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# North Dakota Barley, Oat and Rye

## *Variety Trial Results for 2019 and Selection Guide*

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Barley, oat and rye varieties currently grown in North Dakota are described in the following tables. Successful production of these crops depends on numerous factors, including selecting the right variety for a particular area. Characteristics to evaluate in selecting a variety are: yield potential in your area, test weight, straw strength, plant height, reaction to problematic diseases and maturity.

Selecting varieties with good quality also is important to maintain market recognition. Because malting barley usually is purchased on an identity-preserved basis, producers are encouraged to determine which barley varieties are being purchased by potential barley buyers before selecting a variety. When selecting a high-yielding and good-quality variety, use data that summarize several years and locations. Additional data from county sites are available at [www.ag.ndsu.edu/varietytrials](http://www.ag.ndsu.edu/varietytrials) and from each Research Extension Center.

The agronomic data presented in this publication are from replicated research plots using experimental designs that enable the use of statistical analysis. The LSD (least significant difference) numbers beneath the columns in tables are derived from these statistical analyses and apply only to the numbers in the column in which they appear. Differences between two varieties exceeding the LSD value mean that with 95% or 90% confidence (LSD probability 0.05 or 0.10), the higher-yielding variety has a significant yield advantage.

The abbreviation NS is used to indicate that no statistical difference occurs between varieties. The CV is a measure of variability in the trial. The CV stands for coefficient of variation and is expressed as a percentage. Large CVs mean a large amount of variation could not be attributed to differences in the varieties.

Presentation of data for the entries tested does not imply approval or endorsement by the authors or agencies conducting the test. North Dakota State University approves the reproduction of any table in this publication only if no portion is deleted, appropriate footnotes are given and the order of the data is not rearranged.

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**Table 1. 2019 North Dakota barley variety descriptions.**

Variety	Use <sup>1</sup>	Origin <sup>2</sup>	Year Released	Rachilla			Height (inch)	Days to Head	Straw Strength <sup>5</sup>	Reaction to Disease <sup>6</sup>			
				Awn Type <sup>3</sup>	Hair Length <sup>4</sup>	Aleurone Color				Stem Rust	Spot-form Net Blotch	Spot Blotch	Net Blotch
<b>Six-rowed</b>													
Lacey	M/F	MN	2000	S	S	White	30	58	4	8	4	3	7
Tradition	M/F	BARI	2003	S	L	White	30	58	3	8	6	3	7
<b>Two-rowed</b>													
AAC Connect	M/F	Meridian	2017	R	L	White	27	62	3	4	5	4	5
AAC Synergy	M/F	Syngenta	2015	R	L	White	27	63	5	4	3	4	4
ABI Balster	M/F	BARI	2015	R	L	White	27	64	6	NA	4	8	NA
Conlon <sup>7</sup>	M/F	ND	1996	S	L	White	27	57	7	8	4	6	3
Explorer	M	Secobra	NA	R	L	White	25	61	4	NA	NA	8	4
ND Genesis	M/F	ND	2015	S	L	White	29	61	5	8	4	4	6
Pinnacle	M/F	ND	2006	S	L	White	29	60	6	8	8	4	6

<sup>1</sup>M = malting; F = feed.

<sup>2</sup>BARI = Busch Agricultural Resources Inc.; MN = University of Minnesota; ND = North Dakota State University.

<sup>3</sup>R = rough; S = smooth.

<sup>4</sup>S = short; L = long.

<sup>5</sup>Straw Strength scores from 1-9, with 1 = strongest and 9 = weakest.

<sup>6</sup>Disease reaction scores from 1-9, with 1 = resistant and 9 = very susceptible, NA – not available.

<sup>7</sup>Lower DON accumulations than other varieties tested.

