

# Wisconsin winter wheat performance tests



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The Wisconsin Winter Wheat Performance Tests are conducted each year to give growers information to select the best-performing varieties that will satisfy their specific goals. The performance tests are conducted at four locations in Wisconsin: Janesville, Arlington, Lancaster, and Chilton. Trials include released varieties, experimental lines from neighboring states, and lines from private seed companies. The primary objective of these trials is to quantify how varieties perform at different locations and across years. Growers can use this data to help select which varieties to plant; breeders use performance data to determine whether to release a new variety.

## YEAR IN REVIEW

### Growing conditions

Wisconsin saw a record number of winter wheat acres planted (350,000) in the 2008 growing season, up from the 290,000 planted the previous year. The estimated yield for the 2008 crop is 68 bu/a, down 1.5% from last year. Good soil moisture conditions and favorable temperatures in September and October of 2007 allowed for timely establishment of the wheat crop. Although winterkill due to cold temperature was not prevalent, ice damage due to record snowfall did cause significant injury to some low-lying fields. Spring growing conditions were mostly

favorable across the state; however, acres were lost due to extreme rainfall and subsequent flooding across much of the southern part of the state in early June. Cooler-than-normal temperatures in May, June, and July delayed crop maturity, but they also extended the grain fill period for winter wheat. An increase in acres harvested for grain resulted in an estimated record production at 22.4 million bushels, a jump of 20% over the 2007 production of 18.6 million bushels.

Winter wheat yields were variable across our testing locations due to variable rainfalls and disease pressure. Wheat yield at the Lancaster location (66 bu/a test average) was lower than expected due to significantly greater-than-normal rainfall and heavy disease pressure. Wheat yields at Janesville and Chilton averaged 78 and 89 bu/a, respectively. The Arlington site was abandoned due to ice sheeting that caused significant stand loss.

Source: USDA  
National Agricultural  
Statistics Service  
([www.nass.usda.gov](http://www.nass.usda.gov))



Table 1. Location and agronomics of winter wheat performance tests in Wisconsin

| Location               | Cooperators             | Soil type | Row spacing<br>(inches) | Avg. nitrogen applied<br>(lb/a) | Date planted<br>(2007) | Date harvested<br>(2008) |
|------------------------|-------------------------|-----------|-------------------------|---------------------------------|------------------------|--------------------------|
| Arlington <sup>a</sup> | M. Martinka, J. Gaska   | silt loam | 7.5                     | 70                              | Sept. 27               | —                        |
| Chilton                | Kolbe Seeds, B. Larson  | red clay  | 7.5                     | 70                              | Sept. 24               | July 28                  |
| Janesville             | Rock Co. Farm, J. Stute | silt loam | 7.5                     | 70                              | Oct. 12                | July 26                  |
| Lancaster              | T. Wood                 | silt loam | 7.5                     | 20 <sup>b</sup>                 | Sept. 27               | July 25                  |

<sup>a</sup> Site abandoned due to severe stand loss caused by ice sheeting.

<sup>b</sup> Nitrogen credited from previous alfalfa.

## Diseases

The Wisconsin Department of Agriculture, Trade, and Consumer Protection conducted surveys between May 5 and June 19 around the state and documented the following diseases: Ascochyta blight, Fusarium head blight, leaf rust, loose smut, powdery mildew, Pseudomonas leaf blight, Septoria leaf blotch complex, sooty mold, and tan spot. Disease levels were considered low and variable. In the trial plots, powdery mildew and Septoria leaf blotch complex were the predominant diseases; however, Fusarium head blight (head scab), leaf rust, stripe rust, and stem rust were noted in some locations (tables 5–7). There were reports at harvest that some fields had head scab levels testing higher than 2.0 ppm for DON, a vomitoxin, leading to grain dockage.

## USING THIS DATA TO SELECT TOP-YIELDING VARIETIES

As with any crop, variety selection is the most important factor to consider in maximizing winter wheat yield and profitability. When choosing a winter wheat variety, several factors must be considered. These include winter survival, insect and disease resistance, heading date, lodging, test weight, and most importantly, yield. Since no variety is ideal for every location, it is important to understand the crop environment and pest complex that affects your specific region to maximize yield.

**Yield** is based on the genetic potential and environmental conditions in which the crop is grown. Therefore, by diversifying the genetic pool that is planted, a grower can hedge against crop failure. Select those varieties that perform well not only in your area but across experimental sites and years. This will increase the likelihood that, given next year's environment (which you cannot control), the variety you selected will perform well. (Table 4 gives an overview of yields across all locations.)

**Test weight** is also an important factor to consider when selecting a variety. The minimum test weight to be considered a U.S. #2 soft red winter wheat is 58 lb/bu. Wheat at lower test weights will be discounted. Both environment and pests may greatly affect test weight; therefore, selecting a variety that has a high test weight potential in your region is critical to maximize economic gain.

Select a variety that has the specific **insect and disease resistance** characteristics that fit your needs. By selecting varieties with the appropriate level of resistance, crop yield loss may be either reduced or avoided without the need of pesticides. (Refer to tables 5–7 for disease incidence data.)

## EXPERIMENTAL PROCEDURES

### AT PLANTING

**Site details:** Summarized in table 1.

**Seedbed preparation:** Conventional and conservation tillage methods.

**Seeding rate:** Seeded at 1.5 million viable seeds/a.

**Seed treatments:** Identified in table 3.

**Planting:** A grain drill with cone units was used to plant 9-row plots, 25-feet in length. Each variety was grown in at least three separate plots (replicates).

### MIDSEASON

**Diseases:** Fusarium head blight (head scab) index was measured June 15. FHBI = (% incidence x % severity) ÷ 100. For other diseases, foliar assessments were made at all trial locations during June.

### HARVEST

**Yield:** The center seven rows were harvested with a self-propelled combine. Plots were weighed and moisture was determined in the field using electronic equipment on the plot harvester. Reported as bu/a (assuming 60 lb/bu) at 13% moisture content.

