CERTIFIED SEED

What is Seed Certification?
Seed certification is an internationally recognized system to preserve the genetic identity and purity of crop varieties.

How is Seed Certified?
Seed certification requires planting eligible seedstocks, field inspection of the growing crop, proper conditioning, representative sampling, thorough laboratory analysis, and proper labeling.

Who Produces Certified Seed?
Certified seed is produced by careful, conscientious growers, according to specific seed certification standards.

Why buy Certified Seed?
Seed certification procedures provide the best possible third party assurance of good quality seed of known identity, germination and purity.

Plant Variety Protection
Minnesota wheat varieties are PVP 94 Title V protected and can only be sold as certified seed.

ASK FOR CERTIFIED SEED

For a list of Certified Seed producers, visit the Minnesota Crop Improvement Association at **mncia.org** or call 1-800-510-6242.

FOR MORE INFORMATION

To learn more about HRSW varieties and the University of Minnesota wheat breeding program contact: **Jim Anderson**, University of Minnesota wheat breeder at 612-625-9763 or **Jochum Wiersma**, University of Minnesota Extension Agronomist at 218-281-8629.

For copies of the annual Minnesota Field Crop Trials visit **varietytrials.umn.edu.**

MN-ROTHSAY

MN-Rothsay is a hard red spring wheat variety that features a great combination of excellent straw strength and very high yields.

The MN-Rothsay variety has stood out in both state and regional trials. In the Uniform Regional Nursery trials, it consistently finished near the top in grain yield and had the best straw strength of all entries in multiple years of testing.

In addition to high yields the protein level of MN-Rothsay is higher than other top yielding varieties along with good test weight and a good pre-harvest sprouting rating. MN-Rothsay has moderate overall disease resistance, with a very good score for leaf and stem rust and a good fusarium head blight (FHB) rating.

The new release is named in honor of the city of Rothsay, MN, in the Southern Red River Valley, an area of the state with a long history of wheat production.

Key characteristics of MN-Rothsay include:

- Very high yields
- Excellent straw strength
- Good test weight
- Resistant to preharvest sprouting

University of Minnesota
Driven to Discover®

WHEAT

Hard Red Spring Wheat Varieties with Proven Results

MN-Rothsay
MN-Torgy
Shelly
Bolles
Linkert

MCIA
MINNESOTA CROP IMPROVEMENT ASSOCIATION

Improving your process
Enhancing your products
Increasing your profits

Hard Red Spring Wheat

MN-ROTHSAY

'MN-Rothsay' combines great standability and very high yields, agronmic attributes that producers look for in a wheat variety.

- Excellent yields
- Very good straw strength
- Above average protein
- Good preharvest sprout rating

BOLLES

'Bolles' is a variety that blends very high grain protein with excellent pre-harvest sprouting resistance to provide outstanding milling and baking quality.

- Superior protein
- High baking quality
- Leaf rust resistance

SHELLY

'Shelly' is a high yielding variety well adapted to the hard red spring wheat growing regions of Minnesota, and the Dakotas.

- High yields
- Good test weight
- Stripe rust resistance

LINKERT

'Linkert' is a hard red spring wheat with excellent straw strength that has high protein good test weight and very good end-use quality.

- Very strong straw
- Very good protein
- High baking quality

MN-TORGY

'MN-Torgy' provides high yields, above average protein and good disease resistance over a wide area of adaptation.

- High yielding
- Very good protein
- Good scab and BLS resistance
- Well adapted to MN, ND and SD

Agronomic characteristics of hard red spring wheat varieties in Minnesota

	Grain Yield			Days to	Straw Strength
	2022	2-Yr	3-Yr		
Variety	% of Mean			Heading[1]	1–9[2]
AP Murdock	103	98	102	48.8	5
Bolles	92	93	93	51.3	4
Linkert	93	94	93	49.5	2
MN-Rothsay	102	103	104	51.4	3
MN-Torgy	100	100	102	50.7	4
Shelly	103	103	103	50.9	5
SY Valda	104	103	104	50.4	5
WB9479	97	95	96	48.6	3
WB9590	101	99	101	48.6	3
Mean (Bu/A)	73.9	69.8	69.9		
LSD (0.10)	3.1	2.2	1.6		
No. Environ.	14	28	42		

[1] 2022 data.
[2] 1–9 scale in which 1=the strongest straw and 9=the weakest.

Grain quality of hard red spring wheat varieties in Minnesota

	Quality		
	Test Wt lbs/Bu	Protein %	Pre-Harvest Sprouting[1]
Variety	2-Yr	2-Yr	1–9
AP Murdock	60.2	14.5	1
Bolles	60.1	16.7	1
Linkert	61.3	15.7	1
MN-Rothsay	60.7	14.8	2
MN-Torgy	61.0	15.2	1
Shelly	60.6	14.4	1
SY Valda	60.5	14.4	2
WB9479	60.3	15.9	1
WB9590	60.4	15.5	1
Mean	60.1	14.8	
No. Environ.	17	17	

[1] 1–9 scale in which 1=best and 9=worst. Values of 1–2 should be considered as resistant.

Disease reactions[1] of hard red spring wheat varieties in Minnesota

	Disease			
	Leaf Rust	Other Leaf Diseases[2]	BLS[3]	Scab[4]
Variety	1–9[1]	1–9[1]	1–9[1]	1–9[1]
AP Murdock	3	6	4	7
Bolles	2	4	4	5
Linkert	3	5	5	5
MN-Rothsay	4	3	4	4
MN-Torgy	3	4	3	3
Shelly	5	4	6	4
SY Valda	4	5	4	4
WB9479	6	6	6	7
WB9590	6	6	6	7

[1] 1–9 scale where 1=most resistant, 9=most susceptible.
[2] Combined rating of tan spot and septoria.
[3] Bacterial leaf streak symptoms are highly variable from one environment to the next. The rating of entries may change as more data is collected.
[4] Scab - Fusarium Head Blight