

Michigan State Wheat Variety Trial: 2000

Rick Ward, Lee Siler, Janet Lewis, and L. Patrick Hart
Department of Crop and Soil Sciences, Michigan State University
July 26, 2000

Comments on the 2000 Wheat Crop

The 1999/2000 Michigan wheat crop appears to have generated a range from average to exceptionally high yields and test weights. Yield was particularly high in the thumb area, and somewhat disappointing in the southern tier of counties. Planting generally occurred in a timely fashion into soil that was often drier than normal. Little winter kill occurred despite the occurrence of several early spring events where very low temperatures coincided with open, snow-less conditions. Wheat spindle streak mosaic virus (yellow mosaic) was unusually rare this year. Powdery mildew developed early, but did not reach severe levels in most fields. Septoria leaf blotch was severe in some fields, particularly in the southern tier of counties. Glume blotch also occurred. Fusarium head blight (scab) was wide spread with damage ranging from slight to extensive. DON or vomitoxin also occurred although most loads of grain appeared to have had levels below 2 ppm. Leaf and stem rust appeared soon after flowering and may have caused yield losses in some fields. Stripe rust was also seen in Michigan. Flowering was early for the third year in a row, but good soil moisture conditions and moderate post-flowering temperatures prolonged grain fill and delayed harvest compared to the previous two years.

Multi-Year Performance Summary (Tables 1 and 2)

These tables both have two pages. Each line in the table has data for a single variety. 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 are only valid within a column.** The table is arranged so that the varieties appear in order of 2000 average yield with the highest yielding variety first and the lowest yielding variety last. To the right of the 2000 yield column are multi-year yield averages. Only data for varieties included in the relevant year's tests are found here. Not all varieties 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 the second page of each table are the averages, L.S.D.s (least significant difference), and C.V.s (coefficient of variation) for each data column. L.S.D.s vary among traits and data sets (combinations of sites and years). Differences between means that are greater than the L.S.D. are very likely to reflect a genuine difference between the two varieties. If the difference between two means is smaller than the L.S.D. for that column, you should conclude that there is **no evidence that those varieties are different for that trait** in the years and sites considered. The C.V. is indicative of a trials precision. Trials with low levels of error variation have lower C.V. values.

Single Site Yield Performance Summary (Table 3)

The first six columns in this table each contain yield (bushels/acre) data from one of the six sites harvested for yield in 2000. The last column contains the same across-site average found in Table 1. Each row in the table represents a single variety in the test.

Choosing Varieties

MSU makes no endorsement of any wheat variety or brand. 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.

Experimental

The 2000 State Wheat Variety Trial was planted at eight county sites: Lenawee, Saginaw, Midland, Huron, Ionia, Sanilac, and Ingham (two sites). Appendix A (below) presents information on each of the county sites. Plots were 11 feet long and had 7 rows at 6" row spacing. The trial was designed and executed as four replication alpha-lattice (10 blocks of 5 plots each). All seed was treated but the chemicals and rates used varied. Seeding rates per linear foot of row were standardized to the rate that would achieve 1.8 million seeds per acre in a solid stand planted in 6" 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. Weeds were controlled chemically 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. That approach tends to underestimate yield.

Yield, test weight, and grain moisture data were acquired electronically on the plot combine at the time of harvest. All scores are based on a 0-9 scale, where 0 is the best possible score. Plant height is reported as the distance from the ground to the tip of average heads in a plot in inches and was taken in Saginaw and Midland counties. Lodging data was taken at the Midland and Saginaw locations and was given a score of 0-9 where 0 equals all plants are erect. Flowering date data indicate the average number of days past January 1st before that variety reached the point where ½ of its heads were flowering at the Midland and Ingham county sites. Wheat spindle streak mosaic virus data was not included due to unusually low symptoms. Powdery mildew severity is reported here with both the 0-9 scale for total plant coverage, and as the average percent of flag leaf infected. Leaf rust is reported as the average percent of the flag leaf area infected. FHB incidence is the percent of wheat heads infected per plot. FHB incidence was rated on a scale from 0-9, where 0 indicates that under 10% of heads were infected in the plot, 1 indicates that 10-19% of heads infected in the plot, etc.. FHB severity is a measure of the average percent of the head infected when considering infected heads only. FHB severity was rated on the same scale as FHB incidence (0-9) where 0 indicates that, for infected heads on average, less than 10% of each head was infected with scab. A rating of 1 indicated that, on average, 10-19% of each head was infected with scab. The milling and baking quality data are based on grain from the 1999 State Variety trial. Flour yield is the ratio of the weight of extractable flour to the weight of milled grain, expressed as a percentage. "Softness Equivalent" is an indirect measure of the sample's grain hardness. Soft wheat varieties generally have softness equivalent values greater than 50. Sprouting data are based on greenhouse evaluation of 5 heads from two replications at the Saginaw and Midland county sites. Harvest maturity heads were collected and dried for four to six days. Scores were taken after the heads were subjected to near-continuous misting for six days.

