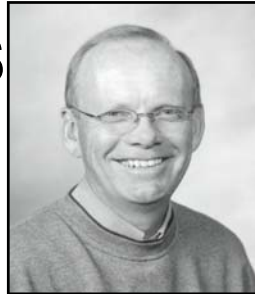


AGRONOMY NEWS

 **Grasslands for Tomorrow**

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Canada Goose Depredation Assistance Available to ND Landowners

The North Dakota Game and Fish Department, the U.S. Department of Agriculture's Wildlife Services, and the U.S. Fish and Wildlife Service will combine resources to provide North Dakota agricultural producers with the necessary tools to manage chronic crop depredation caused by Canada geese, according to Greg Link, assistant wildlife chief for the ND State Game and Fish Department.

The program, in place each spring and summer since 2002, provides landowners with equipment and technical assistance to ward off depredating Canada geese. Past efforts have shown Canada goose depredation control is most effective when a combination of techniques are used in concert: hunting seasons (extended Canada goose seasons and liberal bag limits), egg addling (destroying nests) and non-lethal treatment methods (propane cannons, pyrotechnics and electric fencing).

"As with most problems, an integrated approach using a combination of tools has proven to be the best way to deal with Canada goose depredation," Link said. "In most cases, non-lethal methods work quite well. However, the special depredation permit provides an additional last resort prescription that deals with persistent geese in chronic cases."

Link says landowners experiencing Canada geese crop depredation for the first time need to contact Wildlife Services so their situation can be assessed and properly addressed.

Wildlife Services personnel will make an on-site visit, provide consultation, and make a written recommendation.

Landowners who were issued and complied with special permits last year will receive a special permit application packet by the end of March. The special depredation permit, which is valid from April through July, allows each eligible landowner to kill up to 30 geese and destroy 15 nests.

North Dakota's authorization from the U.S. Fish and Wildlife Service allows for the taking of no more than 6,000 geese and 1,000 nests, including all the eggs.

This is the sixth year the special permits are available to North Dakota landowners. In 2006, 94 landowners used the special permit, taking 1,070 Canada geese (615 adults and 455 goslings) and destroying 101 nests under provisions provided by the permit. Canada geese were taken in 25 counties in eastern and northwestern North Dakota.

Landowners wanting more information about Canada goose depredation assistance can contact the Game and Fish Department at 328-6300.

Agronomy News
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Hard Red Winter Wheat Seeding Rate Trial-2006
Langdon Research Extension Center
Bryan Hanson - Agronomist

Field research was initiated in the fall of 2005 to investigate the effect of seeding rate on yield and other agronomic characteristics of hard red winter wheat (HRWW). The trial was seeded on September 9, 2005 with a no-till drill into 8-inch flax stubble at a seeding depth of 1.5 to 2 inches. Plot size was 4 x 20 ft in length with 7, 7-inch spaced rows. Harvest size was 4 x 16 ft in length. The experimental design was a randomized complete block with four replicates. The soil type was a Svea-Barnes loam. The cultivar Jerry was planted at four seeding rates of 0.75, 1.0, 1.25, and 1.5 million pure live seed (PLS)/A. The germination was 96% and the 1000-seed weight was 40.8 grams. The fall soil test for NPK was 32-11-120. Urea fertilizer was surface applied at a rate of 118 lbs/A of actual N on April 18, 2006 just prior to 1-inch of precipitation. Weeds were controlled by the use of herbicides. Harvest date was July 29, 2006.

Data was collected on initial plant stand (IPS), heading date, plant height, lodging, test weight, seed weight, heads per square foot, kernels per head and yield. IPS was determined at the 1.5 leaf stage by counting two random 4-foot lengths within each plot. The 4-foot lengths were marked in each plot at IPS determination and heads/ft² was recorded from these same areas just prior to maturity. Plant height was an average erect plant taken at maturity. Heading date was recorded when 50% of the heads in each plot were completely out of the boot. Kernels/head was calculated from yield, head/ft² and 1000-seed weight.

Stored soil moisture was good for the start of the 2006 growing season. Precipitation from April to July was 6.90 inches, 2.58 inches below normal. Temperature was 3.6^oF above normal for the same time period. Disease pressure from foliar diseases and fusarium head blight was minimal because of the warm dry conditions.

