.3	4.0	4.2	3.8	3.8	4.3	2.0	1.4	66.0	77.5	46.9	37.1	31.5	28.2	70.9	6.4	92.3
RS 947	Red	0.0	0.0	2.9	3.4	3.4	3.1	5.0	1.9	57.8	73.4	16.3	20.0	10.8	16.1	68.1	6.0	114.4
Jentes	Red	0.5	-----	2.7	-----	3.7	-----	7.0	2.0	47.7	-----	14.7	-----	9.3	-----	-----	-----	-----
Cedar	Red	0.7	0.6	2.8	3.9	3.1	3.0	7.0	2.0	58.5	78.6	26.7	29.7	16.0	24.2	68.4	6.3	113.7
Hopewell	Red	1.7	1.7	3.7	4.4	1.8	1.7	2.0	1.3	46.7	71.6	33.2	40.1	19.0	32.2	68.7	7.1	113.0
Genesis R055	Red	3.4	-----	3.8	-----	3.7	-----	1.5	1.8	70.4	-----	38.5	-----	28.3	-----	-----	-----	-----
Vigoro V9512	Red	3.4	-----	4.9	-----	8.3	-----	2.0	1.2	75.6	-----	31.0	-----	24.2	-----	-----	-----	-----
Genesis R036	Red	5.3	3.9	4.1	5.0	8.4	7.5	3.0	0.6	65.5	82.2	45.1	54.9	26.8	45.4	72.1	7.2	95.4
Excel 392	Red	4.7	-----	3.3	-----	5.8	-----	2.0	1.7	67.7	-----	38.0	-----	24.3	-----	-----	-----	-----
Excel 352tw	Red	3.1	-----	4.9	-----	8.8	-----	1.5	1.2	71.9	-----	38.7	-----	28.0	-----	-----	-----	-----
Excel 450	Red	0.3	-----	2.4	-----	3.7	-----	9.0	2.7	57.1	-----	21.7	-----	12.6	-----	-----	-----	-----
Coffman	Red	4.0	-----	5.3	-----	1.5	-----	2.0	1.3	79.2	-----	54.5	-----	42.4	-----	-----	-----	-----
TW044-094	Red	4.9	3.6	4.3	4.3	5.0	4.7	3.5	0.8	76.7	86.0	37.0	38.4	27.9	33.0	72.4	6.7	87.7
DF 101R	Red	1.3	-----	4.0	-----	1.9	-----	2.0	1.0	80.7	-----	38.1	-----	31.3	-----	-----	-----	-----
Genesis R047	Red	1.2	1.0	3.9	4.2	4.1	3.7	1.5	4.3	82.5	90.9	49.2	64.7	40.5	60.1	70.3	6.4	111.0
MSU Line E1007R	Red	2.4	1.9	4.7	5.0	4.1	3.9	3.5	1.1	60.7	80.4	40.4	49.9	24.4	41.9	70.5	6.8	117.7
Bravo	Red	6.8	4.4	3.5	4.3	4.5	3.0	3.5	1.1	56.9	77.8	40.8	51.2	24.4	42.6	70.7	7.6	91.3
OH 708	Red	0.9	1.1	2.5	3.4	1.4	2.0	0.5	1.9	72.9	86.2	41.2	44.1	30.8	38.8	71.2	6.3	110.3
Merrel	Red	3.4	-----	4.6	-----	3.6	-----	2.5	1.7	77.5	-----	64.2	-----	48.7	-----	-----	-----	-----
Vigoro Tribute	Red	0.4	0.6	2.9	3.1	3.9	2.9	1.5	1.6	73.2	86.6	35.4	51.7	26.3	47.2	69.1	6.7	119.9
Vigoro V9412	Red	0.7	-----	4.8	-----	3.7	-----	2.5	1.2	84.8	-----	34.6	-----	30.2	-----	-----	-----	-----
DF 102R	Red	1.6	-----	4.9	-----	3.9	-----	1.0	2.5	80.5	-----	38.3	-----	30.3	-----	-----	-----	-----
9 XP 30	Red	0.5	-----	4.5	-----	3.4	-----	2.0	1.0	76.6	-----	44.9	-----	35.1	-----	-----	-----	-----
AgriPro Cooper	Red	4.6	-----	5.1	-----	7.2	-----	2.5	1.1	60.5	-----	30.0	-----	16.1	-----	-----	-----	-----
Cecil	Red	3.6	2.8	3.5	4.3	0.1	0.7	7.5	1.1	72.0	84.6	59.4	51.2	42.1	42.0	69.7	6.6	106.8
HS X04R	Red	2.8	-----	4.6	-----	8.7	-----	2.0	1.7	65.3	-----	52.5	-----	35.8	-----	-----	-----	-----
Wiley	Red	2.1	1.8	3.7	3.9	2.6	2.9	2.0	2.5	73.3	85.9	44.8	47.1	34.2	41.5	69.2	7.7	114.0
Kristy	Red	2.4	-----	5.0	-----	8.9	-----	1.0	3.8	66.4	-----	31.5	-----	21.1	-----	-----	-----	-----
MSU Line D8006R	Red	0.5	1.1	5.4	6.0	4.3	5.0	1.5	2.0	63.9	79.2	31.5	39.0	20.7	32.4	71.5	7.0	105.3
Excel 333	Red	3.7	-----	5.6	-----	6.9	-----	1.5	2.0	63.7	-----	27.8	-----	18.6	-----	-----	-----	-----
HS X257R	Red	0.9	-----	3.7	-----	1.6	-----	3.5	1.8	81.7	-----	31.9	-----	24.8	-----	-----	-----	-----
Pioneer Brand 25R37	Red	3.6	2.5	3.2	3.4	5.8	5.1	2.0	1.2	68.9	84.2	26.2	37.1	14.9	31.3	68.9	7.0	108.7
RS 949	Red	5.2	-----	6.2	-----	4.5	-----	1.5	1.5	66.1	-----	24.1	-----	15.9	-----	-----	-----	-----
Genesis R035	Red	4.0	2.5	4.2	4.9	6.6	6.1	2.0	1.1	62.9	80.1	37.0	40.6	27.2	35.2	70.4	7.2	102.6
Besecker	Red	5.6	-----	3.0	-----	7.2	-----	2.0	2.1	30.4	-----	51.6	-----	11.7	-----	-----	-----	-----
B980416	Red	2.6	-----	4.0	-----	8.0	-----	2.0	3.1	56.6	-----	27.6	-----	13.4	-----	-----	-----	-----
MSU Line E2021	Red	1.4	-----	6.5	-----	7.9	-----	2.0	1.4	69.7	-----	33.7	-----	19.8	-----	-----	-----	-----
Excel 399	Red	7.5	-----	5.5	-----	6.9	-----	1.0	1.4	67.4	-----	42.3	-----	28.1	-----	-----	-----	-----
Genesis R045	Red	2.1	1.6	5.4	5.2	8.6	7.1	1.0	0.8	79.2	84.8	45.3	41.5	36.7	35.4	73.6	7.0	105.7
AgriPro COKER 9375	Red	2.0	1.7	4.6	5.2	6.4	5.3	1.0	4.5	70.8	85.4	49.6	60.7	34.4	53.1	71.2	7.2	103.7
Pioneer Brand 25R35	Red	4.4	3.8	4.4	4.9	2.9	2.6	1.5	2.5	64.8	82.4	39.7	34.4	27.5	28.3	67.3	6.2	99.2
Harvard	Red	4.8	-----	4.7	-----	3.7	-----	3.5	1.8	60.8	-----	48.9	-----	31.1	-----	-----	-----	-----
AgriPro COKER 9663	Red	4.3	3.1	2.6	3.1	4.1	3.5	1.0	2.6	67.4	77.4	45.8	48.6	31.0	38.2	69.2	7.1	106.1
McCormick	Red	0.3	0.4	3.8	4.3	4.7	2.7	3.5	2.3	64.1	82.1	24.9	44.1	16.1	39.7	69.4	7.4	116.0

