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 2004

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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
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2004 HARD RED SPRING WHEAT UNIFORM REGIONAL NURSERY REPORT

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NEW VARIETIES EVALUATED AS GERMPLASM ENTRIES IN THE HRSWURN

South Dakota State University
Granger. Released in 2004. Tested as SD3546

North Dakota State University
Dapps. Released in 2003. Tested as ND 724
Steele-ND. Released in 2004. Tested as ND 741

Washington State University
Macon. Released in 2002. Tested as WA007899 (HWS wheat)
Otis. Released in 2004. Tested as WA007931 (HWS wheat)

Agripro
Freyr. Released in 2003. Tested as N99-0107
5602HR. Released in 2003. Tested as N99-2234

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:

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.

SPRING WHEAT PRODUCTION, 2004

SPRING WHEAT OTHER THAN DURUM Growers produced an estimated 573.6 million bushels (15.1 million metric tons) of spring wheat. This production estimate is approximately 7.9 percent higher than year 2003 production, and approximately 47.5 percent higher than 2002. Yield averaged 43.1 bushels per acre, an increase of 0.6 bushels per acre from year 2003, and 14 bushels per acre higher than in year 2002. Area harvested totaled approximately 13.3 million acres (5.3million hectares), which is approximately the same as the acreage harvested in 2003.

Spring Wheat Production Statistics, 2002-2004.*

	Acres Harvested (1000)			Bushels (1000)			Yield (Bu/Ac)		
	2002	2003	2004	2002	2003	2004	2002	2003	2004
Minnesota	1,800	1,800	1,630	61,200	104,400	89,650	34	58	55
Montana	3,450	2,700	2,900	75,900	60,500	89,900	22	22	31
North Dakota	5,900	6,400	6,000	165,200	252,800	246,000	28	39.5	41
South Dakota	1,000	1,340	1,530	24,000	56,280	71,910	24	42	47
USA	13,373	13,441	13,294	388,917	531,402	573,618	29.1	39.5	43.1

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

2004 NURSERY DESCRIPTION AND SUMMARY

The Hard Red Spring Wheat Uniform Regional Nursery (HRSWURN) was planted for the 76th year in 2004. The nursery contained 35 entries submitted by 8 different scientific or industry organizations, 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) (Figure 1). Seventeen locations provided data for inclusion in this report (Table 2). Data summaries for each of these locations are presented in Tables 3 through 19. 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 20, and yield rankings for individual locations are found in Table 21. Two-year means for entries previously entered in the 2003 HRSWURN are presented in Table 22. Entries were also evaluated for *Fusarium* head blight resistance in scab nurseries at St. Paul and Crookston, MN, and at Prosper, ND. Seedling leaf rust resistance was evaluated in St. Paul, MN. These data are presented in Tables 23-26. The highest average yielding location was Powell WY, with 122.1 Bu/Ac, while the lowest yielding location was Hettinger, ND, with 48.9 Bu/Ac. The average yield for the 19 combined locations was 68 Bu/Ac.

Figure 1. Hard Red SpringWheat Uniform Regional Nursery Locations, 2004