**Table 2. Yield and test weight of barley varieties at three locations in eastern North Dakota, 2017-2019.**

Variety	<u>Fargo</u>			<u>Carrington</u>			<u>Langdon</u>			<u>Avg. eastern N.D.</u>		
	Test Wt.	Yield		Test Wt.	Yield		Test Wt.	Yield		Test Wt.	Yield	
	(lb/bu)	2019	3 Yr.	(lb/bu)	2019	3 Yr.	(lb/bu)	2019	3 Yr.	(lb/bu)	2019	3 Yr.
		----(bu/a)----			----(bu/a)----			----(bu/a)----			----(bu/a)----	
<b>Six-rowed</b>												
Lacey	49.9	66.4	92.0	43.4	76.5	95.0	48.9	124.3	130.5	47.4	89.1	105.8
Tradition	49.4	81.0	105.7	42.1	82.3	96.2	48.3	121.0	124.9	46.6	94.8	108.9
<b>Two-rowed</b>												
AAC Connect	49.1	74.4	--	43.4	64.6	--	49.7	120.1	--	47.4	86.4	--
AAC Synergy	50.2	74.6	102.8	43.1	60.0	96.9	50.1	122.5	133.4	47.8	85.7	111.0
ABI Balster	51.8	64.2	95.5	41.5	55.5	90.2	49.5	123.9	127.9	47.6	81.2	104.5
Conlon	51.9	63.5	86.4	44.3	50.2	80.0	51.0	109.8	99.5	49.1	74.5	88.6
Explorer	48.8	53.6	88.0	39.5	48.9	85.5	49.1	122.7	126.1	45.8	75.1	99.9
ND Genesis	50.8	79.6	104.1	41.4	50.9	81.3	48.7	123.2	130.6	47.0	84.6	105.3
Pinnacle	49.0	65.5	90.2	39.4	49.6	78.2	50.6	127.3	130.0	46.3	80.8	99.5
Mean	49.7	71.5	96.0	42.3	61.5	87.9	49.4	122.9	125.4	47.1	85.3	103.1
CV %	--	10.5	--	2.1	14.0	--	0.7	3.4	--	1.9	7.8	5.2
LSD 0.05	--	11.8	--	1.3	12.2	--	0.5	5.9	--	1.3	9.6	7.9
LSD 0.10	--	9.9	--	1.1	10.2	--	0.4	4.9	--	0.8	5.9	4.9

**Table 3. Plump and protein of barley varieties at three locations in eastern North Dakota, 2019.**

Variety	<u>Fargo</u>		<u>Carrington</u>		<u>Langdon</u>		<u>Avg. eastern N.D.</u>	
	Plump	Protein	Plump	Protein	Plump	Protein	Plump	Protein
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<b>Six-rowed</b>								
Lacey	86.9	13.7	83.4	12.1	95.0	12.7	88.4	12.8
Tradition	81.2	13.5	79.2	10.9	92.0	12.8	84.1	12.4
<b>Two-rowed</b>								
AAC Connect	78.8	11.8	80.4	10.8	97.0	13.1	85.4	11.9
AAC Synergy	89.2	11.9	90.9	10.1	97.0	12.4	92.4	11.5
ABI Balster	88.8	12.3	81.0	11.5	94.0	12.2	87.9	12.0
Conlon	95.1	13.5	83.3	11.0	98.0	13.0	92.1	12.5
Explorer	86.3	11.6	75.4	11.0	96.0	12.4	85.9	11.7
ND Genesis	94.0	10.9	78.3	11.1	97.0	11.3	89.8	11.1
Pinnacle	87.3	11.6	72.4	10.7	99.0	12.1	86.2	11.5
Mean	88.9	12.1	83.1	10.7	96.5	12.1	89.5	11.6
CV %	--	--	6.1	7.0	1.3	3.5	3.8	4.0
LSD 0.05	--	--	7.1	1.0	1.8	0.6	5.0	0.7
LSD 0.10	--	--	6.0	0.9	1.5	0.5	3.1	0.4