**Lodging:** Scores are based on the Belgian Lodging System (0 = none, 9 = severe).

**Test weight:** Measured using a Dickey-john GAC2100 AGRI.

**Crop height** and **lodging potential** are also important varietal characteristics that may be affected by your cropping system. If the wheat crop is intended for grain only, it may be important to select a variety that is short in stature and has a low potential for lodging. This may decrease yield loss due to crop spoilage and harvest loss as well as increase harvest rate. However, if the wheat crop is to be used as silage or to be harvested as both grain and straw then selecting a taller variety may be warranted. (Tables 5–7 provide site-specific data on height and lodging potential.)

## TESTING AGENCIES

The Wisconsin Winter Wheat Performance Tests were conducted by the Departments of Agronomy and Plant Pathology, College of Agricultural and Life Sciences and the University of Wisconsin-Extension in cooperation and with support from the Wisconsin Crop Improvement Association.

Table 2. Companies included in the 2008 performance tests

| Brand             | Company name                  | Phone          | Web address              |
|-------------------|-------------------------------|----------------|--------------------------|
| Agripro Coker     | Agripro Coker                 | (765) 563-3111 | www.agriprowheat.com     |
| Diener            | Biotown Seeds                 | (219) 984-5837 | www.biotownseeds.com     |
| DynaGro           | UAP Great Lakes               | (608) 846-1100 | www.uap.com              |
| Growmark          | Growmark, Inc.                | (309) 557-6399 | www.fsseed.com           |
| Jung              | Jung Seed Genetics, Inc.      | (920) 326-5891 | www.jungseedgenetics.com |
| Kaltenberg        | Kaltenberg Seeds              | (800) 383-3276 | www.kaltenbergseeds.com  |
| Pioneer           | Pioneer Hi-Bred International | (800) 851-9043 | www.pioneer.com          |
| PIP               | Partners in Production        | (608) 335-2112 |                          |
| Pro Seed Genetics | Pro Seed Genetics             | (920) 388-2824 |                          |
| Public            | WI Foundation Seeds           | (608) 846-9761 |                          |
| Public            | WI Crop Improvement           | (608) 262-0167 | www.wisc.edu/wcia/       |
| Seed-link         | Seed-Link Inc.                | (705) 324-0544 | www.seed-link.ca         |
| Welter            | Welter Seed                   | (800) 728-8450 | www.welterseed.com       |

Table 3. Wheat class and seed treatment(s) applied to entered varieties

| Brand         | Entry         | Class <sup>a</sup> | Seed treatment            | Brand             | Entry     | Class <sup>a</sup> | Seed treatment    |
|---------------|---------------|--------------------|---------------------------|-------------------|-----------|--------------------|-------------------|
| Public        | Hopewell      | SR                 | Raxil XT                  | Kaltenberg        | KW 51     | SR                 | Dividend Extreme  |
| Public        | Kaskaskia     | SR                 | Dividend Extreme          | Kaltenberg        | KW 55     | SR                 | Dividend Extreme  |
| Public        | Truman        | SR                 | Raxil XT                  | Kaltenberg        | KW 60     | SR                 | Dividend Extreme  |
| Public        | Sunburst      | SR                 | Dividend Extreme          | Kaltenberg        | KW 62     | SR                 | Dividend Extreme  |
| Public - exp  | IL 01-11934   | SR                 | Dividend Extreme          | Kaltenberg        | KW 63     | SR                 | Dividend Extreme  |
| Public - exp  | IL 02-23168   | SR                 | Dividend Extreme          | Kaltenberg        | KW 66     | SR                 | Dividend Extreme  |
| Public - exp  | OH 02-7217    | SR                 | Dividend Extreme          | Kaltenberg        | KW 67     | SR                 | Dividend Extreme  |
| Public - exp  | VA 03W-409    | SR                 | Dividend Extreme          | Kaltenberg        | KW 68     | SR                 | Dividend Extreme  |
| Public - exp  | AR 97044-10-2 | SR                 | Dividend Extreme          | Kaltenberg        | KW 69     | SR                 | Dividend Extreme  |
| Agripro Coker | Branson       | SR                 | Dividend Extreme; Cruiser | Kaltenberg        | KW 70     | SR                 | Dividend Extreme  |
| Agripro Coker | Cooper        | SR                 | Dividend Extreme; Cruiser | Pioneer           | 25R47     | SR                 | Dividend Extreme  |
| Agripro Coker | W 1377        | SR                 | Dividend Extreme; Cruiser | Pioneer           | 25R51     | SR                 | Dividend Extreme  |
| Diener        | D 493 W       | SR                 | Dividend Extreme          | Pioneer           | 25R56     | SR                 | Dividend Extreme  |
| Diener        | D 495 W       | SR                 | Dividend Extreme          | Pioneer           | 25R62     | SR                 | Dividend Extreme  |
| Diener        | D 502 W       | SR                 | Dividend Extreme          | PIP               | 701       | SR                 | Charter           |
| Diener        | D 511 W       | SR                 | Dividend Extreme          | PIP               | 720       | SR                 | Charter           |
| Diener        | XW 70         | SR                 | Dividend Extreme          | PIP               | 721       | SR                 | Charter           |
| Dyna-Gro      | DG 404        | SR                 | Raxil XT                  | PIP               | 760       | SR                 | Charter           |
| Dyna-Gro      | DG 410        | SR                 | Raxil XT                  | Pro Seed Genetics | PRO 200   | SR                 | Dividend Extreme  |
| Dyna-Gro      | DG 421        | SR                 | Raxil XT                  | Pro Seed Genetics | PRO 220   | SR                 | Dividend Extreme  |
| Growmark      | FS 628        | SR                 | Dividend Extreme          | Pro Seed Genetics | PRO 240   | SR                 | Dividend Extreme  |
| Growmark      | FS 637        | SR                 | Dividend Extreme          | Pro Seed Genetics | PRO Ex260 | SR                 | Dividend Extreme  |
| Growmark      | FS 8309       | SR                 | Dividend Extreme          | Pro Seed Genetics | PRO Ex280 | SR                 | Dividend Extreme  |
| Growmark      | FS W08-1      | SR                 | Dividend Extreme          | Seed-Link         | ACS 55017 | HR                 | Dividend Extreme  |
| Jung          | 5804          | SR                 | Raxil XT                  | Welter            | Excel 442 | SR                 | Raxil XT; Cruiser |
| Jung          | 5932          | SR                 | Raxil XT                  |                   |           |                    |                   |
| Jung          | 5988          | SR                 | Raxil XT                  |                   |           |                    |                   |

