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North Dakota Barley, Oat and Rye

Variety Trial Results for 2022 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 <https://vt.ag.ndsu.edu> and from each Research Extension Center.

Yield is reported on a 14.5%, 14% and 14% moisture basis for barley, oats and rye respectively. Protein is reported on a 0% moisture basis for all crops in this report. 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. 2022 North Dakota barley variety descriptions.

Variety	Use ¹	Origin ²	Year Released	Awn ³ Type	Rachilla		Height (inch)	Days to Head	Straw ⁵ Strength	Reaction to Disease ⁶			
					Hair ⁴ Length	Aleurone Color				Stem Rust	Spot-form Net Blotch	Spot Blotch	Net Blotch
Six-rowed													
Tradition	M/F	BARI	2003	S	L	White	30	48	3	8	6	3	7
Two-rowed													
AAC Connect	M/F	AAFC	2017	R	L	White	27	55	4	4	5	4	5
AAC Synergy	M/F	AAFC	2015	R	L	White	29	55	4	4	3	4	4
ABI Cardinal	M/F	BARI	2019	R	S	White	28	56	4	NA	NA	4	6
Brewski	M	ND	2021	S	L	White	28	54	4	NA	NA	4	4
CDC Austenson	F	CDC	2009	R	S	White	29	57	2	NA	NA	2	2
CDC Churchill	M/F	CDC	2019	R	L	White	NA	NA	3	NA	3	3	NA
CDC Fraser	M/F	CDC	2016	R	L	White	27	56	2	NA	NA	4	4
Conlon ⁷	M/F	ND	1996	S	L	White	28	49	5	8	4	6	3
Explorer	M	Secobra	NA	R	L	White	24	55	3	NA	NA	8	4
ND Genesis	M/F	ND	2015	S	L	White	30	52	4	8	4	4	6
Pinnacle	M/F	ND	2006	S	L	White	29	50	3	8	8	5	6

Bolded varieties were tested for the first time this year, so some ratings may change as new data become available.

¹M = malting; F = feed.

²BARI = Busch Agricultural Resources Inc.; CDC = Crop Development Centre, University of Saskatchewan; ND = North Dakota State University
AAFC = Agriculture and Agri-Food Canada

³R = rough; S = smooth.

⁴L = long S = short.

⁵Straw Strength scores from 1-9, with 1 = strongest and 9 = weakest.

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

⁷Lower DON accumulations than other varieties tested.

Table 2. Yield and test weight of barley varieties at three locations in eastern North Dakota, 2020-2022.

Variety	<u>Fargo</u>			<u>Carrington</u>			<u>Langdon</u>			<u>Avg. eastern N.D.</u>		
	Test	Yield		Test	Yield		Test	Yield		Test	Yield	
	Wt.	2022	3 Yr.	Wt.	2022	3 Yr.	Wt.	2022	3 Yr.	Wt.	2022	3 Yr.
	(lb/bu)	-----(bu/a)-----		(lb/bu)	-----(bu/a)-----		(lb/bu)	-----(bu/a)-----		(lb/bu)	-----(bu/a)-----	
Six-rowed												
Tradition	48.5	105.8	117.1	48.5	81.9	73.6	50.0	98.5	98.8	49.0	95.4	96.5
Two-rowed												
AAC Connect	49.9	93.6	103.0	46.9	86.7	74.3	49.5	100.1	105.5	48.8	93.5	94.3
AAC Synergy	49.9	104.2	103.2	48.8	94.0	77.1	50.5	105.2	109.8	49.7	101.1	96.7
ABI Cardinal	51.2	94.2	102.7	48.1	85.3	--	50.6	103.3	98.3	50.0	94.3	--
Brewski	49.5	99.0	100.1	46.7	87.8	--	50.1	108.6	--	48.8	98.5	--
CDC Austenson	--	--	--	52.6	89.7	--	--	--	--	--	--	--
CDC Fraser	49.2	91.1	97.5	47.2	81.4	--	49.4	105.2	--	48.6	92.6	--
Conlon	50.5	82.6	92.8	48.4	78.6	67.1	51.1	100.0	88.7	50.0	87.1	82.9
Explorer	54.2	81.5	95.8	47.7	85.5	73.2	48.9	105.6	95.1	50.3	90.9	88.0
ND Genesis	50.9	111.0	111.7	46.4	87.0	71.6	48.8	100.4	107.5	48.7	99.5	96.9
Pinnacle	49.4	92.0	100.0	48.2	78.5	70.7	51.6	98.5	96.2	49.7	89.7	89.0
Mean	50.3	95.5	102.4	48.1	85.1	72.5	50.1	102.5	100.0	49.4	94.2	92.0
CV %	--	7.8	--	2.1	8.6	--	1.1	5.0	--	2.4	6.1	--
LSD 0.05	--	11.8	--	1.4	10.5	--	0.8	7.6	--	NS	NS	--
LSD 0.10	--	9.9	--	1.2	8.8	--	0.7	6.3	--	1.7	NS	--

