12-2007

Small Grains and Field Peas: 2008 Variety Recommendations (2007 Crop Performance Results)

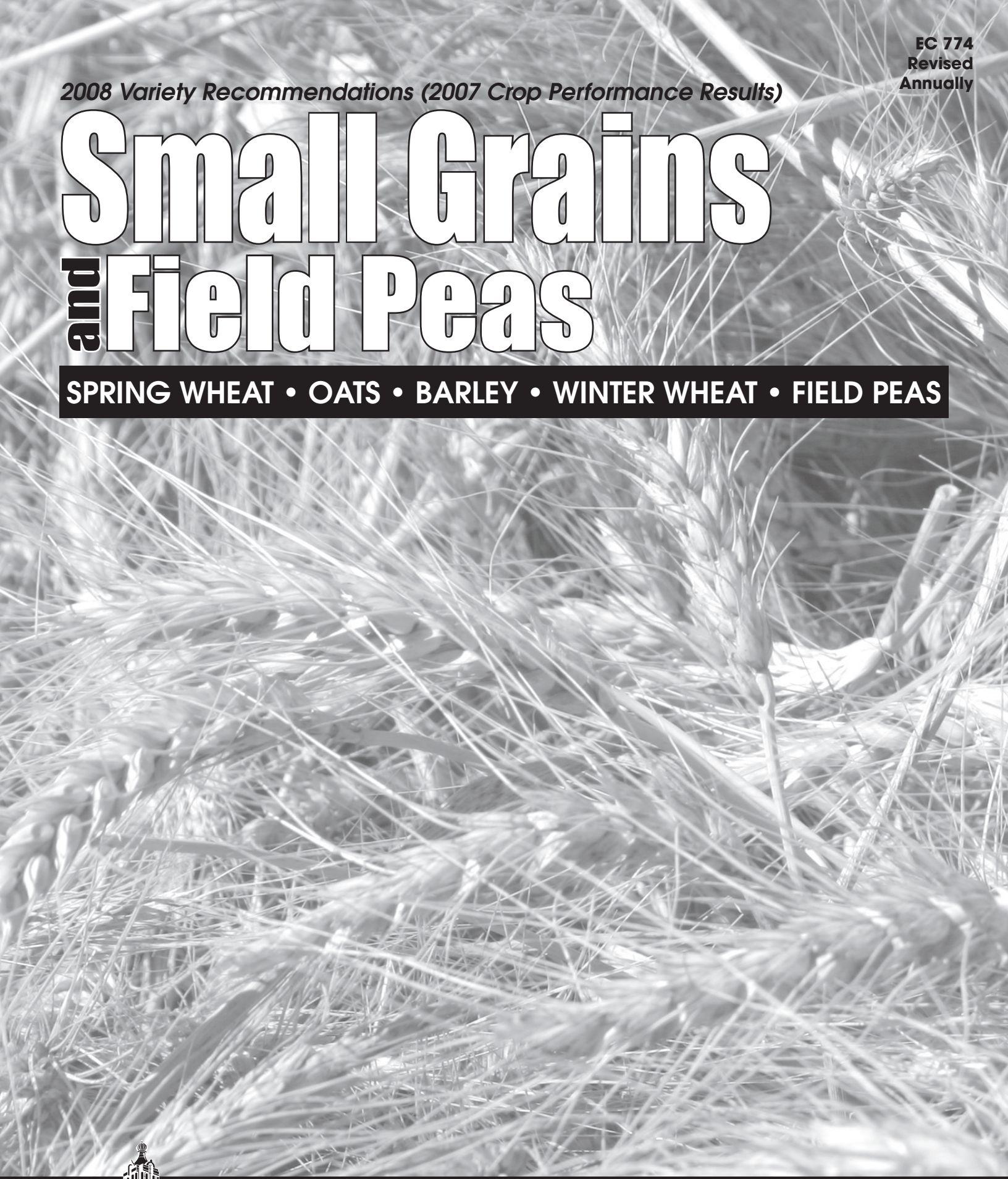
Cooperative Extension Service, South Dakota State University

EC 774
Revised
Annually

2008 Variety Recommendations (2007 Crop Performance Results)

Small Grains and Field Peas

SPRING WHEAT • OATS • BARLEY • WINTER WHEAT • FIELD PEAS



South Dakota State University • Cooperative Extension Service • U.S. Department of Agriculture

The crop performance trials are available at http://plantsci.sdstate.edu/varietytrials/vartrial.html

Small Grain Variety Recommendations for 2008

Recommendations are based on data from the South Dakota Crop Performance Testing (CPT) Program and regional land-grant university nurseries. Variety performance depends on genetics and the environment. Environmental factors like temperature, moisture, plant pests, soil fertility, soil type, and management practices affect variety performance. Performance of recommended varieties in response to environmental conditions is generally better than that of other varieties. The better performance of a recommended variety, however, cannot always be guaranteed due to its complex response to the environment. Variety recommendations, including crop adaptation area (CAA) where each is most suited, are listed below:

@ Plant variety protection (PVP) received or anticipated; seed sales are restricted to classes of certified seed.

PVP non-title V status.

SPRING WHEAT

Recommended		Acceptable/Promising	
Variety	**CAA**	**Variety**	**CAA**
Briggs @	all except 3	Faller @	Statewide
Freyr@	Statewide	Glenn @	Statewide
Granger @	all except 3	RB07	all except 3
Howard	Statewide		
Steele-ND @	all except 3		
Traverse @	Statewide		

OATS

Recommended		Acceptable/Promising	
Variety	**CAA**	**Variety**	**CAA**
Don	5,6,7	Beach	5,6,7
Jerry #	5,6,7	Buff (hull-less)	Statewide
Reeves	5,6,7	HiFi @	1,2,7
Stallion	Statewide	Loyal	1,2
		Morton @	1,2,7
		Souris@§	Statewide

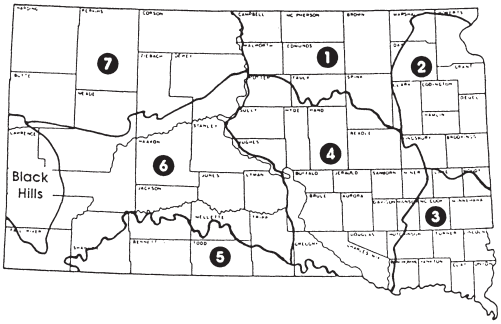
BARLEY

Recommended		Acceptable/Promising	
Variety	**CAA**	**Variety**	**CAA**
Eslick @- feed	6,7	Conlon @	1,4,6,7
Lacey @	Statewide	Drummond @	Statewide
		Robust @	1,2,4,6,7
		Tradition @	Statewide
		Rawson	1,2,7

WINTER WHEAT

Recommended		Acceptable/Promising	
Variety	***CAA***	***Variety***	***CAA***
Alice (white) @	1*,4*,5,6,7*	Alliance @	3,4*,5,6
Expedition @	1*,4,5,6,7*	Arapahoe @	1*,3,4*,5,6, 7*
Harding @	1*,2*,4,7	Darrell @ #	1*,4,5,6,7*
Millennium @	1*,4*,5,6,7*	Hatcher @	5,6,7*
Overland @	1*,3,4*,5,6,7*	Jagalene @ #	5,6,7*
Wendy (white) @	5,6,7*	NuDakota@	5,6,7*
Wesley	5,6,7*	Wahoo @	3,4*,5,6

Crop Adaptation Areas for South Dakota (revised 1992)



American Malting Barley Association approved malting varieties for South Dakota for 2007:

Conlon	Drummond
Legacy	Lacey
Robust	Tradition

+ Exceptional crown rust resistance.

* Plant into protective cover.

A severe infection of leaf rust in 2007 greatly reduced yield.

§ Special licensing agreement is required

This report is available on the Web at http://www.sdstate.edu/~wpls/http/var/vartrial.html

SDSU

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the USDA. Educational programs and materials offered without regard to age, race, color, religion, sex, handicap, or national origin. An Equal Opportunity Employer

EC 774, revised annually. 2,600 copies at ___ cents each. 9-2007.

Small Grains and Field Peas

2007 South Dakota Test Results, Variety Traits, and Yield Averages

Robert G. Hall, Extension agronomist – crops
John Rickertsen, research associate
Kevin K. Kirby, agricultural research manager
Bruce Swan, senior agricultural research technician
Jesse Hall, agricultural research manager

Variety selection is an important management decision in your sound crop production program. This report contains variety recommendations or suggestions, descriptions, and yield data for the spring-seeded small grains spring wheat, oats, and barley; fall seeded winter wheat; and spring-seeded field peas.

Key factors in variety selection include yield, yield stability, maturity, straw strength, height, test weight, quality, and disease resistance. Yield is important; however, a variety with good disease resistance, straw strength, and high grain quality may be more profitable in some cases than a variety merely selected for its yield history.

Disease resistance information is based on reactions to prevalent races of a disease. Since resistance changes as the disease races change; it is strongly suggested that growers inspect the reaction of a variety to diseases every year and not assume it's response to a disease is unchanged.

Variety recommendations (inside cover)

The Plant Science Department Variety Recommendation Committee makes small grain variety recommendations annually. Recommendations for a given crop may vary from one crop adaptation area (CAA) to another. CAAs (see map) are based on soil type, elevation, temperature, and rainfall. Varieties are recommended on the basis of growing season, annual rainfall, disease frequency, and farming practices common to a crop adaptation area.

Varieties are listed as "Recommended" or "Acceptable/Promising." Varieties exhibiting a high level of agronomic performance are listed as "Recommended." Each test entry must meet the minimum criteria listed in Table A before it is eligible for the "Recommended" list. Varieties listed as "Acceptable/Promising" have performed well, but do not merit the "Recommended" list or are new varieties with a high performance potential but have not met the 3-year criteria (Table A) needed to make the "Recommended" list. A variety needs 2 years and six location-years in the SDSU crop performance test trials and/or regional nurseries before it is eligible for the "Acceptable/Promising" list.

Certified seed is the best source of seed and the only way to assure genetic and variety purity.

How to use this information

It is suggested that you use this bulletin as follows for each variety you select:

1. Check the variety-crop adaptation area (CAA) designations for the "Recommended" and "Acceptable/ Promising" lists. Compare these variety-CAA designations with the CAA map of South Dakota. **Identify the varieties suggested for your CAA.**

2. **Evaluate the varieties for desirable traits.** Descriptive information (Tables 3, 6, 9, 12, and 15) is updated as changes occur. This information is obtained from the SDSU Crop Performance Testing Program and from research plots maintained by plant breeders and plant pathologists. Data like protein, height, and bushel weight (test weight) are obtained from every location when possible. Disease resistance ratings continually change; therefore, new information is reported as it becomes available. To evaluate maturity compare the relative heading (Hdg) rating of each variety to the reference variety given. The *Fusarium* head blight tolerance ratings for hard red spring wheat are also given. Note the head blight ratings show **there is presently no variety resistance to *Fusarium* head blight**. They do, however, indicate **some varieties are more tolerant of the disease than other varieties**.

3. **Evaluate each variety for agronomic performance.** Yields and other agronomic performance data are obtained from the SDSU Crop Performance Testing Program. Both 1- and 3-year average yields are included for each test location if the variety was tested for 3 or more years. Yield values for each variety and location average and each location least-significant-difference (LSD) values are rounded to the nearest bushel per acre. Yield averages for spring wheat are reported in Tables 1a-c, for oats in Tables 4a-b, for barley in Tables 7a-b, for winter wheat in Tables 10a-b, and for field peas in Tables 13a-b. Averages for agronomic data like bushel weight, protein content levels, and plant height in spring wheat are reported in Table 2, for oats in Table 5, for barley in Table 8, for winter wheat in Table 11, and for field peas in Table 14.

The location test-trial yield average, high yield average, low yield average, least significant difference (LSD) value, yield value required to qualify for the top-performance group for yield, and

the test-trial coefficient of variation (CV) value are listed below each location yield column. In addition, the statewide test trial averages for bushel weight, height, lodging, and grain protein; the high average, the low average, the LSD value required to qualify for the top-performance group, and the test trial CV value for each of these variables are listed below each variable column. These statistics are derived from data that includes both released varieties and the new experimental lines in each test trial. This enables us to compare varieties to experimental lines that may be released in the near future.

Compare yields.

Always compare 1-year yields with other 1-year yields, and 3-year yields with other 3-year yields.

Determine if data is valid.