**Table 4. Yield and test weight of barley varieties at four locations in western North Dakota, 2017-2019.**

Variety	<u>Dickinson</u>			<u>Hettinger</u>			<u>Minot</u>			<u>Williston</u>			<u>Avg. western N.D.</u>		
	Test	<u>Yield</u>		Test	<u>Yield</u>		Test	<u>Yield</u>		Test	<u>Yield</u>		Test	<u>Yield</u>	
	Wt.	2019	3 Yr.	Wt.	2019	3 Yr.	Wt.	2019	3 Yr.	Wt.	2019	3 Yr.	Wt.	2019	3 Yr.
	(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---	
<b>Six-rowed</b>															
Lacey	49.4	70.3	80.7	47.6	101.7	74.0	48.7	96.8	86.3	52.9	85.6	62.8	49.7	88.6	76.0
Tradition	50.0	67.3	79.3	45.7	113.2	78.6	49.5	98.6	91.1	52.6	73.4	61.1	49.4	88.1	77.5
<b>Two-rowed</b>															
AAC Connect	48.5	73.7	--	46.7	109.8	--	48.5	114.7	--	51.8	95.2	--	48.9	98.4	--
AAC Synergy	49.0	73.8	87.5	47.2	117.4	82.6	47.7	106.6	93.2	52.2	75.7	66.6	49.0	93.4	82.5
ABI Balster	48.6	84.8	89.1	46.8	113.3	83.8	49.1	108.3	93.9	52.6	106.4	75.0	49.3	103.2	85.4
Conlon	52.0	60.7	62.1	48.1	89.0	62.9	49.5	105.5	86.6	54.1	92.6	62.0	50.9	86.9	68.4
Explorer	49.4	86.9	91.8	46.1	90.1	81.1	48.3	110.1	95.3	52.2	105.7	71.8	49.0	98.2	85.0
ND Genesis	50.0	69.1	84.3	48.2	124.7	85.0	46.8	109.6	95.1	52.6	109.5	74.4	49.4	103.2	84.7
Pinnacle	51.3	76.4	85.3	46.4	80.9	73.6	47.5	110.8	95.1	54.0	109.4	73.2	49.8	94.4	81.8
Mean	49.7	73.0	82.5	46.9	107.6	80.0	48.0	105.6	92.1	52.9	99.2	68.3	49.5	94.9	80.2
CV %	1.1	11.3	--	2.3	4.4	--	1.6	5.5	--	1.0	8.9	--	1.5	10.1	4.4
LSD 0.05	0.8	11.8	--	1.4	6.7	--	1.3	9.8	--	0.9	14.7	--	0.9	12.4	6.7
LSD 0.10	0.6	9.8	--	1.2	5.6	--	1.1	8.1	--	0.7	12.2	--	0.8	10.3	5.5

**Table 5. Plump and protein of barley varieties at four locations in western North Dakota, 2019.**

Variety	<u>Dickinson</u>		<u>Hettinger</u>		<u>Minot</u>		<u>Williston</u>		<u>Avg. western N.D.</u>	
	Plump	Protein	Plump	Protein	Plump	Protein	Plump	Protein	Plump	Protein
	------(%)-----									
<b>Six-rowed</b>										
Lacey	88	16.3	95	13.8	98	11.6	88	11.9	92	13.4
Tradition	87	16.9	94	13.4	98	12.2	89	11.9	92	13.6
<b>Two-Rowed</b>										
AAC Connect	90	15.5	92	12.5	97	10.9	85	10.8	91	12.4
AAC Synergy	94	15.1	94	13.0	98	10.1	94	11.5	95	12.4
ABI Balster	89	16.1	90	13.2	98	10.2	87	10.1	91	12.4
Conlon	98	15.8	97	13.0	98	11.6	96	11.5	97	13.0
Explorer	93	15.2	91	13.1	97	10.8	89	9.1	93	12.1
ND Genesis	95	13.9	94	11.9	97	10.3	93	9.9	95	11.5
Pinnacle	97	14.8	93	12.1	98	9.3	96	10.0	96	11.6
Mean	94	15.0	94	12.6	98	10.5	92	10.7	94	12.5
CV %	1.7	1.6	3.1	4.3	0.5	6.1	1.5	6.4	2.2	3.7
LSD 0.05	3	0.4	3.0	0.8	1	1.1	2.2	1.1	2.6	0.6
LSD 0.10	2	0.3	2.5	0.6	1	0.9	1.8	0.9	2.2	0.5