Table 3. Plump and protein of barley varieties at three locations in eastern North Dakota, 2022.

Variety	<u>Fargo</u>		<u>Carrington</u>		<u>Langdon</u>		<u>Avg. eastern N.D.</u>	
	Plump	Protein	Plump	Protein	Plump	Protein	Plump	Protein
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Six-rowed								
Tradition	69.7	12.7	95	11.8	95	10.9	86.7	11.8
Two-rowed								
AAC Connect	81.1	12.0	90	11.1	95	10.3	88.6	11.1
AAC Synergy	87.1	12.3	96	10.9	97	10.4	93.3	11.2
ABI Cardinal	85.1	12.5	95	10.7	97	10.3	92.5	11.2
Brewski	91.6	11.2	96	11.0	96	10.1	94.7	10.8
CDC Austenson	--	--	92	10.8	--	--	--	--
CDC Fraser	88.7	13.1	95	11.1	97	10.3	93.5	11.5
Conlon	90.2	12.6	96	11.7	98	10.5	94.9	11.6
Explorer	91.4	11.5	93	10.8	95	9.7	93.2	10.7
ND Genesis	92.1	10.2	95	10.1	95	9.7	93.9	10.0
Pinnacle	85.0	10.9	96	10.2	97	10.0	92.6	10.4
Mean	86.2	11.9	95	10.9	96	10.2	92.4	11.0
CV %	--	--	2.1	4.6	1.8	4.6	--	--
LSD 0.05	--	--	2.8	0.7	2.4	0.7	--	--
LSD 0.10	--	--	2.4	0.6	2.0	0.6	--	--

Table 4. Yield and test weight of barley varieties at four locations in western North Dakota, 2020-2022.

Variety	<u>Glen Ullin</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.	2022	3 Yr.	Wt.	2022	3 Yr.	Wt.	2022	3 Yr.	Wt.	2022	3 Yr.	Wt.	2022	3 Yr. ¹
	(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---	
Six-rowed															
Tradition	45.8	41.0	60.9	47.5	101.6	62.1	45.1	84.0	94.3	45.8	41.8	31.8	46.1	67.1	62.3
Two-rowed															
AAC Connect	44.4	62.1	--	47.0	94.6	61.3	45.8	90.0	104.6	45.4	41.2	31.0	45.6	72.0	--
AAC Synergy	46.0	56.9	79.4	47.8	103.4	64.1	44.5	85.1	101.7	45.2	42.1	31.4	45.9	71.9	69.1
ABI Cardinal	47.1	68.3	--	47.7	93.9	62.9	47.7	95.6	102.8	46.0	47.3	--	47.1	76.3	--
Brewski	45.4	74.0	--	47.1	105.1	70.0	45.6	82.5	--	43.9	37.1	--	45.5	74.7	--
CDC Austenson	--	--	--	50.1	111.9	--	47.1	94.4	--	--	--	--	--	--	--
CDC Fraser	45.8	63.8	--	46.9	101.2	--	46.0	86.4	--	45.5	37.7	--	46.0	72.3	--
Conlon	--	--	--	48.5	95.2	55.2	47.5	90.1	93.1	46.9	27.2	28.5	--	--	--
Explorer	--	--	--	46.6	105.3	67.6	47.5	93.0	103.4	46.7	41.6	35.0	--	--	--
ND Genesis	45.4	67.6	80.8	47.9	95.6	66.9	44.9	86.4	105.1	44.2	37.6	32.4	45.6	71.8	71.3
Pinnacle	--	--	--	46.2	85.7	59.9	45.2	78.8	99.0	46.6	34.0	31.4	--	--	--
Mean	45.7	62.0	73.7	47.6	99.4	63.3	46.1	87.8	100.5	45.6	36.9	31.6	46.0	72.3	67.6
CV %	1.3	8.3	--	1.6	5.2	--	1.6	4.9	--	1.4	8.5	--	1.7	8.5	--
LSD 0.05	0.9	7.4	--	0.9	6.1	--	1.2	7.4	--	1.1	5.2	--	1.2	NS	--
LSD 0.10	0.7	6.1	--	0.7	4.7	--	1.0	6.1	--	0.9	4.3	--	1.0	7.6	--