The coefficient of variation (CV) value listed at the bottom of each yield column is a measure of experimental error. Yield tests with CV values of 15% or higher contain a higher level of experimental error than tests with a CV of 10% or less. Test sites with a CV greater than 15% are not included in the calculations for yield stability discussed later. Likewise, the LSD value and the top performance group for yield or other performance variables are not shown if the CV exceeds 15%.

Use LSD values to evaluate yield differences between varieties.

The LSD value indicates if the yield of one variety is really different from another variety. If the yield difference between two varieties is greater than the LSD value, the varieties differ in yield. If the yield difference is equal to or less than the LSD value, the varieties do not statistically differ in yield.

For example, at Brookings, the variety Traverse averaged 44 bu/acre in 2007 compared to the variety Howard that averaged 39 bu/acre. Did the yield difference between these two varieties differ significantly? Compare the yield difference of 5 bu/acre between the two varieties (44 – 39) to the reported LSD value of 5 bu/acre. Since the yield difference of 5 bu/acre does not exceed the LSD value of 5 bu/acre; the two varieties did not differ significantly in yield at Brookings in 2007. If the yield difference had been 6 bu/acre, then the yield difference between the two varieties would have exceeded 5 bu/acre; and in that case there would have been a significant yield difference between the two varieties.

Use the LSD value to determine the top performance group (TPG) of entries for each location.

At each location the variety with the highest numerical yield is identified using 1- or 3-year averages. The reported test LSD value is subtracted from the highest yielding variety. Varieties with yields greater than this value (highest yield minus test LSD) are in the top yield group at that location.

For example, in spring wheat the top yielding entry at Brookings for 2007 was the experimental line SD 3944 that averaged 45 bu/acre (Table 1a). Subtracting 5 bu/acre (the rounded-off LSD value) from the highest yield entry of 45 bu/acre equals 40 bu/acre. Therefore, all varieties listed in that column yielding more than 40 bushels are in the TPG. However, since the LSD values and reported yield averages are rounded off to the nearest whole bushel we can say that 40 bu/acre can also be included in the TPG. Therefore, due to rounding off of yield average to the nearest bushel, all varieties at Brookings with a 2007 yield average of 40 bu/acre or higher are in the TPG for yield.

The TPG of varieties for other performance variables like bushel weight, plant height, lodging score, and grain protein can also be easily identified in each performance table. The TPG value for yield, bushel weight, height, and grain protein content are minimum TPG values because the reported LSD value is subtracted from the highest numerical average within a column where high values are wanted, such as high yield, bushel weight, height, or grain protein content values. In contrast, the TPG value for lodging score is a maximum TPG value because the reported LSD value is added to the lowest numerical average within a column; where low values are wanted, such as low lodging scores.

The TPG values for all variables are reported as "TPG value" at the bottom of each variable column in each table. In addition, all values that qualify for the TPG within a column are identified with the plus (+) symbol.

Sometimes, a LSD value is not given and the designation NS^ is listed. This indicates yield differences were not significant (NS) or yield differences could not be detected. Therefore, all the varieties have a similar yielding potential and are considered to be in the TPG. In test trials with high levels of experimental error (CV exceeds 15%) LSD values and TPG values are not reported because the data contains too much experimental error to be valid.

Use top-yield group for yield information to evaluate variety yield stability.

When evaluating yield performance, remember that environmental conditions at a test location seldom repeat themselves from year to year. Therefore, look at yield data from as many trial locations and years as possible.

Look at the performance or "yield stability" of a variety over several locations. A simple way of evaluating "yield stability" is to see how often a variety is in the TPG for yield over all test locations. For convenience, the top-yield frequency or the percentage of locations where a variety is in the TPG for yield has been calculated. **The top yield percentage for each variety of spring wheat are reported in Tables 1b and 1c, for oats in Tables 4b and 4c, and for barley in Tables 7b and 7c.** Top yield frequencies for winter wheat are not reported because winter hardiness greatly influences spring stands and makes it impossible to report valid top-yield frequencies for more than a year. The top-yield frequency for field peas was not calculated because data is limited.

A variety exhibiting a relatively high top-yield frequency will appear in the top yield group at many locations but not necessarily at all locations. For example, a variety with a top yield percentage of 50% or more exhibits good yield stability while a percentage of 20% or less indicates low yield stability. In small grains a percentage of 50% or higher is generally considered good for 1 year and percentages of 80 to 100% are common for the longer 3-year period. The higher percentages for the 3-year period generally occur because there are two additional years of plot data to average which tends to decrease the yearly variations and makes the percentage for a 3-year period higher than for a current year period. Varieties with a high top yield percentage have the ability to adapt to a wide range of environmental conditions across many locations. In contrast, varieties with a low top-yield frequency typically adapt to a narrow range of environments. **Look for** varieties with **top-yield percentages of 50% or higher** if possible, and don't be surprised if the percentage reaches 100% for the longer 3-year period.

An illustrated use of performance tables

How can the information reported in this publication's performance tables be used to your advantage? Let's use the spring

wheat Tables 1a, 2, and 3 to identify some entries that might be of benefit. Say we live near Brookings and want to identify some varieties that we might consider planting in 2008.

First, use Table 1a to examine the 2007 and latest 3-year yield averages at Brookings. In 2007, the best yielding entries at Brookings averaged 40 bu/acre or higher. Identify these entries in Table 1a. These entries included the released varieties Traverse, Granger, Steele-ND, Briggs, and Faller. In addition, an examination of the 3-year yields column indicates the best yielding varieties had to yield 49 bu/acre or higher to be in the TPG for 3-year yields at Brookings. Again, identify these entries in Table 1a. In this case, at Brookings, the TPG for 3-year yields only included the variety Traverse.

Second, use Table 1b to evaluate the yield stability of the various entries for 2007 and for the last 3 years. Look at the far right column of Table 1a [State Top-Yield Freq. (%)]. The 2007 column indicates what percentage of locations a given entry was in the TPG over all the locations tested in 2007. Likewise, the 3-year column indicates what percentage of locations an entry was in the TPG over all locations over the last 3 years. In 2007, Traverse, Howard, and Faller were in the TPG 63% of the time while three experimental lines were in the TPG 88% of the time. For the 3-year period, the variety Traverse was in the top-yield group 100% of the time; while Briggs, Granger, and Steele-ND were in the top-yield group 86% of the time across the seven locations with 3-year yield averages. In our example, Traverse, Briggs, Granger, and Steele-ND were identified as varieties with above average yields and yield stability.

Third, use Table 2 to evaluate each entry's bushel weight, height, lodging, and grain protein performance on a statewide basis. Analysis of the data (far right state average columns) gives us valuable information regarding the performance of each entry.

For example:

Bushel weight. Banton, RB07, Hat Trick, and Kelby (59 lb) were significantly higher than Ada, Alsen, Ulen, Briggs, Granger, and Freyr (58 lb). Varieties differing more than 1 lb in bushel weight were significantly higher or lower in bushel weight.

Height. Chris, the check variety, was the tallest (37 inches) while Kelby and Kuntz were the shortest varieties (30 inches). Varieties differing more than 1 inch in height were significantly higher or lower in height.

Lodging. Entries averaged 1; therefore, there were no significant differences among varieties.

Grain protein content. Glenn (14.6%), Kelby (14.7%), and the check variety Chris (14.6%) were the highest in grain protein. Varieties differing more than 0.6% in grain protein were significantly higher or lower in protein content.

Use of origin, traits, and disease reactions tables

You are encouraged to use the traits and disease reactions tables for spring wheat (Table 3), oats (Table 6), barley (Table 9), winter wheat (Table 12), and field peas (Table15) every year. These tables contain the most up-to-date information in South Dakota for any changes in traits and the continuous changes in crop disease reactions caused by disease race changes.

If you are evaluating winter wheat varieties it is suggested that you also review the relative coleoptile length values reported in Table 12. Generally, varieties with relatively long coleoptiles are able to germinate and emerge from a deeper seeding depth than varieties with shorter coleoptiles. This trait may be advantageous in years where the soil moisture is deeper than the normal seeding zone. The coleoptile length of 3.2 inches for Harding is used as the reference standard (100%) for making comparisons. The coleoptile of Tandem is generally slightly longer than for Harding; whereas the coleoptiles for Alice, Arapahoe, Darrell, Expedition, Jagalene, Millennium, Trego~W, Wahoo, and Wesley are generally shorter compared to Harding. Note the coleoptile for Wendy is the shortest of all entries and may exhibit poor emergence if planted as deep as Tandem that has a longer coleoptile.

Origin of varieties tested

Public varieties were released from state agricultural experiment stations. Abbreviations for each include:

Colorado- CO	Illinois- IL
Kansas- KS	Minnesota- MN
Montana- MT	Nebraska- NE
North Dakota- ND	South Dakota- SD
Wisconsin- WI	

Many public varieties were developed and released jointly by one or more experiment stations or USDA. Proprietary varieties released by seed companies and tested by brand name include:

Agri Pro, AP
Alternate Seed Strategies, ASS
Busch Agricultural Resources, Inc., BARI
Farm Pure Seed, FPS
Legume Logic,LL
Meridian Seeds, MS
Pulse USA, PUSA
Seed Strategies, ASS
West bred, LLC.,WB

Trial methods

A random complete block design was used in all trials. Plots were harvested with a small plot combine. Plot size differs between the East River and West River locations. East River plots were 5 feet wide and either 12 or 14 feet long compared to West River plots measuring 5 feet wide and 25 feet long. Plots consisted of drill strips with 7- or 8-inch spacing at East River locations and 10-inch spacing at West River locations. Trial locations are listed in Table B. Yield means are generated from four variety replications per location per year.

Fertility and weed control programs differed between the East and West River locations. East River plots were fertilized with a starter application of 55 lb/acre of 37-15-0 (20.3 lb of N and 8.25 lb of phosphorus/acre) down a secondary tube at seeding. In addition, at these locations a post-emergence application of Bronate (1.0 pint) was applied on the spring wheat, oats, and barley plots. At Spink County and Selby, 0.33 pt Puma was applied before the 5-leaf stage of wheat and barley. West River plots were fertilized with 6 gal/acre of 10-34-0 (6.6 lb of nitrogen and 24 lb of phosphorus/acre) at seeding. Post-emergence applications of Starane herbicide at 1 pt/acre were made in West River spring wheat, barley, and oats plots except at Ralph where an additional 0.67 pt/acre of Puma was applied. Field pea plots were seeded at 7 pure-live-seeds/ft^2 (320,000 seeds/acre) with inoculated seed. Chemical weed control consisted of 2 pt/acre of Prowl at Wall and Bison; 0.75 pt/acre of Poast post-emergence at Selby; and 4.5 oz/acre Spartan pre-emergence at South Shore.

Since seed size can vary greatly among varieties, a seed count was conducted on each entry and all seeding rates were adjusted accordingly. In 2007, the spring-seeded small grain trials were seeded at 42 instead of the 28 pure live seeds per square foot used in the past. The fall-seeded winter wheat trial seeding rates remained at 22 pure live seeds per square foot. Spring seeding rates were changed at the request of many growers who indicated they were using higher seeding rates that resulted in **more primary** tillers and heads but **fewer secondary** tiller and heads. With the higher seeding rates and greater number of primary tillers and heads growers indicated they obtained a shorter flowering period that enabled them to obtain better coverage when applying fungicides to protect the heads from *Fusarium* head blight.

Under good seedbed preparation and favorable conditions these adjusted seeding rates result in seedling densities of about 38 and 20 seedlings per square foot at the spring-seeded and fall-seeded small grain trials, respectively. This results in a final stand of about 1.65 million and 870,000 plants per acre, respectively. If you have a poor seedbed, increase the spring seeding rate to 46 pure-live-seeds per square foot. If planting is delayed until May 1 or later increase the seeding rates to 50 pure-live-seeds per square foot. If you have a poor seedbed, increase the fall-seeded winter wheat seeding rate to 28 pure-live-seeds per square foot. Seeding dates are listed in Table B.

Performance trial highlights

General. The agronomic performance of all the small grain crops in year 2007 was variable but much better than in 2006. In 2007, the small grain crop in South Dakota received more timely rainfall and cooler spring temperatures, which resulted in attained higher yields compared to 2006. In winter wheat, leaf rust became a major production factor in 2007. As the result of a race change, growers are strongly encouraged to examine the disease reactions in Table 12 and note the many changes in the leaf rust disease reaction. Test trial locations and seeding dates are indicated in Table B.