2005 Michigan State University Wheat Variety Trials

Multi-year data are the most informative.

Table 2 : Multi-Year Performance Summary (Note: Tables sorted by 2005 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Powdery Mildew Score (0-9)		Leaf Blotch Complex Score (0-9)		Pre-Harvest Sprout Score (0-9)		Leaf Rust Score (0-9)	Winter Kill (Injury) Score (0-9)	FHB (Scab) Data : Field Observation Symptoms						Milling and Baking Properties (2004 Crop)		
										Incidence (% of spikes)		Severity (% within spikes)		Index (% overall infection)		Percent Flour Yield	Percent Protein In Flour	Lactic Acid Retention
		2005	2 YR 04-05	2005	2 YR 04-05	2005	2 YR 04-05	2005	2005	2005	2 YR 04-05	2005	2 YR 04-05	2005	2 YR 04-05			
Roane	Red	4.5	3.6	4.0	3.9	5.0	3.8	1.5	1.1	61.1	80.6	30.2	45.1	19.9	39.9	68.0	6.6	115.8
Daisy	Red	5.2	4.9	4.4	5.3	5.7	4.3	6.5	1.0	76.5	88.3	31.2	55.7	24.2	52.2	73.0	6.6	111.5
Excel 412tw	Red	6.8	-----	6.4	-----	7.8	-----	3.5	0.8	62.9	-----	29.2	-----	19.2	-----	-----	-----	-----
Warwick	Red	4.2	3.1	4.5	4.8	7.0	4.6	0.5	3.7	80.6	90.3	30.0	43.1	25.8	41.0	67.7	7.3	132.0
FT Wonder	Red	1.8	1.5	4.5	5.1	9.7	9.4	3.5	1.9	-----	-----	-----	-----	-----	-----	71.3	6.1	107.2
Excel 354tw	Red	6.8	-----	3.4	-----	3.8	-----	1.5	1.5	74.3	-----	30.6	-----	25.6	-----	-----	-----	-----
HS 243R	Red	3.0	2.3	4.8	5.3	6.3	5.5	4.5	2.3	68.1	84.1	35.3	53.6	25.6	48.7	70.3	7.4	117.9
Excel 388	Red	7.9	-----	5.7	-----	7.5	-----	2.0	1.0	78.8	-----	43.0	-----	35.4	-----	-----	-----	-----
Sisson	Red	0.8	0.9	4.8	4.9	4.9	5.1	3.0	1.7	88.7	94.4	33.5	53.9	31.1	52.7	70.6	7.0	96.6
Truman	Red	4.8	4.2	3.5	4.0	0.9	1.3	2.5	1.8	29.1	61.3	32.4	32.3	13.5	22.3	68.5	7.0	105.1
B980582	Red	4.5	-----	4.5	-----	8.0	-----	0.5	2.3	70.0	-----	19.4	-----	14.4	-----	-----	-----	-----
VA00W-526	Red	0.3	-----	4.3	-----	6.2	-----	1.5	6.4	59.3	-----	12.9	-----	8.8	-----	-----	-----	-----
MSU Line E2043	White	1.9	-----	3.9	-----	8.0	-----	2.0	1.7	64.1	-----	28.4	-----	17.2	-----	-----	-----	-----
Aubrey	White	0.9	1.0	4.2	4.6	8.3	8.5	1.5	1.7	64.4	76.7	29.2	25.4	17.3	18.3	73.3	7.3	106.9
MSU Line E0027	White	1.8	1.8	4.7	5.4	8.9	9.0	2.0	0.6	83.8	87.2	58.0	52.8	47.6	46.0	71.8	6.8	111.3
MSU Line E0028	White	2.8	2.7	4.3	5.2	9.1	9.1	2.5	0.8	57.7	78.6	37.8	53.5	23.5	46.2	72.7	6.9	106.6
MSU Line E2017	White	4.6	-----	3.7	-----	9.1	-----	2.0	1.1	49.3	-----	50.5	-----	23.8	-----	-----	-----	-----
MSU Line E1008	White	1.2	1.3	3.2	4.2	6.7	7.5	3.5	1.3	57.0	77.8	52.9	59.0	32.2	48.3	69.8	7.0	88.9
