

Table 3. Disease reactions¹ of hard red spring wheat entries in Minnesota in multiple-year comparisons (2009-2014).

Entry	Leaf Rust	Stem Rust ²	Bacterial Leaf Streak ³	Other Leaf Diseases ⁴	Scab
Advance	3	1	4	5	—
Barlow	4	1	4	4	4
Breaker	2	2	2	3	4
Elgin-ND	2	2	4	5	5
Faller	5	1	4	4	4
Forefront	2	4	3	4	3
Glenn	4	1	4	5	3
HRS 3361	—	3	4	4	—
HRS 3378	—	3	6	5	—
HRS 3419	—	1	6	3	—
Jenna	3	2	5	4	7
Knudson	2	3	4	3	6
LCS Albany	2	3	6	5	4
LCS Breakaway	4	2	3	5	5
LCS Iguacu	4	2	4	4	—
LCS Powerplay	5	1	5	5	5
Linkert	3	1	4	4	5
Marshall	8	1	6	7	7
Norden	2	1	4	4	5
Prevail	1	3	2	6	—
Prosper	5	2	4	4	5
RB07	2	2	6	6	4
Rollag	4	2	4	5	3
Samson	5	1	5	6	8
SY Ingmar	—	1	3	6	—
SY Rowyn	2	1	3	6	—
SY Soren	3	1	4	4	4
Vantage	6	3	7	6	5
WB-Digger	3	1	5	5	7
WB-Mayville	3	2	6	7	7
WB9507	—	3	6	3	—

¹1-9 scale where 1=most resistant, 9=most susceptible.

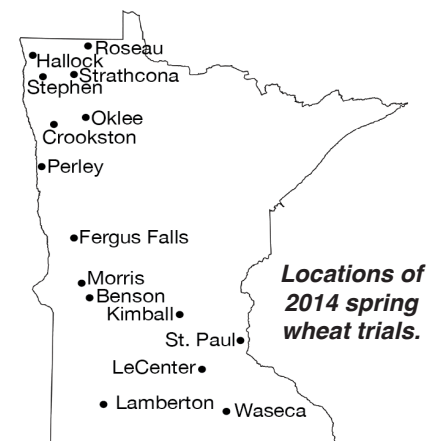
²Stem rust levels have been very low in production fields in recent years, even on susceptible varieties.

³Bacterial leaf streak symptoms are highly variable from one environment to the next. The rating of newer entries may change by as much as one rating point as more data are collected.

⁴Combined rating of tan spot and septoria.

The additional performance evaluations were carried out adjacent to the conventional (no fungicides applied) trials, so results can be compared directly. Data from trials conducted in Lamberton, Morris, Crookston and Roseau are included in the 2014 and multi-year summaries.

In 2014, the fungicide regime as applied in these trials increased grain yield on average by 14.9 bu/acre in the two northern locations and 11.3 bu/acre over the past three years. The 2014 Roseau trial had a severe infection of tan spot that was controlled well by the fungicide treatments. The two southern locations, Lamberton and Morris, averaged 4.8 and 4.5 bu/acre higher grain yield when fungicide



Hard red spring wheat seeding rate calculator.

Calculating and seeding the appropriate amount of seed is an important first step towards maximizing yield. The seeding rate is a function of the number of kernels per pound of seed, the percent germination of the lot, the expected stand loss as a function of the quality of the seedbed, and the desired stand. In Minnesota, an average optimum stand for hard red spring wheat when planted early is between 28 to 30 plants per square foot or approximately 1.25 million plants per acre. This number should increase by 1 to 2 plants per square foot for every week planting is delayed past the early, optimum, seeding date. Expected stand loss even under good seedbed conditions is between 10% to 20% and will increase with a poor seedbed or improper seed placement due to poor depth control.

The general formula for calculating a seeding rate is:

$$\text{Seeding Rate (Pounds/Acre)} = \frac{\text{Desired Stand (Plants/Acre)} \div (1 - \text{Expected Stand Loss})}{(\text{Seeds/Pound}) \times \text{Percentage Germination}}$$

Calculate the seeding rate for every single seed lot and calibrate the drill accordingly.

Example: Early variety.

Desired Stand, (Plants/Acre)	Expected Stand Loss	Seeds Per Pound	Percentage Germination	Seeding Rate, (Lb/Acre)
1.25 million	0.20	14,000	0.95	117