**Table 6. 2019 North Dakota oat variety descriptions.**

Variety	Origin <sup>1</sup>	Year Released	Grain Color	Straw Height	Straw Strength	Maturity <sup>2</sup>	Reaction to Diseases			Test Weight	Protein <sup>5</sup>
							Stem Rust <sup>3</sup>	Crown Rust <sup>3</sup>	Barley Y.Dwf <sup>4</sup>		
AC Pinnacle	AAFC	1999	White	39	Med.	63	8	8	8	V.good	L
Beach	ND	2004	White	35	M.strg.	63	8	4	6	V.good	M
CDC Dancer	Sask.	2000	White	35	Strong	63	8	6	8	V.good	M
CDC Minstrel	Sask.	2006	White	34	M.strg.	64	8	8	8	Good	M
CS Camden	Meridian	2016	White	33	Strong	64	8	6	NA	Good	NA
Deon	MN	2013	Yellow	37	Strong	65	8	1	2	V.good	NA
Hayden	SD	2014	White	36	Med.	62	8	7	NA	V.good	NA
HiFi	ND	2001	White	35	Strong	63	4	8	2	Good	M
Hyttest	SD	1986	White	38	M.strg.	62	8	6	8	V.good	H
Jury	ND	2012	White	34	M.strg.	64	1	8	4	V.good	M
Killdeer	ND	2000	White	32	Strong	63	8	6	4	Good	M
Leggett	AAFC	2005	White	33	Strong	63	3	1	8	Good	M
Newburg	ND	2011	White	38	Med.	62	1	8	4	Good	M
Otana	MT	1977	White	36	M.weak	63	8	8	8	V.good	M/L
Paul <sup>6</sup>	ND	1994	Hull-less	37	Strong	68	1	4	2	Good	H
Rockford	ND	2008	White	38	Strong	65	8	8	4	V.good	M
Souris	ND	2006	White	33	Strong	63	6	8	6	V.good	M
Stallion	SD	2006	White	34	Med.	64	8	3	NA	V.good	M
Warrior	SD	2018	White	32	Strong	62	NA	1	NA	V.good	M

<sup>1</sup>AAFC = Agriculture & Agri-Food Canada; MN = University of Minnesota; ND = North Dakota State University; SD = South Dakota State University; Sask. = University of Saskatchewan; MT = Montana State University.

<sup>2</sup>Days after planting.

<sup>3</sup>Disease reaction scores from 1-9, with 1 = resistant and 9 = very susceptible.

<sup>4</sup>Disease reaction scores from 1-9, with 1 = resistant and 9 = very susceptible, NA – not available.

<sup>5</sup>H = high; M = medium; L = low; NA = not available.

<sup>6</sup>Hull-less variety.

**Table 7. Yield and test weight of oat varieties at five locations in eastern North Dakota, 2017-2019.**

Variety	Fargo		Casselton		Verona		Carrington			Langdon			Average Eastern N.D.	
	Test	Yield	Test	Yield	Test	Yield	Test	Yield		Test	Yield		Test	Yield
	Wt.	2019	Wt.	2019	Wt.	2019	Wt.	2019	3 Yr.	Wt.	2019	3 Yr.	Wt.	2019
	(lb/bu)	(bu/a)	(lb/bu)	(bu/a)	(lb/bu)	(bu/a)	(lb/bu)	-----(bu/a)-----		(lb/bu)	-----(bu/a)-----		(lb/bu)	(bu/a)
AC Pinnacle	36.9	70.8	35.3	53.2	32.4	48.1	32.6	121.6	122.7	38.9	151.1	175.3	35.2	89.0
Beach	38.9	121.7	41.7	102.4	40.6	73.9	34.6	114.0	110.6	40.6	151.6	172.1	39.3	112.7
CDC Dancer	37.6	111.6	38.7	59.2	36.9	51.8	33.7	126.6	128.6	39.5	188.5	187.7	37.3	107.5
CDC Minstrel	33.3	100.4	32.1	67.3	25.9	23.6	28.6	115.8	118.5	37.2	176.9	192.2	31.4	96.8
CS Camden	33.7	108.3	34.3	59.5	28.1	39.1	30.5	142.0	130.4	36.3	188.0	208.5	32.6	107.4
Deon	38.3	113.0	36.3	74.0	35.6	72.2	32.9	130.6	129.1	38.0	184.0	189.7	36.2	114.7
Hayden	37.7	76.9	38.6	76.4	29.3	30.6	35.6	133.9	126.1	40.3	176.8	180.0	36.3	98.9
HiFi	35.9	95.2	34.0	49.9	26.9	29.1	31.0	100.1	108.3	38.5	154.6	174.8	33.3	85.8
Hyttest	39.4	109.6	41.5	89.7	37.8	52.6	36.3	111.7	117.4	40.5	159.5	146.8	39.1	104.6
Jury	34.3	72.2	34.7	68.8	28.3	37.0	29.3	111.3	118.6	37.6	191.8	191.8	32.8	96.2
Killdeer	33.5	78.8	35.5	64.8	26.6	40.0	29.4	111.6	120.0	38.0	185.3	189.7	32.6	96.1
Leggett	37.8	129.2	39.2	114.1	37.1	89.2	33.1	118.5	112.5	39.5	189.3	193.0	37.3	128.1
Newburg	34.6	77.6	32.9	32.1	29.4	54.8	30.8	117.6	116.4	37.8	167.0	174.6	33.1	89.8
Otana	32.7	65.2	33.1	66.6	25.6	24.6	27.5	96.0	113.1	39.5	175.4	184.1	31.7	85.6
Paul <sup>1</sup>	43.7	35.2	43.2	21.0	40.6	14.2	38.5	47.9	68.5	44.1	129.4	147.7	42.0	49.5
Rockford	35.4	60.3	32.1	43.4	26.2	25.9	30.9	107.7	115.9	40.4	167.6	179.0	33.0	81.0
Souris	36.4	87.7	34.9	59.6	27.8	21.8	31.4	105.4	112.3	38.5	166.2	173.5	33.8	88.1
Stallion	37.8	91.3	38.5	75.1	37.4	93.2	35.1	126.3	125.5	40.8	164.8	172.2	37.9	110.1
Warrior	36.8	127.5	37.8	99.0	37.3	104.0	33.2	130.3	--	38.7	162.7	--	36.8	124.7
Mean	37.4	112.9	38.2	83.3	34.7	66.0	33.2	115.1	116.4	39.2	169.5	179.6	35.4	98.2
CV %	3.1	17.4	2.3	16.0	4.0	22.2	4.2	9.0	--	1.1	4.1	--	5.4	15.8
LSD 0.05	1.9	31.8	1.7	26.7	2.3	23.6	2.0	14.5	--	0.7	11.5	--	2.4	19.6
LSD 0.10	1.6	26.5	1.4	22.3	1.9	19.7	1.7	12.1	--	0.6	9.6	--	2.0	16.4

<sup>1</sup>Hull-less varieties. When comparing yield of hull-less oat varieties with varieties with hulls, multiply the yield of the hull-less oats by 1.35 (the hull of a hulled kernel comprises 35% of the weight).