Table Comments. Tables 1a-c, 4a-b, 7a-c, 10a-b, and 13a-b are first sorted (high to low) by state 3-year and then sorted (high to low) by state 2007 yield averages. Likewise, Tables 2, 5, 8, 11, and 14 are sorted (high to low) by state bushel weight (BW). Care should be taken when reading the yield average tables because the varieties are first sorted by 3-year averages then by the 2007 averages. You are encouraged to first evaluate variety yield performance by looking at the 3-year averages. Then evaluate variety performance by looking at the 2007 yield averages. In some cases, varieties that were only tested in 2007 produced the highest numerical yields for year 2007. In other cases, however, the highest numerical yields may have been produced by varieties that have been tested for 3 years or more. In either case, however, remember to look at all the values in the 2007 yield column, regardless if they were tested for the current year or for 3 years.

In summary, although some new entries may have produced numerically higher yields than some varieties tested for 3 years, they may all be in the top-performance group for yield in 2007 because they didn't differ significantly in yield.

Spring Wheat

Yields (Tables 1a-c). The top entries for yield for the past 3 years (2005-07) by variety or experimental line and top yield frequency were **Traverse at 100%; SD 3868; Briggs, Granger, and Steele-ND at 86%; and SD 3870, SD 3851, and Freyr at 71%** (Tables 1b-c). These entries exhibited very good yield stability or the ability to adapt to a wide range of production environments by being in the top-performance group for yield at more than 71% of the test locations during the past 3-year period. The top yield frequency entries for yield in 2007 included **SD 3942, SD 3943, and SD3944 at 88%; and Traverse, Howard, Faller, and SD 3948 at 63%** of the test locations.

Bushel weight (Table 2). The top bushel weight entries (state averages in Table 2 included ten entries at 59 lb including the varieties **Banton, RB07, Hat Trick, and Kelby**, with a state average of 58 lb. Varieties differing **more than one** pound were significantly higher or lower in bushel weight.

Height (Table 2). The check variety **Chris (37 inches) was the tallest** while **Kelby and Kuntz (30 inches) were the shortest** varieties, with a state average of 33 inches. Varieties **differing more than one inch in height** were significantly higher or lower in height.

Lodging (Table 2). All entries averaged 1; therefore, there were **no significant differences among varieties**.

Grain protein content (Table 2). The varieties **Glenn (14.6%)**, **Kelby (14.7%)**, and the check variety **Chris (14.6%)** were the highest in grain protein. The state average in grain protein content was 13.9%. Entries **differing more than 0.6% (1% rounded-off) in grain protein** were significantly higher or lower in protein content.

Spring oats

Yields (Tables 4a-c). The top entries for yield for the past 3 years (2005-07) by variety or experimental line and top yield frequency were **Stallion, HiFi, Beach, Morton, and Loyal at 100%; Don and Jerry at 75%; and Reeves at 50%** (Tables 4b-c). These entries exhibited very good yield stability or the ability to adapt to a wide range of production environments by being in the top-performance group for yield at more than 50% of the test locations during the past 3-year period. The top yield frequency entries for yield in 2007 included **SD 041405 at 88%; SD 041451, SD 041445, and SD 030888 at 75%; Stallion and Souris at 63%; and SD 020883-10** at 50% of the test locations.

Bushel weight (Table 5). The single top bushel weight entry (state averages in Table 5) was the hulless entry **SD 020301-20 at 45 lb** followed by the other hulless variety Buff at 44 lb. Varieties differing **more than one pound** were significantly higher or lower in bushel weight.

Height (Table 5). The variety **Morton at 41 inches** and varieties **Beach, Stallion, and Loyal at 40 inches** were the tallest varieties while the state average was 27 inches. Varieties differing **more than one inch in height** were significantly higher or lower in height.

Lodging (Table 5). The hulled variety Morton and the hulless varieties Buff and Stark at 1 exhibited the best lodging scores. Va-

rieties **differing more than 1 in lodging score** were significantly higher or lower in lodging.

Grain protein content (Table 5). The variety **Hytest (19.1%)** and experimental line **SD 020301-20 (18.8%)** were the highest in grain protein with a state average of 16.5%. Entries **differing more than 0.8% (1% rounded-off) in grain protein** were significantly higher or lower in protein content.

Spring Barley

Yields (Tables 7a-c). The top entries for yield for the past 3 years (2005-07) by variety or experimental line and top yield frequency were **Eslick at 67%; and Lacey, Drummond, and Conlon at 50%** (Tables 7b-c). These entries exhibited very good yield stability or the ability to adapt to a wide range of production environments by being in the top-performance group for yield at more than 50% of the test locations during the past 3-year period. The top yield frequency entries for yield in 2007 included Eslick and Pinnacle at 57% of the test locations.

Bushel weight (Table 8). The top bushel weight entries (state averages in Table 8) were **Conlon, Eslick, Tradition, and Rawson at 46 lb** with a state average of 45 lb. Varieties differing **more than one pound** were significantly higher or lower in bushel weight.

Height (Table 8). The varieties **Robust (33 inches); Drummond (32 inches); and Tradition, Rawson, Lacey, Legacy, and Stellar-ND (31 inches)** were the tallest varieties while the state average was 31 inches. Varieties **differing more than 2 inches in height** were significantly higher or lower in height.

Lodging (Table 8). The varieties **Eslick, Tradition, Rawson, Lacey, Pinnacle, and Stellar-ND with lodging scores of 1** had a lower and better lodging score than the four other varieties. Varieties **differing more than 1 in lodging score** were significantly higher or lower in lodging.

Grain protein content (Table 8). The varieties **Conlon (13.6%), Lacey and Robust (13.3%), Drummond and Legacy (13.1%), Eslick (13.0%), and Tradition (12.7%)** were the highest in grain protein with a state average of 12.7%. The variety **Pinnacle (11.0%)** was the lowest in grain protein content. Varieties differing **more than 0.9% (1% rounded-off) in grain protein** were significantly higher or lower in protein content.

Winter Wheat

Yield (Tables 10a-c). The top entries for yield for the past 3 years (2005-07) included all the released varieties with 3-year yield averages (Tables 10b-c) except for one variety at Martin. At the only valid test sites with 3-year averages (Martin, Winner, and Wall) the yield differences were nonsignificant at Winner and Wall, while all the other entries at Martin were significantly higher in yield than Harding. The top entries for yield in 2007 were **Overland and SD 00111-9 at 57, Millennium at 55, Arapahoe at 54, Nu Dakota and Hawken at 51, and Wesley at 50 bu/acre.**

Bushel weight (Table 11). The top bushel weight entries (state averages in Table 11) **were SD 00111-9, Millennium, Overland, and Tandem at 61 lb; and SD01273 at 60 lb** with a state average of 59 lb. Varieties differing **more than one pound** were significantly higher or lower in bushel weight.

Height (Table 8). The varieties **Jerry (36 inches); Harding (35 inches); Tandem and Darrell (34 inches); and Millennium and Arapahoe (33 inches)** were the tallest varieties while the state average was 31 inches. Varieties differing more than 3 inches in height were significantly higher or lower in height.

Grain protein content (Table 11). The entries **SD 98W175-1-1 (13.2%); SD00111-9 (13.1%); Harding (12.8%), Hawken (12.7%); and Arapahoe, SD03171, and SD 01058 (12.5%)** were the highest in grain protein with a state average of 12.2%. Entries differing **more than 0.7%** (1% rounded-off) in grain protein were significantly higher or lower in protein content.

Field Peas

Yield (Tables 13a-b). The top entries for yield for 2007 by test location were:

South Shore – **CDC Golden**; **Eclipse** and **SW Marquee**; **Fusion**; and **CEB 4152** and **Cooper** at 70, 65, 64, and 63 bu/acre, respectively, 2007.

Selby – **CEB 1093**; **Cooper**, and **CDC Golden** at 64, 62, and 61 bu/acre, respectively, 2007.

Wall – During the 2-year period at Wall, yield differences among the varieties were nonsignificant. The top yielding varieties in 2007 were **CEB 4152**; **DS Admiral**; **SW Midas**, **SW Salute**, and **Fusion**; and **Eclipse**, **CDC Meadow**, and **K2** at 35, 34, 33, and 32 bu/acre, respectively.

Bison –**CEB 1093 and DS Admiral**, and **Eclipse and SW Salute** at 29 and 27 bu/acre, respectively, 2007.

Bushel weight (Table 14, average of all locations). The top bushel weight entries (state averages in Table 11) **included ten entries that weighed at 60 lb or higher;** the state bushel weight average was 60 lb. Varieties differing **more than one pound** were significantly higher or lower in bushel weight.

Height (Table 14, average of Wall and Bison). The tallest varieties **included 8 varieties that measured 24 inches or more in height.** The state height average was 24 inches. Varieties differing **more than 3 inches** in height were significantly higher or lower in height.

Lodging (Table 14, average of Wall and Bison). The entries with the lowest lodging score included **nine entries that exhibited a lodging score of 0 or 1**. Varieties differing **more than 1 in lodging score** were significantly higher or lower in lodging.

Grain protein content (Table 14, average of South Shore and Selby). The highest grain protein entry was **Cruiser at 30.5%**. The state average for grain protein was 27.1%. Entries **differing more than 0.6% (1% rounded-off) in grain protein** were significantly higher or lower in protein content.

The Variety Release/Recommendation Committee includes plant breeders, pathologists, research scientists, Extension agronomists, and managers of the Seed Certification Service and Foundation Seed Stocks Division.

The efforts of the following people are gratefully acknowledged:

SDSU Oat Breeding Project, L. Hall

SDSU Spring Wheat Breeding Project, K. Glover and J. Kleinjan

SDSU Winter Wheat Breeding Project, A. Ibrahim, R. Little, and S. Kalsbeck

Brookings Agronomy Farm, D. Doyle and Staff

N.E. Research Farm (South Shore), A. Heuer

S.E. Research Farm (Beresford), R. Berg and Staff

Dakota Lakes Research Farm (Pierre), D. Beck and Staff

The cooperation and resources of these growers are gratefully acknowledged:

M. Aamot, Kennebec
G. Geise, Selby
R. & L. Haskins, Hayes
B. Jorgensen, Tripp Co.
S. Masat, Spink Co
Nelson Brothers, Miller
D. Neuharth, Hayes
L. Novotny, Martin
D. Patterson, Wall
H. Roghair, Okaton
R. Rosenow, Ralph
A. & I. Ryckmann, Brown Co
R. Seidel, Bison
M. Stiegelmeier, Selby
R. Van Der Pol, Platte
D. Wilson, Sturgis

Table A. Minimum criteria required for the recommended list in this publication.

Trait	Crop				
	Spring Wheat	Oats	Barley	Winter Wheat	Field pea
Yield	3/15*	3/15	3/12		3/15
Bushel weight	3/15	3/15	3/12	3/15	3/15
Height	3/15	3/15	3/12	3/15	3/15
Lodging	WA	WA	WA		WA
Disease reaction	A	A	A	WA	A
Protein	3/15	-	3/12		3/15
Quality data#	2/4	WA	WA	3/15	WA
Unique traits$	WA	WA	WA	WA	WA

3 years/15 location-years.
Includes milling and baking.
$ Traits that affect production and marketing.
A= annually, WA= when available.

Table B. Date test trials were seeded, by crop and test location, for year 2007.

Location	Crop				
	HRS Wheat	Oats	Barley	Field Pea	HRW Wheat (Fall 2006)
Beresford	-	April 18	-	-	-
Bison	April 23	April 23	April 23	April 23	Sept. 19
Brookings	April 18	April 18	April 18		Oct. 1
Brown Co.	April 17	April 17	April 17		-
Pierre-DL	-	-	-		Sept. 26
Hayes	-	-	-	April 12	Sept. 20
Kennebec	-	-	-		Oct. 3
Martin	-	-	-		Sept. 26
Miller	April 18	April 18	April 18		-
Oelrichs	-	-	-		Sept. 21
Okaton		April 17			
Onida	-	-	-	-	Sept. 26
Platte	-	-	-		Sept. 29
Ralph	April 23	-	April 23		-
Selby	April 24	April 24	April 24	April 24	Sept. 27
South Shore	April 20	April 20	April 20	April 20	Oct. 2
Spink Co.	April 19	-	-		-
Sturgis	-	-	-		Sept. 19
Tripp Co.	-	-	-		Sept. 29
Wall	April 13	April 13	April 13	April 16	Sept. 28

*Darkened dates indicates test trials, by location and crop, that were not harvested because of drought or other factors; or the data was dropped because the level of experimental error in the test trial was too high for the data to be valid or acceptable.

