

Wheat variety selection and observations

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There is a concerted effort to significantly improve the grain yields of soft winter wheat. Variety selection may be one source of productivity gains. Here, we attempt to share some observations and comments based on the information provided by a recent state-wide wheat survey and on past reports of the MSU Wheat Performance Trials.

Varieties grown:

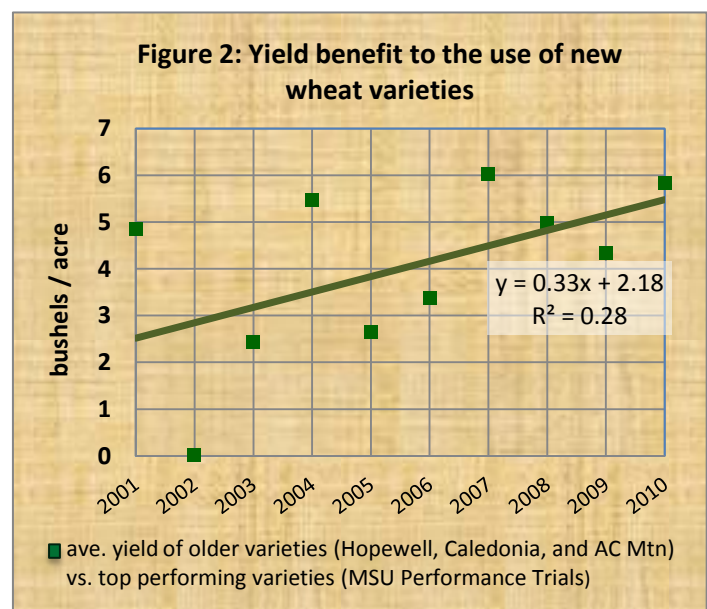
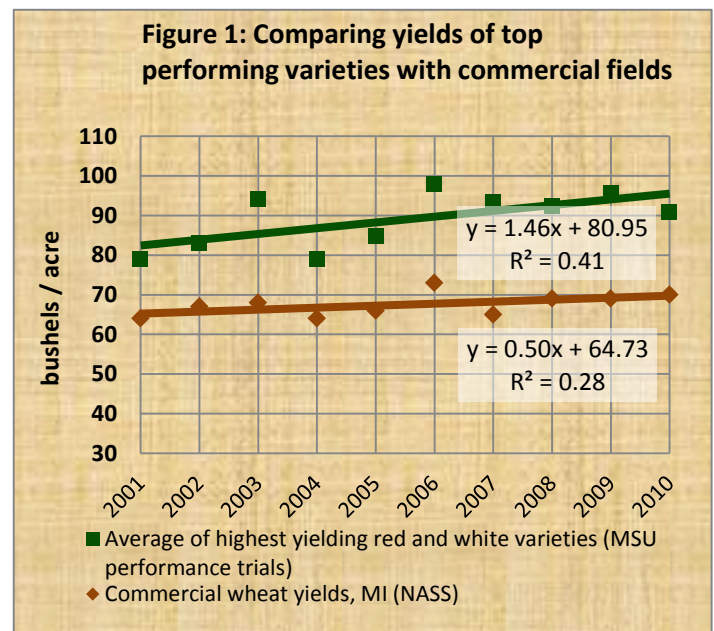
In March of 2011, Michigan growers were asked to list their wheat varieties and their acreages (1). Extrapolating the reported acres to total Michigan wheat acreage, there were 425,000 acres of soft red winter (SRW) wheat and 272,000 acres of soft white winter (SWW) wheat.

In total, growers listed 30 separate SRW varieties (table 1). Hopewell, a 15 year old variety, was planted on nearly a third of Michigan's SRW acres. When Hopewell acres are combined with the second most popular variety (Pioneer 25R47), nearly half of the SRW crop was represented.

Growers of SWW listed 18 different varieties. As shown in Table 2, the 2011 SWW acreage was dominated by Pioneer 25W43 and Ambassador. Of the top five varieties, two (Caledonia and AC Mountain) have been available for over 10 years.