Whitby	White	3.3	3.1	4.5	4.1	7.9	8.3	2.5	1.4	47.5	73.3	31.0	36.6	16.9	29.4	69.8	6.5	96.6
Pearl	White	0.7	0.9	4.8	4.6	9.0	8.9	1.0	3.9	59.9	79.2	29.1	42.8	16.2	35.9	69.8	6.5	114.1
Alpine	White	2.6	-----	3.7	-----	6.7	-----	4.0	1.1	48.6	-----	39.2	-----	20.3	-----	-----	-----	-----
MSU Line D8006	White	1.4	1.7	4.5	5.1	7.8	8.3	2.0	1.1	80.0	90.0	50.4	50.6	39.6	45.2	73.0	6.6	118.2
MSU Line E1007W	White	3.2	3.6	3.7	4.4	8.6	8.5	2.0	1.2	62.9	81.5	43.8	48.0	24.5	38.3	71.5	6.3	113.0
MSU D6234	White	2.7	1.8	3.6	4.0	8.7	8.9	1.0	2.2	61.5	79.9	37.0	41.0	23.8	34.0	70.6	7.0	84.7
MSU Line D9044	White	6.2	4.5	4.8	5.1	8.9	8.9	1.5	1.4	67.5	83.8	45.4	55.8	32.7	49.4	70.5	6.6	108.3
Abacus	White	3.1	-----	3.8	-----	7.3	-----	3.0	1.2	60.9	-----	59.1	-----	36.3	-----	-----	-----	-----
AC Mountain	White	6.3	4.2	3.7	4.2	8.9	8.8	3.0	0.8	67.2	81.6	26.7	42.0	19.8	37.4	72.2	7.0	97.1
Caledonia	White	2.9	2.6	4.7	4.7	9.0	9.0	3.5	4.5	60.7	80.4	60.3	64.3	36.3	52.3	72.1	6.6	100.2
MSU Line E0025	White	1.2	1.2	4.8	5.5	8.8	8.6	3.0	0.8	73.1	85.0	34.2	41.8	25.6	37.0	71.7	6.4	109.7
Arrow	White	3.1	-----	3.8	-----	7.5	-----	1.0	1.0	66.5	-----	28.1	-----	18.8	-----	-----	-----	-----
Pioneer Brand 25W41	White	6.3	5.0	3.1	3.9	7.6	8.1	2.0	1.9	77.5	88.8	56.5	57.9	43.4	51.3	70.8	7.1	96.0
MSU Line E0009	White	5.3	5.2	3.2	3.5	8.8	8.7	3.0	1.7	43.1	65.2	16.2	16.2	10.4	12.5	72.6	6.8	102.4
MSU Line D9044R2	White	5.3	4.3	4.9	4.9	9.1	8.8	2.5	1.3	65.2	82.6	46.1	51.8	32.4	44.9	70.7	6.9	103.9
MSU Line E0001	White	3.2	2.1	4.1	4.5	3.6	4.7	3.0	1.9	49.6	69.6	23.7	24.4	14.0	18.6	73.2	7.6	100.2
Galaxy 501	White	3.3	-----	3.5	-----	7.9	-----	2.5	1.7	47.2	-----	31.2	-----	15.8	-----	-----	-----	-----
MSU Line E0029	White	1.8	1.6	5.2	5.2	8.8	8.9	1.5	0.6	64.8	80.7	35.8	41.0	23.5	34.2	71.7	7.2	81.4
Genesis 7388	White	5.2	-----	4.5	-----	7.7	-----	2.0	2.5	51.2	-----	18.5	-----	12.4	-----	-----	-----	-----
Aurora - SBE	White	4.2	-----	3.4	-----	9.1	-----	3.5	1.7	74.2	-----	45.6	-----	33.5	-----	-----	-----	-----
MSU Line E2052	White	1.0	-----	4.0	-----	8.5	-----	2.5	1.3	59.7	-----	43.5	-----	26.6	-----	-----	-----	-----
VA97W-375WS	White	0.8	0.9	3.3	4.1	8.9	7.7	0.5	3.3	76.9	87.4	29.9	47.3	22.4	42.8	68.9	7.4	98.7
HS X03W	White	2.3	1.5	3.9	4.1	8.0	8.4	3.0	3.7	48.8	72.4	28.4	29.6	14.2	21.9	70.1	7.7	91.2
Trial Mean (90 Entries)		3.1	2.5	4.2	4.4	6.1	5.9	2.4	1.8	66.5	81.9	36.8	44.7	25.0	38.4	70.7	6.9	104.1
LSD		1.9	1.9	1.6	1.1	2.1	2.3	2.2	1.6	22.1	16.5	24.0	22.6	18.7	21.9	-----	-----	-----
CV		30.8	37.1	24.0	12.1	20.9	19.7	46.1	55.5	20.8	9.9	40.1	24.9	45.7	28.0	-----	-----	-----