Five 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.

Appendix A. Trial Site Descriptions for 2000 MSU Wheat Variety Trials.

	Huron County	Ingham County	Midland County	Lenawee County	Saginaw County	Sanilac County	Ionia County	MSU Campus
Cooperator	Lyle Krohn	MSU	Fred Siler	Paul Vergote	Stuart Bierlein	Al Stoutenberg	MSU	MSU
Nearest City	Bad Axe	Mason	Merrill	Blissfield	Gera	Sandusky	Clarksville	East Lansing
Date planted	10/11/99	9/27/99	9/25/99	9/28/99	9/27/99	10/8/99	10/14/99	10/12/99
Date harvested	7/18/00	7/11/00	7/13/00	7/7/00	7/12/00	7/18/00	7/14/00	N / A
Pre-plant Fertilizer	180# 11-13-23 + 1%Mn + 7.5%S	95# 6-0-53	207# 13-0-44	400# 6-17-25 +7% SO + 2% Mg + 1%Mn	300# 5-16-33 + 2%Mn + 4% Cu + 2% Mg	187# 14-10-32 + 1% Zn	None	None
Comments		Sharp Eye Spot	Heavy Leaf Rust	Heavy Septoria Leaf Blotch			Irrigated, Inoculated Scab Nursery	Irrigated, Inoculated Scab Nursery
Avg. yield (bu/acre)	83.4	66.1	91.8	75.1	94.7	97.6	N / A	N / A
Avg. test weight (lbs/bu)	59.2	55.9	59.6	54.8	60.5	59.5	N / A	N / A
Avg. grain moisture (%)	13.5	14.4	13.3	16.1	13.2	13.7	N / A	N / A
Other data	PM	PM, SEP	FD, PM, LR%F, PM%F, PIHt, LOD, SPROUT	SEP	LOD, PIHt, SPROUT	PM	Scab Inc., Scab Sev.	FD

* **FD** – Flowering Date, **LOD** – Lodging Score, **LR%F** - Percentage of Flag Leaf Covered with Leaf Rust, **Plt Ht** - Plant Height in Inches, **PM** - Powdery Mildew Score, **PM%F** – Percentage of Flag Leaf Covered with Powdery Mildew, **Scab Inc** – Fusarium Head Blight Incidence, **Scab Sev** - Fusarium Head Blight Severity, **SEP** – Septoria Glum Blotch Score, **SPROUT** – In-Head Pre-Harvest Sprouting Score.