Initial plant stands were significantly greater at the 1.5 million PLS/A seeding rate compared to all other seeding rates. The 0.75 million PLS/A seeding rate had the lowest IPS while no significant differences were observed between the 1.0 and 1.25 million PLS/A seeding rate (**Table 1**). Differences among seeding rates for IPS were expected due to the larger amount of seed being sown. Heads/ft² was significantly greater at the 1.5 million PLS/A seeding rate but it was not different from the 1.0 million PLS/A seeding rate. No significant differences occurred among the lowest three seeding rates for heads/ft². Seeding rate effect on heading date, plant height, lodging, protein, test weight, 1000-seed weight, kernels/head, and yield were all non-significant.

Table 1. Influence of seeding rate on agronomic characteristics of HRWW at Langdon, ND, 2006.

Seeding rate million PLS/a – bu/A†	Yield bu/a	Initial plant stand ft ²	Head s ft ²	Head- ing Date June	Plant Height in	Lodg- ing 0-9	Pro- tein %	Test Weight lbs/bu	1000- seed weight grams	Kernels/ head
0.75 - 1.2	61.5	13.8	40.0	11.3	47.3	0.3	10.2	59.8	30.2	32.0
1.00 - 1.6	63.6	19.1	46.2	11.3	48.8	0.8	10.6	59.2	29.3	29.6
1.25 - 2.0	61.4	21.3	41.0	11.3	47.8	0.5	10.4	59.3	29.1	33.0
1.50 - 2.4	62.7	28.8	50.6	11.3	48.5	0.8	10.6	59.2	28.9	27.0
LSD 5%	NS	3.6	7.4	NS	NS	NS	NS	NS	NS	NS
C.V.%	3.5	10.9	10.5	0	1.7	103.7	3.1	1.1	3.7	13.5

† Bu/A seeding rate for seedlot with 1000 seed weight of 40.8 grams or 11,127 seeds/lb.

This indicates that HRWW has the ability to compensate for lower seeding rates by producing greater heads/ft², kernels/head and 1000-seed weight. Although heads/ft² were greater for the 1.5 million PLS/A seeding rate in this study, the kernels/head and 1000-seed weight was the lowest among the seeding rates although the differences were not significant.

Results from this study indicate that HRWW should be seeded at a rate between 0.75 and 1.0 million PLS/A. Differences in seeding rate in bu/A will vary depending on seed size (**Table 2**). This study will be conducted again in 2007.

Table 2. Seed size effect on seeding rate in bushels per acre.

Seeding rate million PLS/A†	1000-seed weight (g)/seeds/lb		
	30.0/15,133	35.0/12,971	40.8/11,127
	-----bu/A-----		
0.75	0.9	1.0	1.2
1.00	1.1	1.3	1.6
1.25	1.4	1.7	2.0
1.50	1.7	2.0	2.4

†Assumes a 96% germination.

Leaf and Head Diseases in Winter Wheat

Marcia McMullen, Extension Plant Pathologist, NDSU

Wheat leaf rust has been confirmed in winter wheat in South Dakota, and tan spot has been observed in winter wheat in North Dakota. With the continued rain showers across much of the region which favor continued disease development, and with the rapid development of the crop, producers are considering use of fungicides on winter wheat fields with good yield potential.

Producers who are seeing leaf rust pustules on the flag minus one leaf, and a few pustules on the flag leaf, may have to consider applying a fungicide to the flag leaf for rust control, especially on rust susceptible cultivars. However, for crops that only have rust on lower leaves, with the flag minus one and flag leaf still free of rust, producers should consider waiting until early flowering for fungicide application, so that fungicides that suppress Fusarium head blight could be used, fungicides which also generally control rust and tan spot, as well.

The information on page 4 on fungicides for wheat disease control was prepared by the North

Winter Cereal Sponsors

Ducks Unlimited

Bayer CropScience

Syngenta Crop Protection

South Dakota Game, Fish and Parks

North Dakota Game & Fish Department

Natural Resources Conservation Service

Day, Marshall, James River, Ransom and Wild Rice Conservation Districts

North Dakota Dept. of Health 319 Program

NDSU and SDSU Cooperative Ext. Service

Central regional committee of plant pathologists across multiple states. The chart provides information on relative performance of products against a range of wheat diseases. The chart does not indicate if all products are registered or have special exemptions in each state, nor does the chart reflect retail price of products. Producers will need to consult with their local retailers to determine availability and price.

Reminder

All "Agronomy News" issues can be found at Ducks Unlimited's website:

<http://www.ducks.org/agronomy>

Also, email Janell at jrath@ducks.org and let her know if you would like to receive it by email. Agronomy News will arrive 7-10 days sooner if you choose to receive it by email.