LSD = least significant difference, i.e. differences smaller than the LSD are probably due to chance. CV = low values indicated higher precision.

2005 Michigan State University Wheat Variety Trials

Multi-year data are the most informative.

Table 3 : Single Site Yield and Test Weight Performance Summary (Note: Tables sorted by 2005 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Awns	County Locations												Average All Sites		Company
			Ingham		Lenawee		Midland		Saginaw		Sanilac		Huron		Yield bu/ac	Test Weight	
			Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	
Pioneer Brand 25R47	Red	Yes	73.3	59.8	90.2	59.8	87.9	60.1	101.1	58.0	90.1	55.6	93.2	58.3	89.3	58.6	Pioneer, A Dupont Company
AgriPro Douglas	Red	Yes	73.5	60.0	94.6	59.7	83.9	59.6	100.3	57.6	92.7	55.2	81.3	57.1	87.7	58.2	AgriPro COKER
RS 947	Red	No	69.1	58.7	83.0	58.6	91.6	60.2	100.8	58.4	86.1	55.8	92.6	59.0	87.2	58.5	Rupp Seeds, Inc.
Jentes	Red	No	71.4	60.4	81.1	58.8	90.2	59.7	99.8	58.8	84.8	55.6	84.2	58.1	85.3	58.6	Steyer Seeds, Inc.
Cedar	Red	No	69.0	61.4	84.0	60.0	86.5	59.2	99.5	58.6	82.6	56.2	88.3	58.1	85.0	58.9	Michigan Crop Improvement Association
Hopewell	Red	No	74.3	59.8	86.4	60.3	82.9	60.0	96.0	59.1	85.0	55.1	84.7	57.9	84.9	58.7	Michigan Crop Improvement Association
Genesis R055	Red	No	68.9	59.7	88.0	60.4	83.3	62.1	96.9	58.4	85.6	55.8	85.2	59.2	84.7	59.3	Genesis Brand Seed
Vigoro V9512	Red	No	73.3	61.1	86.6	58.6	85.3	60.6	94.6	58.7	86.5	55.4	81.1	58.6	84.6	58.8	Royster - Clark, Inc.
Genesis R036	Red	No	72.0	58.8	82.2	57.9	83.1	60.3	97.5	58.4	86.2	55.8	84.7	57.1	84.3	58.1	Genesis Brand Seed
Excel 392	Red	No	71.1	61.3	81.4	60.0	85.1	60.5	89.3	58.7	91.0	56.1	88.1	58.1	84.3	59.1	Gristmill Enterprises
Excel 352tw	Red	No	71.9	60.2	82.6	58.5	88.1	60.5	93.2	58.3	87.5	56.3	82.0	58.0	84.2	58.6	Gristmill Enterprises
Excel 450	Red	No	63.7	60.5	84.0	59.7	91.8	60.1	96.6	58.9	81.5	55.5	86.7	57.8	84.1	58.8	Gristmill Enterprises
Coffman	Red	No	67.4	60.0	79.3	57.8	85.1	60.2	97.3	58.1	85.3	55.3	90.2	58.6	84.1	58.3	Steyer Seeds, Inc.
TW044-094	Red	No	78.5	59.9	79.4	59.5	83.3	60.6	91.8	58.2	84.6	56.4	86.2	59.4	84.0	59.0	Hyland Seeds
DF 101R	Red	No	69.8	60.6	82.3	59.7	80.8	61.4	96.0	59.5	89.2	57.7	85.1	59.5	83.9	59.7	D.F. Seeds, Inc.
Genesis R047	Red	No	71.5	61.4	72.3	59.2	91.6	59.3	95.1	58.4	82.0	56.0	89.6	58.3	83.7	58.8	Genesis Brand Seed
MSU Line E1007R	Red	Yes	71.7	62.1	82.6	61.1	80.4	61.0	98.2	59.3	80.4	56.1	89.0	58.7	83.7	59.7	Michigan State University
Bravo	Red	No	67.9	61.1	82.8	59.8	85.9	61.7	93.6	58.3	82.5	57.0	84.2	59.0	82.8	59.5	Michigan Crop Improvement Association
OH 708	Red	No	61.2	60.4	80.1	60.1	80.0	59.3	97.5	58.1	80.2	56.1	91.5	56.7	81.8	58.5	Ohio State University
Merrel	Red	No	69.2	58.8	79.0	57.0	75.4	58.0	94.6	57.9	85.5	55.4	86.9	57.7	81.8	57.5	Steyer Seeds, Inc.