<sup>a</sup> Class: SR = soft red winter wheat, HR = hard red winter wheat

Table 4. COMBINED PERFORMANCE of winter wheat varieties in Wisconsin (2007–2008)

| Brand                 | Entry               | 2008 means |          |       |                        |                             | - Janesville - |          | - Lancaster - |          | - Chilton - |          | 2-year mean yield |
|-----------------------|---------------------|------------|----------|-------|------------------------|-----------------------------|----------------|----------|---------------|----------|-------------|----------|-------------------|
|                       |                     | Yield      | Test wt. | Ht.   | Lodg- ing <sup>a</sup> | Powdery mildew <sup>b</sup> | Yield          | Test wt. | Yield         | Test wt. | Yield       | Test wt. |                   |
|                       |                     | (bu/a)     | (lb/bu)  | (in.) | (0–9)                  | (%)                         | (bu/a)         | (lb/bu)  | (bu/a)        | (lb/bu)  | (bu/a)      | (lb/bu)  | (bu/a)            |
| Public                | Hopewell            | 65         | 55.2     | 34    | 0                      | 8                           | 65             | 54.8     | 54            | 52.2     | 76          | 58.5     | 71                |
|                       | Kaskaskia           | 72         | 58.5     | 37    | 2                      | 47                          | 85             | 58.7     | 63            | 56.9     | 69          | 60.0     | 75                |
|                       | Truman <sup>c</sup> | 69         | 56.9     | 32    | 1                      | 35                          | 69             | 56.2     | 55            | 54.5     | 84          | 59.9     | 78                |
|                       | Sunburst            | *81        | 59.7     | 31    | 0                      | 0                           | 77             | 59.2     | 69            | 57.1     | *96         | 62.7     |                   |
| Public - exp          | IL 01-11934         | *83        | 58.1     | 33    | 1                      | 3                           | 88             | 57.3     | 70            | 56.7     | 92          | 60.1     |                   |
|                       | IL 02-23168         | *79        | 58.7     | 34    | 3                      | 20                          | 77             | 57.9     | 68            | 57.4     | 92          | 60.7     |                   |
|                       | OH 02-7217          | 69         | 56.2     | 36    | 0                      | 4                           | 66             | 55.6     | 63            | 54.0     | 77          | 59.2     |                   |
|                       | VA 03W-409          | 74         | 55.4     | 29    | 0                      | 2                           | 73             | 54.7     | 65            | 53.2     | 85          | 58.5     | 78                |
|                       | AR 97044-10-2       | 71         | 56.5     | 36    | 1                      | 38                          | 71             | 55.9     | 60            | 54.5     | 82          | 59.1     |                   |
| Agripro Coker         | Branson             | *83        | 56.4     | 33    | 1                      | 1                           | 80             | 55.7     | 70            | 54.9     | *98         | 58.6     | 82                |
|                       | Cooper              | *81        | 56.7     | 33    | 0                      | 14                          | 74             | 56.0     | *75           | 54.6     | 95          | 59.5     |                   |
|                       | W 1377              | 77         | 58.8     | 36    | 2                      | 30                          | 72             | 57.5     | 65            | 57.5     | 94          | 61.5     | 81                |
| Diener                | D 493 W             | 69         | 54.0     | 35    | 1                      | 29                          | 57             | 50.9     | 60            | 52.6     | 90          | 58.4     | 75                |
|                       | D 495 W             | 78         | 58.2     | 33    | 2                      | 12                          | 80             | 58.0     | 69            | 56.4     | 84          | 60.3     |                   |
|                       | D 502 W             | *82        | 55.8     | 37    | 2                      | 18                          | 81             | 55.1     | 65            | 53.2     | *100        | 59.0     | 80                |
|                       | D 511 W             | 73         | 55.8     | 32    | 1                      | 10                          | 67             | 55.0     | 70            | 53.4     | 82          | 59.0     |                   |
|                       | XW 70               | *81        | 58.4     | 34    | 1                      | 10                          | 82             | 58.2     | 67            | 56.9     | 93          | 60.0     |                   |
| Dyna-Gro              | DG 404              | *79        | 56.1     | 36    | 1                      | 30                          | 76             | 54.8     | 59            | 54.1     | *102        | 59.3     |                   |
|                       | DG 410              | 77         | 57.3     | 38    | 2                      | 38                          | 85             | 56.9     | 71            | 55.9     | 76          | 59.2     | 76                |
|                       | DG 421              | *79        | 57.7     | 33    | 1                      | 7                           | 78             | 57.4     | 69            | 56.4     | 90          | 59.3     | 79                |
| Growmark              | FS 628              | 77         | 55.9     | 36    | 2                      | 18                          | 79             | 54.9     | 65            | 53.9     | 88          | 58.8     | 81                |
|                       | FS 637              | *81        | 56.8     | 34    | 0                      | 19                          | 70             | 54.7     | 68            | 55.2     | *106        | 60.4     | *84               |
|                       | FS 8309             | *79        | 57.3     | 35    | 1                      | 21                          | 82             | 55.9     | 66            | 56.1     | 89          | 60.0     | 82                |
|                       | FS W08-1            | 77         | 55.8     | 33    | 3                      | 26                          | 72             | 54.4     | 63            | 53.7     | *97         | 59.4     |                   |
| Jung                  | 5804                | *81        | 58.3     | 33    | 2                      | 7                           | 84             | 57.9     | 67            | 56.4     | 93          | 60.7     | 80                |