Table 1a. Hard red spring wheat yield results- South Dakota eastern locations, 2005-2007.

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)								East Yield Avg. (BU/A)		State Yield Avg. (BU/A)	
	Brookings		South Shore		Miller		Spink Co.					
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Traverse (0)	44+	54+	59	57+	40+	35+	58+	61+	50	53	47	50
Howard (4)	39	46	67+	58+	36	34+	57+	60+	50	50	47	49
SD 3868 (-)	43+	48	60	56+	40+	37+	50	62+	48	52	44	49
Steele-ND (3)	41+	46	64	57+	35	34+	52+	59+	49	50	45	48
Briggs (0)	42+	48	65	56+	38	35+	49	59+	48	50	45	48
Granger (0)	43+	48	57	54+	37	32+	46	57+	46	49	43	47
SD 3870 (-)	43+	46	60	55+	38	38+	46	58+	46	50	43	47
SD 3851 (-)	38	47	60	54+	35	36+	45	55+	43	48	41	46
Freyr (1)	33	42	57	51+	32	32+	47	57+	42	47	41	45
Walworth (0)	39	46	57	48	31	31+	38	52	42	45	41	44
Glenn (3)	31	38	58	52+	31	32+	47	57+	42	46	39	44
Forge (-1)	38	47	57	50	32	33+	34	50	40	45	39	44
Banton (1)	36	44	61	51	33	31+	47	56+	43	45	41	43
Ulen (2)	33	40	57	49	31	29+	42	56+	41	45	39	43
Russ (2)	38	45	58	49	32	33+	41	49	41	45	39	43
Oxen (2)	34	42	50	47	29	31+	36	52	38	44	38	43
Reeder (3)	38	44	55	45	26	31+	30	45	38	43	37	41
Alsen (4)	34	39	50	48	30	29+	37	50	38	43	37	41
Chris,CK (3)	28	35	37	36	24	26+	29	40	29	35	28	34
SD 3944 (-)	45+	.	66+	.	38	.	54+	.	53	.	49	.
SD 3942 (-)	43+	.	65	.	40+	.	52+	.	51	.	48	.
Faller (-)	40+	.	64	.	43+	.	55+	.	50	.	47	.
SD 3943 (-)	43+	.	69+	.	39+	.	54+	.	52	.	47	.
SD 3948 (-)	42+	.	71+	.	36	.	57+	.	51	.	47	.
SD 3965 (-)	44+	.	61	.	37	.	51	.	49	.	46	.
RB07 (2)	35	.	63	.	37	.	50	.	47	.	45	.
SD 3927 (-)	35	.	59	.	35	.	52+	.	45	.	43	.
SD 3956 (-)	39	.	65	.	33	.	44	.	45	.	43	.
Kelby (2)	36	.	61	.	31	.	44	.	44	.	41	.
Exp 06MSP3 (-)	35	.	59	.	34	.	39	.	42	.	41	.
Kuntz (2)	33	.	58	.	35	.	47	.	44	.	40	.
Hat Trick (3)	34	.	53	.	32	.	43	.	41	.	39	.
Ada (1)	34	.	51	.	31	.	43	.	41	.	39	.
Test avg. :	38	44	59	51	34	33	46	54	44	47	42	45
High avg. :	45	54	71	58	43	38	58	62	53	53	49	50
Low avg. :	28	35	37	36	24	26	29	40	29	35	28	34
# LSD (.05) :	5	5	5	7	4	^NS	6	8				
## TPG-value :	40	49	66	51	39	26	52	54				
### C.V. :	9	8	6	7	8	13	10	7				

* Heading, the relative days to heading, compared to the variety - Briggs.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

^ Yield differences within a column are non-significant (NS) at the .05 level of probability.

Table 1b. Hard red spring wheat yield results- South Dakota eastern locations (Continued).

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)				East Yield Avg. (BU/A)		State Yield Avg. (BU/A)		State Top-Yield Freq. ** (%)	
	Selby		Brown Co.							
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Traverse (0)	51+	52+	49	58+	50	53	47	50	63	100
Howard (4)	45	46	53+	58+	50	50	47	49	63	47
SD 3868 (-)	44	48+	50	58+	48	52	44	49	25	86
Steele-ND (3)	47	48+	52	55+	49	50	45	48	38	86
Briggs (0)	45	47+	50	56+	48	50	45	48	25	86
Granger (0)	44	50+	47	54+	46	49	43	47	13	86
SD 3870 (-)	44	46	47	54+	46	50	43	47	13	71
SD 3851 (-)	39	43	43	52+	43	48	41	46	13	71
Freyr (1)	44	45	41	52+	42	47	41	45	13	71
Walworth (0)	41	43	46	52+	42	45	41	44	13	43
Glenn (3)	42	45	40	50	42	46	39	44	0	43
Forge (-1)	39	43	40	48	40	45	39	44	25	29
Banton (1)	37	39	45	49	43	45	41	43	13	43
Ulen (2)	38	42	42	52+	41	45	39	43	0	43
Russ (2)	38	43	38	50	41	45	39	43	0	29
Oxen (2)	34	41	44	50	38	44	38	43	13	29
Reeder (3)	36	40	40	51	38	43	37	41	13	29
Alsen (4)	35	41	39	48	38	43	37	41	13	14
Chris,CK (3)	25	31	31	43	29	35	28	34	0	0
SD 3944 (-)	54+	.	58+	.	53	.	49	.	88	
SD 3942 (-)	48+	.	56+	.	51	.	48	.	88	
Faller (-)	52+	.	48	.	50	.	47	.	63	
SD 3943 (-)	49+	.	56+	.	52	.	47	.	88	
SD 3948 (-)	44	.	53+	.	51	.	47	.	63	
SD 3965 (-)	50+	.	50	.	49	.	46	.	38	
RB07 (2)	49+	.	46	.	47	.	45	.	38	
SD 3927 (-)	43	.	46	.	45	.	43	.	25	
SD 3956 (-)	41	.	48	.	45	.	43	.	13	
Kelby (2)	43	.	46	.	44	.	41	.	13	
Exp 06MSP3 (-)	48+	.	38	.	42	.	41	.	25	
Kuntz (2)	43	.	47	.	44	.	40	.	0	
Hat Trick (3)	44	.	42	.	41	.	39	.	0	
Ada (1)	47	.	40	.	41	.	39	.	0	
Test avg. :	43	44	46	52	44	47	42	45		
High avg. :	54	52	58	58	53	53	49	50		
Low avg. :	25	31	31	43	29	35	28	34		
# LSD (.05) :	6	5	5	6						
## TPG-value :	48	47	53	52						
### C.V. :	10	8	8	8						

* Heading, the relative days to heading, compared to the variety - Briggs.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

Table 1c. Hard red spring wheat yield results- South Dakota western locations, 2005-2007.

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)				West Yield Avg. (BU/A)		State Yield Avg. (BU/A)		State Top-Yield Freq. ** (%)	
	Bison		Ralph							
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Traverse (0)	31	.	41+	36+	36	36	47	50	63	100
Howard (4)	34+	.	46+	38+	40	38	47	49	63	47
SD 3868 (-)	30	.	38	36+	34	36	44	49	25	86
Steele-ND (3)	30	.	42+	36+	36	36	45	48	38	86
Briggs (0)	34+	.	38	34+	36	34	45	48	25	86
Granger (0)	30	.	38	35+	34	35	43	47	13	86
SD 3870 (-)	30	.	38	35+	34	35	43	47	13	71
SD 3851 (-)	32+	.	39	37+	36	37	41	46	13	71
Freyr (1)	33+	.	37	36+	35	36	41	45	13	71
Walworth (0)	30	.	42+	35+	36	35	41	44	13	43
Glenn (3)	29	.	33	32	31	32	39	44	0	43
Forge (-1)	32+	.	41+	37+	37	37	39	44	25	29
Banton (1)	32+	.	35	33	34	33	41	43	13	43
Ulen (2)	31	.	34	32	33	32	39	43	0	43
Russ (2)	31	.	37	34+	34	34	39	43	0	29
Oxen (2)	36+	.	39	36+	38	36	38	43	13	29
Reeder (3)	34+	.	33	34+	34	34	37	41	13	29
Alsen (4)	32+	.	36	33	34	33	37	41	13	14
Chris,CK (3)	23	.	25	24	24	24	28	34	0	0
SD 3944 (-)	36+	.	42+	.	39	.	49	.	88	
SD 3942 (-)	35+	.	41+	.	38	.	48	.	88	
Faller (-)	30	.	44+	.	37	.	47	.	63	
SD 3943 (-)	34+	.	34	.	34	.	47	.	88	
SD 3948 (-)	32+	.	39	.	36	.	47	.	63	
SD 3965 (-)	33+	.	40	.	37	.	46	.	38	
RB07 (2)	35+	.	47+	.	41	.	45	.	38	
SD 3927 (-)	33+	.	38	.	36	.	43	.	25	
SD 3956 (-)	33+	.	40	.	37	.	43	.	13	
Kelby (2)	33+	.	35	.	34	.	41	.	13	
Exp 06MSP3 (-)	31	.	43+	.	37	.	41	.	25	
Kuntz (2)	30	.	28	.	29	.	40	.	0	
Hat Trick (3)	28	.	34	.	31	.	39	.	0	
Ada (1)	28	.	38	.	33	.	39	.	0	
Test avg. :	32	.	38	34	35	34	42	45		
High avg. :	36	.	47	38	41	38	49	50		
Low avg. :	23	.	25	24	24	24	28	34		
# LSD (.05) :	4		6	4						
## TPG-value :	32		41	34						
### C.V. :	8		12	10						

* Heading, the relative days to heading, compared to the variety - Briggs.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

Table 2. Eastern, western, and state spring wheat averages for bushel wt. (BW), height (HT), lodging (LDG), and grain protein (PRT) in 2007.

Variety (Hdg.)* - by state BW avg.	East Avg. - BW, HT, LDG, PRT				West Avg. - BW, HT, LDG, PRT				State Avg. - BW, HT, LDG, PRT			
	BW lb	HT in	LDG	PRT %	BW lb	HT in	LDG	PRT %	BW lb	HT in	LDG	PRT %
SD 3956(-)	59	33	1	13.8	59	33	1	.	59+	33	1	13.8
Banton (1)	59	33	1	14.4	59	33	1	.	59+	33	1	14.4
SD 3927(-)	59	33	1	13.8	60	33	1	.	59+	33	1	13.8
SD 3944(-)	58	33	1	13.7	60	33	1	.	59+	33	1	13.7
SD 3948(-)	59	34	1	14.1	58	34	1	.	59+	34	1	14.1
RB07 (2)	58	32	1	14.4	60	32	1	.	59+	32	1	14.4
Hat Trick (3)	59	32	1	13.9	59	31	1	.	59+	32	1	13.9
Kelby (2)	58	30	1	14.7	61	30	1	.	59+	30	1	14.7+
SD 3851(-)	59	34	1	13.8	56	35	1	.	59+	34	1	13.8
Ada (1)	58	32	1	13.9	58	31	1	.	58	32	1	13.9
Alsen (4)	58	32	1	14.5	58	32	1	.	58	32	1	14.5
Ulen (2)	58	33	1	14.3	58	34	1	.	58	33	1	14.3
Briggs (0)	58	33	1	14.2	57	33	1	.	58	33	1	14.2
Granger (0)	57	35	1	13.7	59	35	1	.	58	35	1	13.7
SD 3870(-)	58	36	1	13.9	58	36	1	.	58	36	1	13.9
SD 3965(-)	57	35	1	13.4	59	34	1	.	58	35	1	13.4
Freyr (1)	57	32	1	14.1	59	32	1	.	58	32	1	14.1
Exp 06MSP3(-)	57	30	1	15.2	60	30	1	.	57	30	1	15.2+
Kuntz (2)	57	30	1	13.7	59	31	1	.	57	30	1	13.7
Howard (4)	58	34	1	14.3	55	33	1	.	57	34	1	14.3
SD 3943(-)	58	33	1	13.3	54	33	1	.	57	33	1	13.3
Glenn (3)	58	33	1	14.9	54	35	1	.	57	33	1	14.9+
SD 3942(-)	58	31	1	12.8	54	33	1	.	57	32	1	12.8
Forge (-1)	57	34	1	13.0	55	34	1	.	57	34	1	13.0
Steele-ND (3)	58	34	1	14.5	54	34	1	.	57	34	1	14.5
Walworth (0)	57	33	1	13.9	57	33	1	.	57	33	1	13.9
Russ (2)	56	34	1	13.9	57	33	1	.	57	34	1	13.9
Faller (-)	57	33	1	13.7	54	31	1	.	56	33	1	13.7
SD 3868(-)	57	34	1	13.2	55	36	1	.	56	34	1	13.2
Reeder (3)	57	33	1	13.3	55	32	1	.	56	32	1	13.3
Traverse (0)	56	34	1	13.4	56	34	1	.	56	34	1	13.4
Chris,CK (3)	55	37	2	14.6	57	37	1	.	56	37+	1	14.6+
Oxen (2)	55	32	1	13.4	58	31	1	.	56	31	1	13.4
Test avg. :	58	33	1	13.9	57	33	1	.	58	33	1	13.9
High avg. :	59	37	2	15.2	61	37	1	.	59	37	1	15.2
Low avg. :	55	30	1	12.8	54	30	1	.	56	30	1	12.8
# LSD (.05) :									1	1		0.6
## TPG-value :									59	37	1	14.6
### C.V. :									4	6	18	4.0

* Heading, the relative days to heading, compared to the variety - Briggs.