Vigoro Tribute	Red	No	67.1	62.5	72.7	60.9	84.6	62.2	93.3	60.1	84.9	58.7	86.8	61.9	81.6	61.1	Royster - Clark, Inc.
Vigoro V9412	Red	No	66.3	59.5	77.9	58.9	82.6	61.4	89.7	58.9	86.8	57.2	84.3	58.7	81.3	59.1	Royster - Clark, Inc.
DF 102R	Red	No	67.5	58.2	78.2	58.3	84.1	60.9	92.9	57.4	80.8	55.9	83.1	58.7	81.1	58.2	D.F. Seeds, Inc.
9 XP 30	Red	No	61.4	59.5	78.2	60.5	81.5	62.0	91.7	58.9	91.7	57.9	82.1	59.0	81.1	59.6	Rupp Seeds, Inc.
AgriPro Cooper	Red	No	63.6	60.2	82.3	58.8	80.9	59.8	94.5	57.5	79.4	55.8	84.1	58.3	80.8	58.4	AgriPro COKER
Cecil	Red	No	66.6	59.3	82.5	59.7	81.8	59.1	94.1	58.9	80.4	56.9	78.7	59.1	80.7	58.8	Michigan Crop Improvement Association
HS X04R	Red	No	69.2	59.8	72.2	57.4	80.5	59.9	90.4	57.2	84.2	55.3	86.3	57.8	80.5	57.9	Harrington Seeds, Inc.
Wiley	Red	No	66.4	60.0	77.3	58.6	82.2	60.8	90.7	59.4	83.5	56.9	82.8	59.6	80.5	59.2	Steyer Seeds, Inc.
Kristy	Red	No	62.5	59.6	82.8	59.8	82.0	60.9	93.4	58.3	73.6	55.7	87.2	59.1	80.3	58.9	JGL, Inc.
MSU Line D8006R	Red	Yes	62.3	59.7	77.4	59.1	83.1	60.2	93.0	57.9	80.6	56.8	84.9	59.4	80.2	58.9	Michigan State University
Excel 333	Red	No	66.8	60.1	78.4	58.2	77.6	59.7	-----	-----	84.4	55.6	80.8	58.5	79.9	58.3	Gristmill Enterprises
HS X257R	Red	No	65.9	59.6	74.8	58.4	80.7	61.8	90.2	58.9	85.5	57.7	82.3	59.5	79.9	59.3	Harrington Seeds, Inc.
Pioneer Brand 25R37	Red	No	67.6	59.4	79.8	59.0	80.5	60.4	93.2	60.2	80.6	55.6	77.7	59.6	79.9	59.0	Pioneer, A Dupont Company
RS 949	Red	Yes	63.6	62.0	76.8	60.1	81.3	62.5	94.7	59.6	84.6	57.5	78.3	59.7	79.9	60.2	Rupp Seeds, Inc.
Genesis R035	Red	No	67.9	60.3	80.7	58.9	77.2	59.8	86.8	58.2	84.1	55.5	80.6	59.2	79.6	58.7	Genesis Brand Seed
Besecker	Red	No	68.6	61.8	81.3	60.0	78.4	61.8	90.9	59.1	77.8	56.8	80.5	59.3	79.6	59.8	Steyer Seeds, Inc.
B980416	Red	No	62.2	62.1	79.5	59.8	80.7	60.2	86.6	57.8	83.9	56.8	84.2	57.8	79.5	59.1	Syngenta Seeds, Inc.
MSU Line E2021	Red	No	70.2	60.2	91.0	60.0	75.8	61.2	86.0	58.7	81.1	55.8	72.4	57.8	79.4	59.0	Michigan State University
Excel 399	Red	No	61.5	61.5	81.6	58.9	81.1	60.1	94.6	58.2	79.6	55.4	77.2	56.8	79.3	58.5	Gristmill Enterprises
Genesis R045	Red	No	63.5	58.8	82.7	59.7	81.5	60.8	89.0	57.7	76.9	56.8	81.0	58.6	79.1	58.7	Genesis Brand Seed
AgriPro COKER 9375	Red	No	64.1	58.1	75.6	56.3	79.5	58.5	85.2	55.6	84.6	55.3	83.1	56.8	78.7	56.8	Syngenta Seeds, Inc.
Pioneer Brand 25R35	Red	Yes	63.7	61.1	73.8	59.2	81.3	60.0	87.7	57.6	84.3	55.5	80.9	57.9	78.6	58.6	Pioneer, A Dupont Company
Harvard	Red	No	64.6	61.6	76.9	62.4	80.8	61.2	89.5	59.6	83.0	58.7	76.4	60.0	78.5	60.6	JGL, Inc.
AgriPro COKER 9663	Red	No	58.5	61.0	73.5	60.3	83.2	60.9	89.3	59.0	86.1	56.9	79.9	58.4	78.4	59.4	Syngenta Seeds, Inc.
McCormick	Red	No	62.8	62.3	74.1	61.4	76.6	61.0	90.2	59.5	78.0	57.6	83.1	59.8	77.5	60.3	Michigan Crop Improvement Association