|                       | 5932                | 77         | 56.4     | 32    | 2                      | 17                          | 78             | 55.1     | 65            | 54.9     | 88          | 59.2     | 79                |
|                       | 5988                | *88        | 57.0     | 36    | 2                      | 17                          | *98            | 57.0     | 62            | 54.5     | *104        | 59.6     | *85               |
| Kaltenberg            | KW 51               | *80        | 58.1     | 34    | 2                      | 9                           | 84             | 58.0     | 67            | 55.8     | 88          | 60.5     | 77                |
|                       | KW 55               | 75         | 56.8     | 37    | 1                      | 39                          | 72             | 55.9     | 63            | 55.1     | 89          | 59.5     | 77                |
|                       | KW 60               | *85        | 56.7     | 36    | 2                      | 11                          | *98            | 56.9     | 63            | 54.5     | 93          | 58.8     | *84               |
|                       | KW 62               | *79        | 55.7     | 38    | 1                      | 16                          | 79             | 55.4     | 60            | 52.6     | *98         | 59.1     | 81                |
|                       | KW 63               | 77         | 56.9     | 35    | 0                      | 13                          | 72             | 54.7     | 69            | 55.1     | 90          | 60.8     | 81                |
|                       | KW 66               | 78         | 56.9     | 34    | 2                      | 10                          | 79             | 55.2     | 67            | 55.1     | 89          | 60.3     |                   |
|                       | KW 67               | *84        | 56.0     | 36    | 2                      | 39                          | *94            | 55.4     | 70            | 53.9     | 87          | 58.6     |                   |
|                       | KW 68               | 74         | 54.1     | 35    | 1                      | 30                          | 67             | 52.0     | 64            | 52.7     | 92          | 57.7     |                   |
|                       | KW 69               | 75         | 57.2     | 34    | 3                      | 21                          | 80             | 57.3     | 61            | 53.9     | 84          | 60.3     |                   |
|                       | KW 70               | *81        | 57.1     | 32    | 1                      | 11                          | 85             | 56.7     | 69            | 55.8     | 88          | 58.9     |                   |
| Pioneer               | 25R47               | *86        | 56.2     | 33    | 0                      | 17                          | 87             | 54.6     | 72            | 55.0     | *99         | 58.9     | *89               |
|                       | 25R51               | *88        | 56.3     | 34    | 0                      | 24                          | 88             | 55.4     | *79           | 54.4     | *96         | 59.1     | *87               |
|                       | 25R56               | *79        | 55.9     | 34    | 1                      | 37                          | 75             | 53.9     | 67            | 53.6     | 95          | 60.2     | 82                |
|                       | 25R62               | *86        | 53.7     | 33    | 0                      | 16                          | 74             | 52.1     | 71            | 51.7     | *112        | 57.3     |                   |
| PIP                   | 701                 | 77         | 55.2     | 37    | 2                      | 7                           | 77             | 54.8     | 61            | 52.2     | 92          | 58.6     |                   |
|                       | 720                 | *80        | 56.2     | 35    | 0                      | 11                          | 71             | 54.2     | *76           | 54.2     | 94          | 60.2     |                   |
|                       | 721                 | 72         | 56.4     | 33    | 2                      | 30                          | 72             | 55.5     | 69            | 54.3     | 74          | 59.4     |                   |
|                       | 760                 | *85        | 57.0     | 35    | 3                      | 13                          | *94            | 56.9     | 67            | 54.7     | 94          | 59.5     |                   |
| Pro Seed Genetics     | PRO 200             | *79        | 58.0     | 35    | 3                      | 15                          | 84             | 57.2     | 62            | 55.8     | 91          | 61.0     | 80                |
|                       | PRO 220             | 68         | 58.8     | 36    | 3                      | 48                          | 75             | 58.7     | 56            | 56.8     | 74          | 60.9     | 74                |
|                       | PRO 240             | 77         | 56.4     | 37    | 1                      | 22                          | 74             | 54.8     | 66            | 55.8     | 92          | 58.8     | 81                |
|                       | PRO Ex260           | 75         | 56.1     | 36    | 1                      | 21                          | 75             | 54.9     | 63            | 53.9     | 88          | 59.7     |                   |
|                       | PRO Ex280           | *79        | 58.8     | 34    | 1                      | 17                          | 86             | 58.4     | 68            | 57.1     | 84          | 61.0     |                   |
| Seed-Link             | ACS 55017           | 71         | 58.2     | 35    | 1                      | 19                          | 75             | 57.2     | 62            | 56.5     | 77          | 61.0     |                   |
| Welter                | Excel 442           | *83        | 56.2     | 38    | 2                      | 36                          | 83             | 55.6     | *73           | 54.4     | 92          | 58.8     |                   |
| Mean                  |                     | 78         | 56.8     | 35    | 1                      | 19                          | 78             | 55.9     | 66            | 54.8     | 89          | 59.7     | 80                |
| LSD(.10) <sup>d</sup> |                     | 9          | 1.1      | 2     | 1                      | 20                          | 8              | 0.7      | 6             | 1.2      | 16          | 1.1      | 6                 |