¹Glen Ullin excluded from three-year average.

Table 5. Plump and protein of barley varieties at four locations in western North Dakota, 2022.

Variety	<u>Glen Ullin</u>		<u>Hettinger</u>		<u>Minot</u>	<u>Williston</u>	<u>Avg. western N.D.</u>	
	Plump	Protein	Plump	Protein	Protein	Protein	Plump	Protein
	------(%)-----							
Six-rowed								
Tradition	95	11.7	91	13.9	12.3	11.4	93	12.3
Two-rowed								
AAC Connect	88	11.3	85	12.9	11.8	10.3	87	11.6
AAC Synergy	93	10.6	92	12.4	12.9	10.8	92	11.7
ABI Cardinal	95	11.2	90	12.4	11.9	9.9	93	11.4
Brewski	95	9.8	90	11.7	11.6	11.2	93	11.1
CDC Austenson	--	--	89	12.3	12.3	--	--	--
CDC Fraser	96	11.5	91	12.4	12.9	11.3	94	12.0
Conlon	--	--	95	13.1	12.7	11.0	--	--
Explorer	--	--	86	13.6	11.8	10.2	--	--
ND Genesis	94	9.6	92	11.2	10.8	9.7	93	10.3
Pinnacle	--	--	85	11.7	10.7	9.5	--	--
Mean	94	10.8	90	12.5	12.0	10.4	92	11.5
CV %	2.0	4.0	3.1	5.8	3.4	5.5	--	--
LSD 0.05	3	0.6	3.2	0.8	0.6	0.9	--	--
LSD 0.10	2	0.5	2.5	0.7	0.5	0.8	--	--

Table 6. 2022 North Dakota oat variety descriptions.

Variety	Origin ¹	Year Released	Grain Color	Height (inch)	Straw Strength	Days to Heading ²	Reaction to Diseases ³			Test Weight	Protein ⁴
							Stem Rust	Crown Rust ³	Barley Y.Dwf		
AAC Douglas	AAFC	2019	White	39	NA	52	NA	4	5	Good	M
Beach	ND	2004	White	39	M.strg.	52	8	4	6	V.good	M
CDC Minstrel	Sask.	2006	White	37	M.strg.	53	8	8	8	Good	M
CS Camden	Meridian	2016	White	36	Strong	54	8	6	NA	Good	M
Deon	MN	2013	Yellow	40	Strong	55	8	2	2	V.good	M
HiFi	ND	2001	White	40	Strong	55	4	8	2	Good	M
Jury	ND	2012	White	43	M.strg.	54	1	8	4	V.good	M
Killdeer	ND	2000	White	35	Strong	52	8	6	4	Good	M
Leggett	AAFC	2005	White	38	Strong	54	3	1	8	Good	M
MN-Pearl	MN	2019	White	39	NA	54	NA	7	4	Good	M/L
ND Heart	ND	2020	White	40	Strong	53	3	6	4	Good	H
Newburg	ND	2011	White	39	Med.	56	1	8	4	Good	M
Otana	MT	1977	White	41	M.weak	55	8	8	8	V.good	M/L
Paul ⁵	ND	1994	Hull-less	41	Strong	56	1	4	2	V.good	H
Rockford	ND	2008	White	41	Strong	55	8	8	4	V.good	M
SD Buffalo	SD	2022	White	41	Strong	52	NA	6	NA	V.good	M
Warrior	SD	2018	White	37	Strong	52	6	1	NA	V.good	M

Bolded varieties were tested for the first time this year, so some ratings may change as new data become available.