**Management of Small Grain Diseases
Fungicide Efficacy for Control of Wheat Diseases**

The North Central Regional Committee (**NCERA-184**) on Management of Small Grain Diseases (composed of pathologist from multiple states) has developed the following information on fungicide efficacy for control of certain foliar diseases of wheat for use by the grain production industry in the U. S. Efficacy ratings for each fungicide listed in the following table were determined by field testing the materials over multiple years and locations by the members of the committee. Efficacy is based on proper application timing to achieve optimum effectiveness of the fungicide as determined by labeled instructions and overall level of disease in the field at the time of application. Differences in efficacy among fungicide products were determined by direct comparisons among products in field tests and are based on a single application of the labeled rate as listed in the table.

Efficacy of fungicides for wheat disease control based on appropriate application timing.

Product	Fungicide(s)	Rate/A (fl.oz.)	Powdery Mildew	Leaf/ Glume Blotch	Septoria Leaf Blotch	Tan Spot	Stripe Rust	Leaf Rust	Head Scab
Headline 2.09 EC	Pyraclostrobin 23.6%	6.0 (to 9.0)	++ ¹	+++	+++	++++	++++ ²	++++	
Proline 480 SC	Prothioconazole 41%	5.0 (5.7 FHB)	-- ³	+++	+++	+++	--	+++	++(+) ⁴
PropiMax 3.6 EC	Propiconazole 41.8%	4.0	+++	+++	+++	+++	+++	+++	+
Quadris 2.08 SC	Azoxystrobin 22.9%	6.2 (to 10.8)	+(+)	+++	+++	++++	++++ ²	++++	
Quilt 200SC	Azoxystrobin 7.0% Propiconazole 11.7%	14.0	+++	+++	+++	+++	+++	+++	
Stratego 250 EC	Propiconazole 11.4% Trifloxystrobin 11.4%	10.0	++	+++	+++	+++	+++	++	
Tilt 3.6 EC	Propiconazole 41.8%	4.0	+++	+++	+++	+++	+++	+++	+
Folicur 3.6 F ⁵	Tebuconazole 38.7%	4.0	++	+++	+++	+++	++++	++++	++

¹ Greater the number of + signs the greater the relative efficacy

² Efficacy may be significantly reduced if solo strobilurin products are applied after infection has occurred

³ Insufficient data to make statement on efficacy of this product

⁴ (+) indicates greater efficacy at higher application rates

⁵ Folicur does not have a federal label, but may have Section 18 emergency registration in some states

This information is provided only as a guide. It is the responsibility of the pesticide applicator by law to read and follow all current label directions. No endorsement is intended for products listed, nor is criticism meant for products not listed. Members of NCERA-184 assume no liability resulting from the use of these products.

* **Proline + Folicur 3 + 3 program:** An additional treatment option for suppression of Fusarium head blight has become available since the above information was prepared by the NC regional wheat pathology committee. Bayer CropScience announced the availability of Proline + Folicur (3 + 3) program. Proline 480 SC fungicide at 3 fl oz mixed with Folicur 3.6F at 3 fl oz will provide excellent (+++) suppression of Fusarium head blight and reduction of DON (similar to the rates of prothioconazole and tebuconazole in Prosaro, which has been tested in many uniform fungicide trials). North Dakota has granted 2 (ee) labels for this fungicide mix on wheat and barley; producers in other states will have to check to see if these 2 (ee) labels are available.