\*Varieties not significantly different (0.10 level) from the highest yielding cultivar.

<sup>a</sup> Lodging rankings are based on the Belgian Lodging System. Values are rounded to whole numbers (0 = none, 9 = severe).

<sup>b</sup> Incidence of powdery mildew (% plants infected at June disease assessment).

<sup>c</sup> Truman plots were reseeded at Lancaster and Chilton due to poor seed quality.

<sup>d</sup> The LSD (least significant difference) figures are a statistical measure of variation within the trial. If the differences between two varieties is equal to or greater than the LSD, then the values are significantly different. If the difference is less than the LSD, then the value difference may have been due to other factors.

Table 5. JANESVILLE SITE—winter wheat performance details (2007–2008)

| Brand                 | Entry         | Yield  | Test weight | Height | Lodging <sup>a</sup> | Sep-toria <sup>b</sup> | Powdery mildew <sup>b</sup> | - Leaf rust <sup>c</sup> - F | - F-1 | 2007 yield | 2-yr mean yield |
|-----------------------|---------------|--------|-------------|--------|----------------------|------------------------|-----------------------------|------------------------------|-------|------------|-----------------|
|                       |               | (bu/a) | (lb/bu)     | (in.)  | (0–9)                | (%)                    | (%)                         | (%)                          | (%)   | (bu/a)     | (bu/a)          |
| Public                | Hopewell      | 65     | 54.8        | 34     | 0                    | 100                    | 0                           | 6                            | 9     | 75         | 70              |
|                       | Kaskaskia     | 85     | 58.7        | 37     | 3                    | 83                     | 18                          | 0                            | 0     | 74         | 80              |
|                       | Truman        | 69     | 56.2        | 33     | 2                    | 90                     | 3                           | 2                            | 4     | 79         | 74              |
|                       | Sunburst      | 77     | 59.2        | 30     | 0                    | 78                     | 0                           | 0                            | 0     |            |                 |
| Public - exp          | IL 01-11934   | 88     | 57.3        | 32     | 1                    | 100                    | 0                           | 0                            | 1     |            |                 |
|                       | IL 02-23168   | 77     | 57.9        | 33     | 3                    | 93                     | 0                           | 0                            | 0     |            |                 |
|                       | OH 02-7217    | 66     | 55.6        | 37     | 0                    | 100                    | 0                           | 2                            | 5     |            |                 |
|                       | VA 03W-409    | 73     | 54.7        | 30     | 0                    | 68                     | 0                           | 0                            | 0     | 75         | 74              |
|                       | AR 97044-10-2 | 71     | 55.9        | 36     | 1                    | 80                     | 0                           | 1                            | 2     |            |                 |
| Agripro Coker         | Branson       | 80     | 55.7        | 33     | 1                    | 92                     | 3                           | 2                            | 4     | 73         | 77              |
|                       | Cooper        | 74     | 56.0        | 33     | 0                    | 100                    | 0                           | 1                            | 1     |            |                 |
|                       | W 1377        | 72     | 57.5        | 34     | 1                    | 68                     | 0                           | 4                            | 7     | *89        | 81              |
| Diener                | D 493 W       | 57     | 50.9        | 33     | 1                    | 100                    | 0                           | 3                            | 4     | 79         | 68              |
|                       | D 495 W       | 80     | 58.0        | 34     | 3                    | 100                    | 0                           | 5                            | 6     |            |                 |
|                       | D 502 W       | 81     | 55.1        | 35     | 2                    | 95                     | 0                           | 4                            | 5     | 77         | 79              |
|                       | D 511 W       | 67     | 55.0        | 31     | 1                    | 93                     | 0                           | 4                            | 6     |            |                 |
|                       | XW 70         | 82     | 58.2        | 34     | 1                    | 83                     | 0                           | 0                            | 0     |            |                 |
| Dyna-Gro              | DG 404        | 76     | 54.8        | 38     | 2                    | 98                     | 0                           | 5                            | 9     |            |                 |
|                       | DG 410        | 85     | 56.9        | 39     | 3                    | 93                     | 3                           | 4                            | 4     | 75         | 80              |
|                       | DG 421        | 78     | 57.4        | 33     | 1                    | 90                     | 0                           | 2                            | 3     | 69         | 74              |
| Growmark              | FS 628        | 79     | 54.9        | 37     | 3                    | 88                     | 0                           | 5                            | 5     | 77         | 78              |
|                       | FS 637        | 70     | 54.7        | 34     | 1                    | 100                    | 0                           | 4                            | 7     | 78         | 74              |
|                       | FS 8309       | 82     | 55.9        | 35     | 1                    | 83                     | 3                           | 0                            | 0     | 81         | 82              |
|                       | FS W08-1      | 72     | 54.4        | 32     | 1                    | 88                     | 0                           | 1                            | 1     |            |                 |
| Jung                  | 5804          | 84     | 57.9        | 34     | 2                    | 88                     | 0                           | 3                            | 4     | 73         | 79              |
|                       | 5932          | 78     | 55.1        | 33     | 1                    | 98                     | 3                           | 1                            | 2     | 72         | 75              |
|                       | 5988          | *98    | 57.0        | 33     | 3                    | 93                     | 0                           | 1                            | 2     | 77         | *88             |
| Kaltenberg            | KW 51         | 84     | 58.0        | 35     | 3                    | 100                    | 0                           | 5                            | 7     | 73         | 79              |
|                       | KW 55         | 72     | 55.9        | 39     | 1                    | 93                     | 3                           | 3                            | 4     | 72         | 72              |
|                       | KW 60         | *98    | 56.9        | 35     | 3                    | 88                     | 0                           | 1                            | 3     | 77         | *88             |
|                       | KW 62         | 79     | 55.4        | 38     | 1                    | 100                    | 0                           | 3                            | 4     | 76         | 78              |
|                       | KW 63         | 72     | 54.7        | 36     | 0                    | 95                     | 0                           | 11                           | 13    | 81         | 77              |
|                       | KW 66         | 79     | 55.2        | 32     | 3                    | 100                    | 0                           | 3                            | 8     |            |                 |
|                       | KW 67         | *94    | 55.4        | 36     | 2                    | 90                     | 3                           | 3                            | 3     |            |                 |
|                       | KW 68         | 67     | 52.0        | 34     | 1                    | 98                     | 0                           | 6                            | 10    |            |                 |
|                       | KW 69         | 80     | 57.3        | 34     | 3                    | 88                     | 5                           | 2                            | 3     |            |                 |
|                       | KW 70         | 85     | 56.7        | 33     | 0                    | 85                     | 0                           | 0                            | 0     |            |                 |
| Pioneer               | 25R47         | 87     | 54.6        | 34     | 0                    | 83                     | 0                           | 1                            | 1     | *94        | *91             |
|                       | 25R51         | 88     | 55.4        | 32     | 0                    | 88                     | 0                           | 0                            | 0     | *87        | *88             |
|                       | 25R56         | 75     | 53.9        | 34     | 0                    | 95                     | 5                           | 0                            | 1     | 80         | 78              |
|                       | 25R62         | 74     | 52.1        | 32     | 0                    | 98                     | 0                           | 5                            | 8     |            |                 |
| PIP                   | 701           | 77     | 54.8        | 37     | 1                    | 98                     | 0                           | 3                            | 5     |            |                 |
|                       | 720           | 71     | 54.2        | 35     | 0                    | 88                     | 0                           | 4                            | 5     |            |                 |
|                       | 721           | 72     | 55.5        | 33     | 2                    | 95                     | 0                           | 0                            | 2     |            |                 |
|                       | 760           | *94    | 56.9        | 35     | 5                    | 83                     | 0                           | 0                            | 1     |            |                 |
| Pro Seed Genetics     | PRO 200       | 84     | 57.2        | 36     | 3                    | 98                     | 3                           | 0                            | 1     | 79         | 82              |
|                       | PRO 220       | 75     | 58.7        | 37     | 3                    | 95                     | 13                          | 2                            | 2     | 81         | 78              |
|                       | PRO 240       | 74     | 54.8        | 36     | 2                    | 100                    | 3                           | 3                            | 6     | 79         | 77              |
|                       | PRO Ex260     | 75     | 54.9        | 35     | 2                    | 85                     | 0                           | 1                            | 2     |            |                 |
|                       | PRO Ex280     | 86     | 58.4        | 35     | 1                    | 83                     | 0                           | 0                            | 0     |            |                 |
| Seed-Link             | ACS 55017     | 75     | 57.2        | 34     | 1                    | 75                     | 0                           | 0                            | 0     |            |                 |
| Welter                | Excel 442     | 83     | 55.6        | 38     | 1                    | 90                     | 0                           | 1                            | 2     |            |                 |
| Mean                  |               | 78     | 55.9        | 34     | 1                    | 91                     | 1                           | 2                            | 3     | 76         | 78              |
| LSD(.10) <sup>d</sup> |               | 8      | 0.7         | 2      | 1                    | 16                     | 6                           | 3                            | 4     | 8          | 7               |

\* Varieties not significantly different (0.10 level) from the highest yielding cultivar.

