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 2010

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

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Agricultural Research Service
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2010 HARD RED SPRING WHEAT UNIFORM REGIONAL NURSERY REPORT

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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.

U.S. SPRING WHEAT PRODUCTION, 2010

***SPRING WHEAT (OTHER THAN DURUM)*: Growers produced an estimated 626,937 million bushels of spring wheat. This production estimate is approximately 7.3 percent higher than year 2009 production. Yield averaged nearly 47 bushels per acre, an increase of 4 bushels per acre from year 2009. Area harvested totaled approximately 13.3 million acres, which is approximately 3.3% higher than the acreage harvested in 2009.**

Spring Wheat Production Statistics, 2008-2010*

	Acres Harvested (x1000)			Production (x1000 Bushels)			Yield (Bushels/Acre)		
	2008	2009	2010	2008	2009	2010	2008	2009	2010
Minnesota	1,800	1550	1,550	100,800	82,150	85,250	56	53	55
Montana	2,480	2350	2,750	59,520	70,500	104,500	24	30	38
North Dakota	6,400	6300	6,300	246,400	289,800	286,650	38.5	46	45.5
South Dakota	1,520	1470	1,410	68,400	64,680	59,220	45	44	42
USA	13,517	12,955	13,379	548,004	584,411	626,937	40.5	45	46.9

* Source: National Agricultural Statistics Service: (http://www.nass.usda.gov/QuickStats/PullData_US.jsp) on 1-05-11.

2010 NURSERY DESCRIPTION AND SUMMARY

The Hard Red Spring Wheat Uniform Regional Nursery (HRSWURN) was planted for the 82nd year in 2010. The nursery contained 32 entries submitted by 7 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 16 locations in 6 different states in the USA (MN, ND, SD, MT, WY, and WA), and two Canadian provinces (Manitoba and Saskatchewan). All locations but one provided data included in this report (Figure 1, Table 2). Data summaries for each of these locations are presented in individual tables. 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 18, and yield rankings for individual locations are found in Table 19. Two-year means for entries entered previously in the 2009 HRSWURN are presented in Table 20. Entries were also evaluated for various diseases at different locations; these can be found by looking at individual location data summaries. Leaf rust and stem resistance was evaluated in St. Paul, MN, and stripe rust evaluations were completed at two field locations in WA. These rust data are presented in Tables 21-23. Entries were evaluated in *Fusarium* head blight nurseries at Crookston and St. Paul, MN; these results are provided in Tables 24 and 25. Molecular marker genotyping for select traits was also performed; this information is presented in Table 26. The highest average yielding location was Powell, WY, with 110 Bu/Ac, while the lowest yielding location was Williston, ND, with 39 Bu/Ac.

Figure 1. Hard Red SpringWheat Uniform Regional Nursery Reporting Locations, 2010