The area planted to winter wheat during the 2007-08 growing season, 650,000 acres, was the largest since 1985. Except for the eastern part of the state, little protective snow fell during the abnormally cold winter. Nevertheless, winter survival was generally adequate, except where drought in the fall resulted in poor germination. Drought persisted during the spring and summer in the western third of the state, dramatically reducing yield. The cool spring and cooler than normal summer were favorable for high yield potential in regions where moisture was not limiting. Disease pressure was generally low. Leaf rust appeared later in the season and caused less damage this year, compared with 2007. Generally scab was not problematic on winter wheat.

Jerry was the most popular variety in 2007-08, occupying 50.5 percent of the acres planted. CDC Falcon, Jagalene and Wesley followed Jerry in popularity with 13.9, 10.4 and 6.2 percent of the acreage, respectively.

Characteristics of hard red winter wheat varieties adapted for production in North Dakota are described in Table 1. Information on the agronomic performance of selected varieties is summarized in subsequent tables. Successful winter wheat production depends on numerous production practices, including selecting the right variety for a particular area. The information included in this publication is meant to help growers choose that variety or group of varieties. Characteristics to consider when selecting a variety are winter hardiness, yield potential in your area, test weight, protein content when grown with proper fertility, straw strength, plant height, reaction to important diseases and maturity.

The recommended seeding dates for winter wheat are Sept. 10-30 south of North Dakota Highway 200 and Sept. 1-15 in northern regions. Planting after the recommended dates reduces winter survival and grain yield. Planting prior to the recommended date may deplete soil moisture reserves unnecessarily. It also increases risk of wheat streak mosaic virus and may reduce winter survival. Winter wheat should be seeded at a rate of 1 million viable seeds per acre, or about 80 pounds per acre. Use higher seeding rates for late seeding or poor seedbed conditions. Producers should consider only the most winter-hardy varieties available when growing winter wheat in North Dakota. Among the current varieties, Ransom, CDC Buteo, CDC Falcon, Peregrine, Accipiter and Jerry possess the best combination of winter hardiness and yield. Winter survival data for winter wheat varieties during the 2003-04 season can be viewed at www.ag.ndsu.edu/smgrains/WWsurvival.htm.

Phosphorus aids overwinter survival by stimulating root growth and fall tillering. The secondary root system that develops during tillering is essential for a healthy, deep-rooted plant capable of withstanding stress. If winter wheat is planted on bare soil, an application of phosphorus is essential. While important, the contribution of phosphorus to overwinter survival is secondary to varietal hardiness. For more production information, see NDSU Extension Service publication EB-33, “Winter Wheat Production in North Dakota” (www.ag.ndsu.edu/pubs/plantsci/smgrains/eb33w.htm).

Use data from several years and locations when selecting varieties. The notion that the single data set nearest your farm will indicate which variety will perform the best for you next year is incorrect. You should select varieties that, on average, perform the best at multiple locations near your farm across several years.
List of Tables

Table 1. 2008 North Dakota hard winter wheat variety description table, agronomic traits.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Agent or Origin</th>
<th>Year</th>
<th>Quality</th>
<th>Leaf Rust</th>
<th>Stem Rust</th>
<th>Scab</th>
<th>Maturity</th>
<th>Straw Strength</th>
<th>Height</th>
<th>Winter Hardiness</th>
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<td>S</td>
<td>MR</td>
<td>S</td>
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<td>M. strong</td>
<td>Short</td>
<td>Fair</td>
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<td>MS</td>
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<td>MS</td>
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</table>

1NA = data not available or data insufficient to give rating.
2R = resistant; MR = moderately resistant; MS = moderately susceptible; S = susceptible; VS = very susceptible; NA = not available.
3Primarily based on data collected in 2005 from several locations.
4Varieties with less than good winter hardiness should be seeded only in tall stubble.
5WB = Westbred
6White wheat.
7Curl mite resistant.
8Saw fly resistant.

The following contributed data reported in this publication:
- Blaine Schatz and Steve Zwinger - Carrington
- Eric Eriksmoen – Hettinger and Mandan
- Bryan Hanson - Langdon
- Joel Ransom and Chad Deplazes - Lisbon
- Joel Ransom and Chad Deplazes - Prosper
- Neil Riveland - Williston
- Glenn Martin - Dickinson
Table 2. Yield of winter wheat varieties grown at four locations in western North Dakota in 2008, with three-year averages (2006-08).

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Table 3. Yield of winter wheat varieties grown at four locations in eastern North Dakota in 2008, with three-year averages (2006-08).

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### Table 4. Test weight of winter wheat varieties grown at eight locations in North Dakota in 2008.

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CV (%)  1.2   1.1   2.5   3.3   3.7   1.4   1.7   1.7   1.2   
LSD 0.05 1.3   0.9   2.0   2.5   NS    1.2   3.7   1.2   

### Table 5. Grain protein content of winter wheat varieties grown at eight locations in North Dakota in 2008.

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<th>Carrington</th>
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Mean    14.3  15.6  11.4  12.6  12.4  11.6  15.6  13.1  12.9  
CV (%)  3.5   2.2   9.8   3.9   6.0   4.8   5.8   2.9   
LSD 0.05 1.0   0.7   1.5   0.7   NS    0.8   1.2   0.9   

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