<u>DATES</u>	<u>TOURS</u>	<u>DATES</u>	<u>TOURS</u>
June 25th	DU/NDSU Dickey County Intensive Winter Wheat Management Study, 7 miles east of Ellendale, ND on Highway 11. The tour starts at 6:00 p.m. followed by a steak dinner sponsored by Syngenta Crop Protection and the Dickey County CIA. There are several new varieties from SDSU, Meridian Seeds, Unity Seed Co., and AgriPro. This trial has 3 winter wheat varieties seeded in HRSW, Flax, pea and soybean stubble. Each variety in each prior crop stubble has 4 fungicide timing treatments. Dr. Franzen has a chloride/fungicide study there also. A Syngenta experimental broadleaf herbicide research site will also be toured. For additional information: 701-349-3249 Ext. 2	July 11th	NDSU Dickinson Research Extension Center Tour, Dickinson, ND. The tour starts at 8:00 a.m. For additional information: 701-483-2348
		July 12th	NDSU Williston Research Ext. Center, Williston, ND. The tour starts at 9:00 a.m. For additional information: 701-774-4315
		July 12th	CCSP (Conservation Cropping Systems Project) Tour, starting at 5:00 p.m. The tour is followed by a complimentary meal, 1 mile south of Forman, ND at the junction of Highways 11 and 32. CCSP is a no-till crop rotation research and demonstration farm including no-till and strip-till comparisons. For additional information: 701-724-3247 Ext. 3
June 25th	Brookings Agronomy Farm Tour, SDSU, Brookings, SD. 4:00 p.m.	July 16th	NDSU Casselton Agronomy Seed Farm Tour, Casselton, ND. The tour starts at 5:30 p.m. For additional information: 701-347-4743
June 27th	SDSU Field Day Tour, west side of Highmore, SD. The tour is from 3:00 p.m. until dusk. Contact Robin Bortnem at 605-688-4958 for additional information.	July 17th	NDSU Carrington Research Extension Center Tour, Carrington, ND. The tour starts at 9:00 a.m. For additional information: 701-652-2951
June 28th	Dakota Lakes Research Farm Tours start at 1:00 p.m. 17 miles east of Pierre, SD on Highway 34. For additional information: 605-224-6114	July 18th	NDSU North Central Research Extension Center Tour, Minot, ND. The tour starts at 9:00 a.m. For additional information: 701-857-7677
July 2nd	SDSU Northeast Farm Tour, South Shore site north of Watertown, SD. The tour starts at 4:00 p.m. July 10th rain date	July 19th	Friends and Neighbors Day at the Northern Great Plains Research Lab and Area IV SCD Research Farm, Mandan, ND The tour starts at 2:00 p.m. with a campus tour and the field tour at 4:00 p.m. with a barbeque and entertainment following. For additional information: 701-663-6445
July 10th	NDSU Hettinger Research Extension Center, Hettinger, ND. Small Grains tour starts at 5:00 p.m. For additional information: 701-567-4323	July 19th	NDSU Langdon Research Extension Center, Langdon, ND. Tour starts at 8:30 a.m. For additional information: 701-256-2582
July 10th	NDSU/DU Ransom/Sargent County Research Plot Tour, 7.5 miles south of Lisbon, ND on Hwy. 32. Breakfast at 7:30 a.m. Winter Wheat and HRSW varieties with and without fungicide.		

Quotable Quotes

"One hundred pounds of dry soil that contains 4% to 5% organic matter can hold 165 to 195 pounds of water, says Dwayne Beck, manager of the Dakota Lakes Research Farm near Pierre, South Dakota. That drops to 35 to 45 pounds of water in 2% organic matter soils."

Successful Farming, December 2005

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SDSU Releases Two New Winter Wheat Varieties

South Dakota State University (SDSU) has released two new winter wheat varieties according to Dr. John Kirby, Director of the Agricultural Experiment Station. A hard red winter wheat called **Darrell** and a hard white winter wheat called **Alice** were developed by Dr. Amir Ibrahim, SDSU winter wheat breeder.

Darrell was released on the basis of its good disease resistance and excellent yield potential in the northern Great Plains. It is similar in maturity to Millennium, four days later than Expedition and two days earlier than Harding. The SDSU winter survival is rated good to excellent.

Darrell outyielded Wendy, Wesley, Expedition, and Arapahoe in testing, but yielded less than Millennium. It is resistant to stem rust, but moderately susceptible to leaf rust. Darrell has the best scab resistance record of any hard winter wheat tested in SD over the past five years. Darrell is moderately resistant to wheat streak mosaic virus. Darrell was found to have acceptable milling and good baking qualities in cooperative baking tests by the ARS Hard Winter Wheat Quality Lab in Manhattan, Kansas.

Alice was the earliest maturing wheat, similar to Wendy and Expedition, two days earlier than Wesley, and six days earlier than Harding, in testing at multiple sites from 2003-06. The SDSU winter survival of Alice is rated fair. Alice has the best pre-harvest sprouting resistance among any hard white winter wheat tested in the SD Crop Performance Testing variety trial, similar to Crimson, and better than Millennium, Trego and Wendy.

Alice outyielded Wendy, Wesley, Expedition, Trego, and Arapahoe, but yielded less than Millennium. Alice is resistant to moderately resistant to stem rust of two common pathotypes, but was found to be moderately susceptible to moderately resistant to another common pathotype. Seedling tests show Alice is susceptible to the Great Plains biotype of Hessian fly. Alice is slightly resistant to wheat streak mosaic virus.

Alice had very good milling and baking scores in cooperative baking tests by the ARS Lab in Kansas. In Wheat Quality Council tests in 2004 its bread baking quality was found to be better than all hard winter wheat experimental lines and checks including Tandem.

A complete description can be found at: <http://plantsci.sdstate.edu/triticum/index.htm>