** Lodging score: 0= all plants erect, 3= 50% of plants lodged at 45°-angle, 5= all plants flat.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum or maximum value required for the top-performance group (TPG).

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error.

Table 3. Origin, traits, and disease reactions for hard red spring wheat varieties tested in 2007.

Variety	Origin	Rel Hdg*	Ldg Res #	Rust Stripe	Rust Stem	Rust Leaf	Fusarium Head Blight	PVP** Status
Forge	SD-97	-1	G	MS+	MR+	MS+	MS+~	Yes
Briggs	SD-02	0	G	MR	R	MR	M~	Yes
Granger	SD-04	0	G	MR	R	MR	M~	Yes
Traverse	SD-06	0	G	MR	R	MR	MR~	Yes
Walworth	SD-01	0	G	S	R	MS	M~	Yes
Ada	MN-06	1	G	-	R	R	MS~	Yes
Banton	TSS-04	1	VG	-	R	MR	M~	Yes
Freyr	AW-05	1	G	R	MR	MR	MR~	Yes
Kelby	AW-06	2	VG	-	MR	R	MR	Yes
Kuntz	AW-07	2	VG	MS	MR	MR	MS~	Yes
Oxen	SD-96	2	G	MR	R	S	MS~	Yes
RB07	MN-07	2	G	MS	MR	MR	MS	-
Russ	SD-95	2	G	MR	R	MS	MS~	Yes
Ulen	MN-04	2	G	-	R	MR	MS	Yes
Chris, CK	MN-65	3	P	-	R	MS	S	No
Glenn	ND-05	3	G	MR	R	R	MR~	Yes
Hat Trick	TSS-07	3	G	MR	MR	R	MR	-
Reeder	ND-99	3	VG	MR	R	MS	MS~	Yes
Steele-ND	ND-04	3	G	MR	MR	R	MR~	Yes
Alsen	ND-00	4	G	R	R	MS	MR~	Yes
Howard	ND-06	4	G	-	R	R	MR~	No
Faller	ND-07	-	-	-	-	-	-	***Pdg
SD 3851	SD-		-	-	-	-	-	-
SD 3868	SD-		-	-	-	-	-	-
SD 3870	SD-		-	-	-	-	-	-
SD 3927	SD-		-	-	-	-	-	-
SD 3942	SD-		-	-	-	-	-	-
SD 3943	SD-		-	-	-	-	-	-
SD 3944	SD-		-	-	-	-	-	-
SD 3948	SD-		-	-	-	-	-	-
SD 3956	SD-		-	-	-	-	-	-
SD 3965	SD-		-	-	-	-	-	-
Exp 06MSP3	TSS-		-	-	-	-	-	-

"* Heading, the relative difference in days to heading, compared to Briggs."

"# E= excellent, G= good, VG= very good, F= fair, P= poor."

"+ R= resistant, MR= moderately resist., MS= mod. susceptible, S= susc., VS=very susc."

~ Indicates variety exhibits a consistent tolerance to head blight in grainyield and quality.

"** Plant variety protection (PVP), title V certification option- sold by variety name only as a class of certified seed.

*** PVP application pending.

Table 4a. Oat yield results - South Dakota East River locations, 2005-2007.

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)								East Yield Avg. (BU/A)		State Yield Avg. (BU/A)	
	Brookings		South Shore		Beresford		Miller					
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Hulled types:												
Stallion (8)	123+	119+	141+	129+	133+	126+	115+	.	128	122	113	122
HiFi (8)	115	123+	134	131+	102	112+	107+	.	116	122	104	122
Beach (6)	124+	117+	139+	125+	122	114+	97	.	121	118	107	118
Morton (7)	114	110+	137	129+	113	111+	103	.	117	115	105	115
Loyal (8)	115	117+	130	119+	108	113+	106+	.	114	113	100	113
Don (1)	112	112+	130	114+	113	99	104	.	118	106	107	106
Jerry (5)	117	113+	119	107	112	107+	94	.	110	106	100	106
Reeves (2)	107	105+	133	112	119	101	99	.	115	103	103	103
Hytest (4)	84	89	91	94	65	70	80	.	78	84	74	84
SD 041405 (-)	119	.	149+	.	131+	.	119+	.	130	.	119	.
SD 041451 (-)	119	.	148+	.	125+	.	109+	.	127	.	115	.
SD 041445 (-)	130+	.	139+	.	128+	.	116+	.	127	.	114	.
Souris (6)	123+	.	141+	.	117	.	105+	.	124	.	112	.
SD 030888 (-)	127+	.	146+	.	125+	.	108+	.	125	.	112	.
SD 020883-10 (-)	109	.	148+	.	127+	.	110+	.	121	.	110	.
SD 020883-29 (-)	115	.	136	.	122	.	112+	.	120	.	109	.
SD 020883-11 (-)	111	.	146+	.	124+	.	99	.	120	.	109	.
SD 020883-17 (-)	117	.	142+	.	115	.	103	.	119	.	108	.
SD 041117 (-)	113	.	144+	.	121	.	104	.	119	.	108	.
Hulless types:												
Buff Hls (3)	78	84	97	91	93	85	71	.	81	84	76	84
SD 020301-20 (-)	86	.	116	.	91	.	84	.	93	.	84	.
Test avg. :	109	104	131	112	112	100	100	.	113	104	102	104
High avg. :	130	123	149	131	133	126	119	.	130	122	119	122
Low avg. :	39	60	77	77	63	63	60	.	53	67	49	67
# LSD (.05) :	8	18	11	18	10	23	14					
## TPG-value :	122	105	138	113	123	103	105					
### C.V. :	5	8	6	8	7	11	10					

* Heading, the relative days to heading, compared to the variety - Don.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

** Frequency or percent of all test locations that a variety was in the TPG for yield.

Table 4b. Oat yield results - South Dakota East River locations (Continued).

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)				East Yield Avg. (BU/A)		State Yield Avg. (BU/A)		State Top-Yield Freq. ** (%)	
	Selby		Brown Co.							
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Hulled types:										
Stallion (8)	124	.	133+	115+	128	122	113	122	63	100
HiFi (8)	113	.	127+	121+	116	122	104	122	25	100
Beach (6)	119	.	123+	116+	121	118	107	118	38	100
Morton (7)	114	.	119	108+	117	115	105	115	0	100
Loyal (8)	109	.	113	102+	114	113	100	113	13	100
Don (1)	128	.	118	100+	118	106	107	106	0	75
Jerry (5)	109	.	111	95+	110	106	100	106	0	75
Reeves (2)	124	.	105	93+	115	103	103	103	0	50
Hytest (4)	66	.	79	84	78	84	74	84	0	0
SD 041405 (-)	134+	.	130+	.	130	.	119	.	88	
SD 041451 (-)	140+	.	121	.	127	.	115	.	75	
SD 041445 (-)	118	.	128+	.	127	.	114	.	75	
Souris (6)	126	.	132+	.	124	.	112	.	63	
SD 030888 (-)	123	.	122+	.	125	.	112	.	75	
SD 020883-10 (-)	120	.	113	.	121	.	110	.	50	
SD 020883-29 (-)	116	.	118	.	120	.	109	.	38	
SD 020883-11 (-)	122	.	115	.	120	.	109	.	38	
SD 020883-17 (-)	122	.	114	.	119	.	108	.	25	
SD 041117 (-)	121	.	113	.	119	.	108	.	25	
Hulless types:										
Buff Hls (3)	67	.	78	74	81	84	76	84	0	
SD 020301-20 (-)	80	.	101	.	93	.	84	.	0	
Test avg. :	110	.	112	98	113	104	102	104		
High avg. :	140	.	133	121	130	122	119	122		
Low avg. :	21	.	55	67	53	67	49	67		
# LSD (.05) :	11		11	29						
## TPG-value :	129		122	92						
### C.V. :	7		7	10						

* Heading, the relative days to heading, compared to the variety - Don.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

** Frequency or percent of all test locations that a variety was in the TPG for yield.

Table 4c. Oat yield results - South Dakota West River locations, 2005-2007.

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)				West Yield Avg. (BU/A)		State Yield Avg. (BU/A)		State Top-Yield Freq. ** (%)	
	Bison		Okaton							
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Hulled types:										
Stallion (8)	67	.	70	.	69	.	113	122	63	100
HiFi (8)	56	.	78	.	67	.	104	122	25	100
Beach (6)	60	.	72	.	66	.	107	118	38	100
Morton (7)	63	.	75	.	69	.	105	115	0	100
Loyal (8)	60	.	58	.	59	.	100	113	13	100
Don (1)	68	.	80	.	74	.	107	106	0	75
Jerry (5)	65	.	75	.	70	.	100	106	0	75
Reeves (2)	67	.	70	.	69	.	103	103	0	50
Hytest (4)	63	.	65	.	64	.	74	84	0	0
SD 041405 (-)	78+	.	88+	.	83	.	119	.	88	
SD 041451 (-)	76+	.	84+	.	80	.	115	.	75	
SD 041445 (-)	68	.	85+	.	77	.	114	.	75	
Souris (6)	64	.	90+	.	77	.	112	.	63	
SD 030888 (-)	61	.	84+	.	73	.	112	.	75	
SD 020883-10 (-)	72	.	83+	.	78	.	110	.	50	
SD 020883-29 (-)	73+	.	83+	.	78	.	109	.	38	
SD 020883-11 (-)	72	.	83+	.	78	.	109	.	38	
SD 020883-17 (-)	71	.	82+	.	77	.	108	.	25	
SD 041117 (-)	67	.	83+	.	75	.	108	.	25	
Hulless types:										
Buff Hls (3)	51	.	74	.	63	.	76	84	0	
SD 020301-20 (-)	54	.	60	.	57	.	84	.	0	
Test avg. :	64	.	76	.	70	.	102	104		
High avg. :	78	.	90	.	83	.	119	122		
Low avg. :	33	.	44	.	39	.	49	67		
# LSD (.05) :	5		9							
## TPG-value :	73		81							
### C.V. :	6		9							

* Heading, the relative days to heading, compared to the variety - Don.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

** Frequency or percent of all test locations that a variety was in the TPG for yield.

Table 5. Eastern, western, and state oat averages for bushel weight (BW), height (HT), lodging (LDG), and grain protein (PRT) in 2007.