CAUTION: Single site/single year data should not be used to make variety choice decisions

2005 Michigan State University Wheat Variety Trials

Multi-year data are the most informative.

Table 3 : Single Site Yield and Test Weight Performance Summary (Note: Tables sorted by 2005 Yield, red wheats grouped before white)

MSU makes no endorsement of any variety or brand.

Name	Grain Color	Awns	County Locations												Average All Sites		CAUTION: Single site/single year data should not be used to make variety choice decisions	
			Ingham		Lenawee		Midland		Saginaw		Sanilac		Huron		Yield bu/ac	Test Weight		Company
			Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	Yield bu/ac	Test Weight	Yield bu/ac	Test Weight				
Roane	Red	No	61.3	63.0	76.8	60.9	77.3	61.6	88.5	59.8	79.1	56.7	78.8	59.9	77.0	60.3	Michigan Crop Improvement Association	
Daisy	Red	No	57.4	57.6	71.7	56.8	74.9	59.6	93.1	56.9	82.8	54.7	80.5	56.7	76.7	57.1	Michigan Crop Improvement Association	
Excel 412tw	Red	No	63.6	61.9	76.6	58.9	82.6	61.1	83.8	59.2	76.0	56.4	75.1	58.6	76.3	59.4	Gristmill Enterprises	
Warwick	Red	No	64.2	59.0	65.5	57.2	78.5	59.6	87.9	57.9	77.3	55.4	83.1	57.9	76.1	57.8	Hyland Seeds	
FT Wonder	Red	Yes	57.5	60.3	69.3	58.3	80.2	61.5	92.6	59.3	72.8	56.1	82.1	58.9	75.8	59.1	Hyland Seeds	
Excel 354tw	Red	No	57.8	61.9	70.8	60.5	76.0	62.8	90.3	59.6	78.4	57.7	78.0	60.6	75.2	60.5	Gristmill Enterprises	
HS 243R	Red	No	57.8	59.8	80.1	59.0	72.8	58.7	93.4	58.4	67.3	55.9	78.1	57.6	74.9	58.2	Harrington Seeds, Inc.	
Excel 388	Red	No	59.5	60.7	73.4	57.4	75.0	59.0	89.0	58.3	76.1	55.5	75.0	58.5	74.7	58.2	Gristmill Enterprises	
Sisson	Red	No	65.1	61.2	80.4	59.3	69.5	60.4	89.7	58.5	65.3	55.8	77.0	58.9	74.5	59.0	Michigan Crop Improvement Association	
Truman	Red	No	56.9	60.8	74.5	58.6	74.6	60.7	85.5	59.5	76.7	57.8	77.6	59.3	74.3	59.5	Michigan Crop Improvement Association	
B980582	Red	No	64.3	62.8	71.2	60.0	75.6	62.3	79.7	59.2	76.2	57.6	79.0	60.2	74.3	60.4	Syngenta Seeds, Inc.	
VA00W-526	Red	No	59.5	60.4	66.4	59.1	83.0	61.3	76.5	57.0	72.7	57.5	80.6	59.4	73.1	59.1	VPI & SU / VCIA	
MSU Line E2043	White	Yes	68.8	60.9	83.6	62.6	84.5	60.7	95.7	59.4	88.3	55.9	80.6	58.3	83.6	59.6	Michigan State University	
Aubrey	White	No	67.3	59.4	79.2	60.5	81.4	61.1	97.7	61.1	86.6	57.6	87.0	58.8	83.2	59.8	Genesis Brand Seed	
MSU Line E0027	White	Yes	74.9	58.9	87.4	59.0	74.9	58.3	93.4	57.3	77.2	53.6	85.1	57.1	82.2	57.4	Michigan State University	
MSU Line E0028	White	No	70.8	58.8	84.4	58.7	74.0	58.5	93.9	56.7	82.7	54.3	87.6	56.8	82.2	57.3	Michigan State University	
MSU Line E2017	White	No	74.3	61.2	82.4	60.5	78.5	59.2	96.6	58.4	81.0	55.3	79.7	59.1	82.1	59.0	Michigan State University	
MSU Line E1008	White	Yes	65.9	62.2	84.1	62.3	75.7	61.4	98.7	59.8	83.7	56.7	81.7	59.0	81.6	60.2	Michigan State University	
Whitby	White	No	67.0	59.9	76.9	59.6	81.8	59.4	93.9	59.1	86.3	55.2	81.7	57.1	81.3	58.4	Hyland Seeds	
Pearl	White	No	64.1	60.9	78.6	58.8	85.1	60.7	90.2	58.6	82.8	55.5	85.3	59.6	81.0	59.0	Michigan Crop Improvement Association	