**Table 8. Yield and test weight of oat varieties at four locations in western North Dakota, 2017-2019.**

Variety	<u>Dickinson</u>			<u>Hettinger</u>			<u>Minot</u>			<u>Williston</u>			<u>Average Western N.D.</u>		
	Test	Yield		Test	Yield		Test	Yield		Test	Yield		Test	Yield	
	Wt.	2019	3 Yr.	Wt.	2019	3 Yr.	Wt.	2019	3 Yr.	Wt.	2019	3 Yr.	Wt.	2019	3 Yr.
	(lb/bu)	----(bu/a)----		(lb/bu)	----(bu/a)----		(lb/bu)	----(bu/a)----		(lb/bu)	----(bu/a)----		(lb/bu)	----(bu/a)----	
AC Pinnacle	38.8	102.5	100.7	34.8	142.1	105.7	37.3	128.0	136.3	44.8	166.3	107.6	38.9	134.7	112.6
Beach	40.1	108.5	87.4	37.2	153.9	98.6	39.7	118.7	136.5	45.3	138.0	92.6	40.6	129.8	103.8
CDC Dancer	39.5	102.3	90.7	35.7	172.9	114.7	36.5	115.1	125.4	44.6	186.1	111.5	39.1	144.1	110.6
CDC Minstrel	37.6	127.5	101.2	33.3	183.6	116.6	36.2	123.8	129.1	42.7	172.8	104.1	37.4	151.9	112.8
CS Camden	36.5	102.4	95.4	32.3	173.9	120.4	34.5	126.4	136.0	40.5	195.0	113.4	36.0	149.4	116.3
Deon	38.6	149.8	107.1	34.8	160.6	107.1	37.3	117.9	126.6	43.4	176.7	109.4	38.5	151.3	112.6
Hayden	39.8	129.5	109.3	36.7	174.1	118.2	38.1	123.9	139.5	44.6	176.3	106.7	39.8	150.9	118.4
HiFi	38.0	118.0	99.0	35.4	161.7	104.4	36.6	117.6	127.6	43.5	164.0	101.3	38.4	140.3	108.1
Hyttest	39.5	90.5	86.0	38.3	146.4	98.1	37.9	119.4	125.2	45.7	127.1	78.3	40.3	120.9	96.9
Jury	38.5	122.6	97.0	33.9	162.2	104.2	38.2	114.5	117.9	42.2	183.5	112.2	38.2	145.7	107.8
Killdeer	37.6	125.7	105.6	34.2	150.5	105.7	38.3	113.1	119.8	42.2	194.7	113.5	38.1	146.0	111.1
Leggett	39.1	97.9	88.1	35.2	160.5	108.6	36.2	122.3	132.4	43.9	190.7	112.2	38.6	142.9	110.3
Newburg	37.8	107.5	87.6	33.3	159.1	104.1	38.6	116.5	109.6	43.7	147.7	99.4	38.3	132.7	100.2
Otana	39.5	108.0	94.1	35.6	159.3	107.9	38.5	99.7	116.5	42.7	171.0	106.5	39.1	134.5	106.2
Paul <sup>1</sup>	43.5	87.5	71.0	40.3	105.5	72.5	42.7	82.4	95.2	51.8	120.1	72.7	44.6	98.9	77.9
Rockford	39.6	123.4	97.9	37.3	167.7	118.7	38.4	121.6	124.3	45.0	184.6	106.3	40.1	149.3	111.8
Souris	37.6	110.9	94.5	35.3	152.3	110.0	38.0	102.9	118.9	44.2	162.2	100.0	38.8	132.1	105.8
Stallion	40.4	113.7	100.2	36.4	144.9	99.9	36.6	125.7	132.0	42.9	156.6	97.0	39.1	135.2	107.3
Warrior	38.3	97.0	--	32.3	168.1	--	36.5	120.5	--	43.4	166.0	--	37.6	137.9	--
Mean	39.0	111.9	95.2	35.4	157.9	106.4	37.7	116.3	124.9	44.1	167.3	102.5	39.0	138.3	107.2
CV %	1.5	14.6	--	4.3	7.3	--	2.3	8.0	--	1.4	10.8	--	2.0	7.6	5.2
LSD 0.05	0.8	23.2	--	2.1	16.2	--	1.4	14.8	--	1.0	28.8	--	1.0	13.4	7.2
LSD 0.10	0.7	19.4	--	1.8	13.5	--	1.2	12.4	--	0.8	24.1	--	0.8	11.2	6.0

<sup>1</sup>Hull-less varieties. When comparing yield of hull-less oat varieties with varieties with hulls, multiply the yield of the hull-less oats by 1.35 (the hull of a hulled kernel is 35% of the weight).

**Table 9. 2019 North Dakota winter rye variety descriptions.**

Variety	Origin <sup>1</sup>	Year Released	Height (inches)	Straw Strength	Days to Flowering	Seed Color	Seed Size	Winter Hardiness
AC Hazlet	Canada	2006	43	Good	152	Bl-grn.	Small	Good
Aroostok	USDA	1981	45	Fair	145	Tan	Small	V.good
Bono <sup>3</sup>	KWS Germany	2013	37	Good	151	Green	Med.	Good
Brasetto <sup>3</sup>	KWS Germany	2008	36	V.good	151	Bl-grn.	Large	Good
Dacold	ND	1989	42	Good	154	Bl-grn.	Med.	Good
Hancock	WI	1979	43	Good	149	Tan	Large	Fair <sup>4</sup>
ND Dylan	ND	2016	45	Good	150	Blue	Med.	V.good
ND Gardner	ND	2019	44	Fair	144	Bl-grn.	Small	V.good
Rymin	MN	1973	42	V.good	150	Grn-gray	Large	Fair <sup>4</sup>
Spooner	WI	1993	44	V.good	149	Tan	Large	Good
Wheeler	MI	1971	47	Fair	152	Tan	Large	Fair

<sup>1</sup>ND = North Dakota State University; WI = University of Wisconsin; MN = University of Minnesota; MI = Michigan State University.

<sup>2</sup>NA = not available.

<sup>3</sup>Hybrid.

<sup>4</sup>Varieties with fair winter hardiness should not be seeded in bare soil.

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