<sup>a</sup> Lodging rankings are based on the Belgian Lodging System. Values are rounded to whole numbers (0 = none, 9 = severe).

<sup>b</sup> Disease incidence (% plants infected at June 25 disease assessment).

<sup>c</sup> Leaf rust severity (% leaf area covered at June 25 disease assessment): F = flag leaf, F-1 = leaf directly preceding flag leaf.

<sup>d</sup> The LSD (least significant difference) figures are a statistical measure of variation within the trial. If the differences between two varieties is equal to or greater than the LSD, then the values are significantly different. If the difference is less than the LSD, then the value difference may have been due to other factors.



Table 6. LANCASTER SITE—winter wheat performance details (2007–2008)

| Brand                 | Entry               | Yield  | Test weight | Height | Lodging <sup>a</sup> | Powdery mildew <sup>b</sup> | —Leaf rust—<br>F F-1 | Head scab <sup>d</sup> | 2007 yield <sup>c</sup> | 2-yr mean yield |
|-----------------------|---------------------|--------|-------------|--------|----------------------|-----------------------------|----------------------|------------------------|-------------------------|-----------------|
|                       |                     | (bu/a) | (lb/bu)     | (in.)  | (0–9)                | (%)                         | (%) (%)              | (0–100)                | (bu/a)                  | (bu/a)          |
| Public                | Hopewell            | 54     | 52.2        | 36     | 0                    | 0                           | 3 7                  | 2.3                    | 76                      | 65              |
|                       | Kaskaskia           | 63     | 56.9        | 39     | 2                    | 48                          | 0 0                  | 2.9                    | 83                      | 73              |
|                       | Truman <sup>f</sup> | 55     | 54.5        | 33     | 1                    | 10                          | 0 1                  | 0.7                    | *96                     | 76              |
|                       | Sunburst            | 69     | 57.1        | 31     | 0                    | 0                           | 0 0                  | 0.9                    |                         |                 |
| Public - exp          | IL 01-11934         | 70     | 56.7        | 34     | 2                    | 3                           | 1 2                  | 0.6                    |                         |                 |
|                       | IL 02-23168         | 68     | 57.4        | 35     | 3                    | 3                           | 0 0                  | 1.3                    |                         |                 |
|                       | OH 02-7217          | 63     | 54.0        | 38     | 1                    | 0                           | 9 14                 | 3.2                    |                         |                 |
|                       | VA 03W-409          | 65     | 53.2        | 31     | 0                    | 3                           | 0 0                  | 3.0                    | *96                     | *81             |
|                       | AR 97044-10-2       | 60     | 54.5        | 38     | 0                    | 53                          | 0 0                  | 1.9                    |                         |                 |
|                       | Branson             | 70     | 54.9        | 33     | 2                    | 0                           | 0 0                  | 2.1                    | *94                     | *82             |
| Agripro Coker         | Cooper              | *75    | 54.6        | 35     | 1                    | 0                           | 0 0                  | 1.7                    |                         |                 |
|                       | W 1377              | 65     | 57.5        | 38     | 1                    | 8                           | 0 0                  | 2.5                    | *90                     | *78             |
|                       | D 493 W             | 60     | 52.6        | 37     | 1                    | 13                          | 0 0                  | 4.3                    | *94                     | 77              |
| Diener                | D 495 W             | 69     | 56.4        | 35     | 3                    | 3                           | 0 0                  | 1.2                    |                         |                 |
|                       | D 502 W             | 65     | 53.2        | 39     | 2                    | 5                           | 0 0                  | 3.0                    | *92                     | *79             |
|                       | D 511 W             | 70     | 53.4        | 34     | 0                    | 8                           | 0 0                  | 0.7                    |                         |                 |
|                       | XW 70               | 67     | 56.9        | 37     | 1                    | 0                           | 0 0                  | 1.7                    |                         |                 |
| Dyna-Gro              | DG 404              | 59     | 54.1        | 39     | 1                    | 3                           | 0 1                  | 5.3                    |                         |                 |
|                       | DG 410              | 71     | 55.9        | 38     | 1                    | 25                          | 0 0                  | 2.8                    | 81                      | 76              |
|                       | DG 421              | 69     | 56.4        | 37     | 2                    | 5                           | 0 1                  | 1.5                    | *87                     | *78             |
| Growmark              | FS 628              | 65     | 53.9        | 38     | 2                    | 0                           | 1 2                  | 6.7                    | *100                    | *83             |
|                       | FS 637              | 68     | 55.2        | 36     | 1                    | 5                           | 0 0                  | 3.8                    | *95                     | *82             |
|                       | FS 8309             | 66     | 56.1        | 37     | 0                    | 0                           | 1 3                  | 1.8                    | 86                      | 76              |
|                       | FS W08-1            | 63     | 53.7        | 35     | 3                    | 0                           | 0 1                  | 1.7                    |                         |                 |