Alpine	White	No	74.7	58.0	76.8	56.8	78.8	57.7	93.9	56.9	80.2	53.4	80.5	56.0	80.8	56.5	Michigan Crop Improvement Association	
MSU Line D8006	White	Yes	67.2	59.1	73.6	59.0	80.0	59.9	95.5	57.2	82.4	54.5	86.2	57.3	80.8	57.8	Michigan State University	
MSU Line E1007W	White	Yes	63.7	61.2	84.0	61.8	76.1	60.2	95.3	58.6	84.4	55.4	80.0	58.7	80.6	59.3	Michigan State University	
MSU D6234	White	No	72.6	60.5	82.3	61.4	79.4	61.6	90.5	58.2	78.2	55.8	78.6	58.5	80.3	59.3	Michigan State University	
MSU Line D9044	White	No	67.6	61.4	87.0	60.7	77.1	60.1	92.3	58.1	78.5	54.4	79.2	57.5	80.3	58.7	Michigan State University	
Abacus	White	No	64.6	59.1	78.8	59.0	80.0	58.2	93.9	57.3	80.9	54.7	82.8	56.8	80.2	57.5	Michigan Crop Improvement Association	
AC Mountain	White	No	66.3	59.5	80.5	57.9	76.4	58.3	93.5	57.9	80.2	54.5	82.0	57.2	79.8	57.6	Michigan Crop Improvement Association	
Caledonia	White	No	60.3	59.4	80.4	59.3	79.8	60.8	93.4	59.0	81.7	55.6	81.8	58.3	79.6	58.7	Genesis Brand Seed & Harrington Seeds, Inc	
MSU Line E0025	White	Yes	65.1	58.7	79.5	57.1	78.5	59.9	94.7	56.8	77.7	53.4	81.6	55.7	79.5	56.9	Michigan State University	
Arrow	White	Yes	68.4	59.3	76.0	59.9	78.9	60.5	88.4	58.4	82.7	55.9	80.9	58.6	79.2	58.8	Michigan Crop Improvement Association	
Pioneer Brand 25W41	White	Yes	65.1	62.9	75.3	61.1	81.0	62.0	89.2	59.2	80.9	55.9	82.8	59.0	79.1	60.0	Pioneer, A Dupont Company	
MSU Line E0009	White	No	67.4	60.1	79.7	60.2	75.9	58.7	91.2	58.6	78.1	57.2	76.6	59.1	78.2	59.0	Michigan State University	
MSU Line D9044R2	White	No	69.3	60.5	82.1	61.4	74.4	60.5	89.8	58.1	72.7	54.9	77.7	57.4	77.7	58.8	Michigan State University	
MSU Line E0001	White	No	67.5	60.9	74.5	59.2	79.5	60.7	84.7	59.0	80.7	56.7	77.8	58.2	77.5	59.1	Michigan State University	
Galaxy 501	White	No	65.2	60.2	76.9	59.5	74.3	59.7	86.0	58.9	79.6	55.7	73.9	58.7	76.0	58.8	Michigan Crop Improvement Association	
MSU Line E0029	White	No	68.1	60.5	83.5	58.6	70.9	60.2	83.5	58.3	70.3	55.0	77.7	57.8	75.7	58.4	Michigan State University	
Genesis 7388	White	No	64.5	61.7	70.7	60.9	76.5	62.1	83.0	59.8	82.3	57.1	76.5	60.3	75.6	60.3	Genesis Brand Seed	
Aurora - SBE	White	No	61.2	60.5	75.9	59.7	74.4	60.4	89.1	58.0	74.3	55.6	77.8	59.2	75.5	58.9	Michigan Crop Improvement Association	
MSU Line E2052	White	No	65.3	60.5	71.4	60.1	75.8	61.1	80.1	58.9	76.8	57.6	71.7	59.1	73.5	59.6	Michigan State University	
VA97W-375WS	White	No	51.7	60.5	73.7	59.2	72.4	59.4	78.8	58.2	69.9	55.9	80.5	59.3	71.2	58.8	Michigan Crop Improvement Association	
HS X03W	White	No	64.0	61.3	76.9	62.1	66.4	60.7	78.2	59.8	64.3	56.9	69.0	58.1	69.8	59.8	Harrington Seeds, Inc.	
Trial Mean (90 Entries)			66.3	60.4	79.1	59.5	80.2	60.4	91.5	58.5	81.0	56.1	81.9	58.5	80.0	58.9		
LSD			10.1	1.8	5.7	1.7	5.2	1.6	5.6	1.2	8.0	1.4	4.5	1.6	4.3	0.8		
CV			11.0	2.1	4.9	2.0	4.4	1.9	4.2	1.4	6.7	1.8	3.7	1.9	4.7	1.3		

LSD = least significant difference, i.e. differences smaller than the LSD are probably due to chance. CV = low values indicated higher precision.