Variety (Hdg.)* - by state BW avg.	East Avg. - BW, HT, LDG, PRT				West Avg. - BW, HT, LDG, PRT				State Avg. - BW, HT, LDG, PRT			
	BW lb	HT in	LDG	PRT %	BW lb	HT in	LDG	PRT %	BW lb	HT in	LDG	PRT %
Hulled types:												
SD 020883-29 (-)	40	36	3	16.9	39	34	1	.	39	36	2	16.9
SD 020883-11 (-)	40	36	2	16.8	39	34	1	.	39	35	2	16.8
SD 020883-10 (-)	40	37	2	16.3	38	35	1	.	39	36	2	16.3
SD 041451 (-)	40	40	3	15.8	38	35	1	.	39	38	2	15.8
Hytest (4)	39	40	2	19.1	39	37	1	.	39	39	2	19.1+
SD 020883-17 (-)	39	37	3	16.5	38	34	1	.	39	36	2	16.5
Reeves (2)	39	40	3	18.0	38	37	1	.	39	39	2	18.0
SD 041445 (-)	40	40	2	15.6	35	35	1	.	39	39	2	15.6
SD 041117 (-)	39	36	2	16.4	37	34	1	.	38	35	2	16.4
Beach (6)	39	42	2	14.7	35	36	1	.	38	40+	2	14.7
SD 041405 (-)	38	35	3	15.0	37	32	1	.	38	34	2	15.0
Jerry (5)	38	39	2	16.0	36	36	1	.	38	38	2	16.0
SD 030888 (-)	38	34	2	15.4	35	31	1	.	38	33	2	15.4
Stallion (8)	39	42	2	16.6	33	36	1	.	37	40+	2	16.6
Don (1)	37	34	3	15.3	36	32	1	.	37	33	2	15.3
Souris (6)	37	36	2	15.6	35	31	1	.	37	34	2	15.6
Loyal (8)	37	41	2	17.0	34	36	1	.	36	40+	2	17.0
Morton (7)	37	42	2	15.8	34	37	1	.	36	41+	1+	15.8
HiFi (8)	37	39	2	15.4	31	35	1	.	35	38	2	15.4
Hulless types:												
Buff Hls (3)	45	36	2	17.9	38	32	1	.	44	35	1+	17.9
SD 020301-20 (-)	46	39	2	18.8	41	34	1	.	45+	38	2	18.8+
Test avg. :	39	38	2	16.5	36	34	1	.	39	37	2	16.5
High avg. :	46	42	3	19.1	41	37	1	.	45	41	2	19.1
Low avg. :	37	34	2	14.7	31	31	1	.	35	33	1	14.7
# LSD (.05) :									1	1	1	0.8
## TPG-value :									44	40	1	18.3
### C.V. :									5	6	27	4

* Heading, the relative days to heading, compared to the variety - Don.

** Lodging score: 0= all plants erect, 3= 50% of plants lodged at 45°-angle, 5= all plants flat.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum or maximum value required for the top-performance group (TPG).

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error.

Table 6. Origin, variety traits, and disease reactions for oat entries tested in 2007.

Variety	Origin	Rel Hdg*	Ldg Res	Grain Color	Smut	Rust Stem	Rust Crown	Red Leaf	PVP** Status
Hulled types:									
Don	IL-85	1	Good	White	R+	MS+	S+	MR+	No
Reeves	SD-02	2	Fair	White	MR	S	MS	MS	No
Hytest	SD-86	4	Good	Lt.Cream	MR	MS	S	S	No
Jerry	ND-94	5	Good	White	MS	MS	S	MS	Yes
Beach	ND-04	6	Good	White	R	S	MS	MS	Pdg
Souris	ND-06	6	VGood	White	MR	MS	R	MS	Yes
Morton	ND-01	7	Good	White	R	MS	MS	MS	Yes
HiFi	ND-01	8	Good	White	MR	R	MR	MS	Yes
Loyal	SD-00	8	Fair	White	R	S	MS	S	No
Stallion	SD-06	8	Fair	White	MS	S	MR	MR	***Pdg
SD 020883-29	SD-	-	-	-	-	-	-	-	-
SD 020883-10	SD-	-	-	-	-	-	-	-	-
SD 020883-11	SD-	-	-	-	-	-	-	-	-
SD 020883-17	SD-	-	-	-	-	-	-	-	-
SD 030888	SD-	-	-	-	-	-	-	-	-
SD 041117	SD-	-	-	-	-	-	-	-	-
SD 041405	SD-	-	-	-	-	-	-	-	-
SD 041445	SD-	-	-	-	-	-	-	-	-
SD 041451	SD-	-	-	-	-	-	-	-	-
Hulless types:									
Buff Hls	SD-02	3	Good	Hulless	R	S	MS	MR	No
SD 020301-20	SD-	-	-	-	-	-	-	-	-

* Heading, the relative difference in days to heading, compared to Don.

+ R= resistant, MR= moderately resist., MS= mod. susceptible, S= susc., VS= very susc..

** Plant variety protection (PVP), title V certification option- sold by variety name only as a class of certified seed.

*** PVP application pending.

Table 7a. Barley yield results - South Dakota East River locations, 2005-2007.

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)						East Yield Avg. (BU/A)		State Yield Avg. (BU/A)	
	Brookings		South Shore		Miller					
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Eslick (3)	59+	79+	76	81+	64+	61+	62	74	60	71
Lacey (0)	65+	74+	80	83+	52	51	63	69	59	66
Tradition (0)	54	66+	85+	84+	55	49	62	67	60	65
Drummond (2)	51	65+	86+	84+	59	47	63	67	59	64
Legacy (3)	66+	71+	73	76	53	45	59	64	55	61
Conlon (0)	60+	61+	88+	85+	62	58+	60	65	58	60
Stellar-ND (2)	58	68+	74	77	57	46	60	64	57	60
Robust (3)	57	64+	72	73	54	43	57	60	53	56
Pinnacle (3)	65+	.	88+	.	71+	.	70	.	63	.
Rawson (2)	64+	.	90+	.	63	.	67	.	60	.
Test avg. :	61	69	81	80	60	50	63	66	59	63
High avg. :	66	79	90	85	71	61	70	74	63	71
Low avg. :	51	61	72	73	52	43	57	60	53	56
# LSD (.05) :	7	NS^	6	6	7	8				
## TPG-value :	59	61	84	79	64	53				
### C.V. :	8	8	5	6	8	8				

* Heading, the relative days to heading, compared to the variety - Lacey.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

** Frequency or percent of all test locations that a variety was in the TPG for yield.

^ Yield differences within a column are non-significant (NS) at the .05 level of probability.

Table 7b. Barley yield results - South Dakota East River locations (Continued).

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)				East Yield Avg. (BU/A)		State Yield Avg. (BU/A)		State Top-Yield Freq. ** (%)	
	Selby		Brown Co.							
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Eslick (3)	76+	84+	36	64+	62	74	60	71	57	67
Lacey (0)	74+	75+	43	64+	63	69	59	66	29	50
Tradition (0)	72+	73	46+	64+	62	67	60	65	43	33
Drummond (2)	77+	76+	44	63+	63	67	59	64	29	50
Legacy (3)	64	69	41	60+	59	64	55	61	14	17
Conlon (0)	58	63	33	59+	60	65	58	60	43	50
Stellar-ND (2)	73+	69	39	59+	60	64	57	60	14	17
Robust (3)	64	61	39	57+	57	60	53	56	0	17
Pinnacle (3)	71	.	53+	.	70	.	63	.	57	
Rawson (2)	68	.	49+	.	67	.	60	.	43	
Test avg. :	71	71	44	61	63	66	59	63		
High avg. :	81	84	53	64	70	74	63	71		
Low avg. :	58	61	33	57	57	60	53	56		
# LSD (.05) :	9	10	8	NS^						
## TPG-value :	72	74	45	57						
### C.V. :	9	8	12	9						

* Heading, the relative days to heading, compared to the variety - Lacey.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

** Frequency or percent of all test locations that a variety was in the TPG for yield.

^ Yield differences within a column are non-significant (NS) at the .05 level of probability.

Table 7c. Barley yield results - South Dakota West River locations, 2005-2007.

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)				West Yield Avg. (BU/A)		State Yield Avg. (BU/A)		State Top-Yield Freq. ** (%)	
	Bison		Ralph							
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Eslick (3)	45+	.	67+	54+	56	54	60	71	57	67
Lacey (0)	47+	.	54	50+	51	50	59	66	29	50
Tradition (0)	51+	.	58	51+	55	51	60	65	43	33
Drummond (2)	47+	.	49	46+	48	46	59	64	29	50
Legacy (3)	43+	.	48	44+	46	44	55	61	14	17
Conlon (0)	46+	.	60+	33+	53	33	58	60	43	50
Stellar-ND (2)	46+	.	52	43+	49	43	57	60	14	17
Robust (3)	40+	.	43	37+	42	37	53	56	0	17
Pinnacle (3)	46+	.	48	.	47	.	63	.	57	
Rawson (2)	49+	.	38	.	44	.	60	.	43	
Test avg. :	46	.	52	45	49	45	59	63		
High avg. :	51	.	67	54	56	54	63	71		
Low avg. :	40	.	38	33	42	33	53	56		
# LSD (.05) :	NS		8	NS^						
## TPG-value :	40		59	33						
### C.V. :	9		11	13						

* Heading, the relative days to heading, compared to the variety - Lacey.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

** Frequency or percent of all test locations that a variety was in the TPG for yield.

^ Yield differences within a column are non-significant (NS) at the .05 level of probability.

Table 8. Eastern, western, and state barley averages for bushel weight (BW), height (HT), lodging (LDG), and grain protein (PRT) in 2007.

Variety (Hdg.)* - by state BW avg.	East Avg. - BW, HT, LDG, PRT				West Avg. - BW, HT, LDG, PRT				State Avg. - BW, HT, LDG, PRT			
	BW lb	HT in	LDG	PRT %	BW lb	HT in	LDG	PRT %	BW lb	HT in	LDG	PRT %
Conlon (0)	47	28	2	13.6	.	30	1	.	46+	29	2	13.6+
Eslick (3)	47	26	1	13.0	44	31	1	.	46+	27	1+	13.0 +
Tradition (0)	46	31	2	12.7	46	32	1	.	46+	31+	1+	12.7+
Rawson (2)	46	31	1	12.3	45	31	1	.	46+	31+	1+	12.3
Lacey (0)	45	31	2	13.3	45	33	1	.	45	31+	1+	13.3+
Robust (3)	45	32	2	13.3	45	34	1	.	45	33+	2	13.3+
Pinnacle (3)	45	30	1	11.0	43	29	1	.	45	30	1+	11.0
Drummond (2)	45	32	2	13.1	44	33	1	.	44	32+	2	13.1+
Legacy (3)	45	32	2	13.1	41	29	1	.	44	31+	2	13.1+
Stellar-ND (2)	44	31	2	12.2	42	32	1	.	43	31+	1+	12.2
Test avg. :	45	30	2	12.7	44	32	1	.	45	31	1	12.7
High avg. :	47	32	2	13.6	46	34	1	.	46	33	2	13.6
Low avg. :	44	26	1	11.0	41	29	1	.	43	27	1	11.0
# LSD(.05) :									1	2	1	0.9
## TPG-value :									46	31	1	12.7
### C.V. :									4	10	23	6

* Heading, the relative days to heading, compared to the variety - Lacey.

** Lodging score: 0= all plants erect, 3= 50% of plants lodged at 45°-angle, 5= all plants flat.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum or maximum value required for the top-performance group (TPG).

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error.

Table 9. Origin, traits, and disease reactions for barley varieties tested in 2007.

Variety	Origin	Rel Hdg*	Ldg Res #	Grain Use	Awn ## Texture	Loose Smut	Stem Rust	Blotch		PVP** Status
								Spot	Net	
Two-row types:										
Conlon	ND-96	0	G	Malt	SS	S+	S+	M+	MR+	Yes
Rawson	ND-05	2	F	Feed	SR	S	S	R	MS	No
Pinnacle	ND-07	3	-	*	S	-	-	-	-	***Pdg
Eslick	MT-04	3	F	Feed	R	S	S	MS	-	-
Six-row types:										
Lacey	MN-00	0	G	Malt	S	S	S	M	S	Yes
Tradition	BARI-03	0	F	Malt	S	MS	MS	M	S	Yes
Stellar-ND	ND-05	2	G	Feed	SS	S	S	M	MS	Yes
Drummond	ND-00	2	VG	Malt	SS	S	S	R	MS	Yes
Excel	MN-90	3	VG	Malt	S	S	S	M	S	Yes
Robust	MN-83	3	G	Malt	S	S	S	M	S	Yes
Legacy	BARI-00	3	G	Malt	S	MS	MR	M	MR	Yes

* Heading, the relative difference in days to heading, compared to Lacey.

E= excellent, G= good, VG= very good, F= fair, P= poor.

S= smooth, SS= semi-smooth, SR= semi-rough, and R= rough texture.

+ R= resistant, MR= moderately resist., MS= mod. susceptible, S= susc., VS= very susc..

** Plant variety protection (PVP), title V, certification option- sold by variety name only as a class of certified seed.

*** PVP application pending.

Table 10a. Winter wheat yield results - South Dakota western locations, 2005-2007.