| Jung                  | 5804                | 67     | 56.4        | 35     | 2                    | 5                           | 0 1                  | 1.2                    | *90                     | *79             |
|                       | 5932                | 65     | 54.9        | 32     | 3                    | 3                           | 0 0                  | 1.8                    | *91                     | *78             |
|                       | 5988                | 62     | 54.5        | 38     | 1                    | 0                           | 0 0                  | 2.4                    | 84                      | 73              |
| Kaltenberg            | KW 51               | 67     | 55.8        | 37     | 2                    | 5                           | 0 0                  | 1.5                    | 86                      | 77              |
|                       | KW 55               | 63     | 55.1        | 38     | 1                    | 15                          | 1 1                  | 1.7                    | *87                     | 75              |
|                       | KW 60               | 63     | 54.5        | 39     | 3                    | 8                           | 0 0                  | 7.5                    | *91                     | 77              |
|                       | KW 62               | 60     | 52.6        | 39     | 2                    | 5                           | 0 1                  | 2.9                    | *92                     | 76              |
|                       | KW 63               | 69     | 55.1        | 38     | 0                    | 0                           | 0 0                  | 2.7                    | *95                     | *82             |
|                       | KW 66               | 67     | 55.1        | 39     | 3                    | 0                           | 0 2                  | 3.2                    |                         |                 |
|                       | KW 67               | 70     | 53.9        | 40     | 2                    | 33                          | 0 1                  | 1.7                    |                         |                 |
|                       | KW 68               | 64     | 52.7        | 38     | 0                    | 8                           | 0 0                  | 8.9                    |                         |                 |
|                       | KW 69               | 61     | 53.9        | 35     | 3                    | 20                          | 2 3                  | 1.5                    |                         |                 |
|                       | KW 70               | 69     | 55.8        | 34     | 1                    | 3                           | 1 1                  | 0.7                    |                         |                 |
|                       | 25R47               | 72     | 55.0        | 35     | 0                    | 0                           | 0 0                  | 2.1                    | *91                     | *82             |
| Pioneer               | 25R51               | *79    | 54.4        | 36     | 1                    | 10                          | 0 0                  | 2.1                    | *91                     | *85             |
|                       | 25R56               | 67     | 53.6        | 34     | 0                    | 13                          | 0 0                  | 2.5                    | 83                      | 75              |
|                       | 25R62               | 71     | 51.7        | 36     | 0                    | 8                           | 0 2                  | 1.6                    |                         |                 |
|                       | 701                 | 61     | 52.2        | 39     | 2                    | 0                           | 0 0                  | 2.3                    |                         |                 |
| PIP                   | 720                 | *76    | 54.2        | 37     | 1                    | 0                           | 0 0                  | 3.9                    |                         |                 |
|                       | 721                 | 69     | 54.3        | 34     | 2                    | 23                          | 0 0                  | 1.4                    |                         |                 |
|                       | 760                 | 67     | 54.7        | 38     | 2                    | 0                           | 0 0                  | 1.5                    |                         |                 |
|                       | PRO 200             | 62     | 55.8        | 36     | 3                    | 13                          | 0 0                  | 1.8                    | 86                      | 74              |
| Pro Seed Genetics     | PRO 220             | 56     | 56.8        | 37     | 3                    | 58                          | 0 0                  | 1.7                    | 78                      | 67              |
|                       | PRO 240             | 66     | 55.8        | 40     | 1                    | 0                           | 1 2                  | 3.4                    | *90                     | *78             |
|                       | PRO Ex260           | 63     | 53.9        | 38     | 1                    | 0                           | 0 0                  | 2.2                    |                         |                 |
|                       | PRO Ex280           | 68     | 57.1        | 37     | 0                    | 0                           | 0 0                  | 1.4                    |                         |                 |
|                       | ACS 55017           | 62     | 56.5        | 38     | 0                    | 13                          | 0 1                  | 1.1                    |                         |                 |
| Seed-Link             | Welter              | *73    | 54.4        | 40     | 2                    | 37                          | 0 0                  | 1.5                    |                         |                 |
| Mean                  |                     | 66     | 54.8        | 36     | 1                    | 9                           | 0 1                  | 2.4                    | 85                      | 77              |
| LSD(.10) <sup>g</sup> |                     | 6      | 1.2         | 2      | 1                    | 16                          | 1 1                  | 3.2                    | 13                      | 7               |

