

**UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH SERVICE**

**in cooperation with**

**STATE AGRICULTURAL EXPERIMENT STATIONS**

**Report on Hard Red Spring Wheat Varieties Grown in Cooperative Plot and  
Nursery Experiments in the Spring Wheat Region in 2005**

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This is a joint progress report of cooperative investigations underway in the State Agricultural Experiment Stations and the Agricultural Research Service of the U.S. Department of Agriculture. It contains preliminary data which have not been sufficiently confirmed to justify general release, and interpretations may be modified after additional experimentation. Confirmed results will be published through established channels. This report is primarily a tool for use by cooperators and their official staffs, and for those persons having direct and special interest in the development of agricultural research programs.

This report includes data furnished by the State Agricultural Experiment Stations as well as by the Agricultural Research Service of the U.S. Department of Agriculture. This report is not intended for publication and should not be referred to in literature citations, nor quoted in publicity or advertising.

Use of the data may be granted for certain purposes upon written request to the agency or agencies involved.

Agricultural Research Service  
U.S. Department of Agriculture  
Midwest Area  
St. Paul, Minnesota  
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## 2005 HARD RED SPRING WHEAT UNIFORM REGIONAL NURSERY REPORT

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## COOPERATING AGENCIES, STATIONS, AND PERSONNEL FOR THE 2005 HRSWURN

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(continued on next page)

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Powell, University of Wyoming

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WASHINGTON AGRICULTURAL EXPERIMENT STATION  
Pullman, Washington State University

K. Kidwell  
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**NEW VARIETIES PREVIOUSLY EVALUATED AS  
GERMPLASM ENTRIES IN THE HRSWURN**

**South Dakota State University**

‘Traverse’. Tested as SD3687.

**North Dakota State University**

‘Glenn’. Tested as ND 744.

**University of Minnesota**

‘Ulen’. Tested as MN97803.

**Washington State University**

‘Hollis’. Tested as WA7859.

**Agripro**

‘Kelby’. Tested as 98S0113-20.

**WestBred**

‘Bigg Red’. Tested as FA-900-720.

‘Trooper’. Tested as CA-901-735.

‘WestBred 590W’. Tested as CA-901-580W.

‘Rush’. Tested as CA-902-701.

**Agriculture and Agrifood Canada**

‘Somerset’. Tested as BW307.

‘Burnside’. Tested as ES54.

## **Entering Lines with Protected or Patented Genes into the Hard Red Spring Wheat Uniform Regional Nursery**

The following information details the Hard Winter Wheat Regional Program position on this issue. Basically, the same situation exists in the Spring Wheat Region, and it is therefore suggested that these guidelines are appropriate and thus accepted for the Hard Red Spring Wheat Uniform Regional Nursery as well, until such a time as the participants agree to deviate from it:

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### **From: Robert Graybosch, Coordinator of Hard Winter Wheat Region**

A question has arisen as to whether wheat germplasm lines carrying protected or patented genes may be entered in the HWW regional program. We have decided to allow such submissions, on a provisional basis, for the 2001 nurseries. Submissions must adhere to the provisions below, and submissions of such lines after the 2001 year will depend upon the adoption of formal guidelines. We are in the process of drafting a formal plan, hopefully one that will be approved at the 2001 Hard Winter Wheat Workers Conference.

### **Provisional plan for the submission of lines with patented or protected genes:**

**Definition: "protected" gene = a gene whose use is restricted by patents, Material Transfer Agreements, or other types of research agreements.**

Wheat lines carrying such traits may be entered in the 2001 HWW Regional nurseries (RGON, SRPN, NRPN) under the following conditions:

1. Cooperators may cross with the line in question. Thereafter, the cooperator making such crosses must either have their own research agreement with the trait owner, or, if such an agreement is lacking, they must remove the trait from breeding populations by selection.
2. The owner of the trait has been informed of the submission, and that they agree to the conditions set forth in #1.
3. All other uses of the line are governed by the Wheat Workers Code of Ethics.
4. The trait may not have been inserted into the wheat genome by genetic engineering. In other words, the wheat line in question may not be transgenic.

At this point in time, transgenics may not be entered in the program. I am certain this question will arise in the near future, so I have contacted USDA-APHIS regarding this point. If you are interested in the details, the attached file contains the pertinent points of our e-mail exchange (note by HRSW coordinator: this file is not included in this report). The APHIS responses are in bold. To make a long story short - transgenic wheat lines will be allowed in the regional program only if they have been granted permanent non-regulated status. Non-regulated status is granted only after the originator files a formal petition to de-regulate a line with APHIS.

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## SPRING WHEAT PRODUCTION, 2005

***SPRING WHEAT OTHER THAN DURUM*** Growers produced an estimated 504.46 million bushels of spring wheat. This production estimate is approximately 11.7 percent lower than year 2004 production, and approximately 5 percent lower than 2003. Yield averaged 37.1 bushels per acre, a decrease of 6.1 bushels per acre from year 2004, and 2.4 bushels per acre lower than in year 2003. Area harvested totaled approximately 13.6 million acres, which is greater than the acreage harvested in 2004.

### Spring Wheat Production Statistics, 2003-2005.\*

	<u>Acres Harvested (x1000)</u>			<u>Production (x1000 Bushels)</u>			<u>Yield (Bushels/Acre)</u>		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Minnesota	1,800	1,610	1,730	104,400	88,550	70,930	58	55	41
Montana	2,750	2,850	2,550	60,500	88,350	81,600	22	31	32
North Dakota	6,400	5,950	6,600	252,800	243,950	224,400	39.5	41	34
South Dakota	1,340	1,530	1,690	56,280	71,910	67,600	42	47	40
USA	13,441	13,174	13,609	531,402	568,918	504,456	39.5	43.2	37.1

\* Source: National Agricultural Statistics Service: (<http://www.usda.gov/nass/pubs/estindx3.htm#wheats>)

## 2005 NURSERY DESCRIPTION AND SUMMARY

The Hard Red Spring Wheat Uniform Regional Nursery (HRSWURN) was planted for the 77th year in 2005. The nursery contained 34 entries submitted by 9 different scientific or industry breeding programs, and 5 checks (Table 1). Trials were conducted as randomized complete blocks with three replicates. The HRSWURN was planted at 20 locations in 7 different states in the USA (MN, ND, SD, MT, NE, WY, and WA), and two Canadian provinces (Manitoba and Saskatchewan). Eighteen locations provided data for inclusion in this report (Figure 1, Table 2). Data summaries for each of these locations are presented in Tables 3 through 20. For each location summary, entries are listed in descending order of yield. Overall means across locations for a set of core traits are summarized in Table 21, and yield rankings for individual locations are found in Table 22. Two-year means for entries previously entered in the 2004 HRSWURN are presented in Table 23. Entries were also evaluated for various diseases at different locations; these can be found by looking at individual location data summaries. Seedling and adult plant leaf rust resistance was evaluated in St. Paul, MN, and adult plant stem rust resistance was also evaluated at this location. These data are presented in Tables 24-25. Lastly, entries were evaluated in a *Fusarium* head blight nursery at St. Paul, MN; results are provided in Table 26. The highest average yielding location was Powell WY, with 103 Bu/Ac, while the lowest yielding location was Sidney, NE, with 22 Bu/Ac. The average yield for the 18 combined locations was 49.1 Bu/Ac.



**Figure 1. Hard Red SpringWheat Uniform Regional Nursery, Reporting Locations, 2005**