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)								West Yield Avg. (BU/A)		State Yield Avg. (BU/A)	
	Wall		Bison		Hayes		Sturgis					
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Overland (4)	47	48+	58+	.	52	.	33+	30	51	44	57	48
Millennium (4)	44	48+	52	.	52	.	34+	33+	49	43	55	47
Arapahoe (3)	51+	46+	48	.	52	.	29	29	48	42	54	46
Wahoo (3)	45	49+	52	.	56+	.	33+	33+	47	44	51	46
Wesley (2)	54+	47+	57+	.	52	.	31	31	50	43	50	45
Wendy~W (-)	55+	49+	56+	.	54+	.	30	30	47	43	49	45
SD96240-3-1 (-)	44	46+	49	.	52	.	33+	31	45	43	47	45
Hatcher (2)	61+	49+	55	.	50	.	35+	36+	47	45	45	45
Trego~W (3)	52+	47+	57+	.	52	.	33+	33+	48	44	50	44
Expedition (0)	51+	46+	52	.	55+	.	30	31	46	42	49	44
Harding (5)	40	43+	44	.	55+	.	31	29	46	40	52	43
Jerry (5)	40	46+	37	.	48	.	32+	28	40	39	46	43
Alice~W (-)	50+	48+	55	.	46	.	30	30	43	43	45	43
Darrell (5)	46	48+	49	.	53+	.	30	32+	42	42	43	43
SD01W064 (-)	44	52+	46	.	48	.	31	30	40	44	42	43
Tandem (4)	48	45+	52	.	58+	.	30	31	46	41	48	42
Overley (0)	45	44+	54	.	51	.	23	27	45	40	46	42
Jagalene (3)	48	46+	51	.	49	.	29	31	36	41	36	40
SD00111-9 (-)	48	.	53	.	55+	.	31	.	51	.	57	.
SD01273 (-)	54+	.	47	.	54+	.	30	.	48	.	52	.
NuDakota~W (3)	56+	.	61+	.	52	.	29	.	49	.	51	.
Hawken (3)	56+	.	59+	.	53+	.	32+	.	49	.	51	.
SD01058 (-)	46	.	52	.	52	.	32+	.	46	.	49	.
NI04420 (-)	46	.	50	.	49	.	29	.	44	.	46	.
SD98W175-1-1 (-)	48	.	51	.	46	.	31	.	43	.	46	.
SD98W175-1 (-)	44	.	51	.	47	.	32+	.	44	.	46	.
SD03171 (-)	45	.	49	.	45	.	28	.	42	.	45	.
Ripper (2)	48	.	52	.	52	.	32+	.	42	.	43	.
Danby~W (3)	40	.	56+	.	55+	.	31	.	43	.	43	.
Test avg. :	48	47	52	.	52	.	31	31	45	42	48	44
High avg. :	61	52	61	.	58	.	35	36	51	45	57	48
Low avg. :	40	43	37	.	45	.	23	27	36	39	36	40
# LSD (.05) :	11	NS^	5		5		3	4				
## TPG-value :	50	43	56		53		32	32				
### C.V. :	13	14	7		7		6	9				

* Heading, the relative days to heading, compared to the variety - Expedition.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

^ Yield differences within a column are non-significant (NS) at the .05 level of probability.

Table 10b. Winter wheat yield results - South Dakota western locations, 2005-2007 (Continued).

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)								West Yield Avg. (BU/A)		State Yield Avg. (BU/A)	
	Martin		Platte		Kennebec		Winner					
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Overland (4)	38	50+	69+	.	55	.	53+	48+	51	44	57	48
Millennium (4)	36	47+	70+	.	54	.	51+	45+	49	43	55	47
Arapahoe (3)	40+	47+	62	.	54	.	51+	46+	48	42	54	46
Wahoo (3)	39	49+	55	.	47	.	45	44+	47	44	51	46
Wesley (2)	44+	53+	66+	.	51	.	45	41+	50	43	50	45
Wendy~W (-)	37	47+	52	.	42	.	48+	46+	47	43	49	45
SD96240-3-1 (-)	35	49+	55	.	50	.	40	45+	45	43	47	45
Hatcher (2)	35	52+	54	.	47	.	35	41+	47	45	45	45
Trego~W (3)	39	50+	52	.	50	.	47	46+	48	44	50	44
Expedition (0)	32	47+	57	.	43	.	44	42+	46	42	49	44
Harding (5)	35	43	69+	.	50	.	45	45+	46	40	52	43
Jerry (5)	32	45+	54	.	41	.	37	38+	40	39	46	43
Alice~W (-)	33	49+	52	.	37	.	42	46+	43	43	45	43
Darrell (5)	32	45+	50	.	38	.	35	44+	42	42	43	43
SD01W064 (-)	31	46+	46	.	37	.	40	47+	40	44	42	43
Tandem (4)	34	45+	55	.	46	.	43	43+	46	41	48	42
Overley (0)	38	49+	61	.	46	.	45	40+	45	40	46	42
Jagalene (3)	25	46+	33	.	29	.	27	40+	36	41	36	40
SD00111-9 (-)	41+	.	70+	.	63+	.	47	.	51	.	57	.
SD01273 (-)	39	.	62	.	55	.	46	.	48	.	52	.
NuDakota~W (3)	36	.	61	.	46	.	48+	.	49	.	51	.
Hawken (3)	35	.	61	.	50	.	42	.	49	.	51	.
SD01058 (-)	36	.	60	.	43	.	44	.	46	.	49	.
NI04420 (-)	37	.	53	.	44	.	46	.	44	.	46	.
SD98W175-1-1 (-)	35	.	53	.	42	.	40	.	43	.	46	.
SD98W175-1 (-)	34	.	56	.	41	.	44	.	44	.	46	.
SD03171 (-)	32	.	50	.	41	.	42	.	42	.	45	.
Ripper (2)	32	.	44	.	40	.	36	.	42	.	43	.
Danby~W (3)	31	.	50	.	42	.	35	.	43	.	43	.
Test avg. :	35	48	56	.	46	.	43	44	45	42	48	44
High avg. :	44	53	70	.	63	.	53	48	51	45	57	48
Low avg. :	25	43	33	.	29	.	27	38	36	39	36	40
# LSD (.05) :	4	8	6		4		5	NS^				
## TPG-value :	40	45	64		59		48	38				
### C.V. :	8	10	8		6		8	9				

* Heading, the relative days to heading, compared to the variety - Expedition.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

^ Yield differences within a column are non-significant (NS) at the .05 level of probability.

Table 10c. Winter wheat yield results - South Dakota eastern locations, 2005-2007.

Variety (Hdg.)* - by 3-yr then 2007 state yield avg.	Location Yield Avg. (BU/A at 13% moist.)										East Yield Avg. (BU/A)		State Yield Avg. (BU/A)	
	Brookings		South Shore		Selby		Onida		Pierre					
	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr	2007	3-Yr
Overland (4)	60+	64	74+	.	76+	.	62+	.	67+	.	68	64	57	48
Millennium (4)	57+	62	72+	.	69	.	61+	.	63+	.	64	62	55	47
Arapahoe (3)	57+	61	66	.	65	.	60+	.	61	.	62	61	54	46
Wahoo (3)	49	55	55	.	63	.	60+	.	63+	.	58	55	51	46
Wesley (2)	45	51	42	.	52	.	59+	.	55	.	51	51	50	45
Wendy~W (-)	46	52	43	.	57	.	57	.	62	.	53	52	49	45
SD96240-3-1 (-)	41	52	49	.	51	.	59+	.	54	.	51	52	47	45
Hatcher (2)	40	46	47	.	32	.	54	.	46	.	44	46	45	45
Trego~W (3)	43	43	54	.	61	.	55	.	59	.	54	43	50	44
Expedition (0)	46	53	45	.	66	.	52	.	60	.	54	53	49	44
Harding (5)	50	53	62	.	68	.	61+	.	61	.	60	53	52	43
Jerry (5)	50	59	57	.	64	.	55	.	51	.	55	59	46	43
Alice~W (-)	38	44	41	.	50	.	55	.	57	.	48	44	45	43
Darrell (5)	37	47	43	.	46	.	56	.	48	.	46	47	43	43
SD01W064 (-)	33	41	43	.	50	.	51	.	51	.	46	41	42	43
Tandem (4)	43	48	54	.	53	.	56	.	54	.	52	48	48	42
Overley (0)	47	51	40	.	42	.	50	.	59	.	48	51	46	42
Jagalene (3)	31	38	26	.	31	.	42	.	42	.	34	38	36	40
SD00111-9 (-)	63+	.	75+	.	79+	.	58+	.	61	.	67	.	57	.
SD01273 (-)	57+	.	54	.	61	.	61+	.	57	.	58	.	52	.
NuDakota~W (3)	44	.	57	.	55	.	61+	.	53	.	54	.	51	.
Hawken (3)	51	.	61	.	48	.	62+	.	56	.	56	.	51	.
SD01058 (-)	50	.	54	.	55	.	57	.	54	.	54	.	49	.
NI04420 (-)	41	.	43	.	49	.	52	.	57	.	48	.	46	.
SD98W175-1-1 (-)	44	.	55	.	46	.	55	.	56	.	51	.	46	.
SD98W175-1 (-)	44	.	45	.	53	.	55	.	57	.	51	.	46	.
SD03171 (-)	42	.	45	.	58	.	53	.	53	.	50	.	45	.
Ripper (2)	35	.	44	.	43	.	49	.	53	.	45	.	43	.
Danby~W (3)	40	.	47	.	41	.	50	.	46	.	45	.	43	.
Test avg. :	46	51	51	.	55	.	56	.	56	.	53	51	48	44
High avg. :	63	64	75	.	79	.	62	.	67	.	68	64	57	48
Low avg. :	31	38	26	.	31	.	42	.	42	.	34	38	36	40
# LSD (.05) :	6		5		6		4		4					
## TPG-value :	57		70		73		58		63					
### C.V. :	10		7		8		5		5					

* Heading, the relative days to heading, compared to the variety - Expedition.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

Table 11. Eastern, western, and state spring wheat averages for bushel wt. (BW), height (HT), lodging (LDG), and grain protein (PRT) in 2007.

Variety (Hdg.)* - by state BW avg.	West Avg. - BW, HT, PRT			East Avg. - BW, HT, PRT			State Avg. - BW, HT, PRT		
	BW lb	HT in	PRT %	BW lb	HT in	PRT %	BW lb	HT in	PRT %
SD00111-9 (-)	60	29	12.8	62	33	13.4	61+	31	13.1+
Millennium (4)	61	30	11.8	61	35	12.0	61+	33+	11.9
Overland (4)	60	29	11.6	61	32	11.7	61+	31	11.7
Tandem (4)	61	35	12.3	61	34	12.3	61+	34+	12.3
SD01273 (-)	60	30	11.4	60	32	11.6	60+	31	11.5
Overley (0)	61	32	12.2	58	29	12.4	59	30	12.3
Harding (5)	59	34	12.6	59	36	12.9	59	35+	12.8+
Arapahoe (3)	59	31	12.1	59	34	12.8	59	33+	12.5+
SD03171 (-)	59	29	12.6	59	30	12.4	59	30	12.5+
Trego~W (3)	60	27	11.7	59	29	11.3	59	28	11.4
Wendy~W (-)	60	25	12.1	58	28	12.3	59	27	12.2
NI04420 (-)	60	30	12.0	58	31	12.0	59	30	12.0
SD01W064 (-)	60	31	11.6	58	33	11.7	59	32	11.7
Expedition (0)	59	31	11.7	59	28	11.9	59	29	11.8
SD98W175-1-1 (-)	60	31	12.9	57	31	13.5	59	31	13.2+
Hawken (3)	59	26	12.2	58	30	13.1	59	28	12.7+
SD98W175-1 (-)	59	31	12.3	58	33	12.6	59	32	12.4
SD01058 (-)	59	32	12.4	57	33	12.7	58	32	12.5+
Danby~W (3)	59	27	11.5	57	31	11.7	58	30	11.6
Jerry (5)	58	35	12.9	59	36	12.7	58	36+	12.8
Wesley (2)	58	31	12.1	57	28	12.2	58	29	12.2
Alice~W (-)	59	27	12.3	56	28	12.1	58	27	12.2
Darrell (5)	58	34	12.0	57	34	12.6	58	34+	12.3
Hatcher (2)	59	30	10.8	56	30	11.0	58	30	10.9
Jagalene (3)	59	29	11.5	55	30	11.8	57	29	11.7
SD96240-3-1 (-)	58	28	12.1	57	31	12.1	57	30	12.1
Wahoo (3)	57	32	11.6	57	31	12.1	57	31	11.9
NuDakota~W (3)	57	27	12.3	55	29	12.4	56	28	12.4
Ripper (2)	56	31	12.3	54	31	12.6	55	31	12.5+
Test avg. :	59	30	12.1	58	31	12.3	59	31	12.2
High avg. :	61	35	12.9	62	36	13.5	61	36	13.2
Low avg. :	56	25	10.8	54	28	11.0	55	27	10.9
# LSD (.05) :							1	3	0.7
## TPG-value :							60	33	12.5
### C.V. :							3	7	4

* Heading, the relative days to heading, compared to the variety - Expedition.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum or maximum value required for the top-performance group (TPG).