¹AAFC = 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.

²Days after planting.

³Disease reaction scores from 1-9, with 1 = resistant and 9 = very susceptible. NA - not available.

⁴H = high; M = medium; L = low.

⁵Hull-less variety.

Table 7. Yield and test weight of oat varieties at four locations in eastern North Dakota, 2020-2022.

Variety	<u>Fargo</u>			<u>Casselton</u>			<u>Carrington</u>			<u>Langdon</u>			<u>Average Eastern N.D.</u>		
	Test	Yield		Test	Yield		Test	Yield		Test	Yield		Test	Yield	
	Wt.	2022	3 Yr.	Wt.	2022	3 Yr.	Wt.	2022	3 Yr. ¹	Wt.	2022	3 Yr. ¹	Wt.	2022	3 Yr. Avg.
	(lb/bu)	----(bu/a)----		(lb/bu)	----(bu/a)----		(lb/bu)	----(bu/a)----		(lb/bu)	---(bu/a)----		(lb/bu)	----- (bu/a)-----	
AAC Douglas	37.2	89.5	--	40.0	91.8	--	37.4	88.6	--	39.8	187.3	--	38.6	114.3	--
Beach	41.9	90.7	101.6	42.6	81.6	85.2	37.4	39.4	95.3	43.2	160.4	165.6	41.3	93.0	111.9
CDC Minstrel	37.6	91.1	--	40.9	81.2	--	33.8	52.8	96.4	40.2	189.2	188.5	38.1	103.6	--
CS Camden	36.3	97.7	109.7	39.5	102.3	107.7	35.5	72.9	113.1	38.9	197.3	198.1	37.5	117.5	132.2
Deon	38.8	99.2	114.9	39.8	66.2	94.0	38.4	70.1	109.3	41.0	185.3	197.4	39.5	105.2	128.9
HiFi	38.6	89.6	101.2	39.2	66.9	88.6	34.8	48.6	90.7	41.1	184.7	175.6	38.4	97.5	114.0
Jury	38.5	94.7	114.5	41.7	85.9	95.2	36.5	77.3	107.7	40.8	182.9	188.6	39.4	110.2	126.5
Killdeer	36.9	89.0	100.5	39.3	58.0	85.0	34.6	54.1	91.1	40.0	189.3	191.3	37.7	97.6	117.0
Leggett	40.1	104.1	115.9	38.9	74.6	90.6	37.9	61.7	97.2	41.5	186.3	189.5	39.6	106.7	123.3
MN-Pearl	39.1	100.0	--	39.5	73.5	--	38.0	81.7	--	39.7	191.8	--	39.1	111.8	--
ND Heart	39.1	111.2	108.6	40.4	74.0	91.3	35.0	51.1	100.5	41.5	174.9	175.2	39.0	102.8	118.9
Newburg	38.3	99.6	108.9	40.8	77.0	84.2	35.3	70.9	107.3	40.5	204.6	188.9	38.7	113.0	122.3
Otana	37.4	88.8	103.9	40.0	75.8	83.9	36.9	65.3	104.6	41.0	164.7	173.8	38.8	98.6	116.5
Paul ²	43.7	68.7	75.0	44.1	40.2	56.4	45.1	38.1	51.1	46.8	126.0	133.9	44.9	68.3	79.1
Rockford	40.4	89.1	101.5	40.6	64.5	84.5	35.9	53.3	93.9	42.8	182.2	173.3	39.9	97.3	113.3
SD Buffalo	39.7	91.2	--	42.0	107.9	--	39.7	73.0	--	42.2	189.2	--	40.9	115.3	--
Warrior	37.6	72.1	107.5	38.3	50.8	85.6	38.8	63.4	99.4	41.2	169.1	170.3	39.0	88.9	115.7
Mean	38.9	92.1	104.9	40.4	74.8	87.1	37.1	62.5	97.0	41.3	180.3	179.3	39.4	102.4	116.9
CV %	1.9	11.8	--	3.0	11.3	--	3.6	15.5	--	0.8	3.7	--	2.9	10.4	--
LSD 0.05	1.2	18.5	--	2.1	13.7	--	1.9	13.6	--	0.5	9.4	--	1.7	15.1	--
LSD 0.10	1.0	14.3	--	1.6	10.6	--	1.6	11.4	--	0.4	7.9	--	1.4	12.6	--