2005 Michigan State University Wheat Variety Trials

Appendix A. Trial Site Descriptions for 2005 MSU Wheat Variety Trials.

	HURON COUNTY	YIELD TRIAL	INGHAM COUNTY OBSERVATION	SCAB NURSERY	LENAWEE COUNTY	MIDLAND COUNTY	SANILAC COUNTY	SAGINAW COUNTY
COOPERATOR	DARWIN SNELLER	TIM DIETZ	MICHIGAN STATE UNIVERSITY	MICHIGAN STATE UNIVERSITY	WOODS SEED FARM	FRED SILER	STOUGHTENBURG FARMS	STUART BIERLEIN
NEAREST CITY	SEBEWAING	WILLIAMSTON	MASON	EAST LANSING	BRITTON	LAPORTE	SANDUSKY	GERA
PLANTING DATE	10/11/04	10/03/04	10/06/04	10/08/05	09/30/04	10/05/04	10/01/04	09/29/04
HARVEST DATE	07/23/05	07/12/05	N / A	N / A	07/11/05	07/17/05	07/21/05	07/20/05
PRE-PLANT FERTILIZER	225# 6-17-34	200# 6-24-24	200# 6-24-24	200# 6-24-24	300# 9-23-30	250# 10-12-36 +1% Mn	190# 8-15-30 +3.7% S	300# 6-11-35 +1%Mn+0.3Cu +0.3Zn
COMMENTS	Light Scab Pressure; Moderate Leaf Blotch Pressure	Light to Moderate Powdery Mildew; Moderate Leaf Blotch Pressure	Observation Site / Yield Not Taken		Light to Moderate Powdery Mildew Early Moderate Leaf Rust Pressure Late; Moderate Leaf Blotch Pressure	Light Leaf Rust Pressure Late; Moderate Leaf Blotch Pressure	Light to Moderate Winter Kill (Injury);Light to Moderate Powdery Mildew Early; Moderate Leaf Blotch Pressure	Light to Moderate Winter Kill (Injury);Light to Moderate Powdery Mildew Early; Moderate Leaf Blotch Pressure
AVERAGE YIELD (BUSHEL / ACRE)	81.9	66.3	N / A	N / A	79.1	80.2	81.0	91.5
AVERAGE TEST WEIGHT (LBS. / BUSHEL)	58.5	60.4	N / A	N / A	59.5	60.4	56.1	58.5
AVERAGE PERCENT GRAIN MOISTURE	14.2	13.1	N / A	N / A	11.2	15.5	12.5	15.4
DATA RECORDED (NUMBER OF REPS)	STRI (2)	PL_HT (4); PM (2);	SPROUT (2); FD (1); W_KIL (1)	FHBI% (4); FHBS% (4); FHBX (4)	LRUST (2); PM (2); STRI (2)	LRUST (1); PL_HT (3); FD (4); SPROUT (3)	LODGE (4); STRI (2); W_KIL (4)	W_KIL (4); SPROUT (3)

*OTHER DATA: **FD** – Flowering Date (Days Past Jan. 01),**PL_HT** - Plant Height in Inches,**SPROUT** - In-Head Pre-Harvest Sprouting Score (0-9)**LODGE** - Lodging Score (0-9)**LRUST** - Leaf Rust Score (0-9),
STRI – Stagonospora tritici (Leaf Blotch) Score (0-9)**PM** - Powdery Mildew Score (0-9),**W_KIL** - Winter Kill (Injury) Score (0-9);**FHBI** - Fusarium Head Blight Incidence Percent (0-100%)**FHBS** - Fusarium Head
Blight Severity Percent (0-100%),**FHBX** - Fusarium Head Blight Severity Index

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

**ORGANIZATIONS ENTERING VARIETIES IN THE
2005 MICHIGAN WHEAT VARIETY TRIALS**

AgriPro COKER
P.O. Box 411, 520 E. 1050 South
Brookston, IN 47923
Phone: 765-563-3111

Ohio State University
1680 Madison Ave.
Wooster, OH 44691
Phone: 330-263-3944

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

Pioneer – Hi-Bred International, Inc.
210 Westfield Drive
Archbold, OH 43502
Phone: 800-611-9569

Genesis Brand Seed
P.O. Box 21085
Lansing, MI 48909
Phone: 517-887-1684

Royster-Clark, Inc.
717 Robinson Rd. SE
Washington C.H., OH 43160
Phone: 740-869-2181

Gristmill Enterprises
P.O. Box 385
Warren, IL 61087
Phone: 815-745-2774

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

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

Steyer Seeds, Inc.
6154 North County Road 33
Tiffin, OH 44883
Phone: 800-231-4274

Hyland Seeds
Nain Research Lab
RR#1 111087 Petty St.
Ailsa Craig, ON N0M 1A0
CANADA
Phone: 519-232-4341

Syngenta Seeds, Inc.
P.O. Box 1240
Winterville, NC 28590
Phone: 252-746-3004

J G L, Inc.
3540 S. US 231
Greencastle, IN 46135
Phone: 765-653-5402

Virginia Polytechnic Institute & State
University / Virginia Crop Improvement
2229 Menokin Road
Warsaw, VA 22572
Phone: 804-333-3485

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