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 2007

Hard Spring Wheat Nursery Coordinator:
D.F. Garvin, Research Geneticist, USDA-ARS

Report prepared by D.F. Garvin and Z. Blankenheim

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. Accuracy of information within this report is not guaranteed by the U.S. Government.

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
December, 2007

2007 HARD RED SPRING WHEAT UNIFORM REGIONAL NURSERY REPORT

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USDA-AGRICULTURAL RESEARCH SERVICE	
National Program Leader	M.W. Simmons
Midwest Area Director	S. R. Shafer
Nursery Coordinator	
Plant Science Research Unit, St. Paul, MN	D.F. Garvin
Quality Investigations	
Cereal Crops Research Unit, Fargo, ND	G. Hareland
Disease Evaluations	
Cereal Disease Laboratory, St. Paul, MN	J. Kolmer
	Y. Jin
Wheat Genetics, Physiology, Quality, and Disease Research Unit, Pullman, WA	X. Chen
MINNESOTA AGRICULTURAL EXPERIMENT STATION	
St. Paul, University of Minnesota	
Agronomy and Plant Genetics	J. Anderson
	G. Linkert
Plant Pathology	R. Dill-Macky
Morris, West Central Experiment Station	G. Nelson
Crookston, Northwestern Experiment Station	J. Wiersma
AGRICULTURE AND AGRI-FOOD CANADA	
Winnipeg, Cereal Research Centre (Glenlea)	
Breeding and Genetics	G. Humphreys
Cereal Diseases	T. Fetch
	B. McCallum
Swift Current, Semiarid Prairie Agricultural Research Centre	R. DePauw
	D. Dahlman
NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION	
Fargo, North Dakota State University	
Agronomy	W. Berzonsky
	M. Mergoum
Hettinger Research Extension Center	E. Eriksmoen
Langdon Research Extension Center	B. Hanson
Williston Research Extension Center	N. Riveland
Carrington Research Extension Center	B. Schatz
SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION	
Brookings, South Dakota State University	K. Glover

MONTANA AGRICULTURAL EXPERIMENT STATION
Bozeman, Montana State University — L. Talbert, S. Lanning
Sidney, Eastern Ag Research Center — J. Eckhoff, D. Kunda, B. Garza

WYOMING AGRICULTURAL EXPERIMENT STATION
Powell, University of Wyoming — M. Killen

WASHINGTON AGRICULTURAL EXPERIMENT STATION
Pullman, Washington State University — K. Kidwell, G. Shelton

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, 2007

SPRING WHEAT OTHER THAN DURUM **Growers produced an estimated 479 million bushels of spring wheat. This production estimate is approximately 4 percent higher than year 2006 production. Yield averaged 37 bushels per acre, an increase of 3.8 bushels per acre from year 2006. Area harvested totaled approximately 12.95 million acres, which is 6.7% less than the acreage harvested in 2006.**

Spring Wheat Production Statistics, 2005-2007.*

	Acres Harvested (x1000)			Production (x1000 Bushels)			Yield (Bushels/Acre)		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Minnesota	1,730	1,650	1,650	70,930	77,550	77,550	41	47	47
Montana	2,550	2,900	2,400	81,600	63,800	55,200	32	22	23
North Dakota	6,600	6,850	6,500	224,400	212,350	234,000	34	31	36
South Dakota	1,690	1,420	1,340	67,600	42,600	52,260	40	30	39
USA	13,609	13,878	12,947	504,456	460,480	479,047	37.1	33.2	37

* Source: National Agricultural Statistics Service: (http://www.nass.usda.gov/Data_and_Statistics/Quick_Stats/) on 12-13-07.

2007 NURSERY DESCRIPTION AND SUMMARY

The Hard Red Spring Wheat Uniform Regional Nursery (HRSWURN) was planted for the 79th year in 2007. The nursery contained 36 entries submitted by 13 different scientific or industry breeding programs, and 5 checks (Table 1). Trials were conducted as randomized complete blocks with three replicates except where noted. The HRSWURN was planted at 19 locations in 6 different states in the USA (MN, ND, SD, MT, WY, and WA), and two Canadian provinces (Manitoba and Saskatchewan). 18 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 entered previously in the 2006 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 leaf rust resistance was evaluated in St. Paul, MN, and stripe rust evaluations were run in fields near Pullman, WA. These data are presented in Tables 24 and 25 respectively. Lastly, entries were evaluated in a *Fusarium* head blight nursery at Crookston, MN; these results are provided in Table 26. The highest average yielding location was Powell, WY with 94.7 Bu/Ac, while the lowest yielding location was Winnipeg, Canada with 25.4 Bu/Ac. The average yield for 17 combined locations where the nursery was replicated was 50 Bu/Ac.

Figure 1. Hard Red SpringWheat Uniform Regional Nursery Reporting Locations, 2007