¹Carrington 3-Yr. average is for 2019, 2020 and 2022 as 2021 trial was lost due to drought.

²Hull-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 three locations in western North Dakota, 2020-2022.

Variety	<u>Hettinger</u>			<u>Minot</u>			<u>Williston</u>			<u>Average Western N.D.</u>		
	Test	<u>Yield</u>		Test	<u>Yield</u>		Test	<u>Yield</u>		Test	<u>Yield</u>	
	Wt.	2022	3 Yr.	Wt.	2022	3 Yr.	Wt.	2022	3 Yr.	Wt.	2022	3 Yr.
	(lb/bu)	----(bu/a)----		(lb/bu)	----(bu/a)----		(lb/bu)	----(bu/a)----		(lb/bu)	----(bu/a)----	
AAC Douglas	34.6	179.5	--	36.3	169.3	--	38.0	69.0	--	36.3	139.3	--
Beach	37.2	153.3	87.1	39.5	168.0	124.8	39.7	37.6	40.3	38.8	119.6	84.1
CDC Minstrel	33.3	175.5	98.6	37.4	171.2	132.4	37.2	25.5	36.5	36.0	124.1	89.2
CS Camden	31.2	165.3	103.3	37.4	186.7	143.5	34.6	42.1	49.3	34.4	131.4	98.7
Deon	35.0	165.8	95.6	38.4	185.6	133.2	36.1	33.6	41.8	36.5	128.3	90.2
HiFi	34.7	165.5	94.9	38.0	168.5	126.1	36.7	41.5	38.6	36.5	125.2	86.5
Jury	34.1	165.1	97.9	39.1	160.4	122.0	38.6	55.1	48.3	37.3	126.9	89.4
Killdeer	35.3	180.1	102.4	38.1	156.8	121.2	37.6	41.0	46.7	37.0	126.0	90.1
Leggett	34.7	165.3	94.1	37.0	173.0	126.7	38.3	47.5	42.6	36.7	128.6	87.8
MN-Pearl	34.0	176.6	--	37.5	183.7	--	37.8	50.1	--	36.4	136.8	--
ND Heart	35.4	163.2	91.2	38.4	159.9	123.3	34.0	32.9	40.1	35.9	118.7	84.9
Newburg	32.8	164.5	94.4	39.7	165.5	123.5	34.7	20.1	39.1	35.7	116.7	85.7
Otana	35.0	168.0	97.6	38.1	154.7	120.6	36.8	52.2	49.9	36.6	125.0	89.4
Paul ¹	43.0	121.9	66.4	41.6	119.7	93.1	40.6	17.0	20.9	41.7	86.2	60.1
Rockford	36.3	162.9	101.8	39.2	164.9	131.0	37.2	36.2	45.9	37.6	121.3	92.9
SD Buffalo	36.5	176.1	--	37.7	178.2	--	38.4	48.7	--	37.5	134.3	--
Warrior	35.4	171.3	103.3	38.5	161.6	127.0	37.7	30.7	40.6	37.2	121.2	90.3
Mean	35.2	165.9	94.9	38.4	170.7	124.9	36.6	42.2	41.5	36.9	124.1	87.1
CV %	2.0	4.3	--	3.5	7.3	--	5.6	15.7	--	3.5	7.8	--
LSD 0.05	0.8	8.2	--	2.2	20.2	--	3.4	10.8	--	2.2	16.1	--
LSD 0.10	0.7	6.4	--	1.8	16.9	--	2.8	9.0	--	1.8	13.4	--

¹Hull-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. 2022 North Dakota winter rye variety descriptions.