\* Varieties not significantly different (0.10 level) from the highest yielding cultivar.

<sup>a</sup> Lodging rankings are based on the Belgian Lodging System. Values are rounded to whole numbers (0 = none, 9 = severe).

<sup>b</sup> Disease incidence (% plants infected at June 11 disease assessment).

<sup>c</sup> Leaf rust severity (% leaf area covered at June 11 disease assessment): F = flag leaf, F-1 = leaf directly preceding flag leaf.

<sup>d</sup> Fusarium head blight (head scab) index: 0 = no disease, 100 = complete infection.

<sup>e</sup> Data for 2007 from previous southern Wisconsin site (Racine).

<sup>f</sup> Truman plots were reseeded due to poor seed quality.

<sup>g</sup> The LSD (least significant difference) figures are a statistical measure of variation within the trial. If the differences between two varieties is equal to or greater than the LSD, then the values are significantly different. If the difference is less than the LSD, then the value difference may have been due to other factors.

Table 7. CHILTON SITE—winter wheat performance details (2007–2008)

| Brand                 | Entry               | Yield    | Test weight | Height | Lodging <sup>a</sup> | Powdery mildew <sup>b</sup> | 2007 yield | 2-yr mean yield |
|-----------------------|---------------------|----------|-------------|--------|----------------------|-----------------------------|------------|-----------------|
|                       |                     | (bu / a) | (lb / bu)   | (in.)  | (0–9)                | (%)                         | (bu / a)   | (bu / a)        |
| Public                | Hopewell            | 76       | 58.5        | 32     | 0                    | 23                          | 77         | 77              |
|                       | Kaskaskia           | 69       | 60.0        | 34     | 1                    | 77                          | 74         | 72              |
|                       | Truman <sup>c</sup> | 84       | 59.9        | 30     | 1                    | 93                          | *84        | 84              |
|                       | Sunburst            | *96      | 62.7        | 31     | 0                    | 0                           |            |                 |
| Public - exp          | IL 01-11934         | 92       | 60.1        | 35     | 0                    | 7                           |            |                 |
|                       | IL 02-23168         | 92       | 60.7        | 33     | 2                    | 57                          |            |                 |
|                       | OH 02-7217          | 77       | 59.2        | 34     | 0                    | 13                          |            |                 |
|                       | VA 03W-409          | 85       | 58.5        | 27     | 1                    | 3                           | 73         | 79              |
|                       | AR 97044-10-2       | 82       | 59.1        | 34     | 1                    | 60                          |            |                 |
| Agripro Coker         | Branson             | *98      | 58.6        | 32     | 2                    | 0                           | 76         | *87             |
|                       | Cooper              | 95       | 59.5        | 32     | 0                    | 43                          |            |                 |
|                       | W 1377              | 94       | 61.5        | 34     | 2                    | 83                          | 73         | 84              |
| Diener                | D 493 W             | 90       | 58.4        | 34     | 1                    | 73                          | 71         | 81              |
|                       | D 495 W             | 84       | 60.3        | 30     | 1                    | 33                          |            |                 |
|                       | D 502 W             | *100     | 59.0        | 37     | 3                    | 50                          | 66         | 83              |
|                       | D 511 W             | 82       | 59.0        | 30     | 1                    | 23                          |            |                 |
|                       | XW 70               | 93       | 60.0        | 31     | 0                    | 30                          |            |                 |
| Dyna-Gro              | DG 404              | *102     | 59.3        | 32     | 2                    | 87                          |            |                 |
|                       | DG 410              | 76       | 59.2        | 36     | 2                    | 87                          | 68         | 72              |
|                       | DG 421              | 90       | 59.3        | 30     | 1                    | 17                          | *80        | 85              |
| Growmark              | FS 628              | 88       | 58.8        | 35     | 1                    | 53                          | 74         | 81              |
|                       | FS 637              | *106     | 60.4        | 31     | 0                    | 53                          | *84        | *95             |
|                       | FS 8309             | 89       | 60.0        | 34     | 1                    | 60                          | *85        | *87             |
|                       | FS W08-1            | *97      | 59.4        | 31     | 3                    | 77                          |            |                 |
| Jung                  | 5804                | 93       | 60.7        | 30     | 2                    | 17                          | 73         | 83              |
|                       | 5932                | 88       | 59.2        | 32     | 2                    | 47                          | 77         | 83              |
|                       | 5988                | *104     | 59.6        | 37     | 1                    | 50                          | *85        | *95             |
| Kaltenberg            | KW 51               | 88       | 60.5        | 31     | 1                    | 23                          | 59         | 74              |
|                       | KW 55               | 89       | 59.5        | 33     | 2                    | 100                         | *81        | 85              |
|                       | KW 60               | 93       | 58.8        | 34     | 1                    | 27                          | *82        | *88             |
|                       | KW 62               | *98      | 59.1        | 38     | 1                    | 43                          | *81        | *90             |
|                       | KW 63               | 90       | 60.8        | 33     | 0                    | 40                          | 77         | 84              |
|                       | KW 66               | 89       | 60.3        | 32     | 2                    | 30                          |            |                 |
|                       | KW 67               | 87       | 58.6        | 32     | 2                    | 83                          |            |                 |
|                       | KW 68               | 92       | 57.7        | 34     | 1                    | 83                          |            |                 |
|                       | KW 69               | 84       | 60.3        | 34     | 3                    | 37                          |            |                 |
|                       | KW 70               | 88       | 58.9        | 31     | 1                    | 30                          |            |                 |
| Pioneer               | 25R47               | *99      | 58.9        | 31     | 1                    | 50                          | *86        | *93             |
|                       | 25R51               | *96      | 59.1        | 34     | 0                    | 63                          | *79        | *88             |
|                       | 25R56               | 95       | 60.2        | 33     | 1                    | 93                          | *89        | *92             |
|                       | 25R62               | *112     | 57.3        | 30     | 0                    | 40                          |            |                 |
| PIP                   | 701                 | 92       | 58.6        | 36     | 2                    | 20                          |            |                 |
|                       | 720                 | 94       | 60.2        | 33     | 0                    | 33                          |            |                 |
|                       | 721                 | 74       | 59.4        | 32     | 2                    | 67                          |            |                 |
|                       | 760                 | 94       | 59.5        | 32     | 1                    | 40                          |            |                 |
| Pro Seed Genetics     | PRO 200             | 91       | 61.0        | 34     | 1                    | 30                          | 74         | 83              |
|                       | PRO 220             | 74       | 60.9        | 35     | 3                    | 73                          | *79        | 77              |
|                       | PRO 240             | 92       | 58.8        | 35     | 1                    | 63                          | *82        | *87             |
|                       | PRO Ex260           | 88       | 59.7        | 35     | 0                    | 63                          |            |                 |
|                       | PRO Ex280           | 84       | 61.0        | 31     | 1                    | 50                          |            |                 |
| Seed-Link             | ACS 55017           | 77       | 61.0        | 35     | 1                    | 43                          |            |                 |
| Welter                | Excel 442           | 92       | 58.8        | 35     | 2                    | 70                          |            |                 |
| Mean                  |                     | 89       | 59.7        | 33     | 1                    | 47                          | 76         | 84              |
| LSD(.10) <sup>d</sup> |                     | 16       | 1.1         | 3      | 1                    | 30                          | 10         | 9               |

\* Varieties not significantly different (0.10 level) from the highest yielding cultivar.

<sup>a</sup> Lodging rankings are based on the Belgian Lodging System. Values are rounded to whole numbers (0 = none, 9 = severe).

<sup>b</sup> Disease incidence (% plants infected at June 9 disease assessment).

<sup>c</sup> Truman plots were reseeded due to poor seed quality.

<sup>d</sup> The LSD (least significant difference) figures are a statistical measure of variation within the trial. If the differences between two varieties is equal to or greater than the LSD, then the values are significantly different. If the difference is less than the LSD, then the value difference may have been due to other factors.

## ADDITIONAL INFORMATION

Check the following publications for additional information on small grain production and seed availability. Both are updated annually.

*Pest Management in Wisconsin Field Crops* (A3646)—available at [learningstore.uwex.edu](http://learningstore.uwex.edu).

*The Wisconsin Certified Seed Directory*—available at [www.wisc.edu/wcia](http://www.wisc.edu/wcia).

For information on seed availability of public varieties, contact the Wisconsin Crop Improvement Association, 554 Moore Hall, 1575 Linden Drive, Madison, WI 53706, (608) 262-1341, [www.wisc.edu/wcia](http://www.wisc.edu/wcia).

To access crop performance testing information electronically, visit [www.coolbean.info](http://www.coolbean.info).



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