Michigan State Wheat Variety Trial Results: 2000 Crop

Name	grain color	Yield: Bushels/acre				Test Weight: lbs/bu				Plant Height (inches)		Lodging score (0-9)		Flowering Date (days past Jan.1)		% Grain Moisture @Harvest		S. tritici (leaf blotch) Score (0-9)	Powdery Mildew		Flag Leaf Infection (%)		Flag Leaf Infection (%)			
		multi-year averages				multi-year averages				2-yr avg		2-yr avg		2-yr avg		Score (0-9)			2-yr avg		2-yr avg					
		2000	2 yr	3 yr	4 yr	2000	99-00	98-00	97-00	2000	99-00	2000	99-00	2000	99-00	2000	99-00		2000	99-00	2000	99-00	2000	99-00	2000	99-00
		2000	99-00	98-00	97-00	2000	99-00	98-00	97-00	2000	99-00	2000	99-00	2000	99-00	2000	99-00		2000	99-00	2000	99-00	2000	99-00	2000	99-00
VA96W-250	R	94.8	.	.	.	58.8	.	.	.	35.8	.	4.4	.	145.2	.	14.0	.	4.0	2.3	.	0.0	.	2.9	.		
VA96W-247	R	94.4	.	.	.	57.8	.	.	.	36.9	.	4.4	.	147.0	.	14.2	.	3.9	1.6	.	0.0	.	1.3	.		
Pioneer Brand 25W60	W	93.3	.	.	.	58.6	.	.	.	41.9	.	1.6	.	149.4	.	13.6	.	3.7	4.0	.	0.3	.	1.2	.		
Pioneer Variety 2552	R	93.0	91.8	87.6	86.7	59.0	60.5	60.1	59.9	38.8	38.2	1.8	2.5	149.1	149.4	14.9	16.2	2.6	2.1	1.6	0.0	0.6	0.7	1.8		
Roane	R	91.2	87.3	83.1	.	60.4	61.2	60.5	.	38.4	36.9	3.4	4.5	148.7	148.9	15.1	16.2	1.1	1.6	1.1	0.0	0.1	0.2	0.8		
Hopewell	R	90.9	88.0	79.8	80.2	59.0	59.7	58.8	58.3	40.8	39.0	0.9	0.6	151.1	150.9	14.0	15.5	3.5	3.5	2.6	1.3	0.8	0.7	1.5		
Caledonia	W	90.9	89.0	82.4	81.5	57.3	58.0	57.3	57.2	40.1	37.8	1.4	1.3	150.9	150.9	13.6	15.0	3.9	3.4	3.0	1.0	1.1	1.5	4.8		
Pioneer Brand 25W33	W	90.8	88.5	81.1	79.9	57.0	58.0	57.0	56.7	38.2	36.6	1.0	2.0	151.0	150.5	13.0	14.4	4.9	2.2	1.9	0.8	0.7	0.4	0.2		
Stine 455	R	88.2	84.9	80.0	.	57.8	58.4	57.8	.	40.7	39.6	3.6	4.3	148.6	149.3	13.0	14.3	4.9	4.1	3.2	0.2	0.7	1.0	0.7		
Genesis 9953	R	87.8	.	.	.	57.1	.	.	.	41.6	.	4.5	.	148.6	.	13.1	.	3.9	3.0	.	0.0	.	0.9	.		
Bernard	W	87.7	.	.	.	58.8	.	.	.	42.8	.	2.6	.	149.7	.	14.2	.	4.2	3.9	.	0.2	.	1.1	.		
Pioneer Brand 25R26	R	87.7	85.7	79.8	79.9	56.9	57.9	57.3	56.9	38.0	36.2	1.3	1.5	150.3	150.5	13.3	14.9	6.2	5.6	4.7	1.3	1.4	2.3	1.4		
569W	R	87.3	.	.	.	58.9	.	.	.	43.0	.	2.3	.	150.1	.	14.2	.	3.8	3.2	.	0.2	.	1.3	.		
Patton	R	87.1	83.7	.	.	58.6	59.6	.	.	40.4	39.5	4.0	4.6	147.9	148.5	14.0	15.0	2.7	4.8	4.7	0.5	2.0	0.0	0.2		
AC Ron	W	86.8	82.2	77.0	77.0	57.3	58.1	57.5	57.3	46.8	44.3	1.5	2.7	152.8	152.1	13.7	15.3	2.8	4.0	3.3	0.0	0.5	4.8	4.6		
Superior	W	86.5	82.9	74.9	.	56.3	58.0	56.8	.	44.9	42.9	1.3	2.6	153.4	152.4	15.4	16.4	2.2	2.4	2.1	0.0	0.5	4.1	3.1		
VA96W-403WS	W	86.3	.	.	.	58.3	.	.	.	41.1	.	4.4	.	150.4	.	14.2	.	4.3	1.2	.	0.3	.	0.2	.		
D6234	W	85.9	84.1	.	.	59.0	59.6	.	.	43.2	40.6	1.8	2.8	151.4	151.3	14.4	15.8	3.8	3.9	3.6	0.2	0.8	6.7	5.5		
Stine 488	R	85.8	84.5	77.8	.	58.8	59.9	58.9	.	42.9	41.5	2.4	2.5	149.6	149.8	14.2	15.4	4.6	3.3	2.9	0.2	0.7	1.5	3.0		
Citron	R	85.8	82.5	77.9	.	59.3	59.6	58.7	.	40.6	40.0	4.1	4.7	146.3	147.5	13.6	14.7	6.1	3.5	3.6	0.0	1.7	0.4	0.7		
D6206	W	85.5	83.4	.	.	57.0	58.2	.	.	41.6	39.2	1.6	1.7	151.9	151.6	14.4	15.6	4.5	3.7	3.1	0.2	0.5	4.3	2.8		
AC Mountain	W	85.1	83.3	.	.	57.5	58.2	.	.	45.8	43.7	2.8	3.5	152.6	151.8	13.5	14.5	3.7	4.3	3.8	0.2	0.7	8.6	6.6		
Navigator	R	85.1	85.6	81.8	79.9	56.0	56.5	56.4	56.1	35.8	35.3	1.1	0.9	148.3	148.6	13.0	14.4	4.1	3.5	2.8	0.7	1.1	2.2	1.7		
Pioneer Brand 25R57	R	84.9	82.6	78.5	77.9	58.5	58.7	58.1	57.7	40.3	38.7	2.0	2.3	147.3	148.3	13.5	14.4	3.8	4.0	3.5	1.3	2.1	2.1	1.7		
Freedom	R	84.9	81.8	75.8	76.8	56.0	56.8	56.2	56.2	42.3	40.7	4.4	4.2	151.3	151.0	14.6	15.9	3.7	4.4	3.5	0.0	0.3	0.2	2.5		
NY88024-117	W	84.7	.	.	.	58.8	.	.	.	43.0	.	1.3	.	152.4	.	14.4	.	3.3	1.1	.	0.0	.	2.2	.		
AC Ariss	W	84.5	81.2	.	.	57.7	58.7	.	.	43.3	40.3	2.1	1.9	153.6	152.8	14.4	15.2	3.1	3.1	2.6	0.0	0.5	9.0	6.6		
Genesis 9939	R	84.4	81.8	.	.	59.0	59.5	.	.	41.0	40.2	3.8	4.5	146.8	147.7	13.6	14.8	4.6	3.0	3.0	0.2	1.1	0.0	0.2		
Hyttest HTW9850	R	84.3	.	.	.	58.5	.	.	.	43.4	.	2.4	.	149.7	.	13.9	.	4.6	3.5	.	0.0	.	1.0	.		
D6277	W	84.2	80.9	.	.	58.3	58.9	.	.	43.1	40.8	2.1	2.5	150.9	150.8	13.5	14.6	3.7	5.3	4.7	2.0	2.0	1.2	1.9		
Nosco Classic RW1488	R	83.8	81.6	76.6	.	59.2	59.7	58.8	.	40.3	40.0	4.5	4.1	146.7	147.8	13.7	15.1	4.7	3.1	2.8	0.0	1.6	0.1	0.4		
Harus	W	83.7	81.3	76.4	75.2	58.0	58.8	58.0	57.8	45.9	43.5	1.7	2.3	152.8	152.0	13.7	14.9	3.5	2.3	2.1	0.0	0.3	4.8	3.3		
Glory	R	83.2	81.3	78.5	78.8	58.3	59.4	58.7	58.4	40.0	38.3	2.0	2.0	148.8	149.2	13.8	15.1	2.4	4.7	3.8	1.8	1.7	2.6	4.1		
Patterson	R	82.7	79.5	74.6	72.7	58.5	59.3	58.9	58.3	41.0	40.0	2.9	3.2	145.6	146.9	13.5	14.6	3.3	6.5	6.5	2.5	6.5	0.8	0.8		
Lowell	W	82.6	78.6	73.9	74.0	57.5	57.6	56.9	56.4	45.6	43.9	5.7	5.9	150.1	150.5	13.2	14.2	4.4	5.1	4.8	0.5	2.0	1.1	5.4		
Bavaria	W	82.5	79.7	74.7	74.7	58.8	59.3	58.5	58.3	46.4	44.1	2.2	3.1	153.2	153.1	14.8	15.9	3.3	4.5	4.4	0.0	0.7	0.8	0.5		
NY85020-395	W	82.2	.	.	.	56.3	.	.	.	46.3	.	2.7	.	153.8	.	14.8	.	2.1	4.2	.	0.0	.	6.9	.		
Excel 400-1	R	81.9	.	.	.	58.2	.	.	.	42.2	.	3.8	.	147.8	.	13.9	.	6.2	5.9	.	1.5	.	2.3	.		

Table 1

Michigan State Wheat Variety Trial Results: 2000 Crop

Name	grain color	Yield: Bushels/acre				Test Weight: lbs/bu				Plant Height (inches)		Lodging score (0-9)		Flowering Date (days past Jan.1)		% Grain Moisture @Harvest		S. tritici (leaf blotch) Score (0-9)	Powdery Mildew		Flag Leaf Infection (%)		Leaf Rust	
		multi-year averages				multi-year averages				2-yr avg		2-yr avg		2-yr avg		2-yr avg			2-yr avg		2-yr avg			
		2000	99-00	98-00	97-00	2000	99-00	98-00	97-00	2000	99-00	2000	99-00	2000	99-00	2000	99-00		2000	99-00	2000	99-00	2000	99-00
Genesis M86	R	81.6	.	.	.	58.6	.	.	.	42.7	.	3.9	.	147.8	.	13.9	.	6.1	6.4	.	2.2	.	1.0	.
Nosco Classic RW151	R	81.0	76.7	72.3	73.4	60.0	61.0	60.4	60.2	43.2	41.4	4.6	5.3	149.0	149.1	15.9	16.3	5.7	4.3	4.4	0.8	2.4	2.1	1.6
Wakefield	R	80.7	78.2	74.6	75.7	58.1	59.0	58.1	58.0	40.1	39.6	4.8	5.0	148.8	149.2	13.5	14.9	2.8	7.2	6.9	1.0	5.0	2.1	3.3
Foster	R	80.2	.	.	.	58.3	.	.	.	39.4	.	1.9	.	148.9	.	14.3	.	4.4	5.2	.	0.5	.	5.6	.
Kaskaskia	R	80.1	76.4	73.5	.	60.4	60.8	60.1	.	43.8	42.3	3.3	3.2	148.5	149.1	14.6	15.4	6.6	4.8	4.7	0.3	1.4	3.5	2.1
SR 204	R	80.0	78.7	73.3	74.1	59.6	60.5	60.1	59.9	40.8	39.8	3.5	4.2	148.7	149.2	15.8	17.1	5.7	3.9	3.9	0.7	1.2	2.1	1.4
Genesis M02	R	79.8	.	.	.	57.7	.	.	.	42.0	.	3.5	.	146.3	.	14.0	.	7.2	6.4	.	1.2	.	2.6	.
NY86003-106	W	79.2	.	.	.	58.9	.	.	.	44.1	.	4.2	.	150.4	.	13.6	.	3.0	2.2	.	0.0	.	15	.
527W	R	77.4	.	.	.	58.2	.	.	.	41.5	.	3.8	.	146.1	.	13.6	.	6.4	5.3	.	0.2	.	0.4	.
Exp 328	R	76.0	.	.	.	58.7	.	.	.	42.8	.	3.6	.	149.9	.	14.0	.	3.8	4.8	.	0.3	.	2.5	.
Nosco Classic RW1517	R	74.9	.	.	.	59.9	.	.	.	42.3	.	4.3	.	148.9	.	14.0	.	5.3	5.0	.	0.0	.	2.2	.
Frankenmuth	W	73.7	72.0	64.6	.	58.0	58.9	57.9	.	51.7	48.6	4.9	4.7	154.5	154.0	14.8	16.1	4.4	3.5	3.2	0.0	0.5	5.9	9.7
average		84.7	82.5	77.2	77.5	58.3	59.0	58.3	57.8	42.0	40.4	2.9	3.1	149.6	150.1	14.0	15.2	4.1	3.9	3.5	0.5	1.3	2.6	2.6
lsd		5.0	3.1	4.6	4.3	0.9	1.0	0.9	0.7	1.6	2.2	1.7	1.4	1.3	1.8	0.6	0.7	2.2	1.6	0.9	0.8	2.9	1.5	4.6
cv		5.2	1.8	3.7	3.9	1.4	0.8	0.9	0.9	1.8	2.6	28.4	21.7	1.3	0.6	3.5	2.4	26.0	29.3	12.7	112.0	106.0	39.3	85.3

lsd=least significant difference, i.e., differences smaller than the lsd are probably due to chance. cv- low values mean higher precision.

Michigan State Wheat Variety Trial Results: 2000 Crop

Multi-year data are the most informative. MSU makes no endorsement of any variety or brand.

Table 2

Name	grain color	Fusarium Head Blight (scab)				Milling and Baking Properties ('99 crop)				In-Head Pre-Harvest Sprout Score (0-9)			Submitted by:
		Severity		Incidence (0-9)		% FlourYield	% Protein in flour	Alkaline water retention	Softness Equivalent	2-yr avg		3-yr avg	
		% Spikelets	Number Spikelets	2000	2-yr avg					2000	99-00		
		Infected	Infected	2000	99-00	2000	99-00	2000	99-00	98-00			
VA96W-250	R	5.3	.	4.0	.	.	.	.	.	2.7	.	.	Virginia Polytechnic Institute and State University
VA96W-247	R	5.0	.	3.0	.	.	.	.	.	3.8	.	.	Virginia Polytechnic Institute and State University
Pioneer Brand 25W60	W	3.3	.	3.0	.	.	.	.	.	2.5	.	.	Pioneer Hi-Bred International, Inc.
Pioneer Variety 2552	R	4.3	3.8	5.0	7.0	72.9	10.4	55.0	54.0	0.3	1.0	1.6	MSU - Long Term Check
Roane	R	2.3	2.4	2.0	5.0	69.7	9.6	57.3	56.6	1.6	1.5	2.0	Virginia Polytechnic Institute and State University
Hopewell	R	2.3	2.6	2.0	4.7	71.8	9.3	54.9	59.3	0.8	0.8	1.1	Michigan Crop Improvement Association
Caledonia	W	4.0	3.8	3.0	4.9	73.1	9.6	52.9	54.6	5.8	7.2	7.6	Genesis Brand Seed - Harrington Seeds, Inc.
Pioneer Brand 25W33	W	2.7	2.8	3.0	5.8	73.2	9.5	53.3	55.6	1.7	3.5	4.1	Pioneer Hi-Bred International, Inc.
Stine 455	R	2.3	2.7	2.0	3.8	69.7	9.5	56.7	52.5	3.8	3.2	3.7	Stine Seed Company, Inc.
Genesis 9953	R	2.3	.	2.0	.	.	.	.	.	4.5	.	.	Genesis Brand Seed
Bernard	W	2.0	.	2.0	.	.	.	.	.	4.2	.	.	Steyer Seeds
Pioneer Brand 25R26	R	2.0	2.5	3.0	5.6	72.2	9.9	54.1	51.3	1.5	2.0	2.2	Pioneer Hi-Bred International, Inc.
569W	R	3.0	.	3.0	.	.	.	.	.	3.3	.	.	Croplan Genetics
Patton	R	2.0	2.0	2.0	4.5	71.6	10.3	53.9	55.1	4.7	4.5	.	Agripro Wheat
AC Ron	W	1.7	3.2	1.0	3.6	70.7	9.9	52.2	54.1	5.2	6.8	7.3	Michigan Crop Improvement Association
Superior	W	1.7	2.1	1.0	2.5	72.4	9.5	51.6	53.5	6.5	7.4	7.5	Harrington Seeds, Inc.
VA96W-403WS	W	3.3	.	2.0	.	.	.	.	.	4.9	.	.	Virginia Polytechnic Institute and State University
D6234	W	1.3	1.7	2.0	4.4	71.7	9.8	53.9	53.0	4.0	6.1	.	MSU Wheat Breeding
Stine 488	R	2.0	2.2	2.0	4.5	72.3	9.6	53.1	55.0	4.5	4.9	5.2	Stine Seed Company, Inc.
Citron	R	2.3	2.9	2.0	3.1	72.5	10.0	54.0	61.1	1.5	1.3	1.9	Lakeside States, Inc.
D6206	W	2.0	2.2	1.0	2.7	72.0	10.0	53.6	53.0	5.6	6.8	.	MSU Wheat Breeding
AC Mountain	W	1.7	2.2	1.0	3.2	73.5	9.8	51.9	54.3	5.5	7.3	.	Michigan Crop Improvement Association
Navigator	R	3.3	3.6	2.0	5.5	71.5	9.3	54.5	59.2	2.7	2.3	2.8	Irrer Seed Farm
Pioneer Brand 25R57	R	4.0	5.2	3.0	5.8	71.3	9.7	52.0	55.4	1.0	1.3	1.9	Pioneer Hi-Bred International, Inc.
Freedom	R	1.7	2.1	1.0	4.1	69.7	9.6	54.3	47.5	1.6	1.7	1.9	Michigan Crop Improvement Association
NY88024-117	W	2.0	.	2.0	.	.	.	.	.	5.6	.	.	Genesis Brand Seed - Harrington Seeds, Inc.
AC Ariss	W	1.3	1.6	1.0	2.9	72.1	10.0	52.0	53.5	4.0	6.0	.	Michigan Crop Improvement Association
Genesis 9939	R	2.0	2.1	2.0	3.3	72.3	10.2	53.5	60.8	2.2	1.6	.	Genesis Brand Seed
Hytest HTW9850	R	3.0	.	2.0	.	.	.	.	.	4.5	.	.	AgriBioTech, Inc
D6277	W	3.3	3.4	3.0	4.8	72.4	10.0	53.4	55.0	5.9	7.4	.	MSU Wheat Breeding
Nosco Classic RW1488	R	3.0	2.8	2.0	3.6	72.6	9.5	54.6	61.3	2.6	.	.	The Andersons, Inc.
Harus	W	2.0	2.1	1.0	3.4	71.4	10.2	52.2	54.0	3.8	5.7	5.9	Michigan Crop Improvement Association
Glory	R	3.0	3.4	3.0	4.7	68.9	9.9	55.0	49.3	2.2	2.3	3.5	Michigan Crop Improvement Association
Patterson	R	5.0	4.5	3.0	5.1	72.4	9.4	53.3	55.2	3.6	2.7	3.0	Michigan Crop Improvement Association
Lowell	W	2.3	2.6	2.0	3.9	72.8	9.9	53.4	55.8	6.0	7.1	7.3	Michigan Crop Improvement Association
Bavaria	W	1.3	2.3	1.0	3.0	73.2	9.5	52.3	52.2	4.8	6.7	6.6	Greater Michigan Seed Growers Cooperative, Inc.
NY85020-395	W	1.3	.	1.0	.	.	.	.	.	4.1	.	.	Genesis Brand Seed - Harrington Seeds, Inc.
Excel 400-1	R	2.3	.	1.0	.	.	.	.	.	4.3	.	.	Trelay Seed Company

Michigan State Wheat Variety Trial Results: 2000 Crop

Multi-year data are the most informative. MSU makes no endorsement of any variety or brand.

Table 2

Name	grain color	Fusarium Head Blight (scab)				Milling and Baking Properties ('99 crop)				In-Head Pre-Harvest Sprout Score (0-9)			Submitted by:
		Severity		Incidence (0-9)		% Flour Yield	% Protein in flour	Alkaline water retention	Softness Equivalent	2-yr avg		3-yr avg	
		Spikelets Infected	Spikelets Infected	2000	2-yr avg 99-00					2000	99-00		
		% Number	Number										
Genesis M86	R	2.7	.	3.0	.	.	.	.	.	4.0	.	.	Genesis Brand Seed
Nosco Classic RW151	R	1.7	1.8	2.0	4.4	73.7	9.3	52.0	57.7	1.8	.	.	The Andersons, Inc.
Wakefield	R	2.7	2.7	2.0	4.2	72.3	9.8	52.6	54.5	0.6	0.9	1.0	Michigan Crop Improvement Association
Foster	R	2.0	.	2.0	.	.	.	.	.	1.8	.	.	Agripro Wheat
Kaskaskia	R	2.3	3.1	2.0	5.5	69.9	9.7	57.3	53.7	2.8	2.9	3.9	Michigan Crop Improvement Association
SR 204	R	2.3	2.7	2.0	4.2	73.3	10.9	56.2	45.7	1.8	2.6	3.5	Land O'Lakes
Genesis M02	R	2.0	.	2.0	.	.	.	.	.	3.8	.	.	Genesis Brand Seed
NY86003-106	W	1.0	.	2.0	.	.	.	.	.	3.7	.	.	Genesis Brand Seed - Harrington Seeds, Inc.
527W	R	3.0	.	3.0	.	.	.	.	.	4.0	.	.	Croplan Genetics
Exp 328	R	3.0	.	2.0	.	.	.	.	.	3.1	.	.	Lakeside States, Inc.
Nosco Classic RW1517	R	1.7	.	1.0	.	.	.	.	.	1.2	.	.	The Andersons, Inc.
Frankenmuth	W	1.3	1.7	1.0	1.9	71.7	10.1	53.5	52.8	4.2	5.8	6.5	MSU - Long Term Check
average		2.5		6.5						3.4	4.0	3.9	
lsd		1.3		2.1						2.1	1.9	2.9	
cv		32.9		18.9						30.9	32.5	24.9	

Milling and baking data provided by USDA's Soft Wheat Quality Lab in Wooster, OH. Flour yield=percent of grain weight that can be milled into flour. Softness equivalent- higher values are softer. Alkaline water retention- used by bakers.

Caution: multi-year data are more informative than single year averages. Single site/single year data should not be used to make variety choice decisions.

Name	Location (county)						Average all sites
	Huron	Midland	Lenawee	Saginaw	Sanilac	Ingham	
VA96W-250	95.5	103.6	81.9	100.1	112.4	75.0	94.8
VA96W-247	98.1	104.1	78.1	101.3	112.0	72.5	94.4
Pioneer Brand 25W60	95.0	101.6	86.7	99.4	99.8	77.4	93.3
Pioneer Variety 2552	86.5	102.8	80.8	102.3	104.0	81.7	93.0
Roane	87.3	101.4	77.3	93.0	111.3	76.8	91.2
Hopewell	91.9	96.6	75.2	102.6	103.9	75.1	90.9
Caledonia	91.3	103.5	73.4	103.4	98.2	75.8	90.9
Pioneer Brand 25W33	85.4	105.0	82.4	103.1	97.1	71.9	90.8
Stine 455	82.5	96.5	82.0	95.6	103.2	69.3	88.2
Genesis 9953	82.8	96.5	78.2	95.9	103.1	70.2	87.8
Bernard	88.1	94.6	75.8	100.7	100.6	66.6	87.7
Pioneer Brand 25R26	83.4	96.4	74.3	106.6	96.6	68.8	87.7
569W	81.9	96.7	76.2	101.0	101.4	66.4	87.3
Patton	82.2	93.2	77.5	94.3	101.1	74.5	87.1
AC Ron	94.6	89.4	77.9	98.2	100.7	59.9	86.8
Superior	87.4	94.0	71.5	96.9	103.2	66.0	86.5
VA96W-403WS	84.6	96.7	76.2	92.1	104.3	63.7	86.3
D6234	86.9	90.1	81.9	97.7	99.2	59.5	85.9
Stine 488	82.4	90.3	75.3	102.1	95.9	68.7	85.8
Citron	83.9	90.6	82.2	91.8	98.0	68.5	85.8
D6206	82.6	91.6	74.1	96.4	99.5	68.8	85.5
AC Mountain	87.5	85.5	70.9	102.1	96.1	68.7	85.1
Navigator	84.6	93.5	71.8	90.0	103.6	67.0	85.1
Pioneer Brand 25R57	83.1	93.7	80.5	92.6	95.7	64.0	84.9
Freedom	82.7	95.7	74.1	93.3	105.0	58.6	84.9
NY88024-117	90.7	93.4	61.3	89.6	95.3	77.6	84.7
AC Ariss	85.7	89.2	72.4	100.3	93.9	65.3	84.5
Genesis 9939	78.6	93.4	81.1	89.5	100.4	63.5	84.4
Hytest HTW9850	75.8	93.1	76.1	100.2	95.9	64.4	84.3
D6277	84.9	91.3	79.3	95.2	98.0	56.2	84.2
Nosco Classic RW1488	80.6	90.4	79.0	90.3	98.3	64.2	83.8
Harus	m	89.0	75.3	93.6	97.6	64.7	83.7
Glory	81.4	89.6	76.2	93.2	94.5	64.4	83.2
Patterson	76.2	92.0	72.0	95.9	93.2	66.9	82.7
Lowell	87.6	90.0	81.1	89.3	89.7	57.9	82.6
Bavaria	81.8	91.3	71.8	93.2	94.9	62.0	82.5
NY85020-395	80.3	86.1	68.2	99.9	94.6	64.3	82.2

Caution: multi-year data are more informative than single year averages. Single site/single year data should not be used to make variety choice decisions.

Name	Location (county)						Average all sites
	Huron	Midland	Lenawee	Saginaw	Sanilac	Ingham	
Excel 400	76.7	87.5	72.9	93.0	93.1	67.9	81.9
Genesis M86	73.8	88.5	73.1	98.8	90.6	64.7	81.6
Nosco Classic RW151	79.6	89.4	70.2	86.1	94.5	65.9	81.0
Wakefield	79.0	85.8	76.1	86.3	98.8	58.3	80.7
Foster	76.4	86.5	73.6	88.2	96.1	60.4	80.2
Kaskaskia	80.1	85.2	68.4	88.8	87.4	70.5	80.1
SR 204	74.7	87.3	70.7	88.8	93.2	65.2	80.0
Genesis M02	73.1	89.6	69.1	91.1	89.7	66.3	79.8
NY86003-106	89.8	72.4	74.0	88.9	81.5	68.5	79.2
527W	72.7	85.5	67.9	86.5	89.5	62.0	77.4
Exp 328	76.3	83.2	75.0	87.9	89.6	43.8	76.0
Nosco Classic RW1517	73.8	81.8	67.4	84.7	89.0	52.8	74.9
Frankenmuth	74.1	78.5	65.9	86.0	87.3	50.2	73.7
average	83.4	91.8	75.1	94.7	97.6	66.1	84.7
lsd	11.8	4.6	9.5	5.7	5.4	8.5	5.0
cv	9.2	3.4	8.4	4.3	3.7	8.9	5.2