Variety	Origin ¹	Year Released	Height (inches)	Straw Strength	Days to Head	Seed Color	Seed Size	Winter Hardiness
AC Hazlet	Canada	2006	50	Good	160	Bl-grn.	Small	Good
Aroostok	USDA	1981	54	Fair	156	Tan	Small	V.good
Danko	Poland	1976	45	Good	160	Green	Large	Poor
ND Dylan	ND	2016	52	Good	161	Blue	Med.	V.good
ND Gardner	ND	2019	53	Fair	155	Bl-grn.	Small	V.good
Receptor²	KWS	2022	44	V.good	161	Grn-gray	Med.	V.good
Rymin	MN	1973	50	V.good	160	Grn-gray	Large	Fair ³
Serafino ²	KWS	2019	44	V.good	160	Green	Large	V.good
Spooner	WI	1993	54	Good	158	Tan	Large	Good
Tayo ²	KWS	2020	44	V.good	161	Green	Med.	Good

Bolded varieties were tested for the first time this year, so some ratings may change as new data become available.

¹ND = North Dakota State University; WI = University of Wisconsin; MN = University of Minnesota; KWS = KWS Cereals, USA.

²Hybrid.

³Varieties with fair or poor winter hardiness should not be seeded in bare soil.

Table 10. Yield and test weight of winter rye varieties at four locations in North Dakota, 2020-2022.

Variety	Carrington (organic)			Hettinger			Langdon			Minot			Average		
	Test	Seed Yield		Test	Seed Yield		Test	Seed Yield		Test	Seed Yield		Test	Seed Yield	
	Wt.	2022	3-yr.	Wt.	2022	3-Yr.	Wt.	2022	3-Yr.	Wt.	2022	3-yr.	Wt.	2022	3-yr.
	(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---		(lb/bu)	---(bu/a)---	
AC Hazlet	56.6	67.0	45.2	52.9	98.5	59.4	56.8	82.6	71.0	56.0	88.4	89.5	55.6	84.1	66.3
Aroostok	55.8	46.5	31.9	49.0	66.5	43.8	53.7	53.4	56.0	53.6	62.1	65.4	53.0	57.1	49.3
Danko	57.2	61.2	37.0	52.2	90.1	55.8	56.8	75.6	57.2	56.0	78.1	--	55.6	76.2	--
ND Dylan	55.9	66.9	45.1	50.5	82.8	53.9	55.5	71.5	66.0	54.5	85.6	87.3	54.1	76.7	63.1
ND Gardner	55.6	57.4	37.2	50.8	80.2	50.2	54.0	52.9	56.2	54.3	67.1	70.4	53.7	64.4	53.5
Receptor	--	--	--	53.1	123.1	--	55.7	99.7	--	55.9	114.0	--	55.4	117.7	--
Rymin	56.0	62.4	38.7	51.2	79.3	51.2	55.1	68.9	63.3	54.2	70.7	74.8	54.1	70.3	57.0
Serafino	57.1	85.7	--	51.3	116.9	--	56.1	94.9	--	54.9	101.1	--	54.8	99.6	--
Spooner	56.5	54.7	37.7	51.7	76.3	49.5	55.7	53.9	52.4	55.2	72.3	70.9	54.8	64.3	52.6
Tayo	--	--	--	51.5	127.8	--	54.3	99.4	--	54.6	105.9	--	53.9	119.8	--
Mean	56.3	62.7	39.0	51.4	94.1	52.0	55.4	75.3	60.3	54.9	84.5	76.4	54.5	83.0	57.0
CV %	0.7	10.3	--	2.4	7.4	--	1.2	12.9	--	0.6	3.1	--	0.9	5.6	--
LSD 0.05	0.6	9.5	--	1.5	8.8	--	1.0	14.0	--	0.6	4.5	--	0.7	7.0	--
LSD 0.10	0.5	7.9	--	1.1	6.7	--	0.8	11.5	--	0.5	3.7	--	0.6	5.8	--

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