Varietal performance – old and new

Because the survey results suggested a relatively high reliance on older varieties, we attempted to compare yields of the older varieties against that of new releases. The data we utilized was the MSU Wheat Performance Reports (2) which annually summarizes the performance of commercial varieties at five sites across the state.



In figure 1, the red line illustrates historic commercial yields achieved by Michigan growers (National Agriculture statistics Service). The slope of the line equates to one half bushel of gain per year. By comparison, the green line shows an average annual improvement of 1.46 bushels for the five leading varieties as reported in the MSU Performance trials. This suggests that commercial yields may not be keeping pace with developments in varietal improvement.

Next, we used the MSU variety performance data to compare the yields of leading varieties to that of selected older varieties currently being grown. In figure 2, the regression line illustrates the average advantage of the top five varieties over that of older varieties (averaged across Hopewell, Caledonia, and AC Mountain). While the correlation is weak, these yield relationships lend to discussions on the merit of retaining older varieties. Here, the slope of the regression line suggests that, on average, a new variety may out-pace old varieties by one third bushel for each year the old variety is retained.

It should be pointed out that this comparison utilized trials where yields ranged from 85-95 bushels per acre. The gap between new and old varieties would likely expand where yields approach and exceed the 100 bushel mark.

References:

(1) **Wheat Inquiry, March, 2011, J. Roy Black, Michigan State University AgBioResearch.**

[A mail survey of Michigan wheat grower conducted jointly by the Michigan Department of Agriculture and Rural Development, MSU Extension and MSU AgBioResearch. The survey method and procedures were administered in accordance with accepted statistical standards. For more information, contact Roy Black, MSU at blackj@anr.msu.edu]

(2) **[MSU Michigan Wheat Performance Trials](#), Janet Lewis et al., Michigan State University, Crops and Soils Department.**

[annual summarization of soft winter wheat variety trials conducted at five locations across the state]

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Table 1: Varieties and acreages of Soft Red Winter Wheat, Michigan, 2011

SRW Varieties	acres #	acres %
Hopewell	137,000	32.2%
Pioneer 25R47	74,200	17.5%
Red Ruby	47,300	11.1%
Pioneer 25R56	24,000	5.6%
Pioneer 25R62	13,700	3.2%
DF-R045	12,800	3.0%
Pioneer 25R39	10,000	2.4%
Pioneer 25R78	8,900	2.0%
Sunburst	8,430	1.4%
Butch	6,070	1.2%
DF-R075	5,240	1.2%
Roane	5,120	1.1%
Branson	4,630	1.1%
Tribute	4,090	1.0%
Shirley	3,810	0.9%
DF-R055	2,970	0.7%
Outlaw	2,500	0.6%
Red Devil	2,180	0.5%
BRAVO	1,960	0.5%
Wellman W132	1,910	0.4%
Dyna-Gro 9042	1,600	0.4%
Jack	1,440	0.3%
Oasis	1,370	0.3%
Bio Gene 2W21	1,370	0.3%
Brodbeck	1,360	0.3%
Dyna-Gro V9723	1,250	0.3%
Rupp-RS978	960	0.2%
other	41,740	9.8%
TOTAL	425,000	100%

Table 2: Varieties and acreages of Soft White Winter Wheat, Michigan, 2011

SWW Varieties	acres #	acres %
Pioneer 25W43	41,000	15.1%
Ambassador	35,700	13.1%
AC Mountain	30,300	11.1%
Pioneer 25W36	26,500	9.7%
Caledonia	23,700	8.7%
Aubrey	21,100	7.8%
D8006	13,700	5.0%
Crystal	12,400	4.6%
Syngenta W1062	11,300	4.2%
Coral	11,300	4.2%
Ava	9,930	3.7%
MSU D6234	4,210	1.5%
Abbey	2500	0.9%
Linebacker 180	2460	0.9%
Jewel	1770	0.7%
Pearl	1730	0.6%
Harris	1240	0.5%
AC Ron	530	0.2%
other	20,630	7.7%
TOTAL	272,000	100%