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error.

Table 12. Origin, traits, and disease reactions for winter wheat varieties tested in 2007.

Variety	Rel Hdg *	Ldg Res	End-use Qlty #	Winter Hardy Rtg #	Coleoptile Pct ##	Wheat Steak Mosaic	Tanspot	Rust			PVP ** Status
								Stripe	Leaf	Stem	
Alice ~W	-1	G	EB	G	78	MR+	MS+	-	S+	MR+	***Pdg
Wendy ~W	-1	E	GN	E	67	MS	R	MR	MS	MR	Yes
Expedition	0	F	GB	G-E	88	S	MS	MS	MS	R	Yes
Overley	0	E	EB	P	89	MR	MR	R	S	R	Yes
Hatcher	2	G	GB	F-G	89	S	-	MS	S	MR	Yes
Ripper	2	G	GB	F	-	-	-	-	S	-	Pdg
Wesley	2	E	GB	G-E	79	S	MR	MR	MR	R	No
Arapahoe	3	F	GB	G-E	83	S	S	MS	MR	MR	Yes
Hawken	3	E	-	-	-	MS	MR	MR	R	MR	-
Jagalene	3	E	AB	G	92	MS	MR	MR	VS	MR	Yes
Danby ~W	3	G	EB	F	-	-	-	R	S	-	Yes
NuDakota ~W	3	E	AB	G-E	-	-	-	-	MS	-	Yes
Trego~W	3	F-G	AB	F-G	80	S	MS	S	S	R	Yes
Wahoo	3	G	-	G	91	S	-	MR	MR	R	Yes
Millennium	4	G	AB	F-G	78	S	MS	MR	MR	MR	Yes
Overland	4	G	AB	E	89	-	-	R	R	R	Pdg
Tandem	4	F-G	EB	G	12	S	S	MR	S	MR	Yes
Darrell	5	G	EB	G	89	MR	MS	-	S	R	Pdg
Harding	5	F-G	AB	E	0	MR	MR	MS	MR	MR	Yes
Jerry	5	F	GB	E	92	MS	-	MR	MR	R	No
NI04420	-	-	-	-		-	-	-	-	-	-
SD00111-9	-	-	-	-	-	-	-	-	-	-	-
SD01058	-	-	-	-	-	-	-	-	-	-	-
SD01273	-	-	-	-	-	-	-	-	-	-	-
SD03171	-	-	-	-	-	-	-	-	-	-	-
SD96240-3-1	-	-	-	-	-	-	-	-	-	-	-
SD01W064	-	-	-	-	-	-	-	-	-	-	-
SD98W175-1	-	-	-	-	-	-	-	-	-	-	
SD98W175-1-1	-	-	-	-	-	-	-	-	-	-	

* Heading, the relative difference in days to heading, compared to Expedition.

~ W, Hard white wheat variety.

E= exc., A= accept., F= fair, G= good, P= poor, B= baking, N=noodles.

Percent of Harding (3-1/4"" long).

+ R= resistant, MR= moderately resist., MS= mod. susceptible, S= susc., VS= very susc.

++ Leaf rust reactions scale: 1= Good to 9= Poor.

** Plant variety protection (PVP), title V certification option- sold by variety name only as a class of certified seed.

*** PVP application pending.

Table 13a. Field pea yield results at two east South Dakota locations for 2007.

Variety (Mat.)* - by 2007 state yield avg.	Location Yield Avg. (Bu/A) 13% moist.				East Yield Avg. (Bu/A)		State Yield Avg. (Bu/A)	
	South Shore		Selby					
	2007	2-Yr	2007	2-Yr	2007	2-Yr	2007	2-Yr
CEB 4152 (E)	63+	.	59	.	61	.	47	.
CDC Golden (M)	70+	.	61+	.	66	.	46	.
Eclipse (M)	65+	.	59	.	62	.	46	.
SW Midas (E)	61	.	59	.	60	.	45	.
SW Salute (E)	62	.	57	.	60	.	45	.
SW Marquee (E)	65+	.	57	.	61	.	45	.
Cooper (L)	63+	.	62+	.	63	.	44	.
Fusion (M)	64+	.	52	.	58	.	43	.
CDC Meadow (E)	55	.	57	.	56	.	43	.
DS Admiral (E)	59	.	51	.	55	.	43	.
CEB 1093 (L)	56	.	64+	.	60	.	43	.
SW Capri (E)	41	.	58	.	50	.	39	.
SW Circus (E)	41	.	55	.	48	.	38	.
CDC Sage (M)	53	.	53	.	53	.	38	.
K2 (E)	35	.	52	.	44	.	36	.
CDC Striker (M)	38	.	52	.	45	.	36	.
Cruiser (M)	31	.	52	.	42	.	34	.
Test avg. :	54	.	56	.	56	.	42	.
High avg. :	70	.	64	.	66	.	47	.
Low avg. :	31	.	51	.	42	.	34	.
# LSD (.05) :	7		4					.
## TPG-value :	63		60					.
### C.V. :	9		5					.

* Early- E, medium- M, or late- L maturity.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

Table 13b. Field pea yield results at two west South Dakota locations, 2006-2007.

Variety (Mat.)* - by 2007 state yield avg.	Location Yield Avg. (Bu/A) 13% moist.				West Yield Avg. (Bu/A)		State Yield Avg. (Bu/A)	
	Wall		Bison					
	2007	2-Yr	2007	2-Yr	2007	2-Yr	2007	2-Yr
CEB 4152 (E)	35+	.	29+	.	32	.	47	.
CDC Golden (M)	27	.	26	.	27	.	46	.
Eclipse (M)	32+	30+	27+	.	30	30	46	.
SW Midas (E)	33+	31+	26	.	30	31	45	.
SW Salute (E)	33+	30+	27+	.	30	30	45	.
SW Marquee (E)	31	25+	26	.	29	25	45	.
Cooper (L)	26	29+	24	.	25	29	44	.
Fusion (M)	33+	30+	24	.	29	30	43	.
CDC Meadow (E)	32+	.	26	.	29	.	43	.
DS Admiral (E)	34+	30+	29+	.	32	30	43	.
CEB 1093 (L)	29	27+	24	.	27	27	43	.
SW Capri (E)	31	27+	26	.	29	27	39	.
SW Circus (E)	30	.	25	.	28	.	38	.
CDC Sage (M)	24	.	20	.	22	.	38	.
K2 (E)	32+	27+	25	.	29	27	36	.
CDC Striker (M)	29	22+	25	.	27	22	36	.
Cruiser (M)	28	26+	24	.	26	26	34	.
Test avg. :	31	28	25	.	28	28	42	.
High avg. :	35	31	29	.	32	31	47	.
Low avg. :	24	22	20	.	22	22	34	.
# LSD (.05) :	3	NS^	2					.
## TPG-value :	32	22	27					.
### C.V. :	7	9	7					.

* Early- E, medium- M, or late- L maturity.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum value required for the top-performance group (TPG) for yield.

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error, 15% or less is best.

^ Yield differences within a column are non-significant (NS) at the .05 level of probability.

Table 14. East, west, and state Field pea averages for bushel weight (BW), height (HT), lodging (LDG), and grain protein (PRT), at two east South Dakota locations for 2007.

Variety (Mat.)* - by state BW avg.	East Avg. - BW, HT, LDG, PRT				West Avg. - BW, HT, LDG, PRT				State Avg. - BW, HT, LDG			
	BW lb	HT in	LDG**	PRT %	BW lb	HT in	LDG**	PRT %	BW lb	HT in	LDG**	PRT %
CDC Striker (M)	63	.	.	29.1	57	24	0	.	61	24	0	29.1
CDC Meadow (E)	64	.	.	24.5	55	26	1	.	61	26	1	24.5
CDC Golden (M)	63	.	.	28.1	55	24	2	.	60	24	2	28.1
SW Circus (E)	63	.	.	28.3	56	22	1	.	60	22	1	28.3
K2 (E)	62	.	.	27.1	57	22	2	.	60	22	2	27.1
SW Marquee (E)	62	.	.	28.6	56	24	0	.	60	24	0	28.6
SW Capri (E)	63	.	.	29.3	55	22	1	.	60	22	1	29.3
Cruiser (M)	62	.	.	30.5	55	24	4	.	60	24	4	30.5+
CEB 4152 (E)	62	.	.	26.3	55	24	0	.	60	24	0	26.3
CEB 1093 (L)	62	.	.	23.1	54	23	0	.	60	23	0	23.1
SW Salute (E)	62	.	.	26.8	55	26	6	.	59	26	6	26.8
DS Admiral (E)	61	.	.	26.3	55	25	2	.	59	25	2	26.3
Fusion (M)	62	.	.	26.9	53	25	6	.	59	25	6	26.9
Eclipse (M)	63	.	.	29.1	52	23	3	.	59	23	3	29.1
CDC Sage (M)	62	.	.	26.1	54	22	1	.	59	22	1	26.1
SW Midas (E)	62	.	.	25.9	52	23	3	.	59	23	3	25.9
Cooper (L)	61	.	.	25.4	53	23	1	.	58	23	1	25.4
Test avg. :	62	.	.	27.1	55	24	2	.	60	24	2	27.1
High avg. :	64	.	.	30.5	57	26	6	.	61	26	6	30.5
Low avg. :	61	.	.	23.1	52	22	0	.	58	22	0	23.1
# LSD (.05) :									1	2	2	0.6
## TPG-value :									60	24	1	29.9
### C.V. :									2	7	44	1

* Early- E, medium- M, or late- L maturity.

** Lodging scale: 0 = all plants erect, 3 = 50% lodged at 45° angle, 5 = all flat.

LSD, the amount two values in a column must differ to be significantly different.

TPG-value, the minimum or maximum value required for the top-performance group (TPG).

A plus sign (+) indicates values within a column that qualify for the TPG.

Coef. of variation, a measure of trial experimental error.

Table 15. Seed source, traits, and disease reactions for field pea entries tested in 2007.

Variety	Seed source	Rel Mat *	Vine type	Vine ht ##	Ldg (1-5)~	Fusarium Wilt **	Powdery mildew **	Mycos-phaerella blight **	PVP $ or PBR Status
DS Admiral	LL-02	E	S-L	17	2	MS	MR	MS	Yes
CEB 4152	MS-	E	-	-	1	-	-	-	Yes
SW Capri	MS-04	E	S-L	18	1	MS	S	MS	Yes
SW Circus	LL-02	E	S-L	-	2	MS	S	MS	Yes
CEB 1093	LL-06	L	-	17	-	-	-	-	Yes
Cooper	MS-02	L	S-L	17	2	MS	MR	MS	Yes
Cruiser	LL-02	M	S-L	18	4	MS	S	MS	Yes
Eclipse	FPS-02	M	S-L	14	1	S	MR	MS	Yes
Fusion	MS-08	M	S-L	16	4	S	MR	MS	Yes
CDC Golden	ASS-03	M	S-L	-	2	MS	MR	MS	No
K2	PUSA-04	E	S-L	16	2	S	S	-	Yes
SW Marquee	LL-04	E	S-L	19	1	MS	MR	MS	Yes
CDC Meadow	ASS-06	E	S-L	-	-	MS	MR	MS	No
SW Midas	LL-05	E	S-L	17	2	MS	MR	MS	Yes
CDC Sage	ASS-05	M	S-L	-	3	MR	MR	MS	Yes
SW Salute	LL-02	E	S-L	17	5	MS	MR	S	Yes
CDC Striker	ASS-02	M	S-L	18	1	MR	S	S	Yes

$ Plant variety protection (PVP, US) or Plant breeders rights (PBR, CAN) application is pending.

* Early- E, medium- M, or late- L maturity.

Normal- N or semi-leafless- SL leaf type.

~ 1= all plants erect, 3= 50% lodged at 45° angle, 5= all flat.

** Very good- VG, good- G, fair- F, poor- P disease resistance.

Tables may be found on the following pages: