



2025 Minn-Dak Seed Approval List

Fully Approved Varieties:

- ACH 166 (RHC)
- ACH 973 (CLS)
- Beta 7068
- Beta 7231
- HIL 2325

Conditionally Approved Varieties:

- None

Test Market Varieties:

- ACH 370
- Beta 7344
- Beta 7397

Specialty Varieties:

- ACH 290 (RHC)
- Beta 7170 (RHC)

Varieties That Did Not Make Approval But Are Still Available For Sale:

- None

2024 Agronomic Performance 1 of 6

Established Varieties	Percent Emergence								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 166	88.8	59.6	49.9	»	74.2	66.1	»	98.4	±	97.4	4	2
ACH 973	87.8	60.8	53.2	»	74.3	67.3	»	100.1	±	101.3	6	4
Beta 7068	90.1	54.7	53.8	»	72.4	66.2	»	98.5	±	99.3	5	3
Hilleshög 2325	81.1	52.4	50.3	»	66.8	61.3	»	91.2	±	94.1	6	4
1-Year Mean	86.9	56.9	51.8		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	71.9	54.3		Approval Mean			67.2				
3-Year Mean	»	»	65.2		2023 3-Yr Mean			61.8				

Candidate Varieties	Percent Emergence								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 290	85.8	58.2	56.1	»	72.0	66.7	»	99.3	±	102.3	3	1
Beta 7170	90.1	52.8	53.0	»	71.4	65.3	»	97.1	±	94.6	4	2
Beta 7231	83.3	58.8	52.9	»	71.0	65.0	»	96.7	±	99.8	3	1
1-Year Mean	86.4	56.6	54.0		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	71.5	55.3		Approval Mean			67.2				
3-Year Mean	»	»	65.7		2023 2-Yr Mean			55.9				

Test Market Varieties	Percent Emergence								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 370	87.5	53.9	-	»	70.7	-	»	100.8	±	95.3	2	-
Beta 7344	90.2	56.0	-	»	73.1	-	»	104.3	±	99.0	2	-
Beta 7397	87.7	57.5	-	»	72.6	-	»	103.5	±	101.5	2	-
1-Year Mean	88.4	55.8			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	72.1			Approval Mean			70.1				
					2023 1-Yr Mean			56.6				

% EMERGENCE

2024 Agronomic Performance 2 of 6

Established Varieties	Percent Sugar								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 166	17.35	19.90	19.53	»	18.63	18.93	»	102.5	±	101.6	4	2
ACH 973	16.70	19.40	18.91	»	18.05	18.34	»	99.3	±	99.2	6	4
Beta 7068	16.59	18.72	18.83	»	17.65	18.05	»	97.8	±	97.6	5	3
Hilleshög 2325	17.05	19.31	19.00	»	18.18	18.46	»	100.0	±	99.6	6	4
1-Year Mean	16.92	19.33	19.07		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	18.13	19.20		Approval Mean			18.46				
3-Year Mean	»	»	18.44		2023 3-Yr Mean			18.63				

Candidate Varieties	Percent Sugar								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 290	16.62	18.97	19.26	»	17.79	18.28	»	99.0	±	98.8	3	1
Beta 7170	16.75	19.14	18.72	»	17.94	18.20	»	98.6	±	97.9	4	2
Beta 7231	17.35	19.92	20.22	»	18.63	19.16	»	103.8	±	103.8	3	1
1-Year Mean	16.91	19.34	19.40		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	18.12	19.37		Approval Mean			18.46				
3-Year Mean	»	»	18.55		2023 2-Yr Mean			19.34				

Test Market Varieties	Percent Sugar								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 370	17.92	20.27	-	»	19.10	-	»	104.5	±	104.8	2	-
Beta 7344	17.48	20.01	-	»	18.74	-	»	102.6	±	103.5	2	-
Beta 7397	17.09	19.43	-	»	18.26	-	»	100.0	±	100.5	2	-
1-Year Mean	17.49	19.91			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	18.70			Approval Mean			18.27				
					2023 1-Yr Mean			19.34				

% SUGAR

2024 Agronomic Performance 3 of 6

Established Varieties	Percent Purity								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 166	91.54	90.14	91.53	»	90.84	91.07	»	100.5	±	100.4	4	2
ACH 973	90.99	90.42	91.89	»	90.71	91.10	»	100.6	±	100.7	6	4
Beta 7068	90.71	89.31	91.65	»	90.01	90.56	»	100.0	±	100.0	5	3
Hilleshög 2325	91.53	89.96	91.60	»	90.74	91.03	»	100.5	±	100.4	6	4
1-Year Mean	91.19	89.96	91.67		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	90.57	90.81		Approval Mean			90.60				
3-Year Mean	»	»	90.94		2023 3-Yr Mean			90.74				

Candidate Varieties	Percent Purity								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 290	91.07	89.19	91.30	»	90.13	90.52	»	99.9	±	100.0	3	1
Beta 7170	90.99	89.53	91.32	»	90.26	90.61	»	100.0	±	100.2	4	2
Beta 7231	91.31	89.81	90.83	»	90.56	90.65	»	100.1	±	100.1	3	1
1-Year Mean	91.12	89.51	91.15		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	90.32	90.33		Approval Mean			90.60				
3-Year Mean	»	»	90.59		2023 2-Yr Mean			90.25				

Test Market Varieties	Percent Purity								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 370	91.36	90.04	-	»	90.70	-	»	100.3	±	100.2	2	-
Beta 7344	91.10	89.34	-	»	90.22	-	»	99.8	±	99.5	2	-
Beta 7397	91.09	89.98	-	»	90.54	-	»	100.1	±	100.2	2	-
1-Year Mean	91.18	89.79			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	90.48			Approval Mean			90.43				
					2023 1-Yr Mean			89.83				

% PURITY

2024 Agronomic Performance 4 of 6

Established Varieties	Yield as Tons/Acre								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 166	35.5	25.7	23.7	»	30.6	28.3	»	98.8	±	101.8	4	2
ACH 973	36.3	26.7	25.4	»	31.5	29.5	»	102.9	±	107.5	6	4
Beta 7068	38.0	25.3	25.6	»	31.6	29.6	»	103.4	±	107.6	5	3
Hilleshög 2325	33.4	24.1	24.2	»	28.8	27.2	»	95.1	±	100.0	6	4
1-Year Mean	35.8	25.5	24.7		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	30.6	25.1		Approval Mean			28.6				
3-Year Mean	»	»	28.7		2023 3-Yr Mean			25.2				
Candidate Varieties	Yield as Tons/Acre								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 290	39.3	28.0	26.3	»	33.7	31.2	»	109.0	±	110.4	3	1
Beta 7170	39.2	26.3	26.6	»	32.7	30.7	»	107.2	±	107.6	4	2
Beta 7231	36.4	25.5	23.5	»	31.0	28.5	»	99.4	±	99.7	3	1
1-Year Mean	38.3	26.6	25.5		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	32.5	26.1		Approval Mean			28.6				
3-Year Mean	»	»	30.1		2023 2-Yr Mean			24.6				
Test Market Varieties	Yield as Tons/Acre								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 370	35.0	24.2	-	»	29.6	-	»	99.9	±	98.1	2	-
Beta 7344	35.5	25.0	-	»	30.3	-	»	102.0	±	101.2	2	-
Beta 7397	35.0	26.2	-	»	30.6	-	»	103.2	±	106.2	2	-
1-Year Mean	35.2	25.2			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	30.2			Approval Mean			29.7				
					2023 1-Yr Mean			24.7				

YIELD

2024 Agronomic Performance 5 of 6

Established Varieties	Recoverable Sugar/Ton (RST)								RST + RSA			
	Trial Year			Average		% of Means *			% of Means *			
	2024	2023	2022	2-Yr	3-Yr	2024	2023	2024	2023			
ACH 166	302.5	341.8	341.6	»	322.1	328.6	»	103.3	±	102.3	205.3	205.9
ACH 973	288.6	334.2	332.0	»	311.4	318.3	»	100.1	±	100.0	202.9	207.1
Beta 7068	285.3	316.7	329.5	»	301.0	310.5	»	97.6	±	97.5	198.6	202.2
Hilleshög 2325	297.0	330.3	332.7	»	313.6	320.0	»	100.6	±	100.2	196.7	200.3
1-Year Mean	293.3	330.8	333.9		* Trial Years »			3 yr		3 yr	3 yr	3 yr
2-Year Mean	»	312.0	332.3		Approval Mean			318.0				
3-Year Mean	»	»	319.3		2023 3-Yr Mean			321.7				

Candidate Varieties	Recoverable Sugar/Ton (RST)								RST + RSA			
	Trial Year			Average		% of Means *			% of Means *			
	2024	2023	2022	2-Yr	3-Yr	2024	2023	2024	2023			
ACH 290	287.3	320.5	335.7	»	303.9	314.5	»	98.9	±	98.8	206.4	207.4
Beta 7170	289.4	325.0	325.9	»	307.2	313.4	»	98.6	±	98.0	204.0	203.1
Beta 7231	301.4	340.1	350.5	»	320.7	330.7	»	104.0	±	104.0	207.2	207.4
1-Year Mean	292.7	328.5	337.4		* Trial Years »			3 yr		2 yr	3 yr	2 yr
2-Year Mean	»	310.6	333.0		Approval Mean			318.0				
3-Year Mean	»	»	319.5		2023 2-Yr Mean			332.1				

Test Market Varieties	Recoverable Sugar/Ton (RST)								RST + RSA			
	Trial Year			Average		% of Means *			% of Means *			
	2024	2023	2022	2-Yr	3-Yr	2024	2023	2024	2023			
ACH 370	312.0	347.8	-	»	329.9	-	»	105.1	±	105.3	210.3	208.4
Beta 7344	302.9	339.6	-	»	321.2	-	»	102.4	±	102.9	206.8	206.6
Beta 7397	295.9	332.6	-	»	314.2	-	»	100.1	±	100.7	203.5	207.1
1-Year Mean	303.6	340.0			* Trial Years »			2 yr		1 yr	2 yr	1 yr
2-Year Mean	»	321.8			Approval Mean			313.8				
					2023 1-Yr Mean			330.2				

RST

2024 Agronomic Performance 6 of 6

Established Varieties	Recoverable Sugar/Acre (RSA)								RST + RSA	
	Trial Year			Average			% of Means *		% of Means *	
	2024	2023	2022	2-Yr	3-Yr	2024	2023	2024	2023	
ACH 166	10,652	8,807	8,025	» 9,729	9,161	» 102.0	‡ 103.6	205.3	205.9	
ACH 973	10,386	8,959	8,368	» 9,673	9,238	» 102.8	‡ 107.1	202.9	207.1	
Beta 7068	10,741	8,071	8,389	» 9,406	9,067	» 100.9	‡ 104.7	198.6	202.2	
Hilleshög 2325	9,859	8,058	7,977	» 8,959	8,632	» 96.1	‡ 100.1	196.7	200.3	
1-Year Mean	10,410	8,474	8,190	* Trial Years »		3 yr	3 yr	3 yr	3 yr	
2-Year Mean	»	9,442	8,332	Approval Mean		8,983				
3-Year Mean	»	»	9,024	2023 3-Yr Mean		8,113				

Candidate Varieties	Recoverable Sugar/Acre (RSA)								RST + RSA	
	Trial Year			Average			% of Means *		% of Means *	
	2024	2023	2022	2-Yr	3-Yr	2024	2023	2024	2023	
ACH 290	11,237	8,996	8,742	» 10,116	9,658	» 107.5	‡ 108.6	206.4	207.4	
Beta 7170	11,249	8,546	8,627	» 9,897	9,474	» 105.5	‡ 105.1	204.0	203.1	
Beta 7231	10,922	8,727	8,162	» 9,825	9,270	» 103.2	‡ 103.4	207.2	207.4	
1-Year Mean	11,136	8,756	8,510	* Trial Years »		3 yr	2 yr	3 yr	2 yr	
2-Year Mean	»	9,946	8,633	Approval Mean		8,983				
3-Year Mean	»	»	9,467	2023 2-Yr Mean		8,167				

Test Market Varieties	Recoverable Sugar/Acre (RSA)								RST + RSA	
	Trial Year			Average			% of Means *		% of Means *	
	2024	2023	2022	2-Yr	3-Yr	2024	2023	2024	2023	
ACH 370	10,857	8,467	-	» 9,662	-	» 105.1	‡ 103.1	210.3	208.4	
Beta 7344	10,677	8,518	-	» 9,597	-	» 104.4	‡ 103.7	206.8	206.6	
Beta 7397	10,266	8,738	-	» 9,502	-	» 103.4	‡ 106.4	203.5	207.1	
1-Year Mean	10,600	8,574		* Trial Years »		2 yr	1 yr	2 yr	1 yr	
2-Year Mean	»	9,587		Approval Mean		9,190				
				2023 1-Yr Mean		8,214				

RSA

2024 1st-Year Agronomic Performance

Experimental Varieties	Percent Emergence		Percent Sugar		Percent Purity		Years In Trials
	2024	% of Est.	2024	% of Est.	2024	% of Est.	
ACH 417	84.6	97.3	17.93	105.9	91.27	100.1	1
ACH 430	86.2	99.1	17.24	101.9	91.16	100.0	1
ACH 454	86.6	99.6	17.74	104.9	91.39	100.2	1
ACH 472	86.1	99.0	17.90	105.8	90.48	99.2	1
ACH 489	90.7	104.3	17.31	102.3	91.41	100.2	1
Beta 7401	86.1	99.0	17.30	102.2	91.24	100.1	1
Beta 7416	83.6	96.2	17.73	104.8	91.24	100.1	1
Beta 7439	90.6	104.2	17.44	103.1	91.06	99.9	1
Beta 7456	92.6	106.5	17.74	104.8	90.16	98.9	1
Hilleshög 2517	91.4	105.2	16.88	99.7	91.24	100.0	1
1-Year Mean	87.8		17.52		91.06		
2024 Est. Variety Means	»	86.9	»	16.92	»	91.19	

1st Year AGRONOMIC

Experimental Varieties	Yield as Tons/Acre		Recoverable Sugar/Ton		Recoverable Sugar/Acre		% RST + % RSA
	2024	% of Est.	2024	% of Est.	2024	% of Est.	
ACH 417	36.9	103.1	311.7	106.3	11,433	109.8	216.1
ACH 430	36.9	103.1	299.0	101.9	10,942	105.1	207.0
ACH 454	35.0	97.8	309.0	105.4	10,723	103.0	208.4
ACH 472	36.6	102.2	307.7	104.9	11,186	107.5	212.4
ACH 489	36.8	102.7	301.2	102.7	10,996	105.6	208.3
Beta 7401	35.8	99.9	300.2	102.3	10,704	102.8	205.2
Beta 7416	36.8	102.7	308.1	105.1	11,271	108.3	213.3
Beta 7439	35.8	99.9	302.1	103.0	10,734	103.1	206.1
Beta 7456	37.1	103.5	303.5	103.5	11,171	107.3	210.8
Hilleshög 2517	31.1	86.9	292.6	99.8	9,124	87.6	187.4
1-Year Mean	35.9		303.5		10,828		
2024 Est. Variety Means	»	35.8	»	293.3	»	10,410	

2024 Disease Performance 1 of 4

Established Varieties	Cercospora Leaf Spot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 166	2.53	2.26	1.65	»	2.40	2.15	»	115.9	‡	153.8	4	2
ACH 973	1.74	2.14	1.58	»	1.94	1.82	»	136.8	‡	164.7	6	4
Beta 7068	2.36	2.39	2.15	»	2.38	2.30	»	108.3	‡	141.4	5	3
Hilleshög 2325	3.30	3.64	4.12	»	3.47	3.69	»	67.6	‡	80.8	6	4
1-Year Mean	2.48	2.61	2.38		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	2.54	2.49		Established 3-YR Mean			2.49				
3-Year Mean	»	»	2.49		2023 3-Yr Mean			3.07				

Candidate Varieties	Cercospora Leaf Spot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 290	2.61	2.63	2.10	»	2.62	2.44	»	101.9	‡	131.1	3	1
Beta 7170	2.72	2.67	2.16	»	2.70	2.52	»	99.0	‡	128.5	4	2
Beta 7231	1.96	2.10	1.53	»	2.03	1.87	»	133.5	‡	170.6	3	1
1-Year Mean	2.43	2.47	1.93		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	2.45	2.20		Established 3-YR Mean			2.49				
3-Year Mean	»	»	2.28		2023 2-Yr Mean			3.10				

Test Market Varieties	Cercospora Leaf Spot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 370	2.02	1.78	-	»	1.90	-	»	133.7	‡	172.8	2	-
Beta 7344	1.70	2.11	-	»	1.91	-	»	133.1	‡	145.2	2	-
Beta 7397	2.13	2.26	-	»	2.20	-	»	115.7	‡	136.0	2	-
1-Year Mean	1.95	2.05			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	2.00			Established 2-YR Mean			2.54				
					2023 1-Yr Mean			3.07				

CERCOSPORA

2024 Disease Performance 2 of 4

Established Varieties	Rhizoctonia Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 166	3.53	3.66	3.72	»	3.59	3.64	»	107.0	‡	111.2	4	2
ACH 973	4.07	3.84	4.61	»	3.95	4.17	»	93.2	‡	95.8	6	4
Beta 7068	3.51	3.58	4.15	»	3.55	3.75	»	103.9	‡	103.9	5	3
Hilleshög 2325	3.89	4.09	3.99	»	3.99	3.99	»	97.5	‡	99.1	6	4
1-Year Mean	3.75	3.79	4.11		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	3.77	3.95		Established 3-YR Mean			3.89				
3-Year Mean	»	»	3.89		2023 3-Yr Mean			3.89				

Candidate Varieties	Rhizoctonia Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 290	2.99	3.14	4.01	»	3.06	3.38	»	115.2	‡	112.0	3	1
Beta 7170	3.46	3.50	3.62	»	3.48	3.53	»	110.3	‡	112.5	4	2
Beta 7231	3.72	3.66	4.10	»	3.69	3.83	»	101.7	‡	103.1	3	1
1-Year Mean	3.39	3.43	3.91		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	3.41	3.67		Established 3-YR Mean			3.89				
3-Year Mean	»	»	3.58		2023 2-Yr Mean			4.00				

Test Market Varieties	Rhizoctonia Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 370	4.19	3.54	-	»	3.86	-	»	97.6	‡	108.0	2	-
Beta 7344	4.07	3.53	-	»	3.80	-	»	99.3	‡	108.2	2	-
Beta 7397	4.67	3.60	-	»	4.14	-	»	91.1	‡	106.1	2	-
1-Year Mean	4.31	3.56			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	3.93			Established 2-YR Mean			3.77				
					2023 1-Yr Mean			3.82				

RHIZOCTONIA

2024 Disease Performance 3 of 4

Established Varieties	Aphanomyces Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 166	3.21	3.53	3.49	»	3.37	3.41	»	104.3	±	97.3	4	2
ACH 973	3.83	3.43	3.16	»	3.63	3.48	»	102.4	±	100.1	6	4
Beta 7068	3.94	3.99	3.06	»	3.96	3.66	»	97.2	±	96.6	5	3
Hilleshög 2325	3.65	3.80	3.63	»	3.73	3.70	»	96.3	±	97.4	6	4
1-Year Mean	3.66	3.69	3.34		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	3.67	3.51		Established 3-YR Mean			3.56				
3-Year Mean	»	»	3.56		2023 3-Yr Mean			3.61				

Candidate Varieties	Aphanomyces Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 290	3.42	4.00	2.91	»	3.71	3.44	»	103.4	±	100.2	3	1
Beta 7170	3.85	3.62	3.20	»	3.74	3.56	»	100.1	±	101.4	4	2
Beta 7231	3.73	3.76	3.29	»	3.74	3.59	»	99.1	±	98.1	3	1
1-Year Mean	3.67	3.79	3.13		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	3.73	3.46		Established 3-YR Mean			3.56				
3-Year Mean	»	»	3.53		2023 2-Yr Mean			3.46				

Test Market Varieties	Aphanomyces Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 370	3.70	3.94	-	»	3.82	-	»	96.1	±	90.7	2	-
Beta 7344	3.45	3.02	-	»	3.24	-	»	113.3	±	118.0	2	-
Beta 7397	3.58	4.32	-	»	3.95	-	»	92.9	±	82.6	2	-
1-Year Mean	3.58	3.76			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	3.67			Established 2-YR Mean			3.67				
					2023 1-Yr Mean			3.57				

APHANOMYCES

2024 Disease Performance 4 of 4

Established Varieties	Fusarium								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 166	1.51	3.43	3.49	»	2.47	2.81	»	114.9	±	151.8	4	2
ACH 973	1.40	2.88	3.64	»	2.14	2.64	»	122.4	±	145.1	6	4
Beta 7068	1.30	3.60	3.29	»	2.45	2.73	»	118.3	±	155.2	5	3
Hilleshög 2325	3.09	6.32	4.83	»	4.70	4.75	»	68.1	±	74.0	6	4
1-Year Mean	1.83	4.06	3.81		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	2.94	3.93		Established 3-YR Mean			3.23				
3-Year Mean	»	»	3.23		2023 3-Yr Mean			4.64				

Candidate Varieties	Fusarium								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 290	1.53	3.54	3.54	»	2.54	2.87	»	112.6	±	124.9	3	1
Beta 7170	1.51	3.74	3.58	»	2.62	2.94	»	109.8	±	120.8	4	2
Beta 7231	1.50	3.43	3.05	»	2.47	2.66	»	121.5	±	136.5	3	1
1-Year Mean	1.51	3.57	3.39		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	2.54	3.48		Established 3-YR Mean			3.23				
3-Year Mean	»	»	2.82		2023 2-Yr Mean			4.42				

Test Market Varieties	Fusarium								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2024	2023	2022	2-Yr	3-Yr	2024	2023					
ACH 370	1.26	4.08	-	»	2.67	-	»	110.2	±	114.1	2	-
Beta 7344	1.04	2.89	-	»	1.96	-	»	149.8	±	161.2	2	-
Beta 7397	1.20	2.31	-	»	1.75	-	»	168.0	±	201.7	2	-
1-Year Mean	1.17	3.09			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	2.13			Established 2-YR Mean			2.94				
					2023 1-Yr Mean			4.65				

2024, 2023, 2022 Un-Adjusted Field Data

FUSARIUM

2024 1st Year Disease Performance

Experimental Varieties	Cercospora		Rhizoctonia		Aphanomyces		Years In Trials
	2024	% of Est.	2024	% of Est.	2024	% of Est.	
ACH 417	1.55	159.8	3.24	115.8	3.10	117.9	1
ACH 430	2.15	115.3	3.62	103.5	3.47	105.4	1
ACH 454	2.17	114.2	3.54	105.9	3.20	114.5	1
ACH 472	1.45	170.9	3.31	113.4	3.43	106.8	1
ACH 489	3.47	71.4	3.46	108.5	3.01	121.8	1
Beta 7401	2.19	113.2	3.49	107.5	3.17	115.3	1
Beta 7416	2.25	110.3	3.27	114.7	3.64	100.5	1
Beta 7439	2.39	103.9	3.82	98.2	3.97	92.2	1
Beta 7456	1.75	141.4	3.20	117.1	3.53	103.6	1
Hilleshög 2517	2.31	107.4	4.12	91.0	4.91	74.6	1
1-Year Mean	2.17		3.51		3.54		
2024 Est. Variety Means	»	2.48	»	3.75	»	3.66	

Experimental Varieties	Fusarium	
	2024	% of Est.
ACH 417	1.36	134.6
ACH 430	1.47	124.9
ACH 454	1.36	134.6
ACH 472	1.32	139.2
ACH 489	1.31	140.2
Beta 7401	1.48	123.6
Beta 7416	1.57	116.9
Beta 7439	1.54	118.8
Beta 7456	1.29	142.4
Hilleshög 2517	1.85	98.9
1-Year Mean	1.45	
2024 Est. Variety Means	»	1.83

1st Year DISEASE

Established Variety for Full Approval

Variety **ACH 166**
 Company *ACH Seeds*
 Contact *Jake Boersma*

TRIAL		AGRONOMY						DISEASE					
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank
2022	2	23.7	17	341.6	15	8,025	16 of 29	1.65	8	3.72	3	3.49	12
2023	3	25.7	6	341.8	3	8,807	3 of 22	2.26	10	3.66	14	3.53	8
2024	4	35.5	15	302.5	8	10,652	17 of 20	2.53	16	3.53	10	3.21	5
2024 Avg. for Approval		28.3		328.6		9,161	RST + RSA	2.15		3.64		3.41	
ACH 166		103.3	✓	102.0	✓	205.3	✓	2.15	✓	3.64	✓	3.41	✓

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: **FULL** TEST MARKET SPECIALTY FAILED

Specialty Credential [CLS, RHC, APH]: **RHC** ✓ Denotes Fulfilled Req

Established Variety for Full Approval

Variety **ACH 973**
 Company *ACH Seeds*
 Contact *Jake Boersma*

TRIAL		AGRONOMY						DISEASE					
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank
2022	4	25.4	5	332.0	23	8,368	7 of 29	1.58	7	4.61	25	3.16	4
2023	5	26.7	2	334.2	12	8,959	2 of 22	2.14	7	3.84	20	3.43	7
2024	6	36.3	11	288.6	19	10,386	18 of 20	1.74	4	4.07	16	3.83	16
2024 Avg. for Approval		29.5		318.3		9,238	RST + RSA	1.82		4.17		3.48	
ACH 973		100.1	✓	102.8	✓	202.9	✓	1.82	✓	4.17	✓	3.48	✓

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: **FULL** TEST MARKET SPECIALTY FAILED

Specialty Credential [CLS, RHC, APH]: **CLS** ✓ Denotes Fulfilled Req

Established Variety for Full Approval

Variety **Beta 7068**
 Company *Betaseed*
 Contact *Cody Lehman*

TRIAL		AGRONOMY						DISEASE					
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank
2022	3	25.6	4	329.5	27	8,389	6 of 29	2.15	18	4.15	10	3.06	2
2023	4	25.3	9	316.7	21	8,071	14 of 22	2.39	12	3.58	11	3.99	17
2024	5	38.0	3	285.3	20	10,741	11 of 20	2.36	14	3.51	9	3.94	18
2024 Avg. for Approval		29.6		310.5		9,067	RST + RSA	2.30		3.75		3.66	
Beta 7068		97.6	✓	100.9	✓	198.6	✓	2.30	✓	3.75	✓	3.66	✓

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: **FULL** TEST MARKET SPECIALTY FAILED

Specialty Credential [CLS, RHC, APH]: ✓ Denotes Fulfilled Req

Established Variety for Full Approval

Variety **Hilleshög 2325**
 Company *Hilleshög*
 Contact *Adam Hansen*

TRIAL		AGRONOMY						DISEASE					
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank
2022	4	24.2	14	332.7	21	7,977	18 of 29	4.12	27	3.99	6	3.63	16
2023	5	24.1	14	330.3	14	8,058	16 of 22	3.64	18	4.09	22	3.80	14
2024	6	33.4	19	297.0	14	9,859	20 of 20	3.30	19	3.89	15	3.65	13

2024 Avg. for Approval **27.2** **320.0** **8,632** **RST + RSA** **3.69** **3.99** **3.70**

Hilleshög 2325 **100.6** ✓ **96.1** ✓ **196.7** ✓ **3.69** ✓ **3.99** ✓ **3.70** ✓

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: **FULL** TEST MARKET SPECIALTY FAILED

Specialty Credential [CLS, RHC, APH]:

✓ Denotes Fulfilled Req

Candidate Variety for Full Approval

Variety	ACH 290												
Company	ACH Seeds												
Contact	Jake Boersma												

TRIAL		AGRONOMY						DISEASE							
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank		
2022	1	26.3	3	335.7	19	8,742	2 of 29	2.10	16	4.01	7	2.91	1		
2023	2	28.0	1	320.5	20	8,996	1 of 22	2.63	15	3.14	1	4.00	18		
2024	3	39.3	1	287.3	20	11,237	4 of 20	2.61	17	2.99	1	3.42	6		
2024 Avg. for Approval		31.2		314.5		9,658	RST + RSA	2.44		3.38		3.44			
ACH 290				98.9		107.5	✓	206.4	✓	2.44	✓	3.38	✓	3.44	✓

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: FULL TEST MARKET **SPECIALTY** FAILED

Specialty Credential [CLS, RHC, APH]: RHC ✓ Denotes Fulfilled Req

Candidate Variety for Full Approval

Variety	Beta 7170												
Company	Betaseed												
Contact	Cody Lehman												

TRIAL		AGRONOMY						DISEASE							
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank		
2022	2	26.6	2	325.9	28	8,627	3 of 29	2.16	19	3.62	2	3.20	5		
2023	3	26.3	4	325.0	19	8,546	7 of 22	2.67	16	3.50	6	3.62	11		
2024	4	39.2	2	289.4	18	11,249	3 of 20	2.72	18	3.46	7	3.85	17		
2024 Avg. for Approval		30.7		313.4		9,474	RST + RSA	2.52		3.53		3.56			
Beta 7170				98.6		105.5	✓	204.0	✓	2.52	✓	3.53	✓	3.56	✓

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: FULL TEST MARKET **SPECIALTY** FAILED

Specialty Credential [CLS, RHC, APH]: RHC ✓ Denotes Fulfilled Req

Candidate Variety for Full Approval

Variety	Beta 7231												
Company	Betaseed												
Contact	Cody Lehman												

TRIAL		AGRONOMY						DISEASE							
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank		
2022	1	23.5	18	350.5	3	8,162	11 of 29	1.53	6	4.10	9	3.29	7		
2023	2	25.5	7	340.1	5	8,727	5 of 22	2.10	5	3.66	15	3.76	13		
2024	3	36.4	10	301.4	10	10,922	9 of 20	1.96	6	3.72	13	3.73	15		
2024 Avg. for Approval		28.5		330.7		9,270	RST + RSA	1.87		3.83		3.59			
Beta 7231				104.0	✓	103.2	✓	207.2	✓	1.87	✓	3.83	✓	3.59	✓

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: **FULL** TEST MARKET SPECIALTY FAILED

Specialty Credential [CLS, RHC, APH]: ✓ Denotes Fulfilled Req

Candidate Variety for Test Market

Variety	ACH 370
Company	ACH Seeds
Contact	Jake Boersma

TRIAL		AGRONOMY						DISEASE						
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank	
2022	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	of 29	#N/A	#N/A	#N/A	#N/A	#N/A	
2023	1	24.2	13	347.8	2	8,467	10	of 22	1.78	1	3.54	9	3.94	16
2024	2	35.0	16	312.0	1	10,857	10	of 20	2.02	7	4.19	19	3.70	14
2024 Avg. for Approval		29.6		329.9		9,662		RST + RSA	1.90		3.86		3.82	

ACH 370	105.1	<input checked="" type="checkbox"/>	105.1	<input checked="" type="checkbox"/>	210.3	<input checked="" type="checkbox"/>	1.90	<input checked="" type="checkbox"/>	3.86	<input checked="" type="checkbox"/>	3.82	<input checked="" type="checkbox"/>
----------------	-------	-------------------------------------	-------	-------------------------------------	-------	-------------------------------------	------	-------------------------------------	------	-------------------------------------	------	-------------------------------------

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: FULL **TEST MARKET** SPECIALTY FAILED

Specialty Credential [CLS, RHC, APH]: ✓ Denotes Fulfilled Req

Candidate Variety for Test Market

Variety	Beta 7344
Company	Betaseed
Contact	Cody Lehman

TRIAL		AGRONOMY						DISEASE						
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank	
2022	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	of 29	#N/A	#N/A	#N/A	#N/A	#N/A	
2023	1	25.0	10	339.6	7	8,518	8	of 22	2.11	6	3.53	7	3.02	2
2024	2	35.5	14	302.9	7	10,677	16	of 20	1.70	3	4.07	17	3.45	8
2024 Avg. for Approval		30.3		321.2		9,597		RST + RSA	1.91		3.80		3.24	

Beta 7344	102.4	<input checked="" type="checkbox"/>	104.4	<input checked="" type="checkbox"/>	206.8	<input checked="" type="checkbox"/>	1.91	<input checked="" type="checkbox"/>	3.80	<input checked="" type="checkbox"/>	3.24	<input checked="" type="checkbox"/>
------------------	-------	-------------------------------------	-------	-------------------------------------	-------	-------------------------------------	------	-------------------------------------	------	-------------------------------------	------	-------------------------------------

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: FULL **TEST MARKET** SPECIALTY FAILED

Specialty Credential [CLS, RHC, APH]: ✓ Denotes Fulfilled Req

Candidate Variety for Test Market

Variety	Beta 7397
Company	Betaseed
Contact	Cody Lehman

TRIAL		AGRONOMY						DISEASE						
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank	
2022	-	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	of 29	#N/A	#N/A	#N/A	#N/A	#N/A	
2023	1	26.2	5	332.6	13	8,738	4	of 22	2.26	10	3.60	13	4.32	21
2024	2	35.0	17	295.9	16	10,266	19	of 20	2.13	8	4.67	20	3.58	11
2024 Avg. for Approval		30.6		314.2		9,502		RST + RSA	2.20		4.14		3.95	

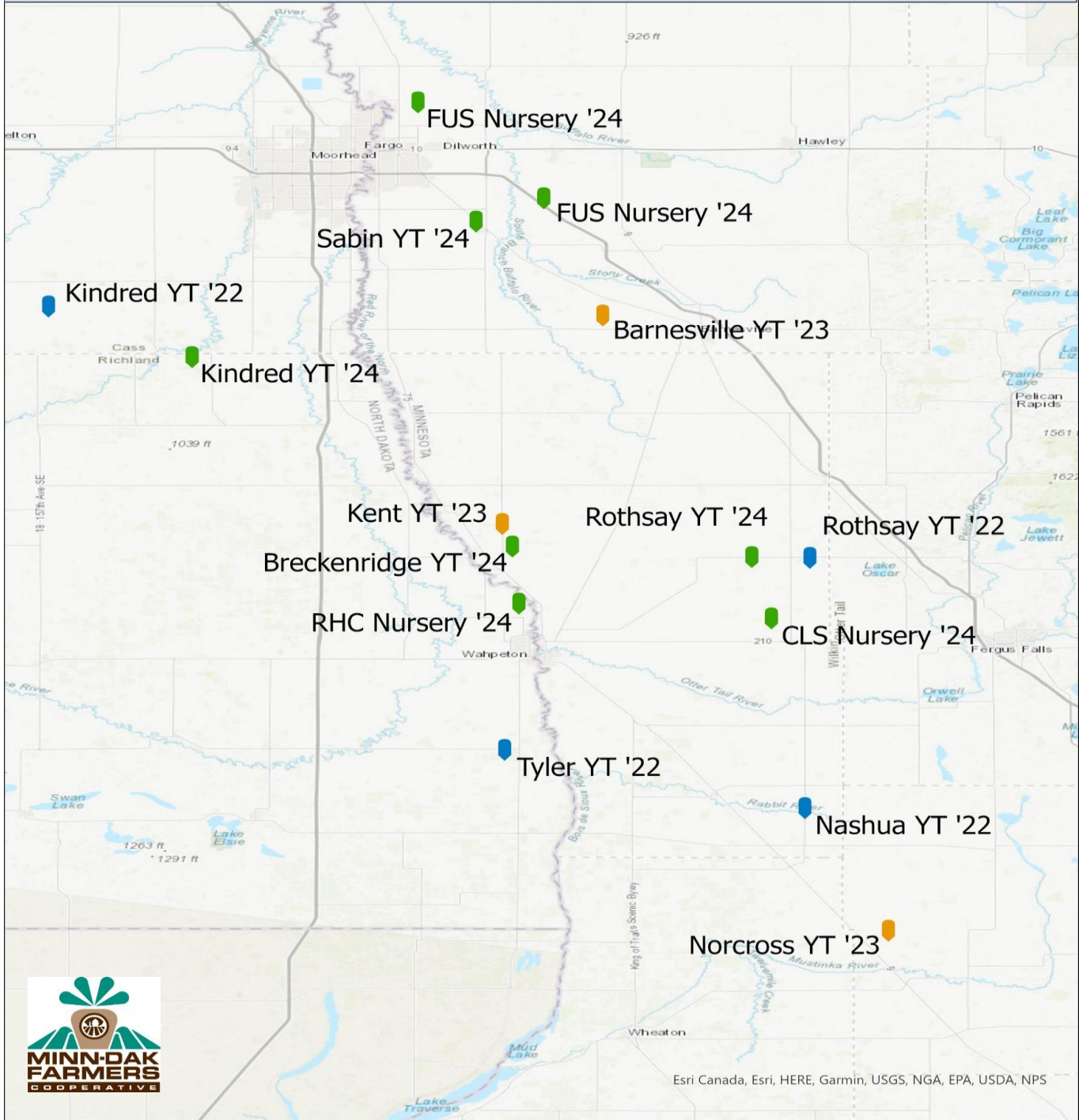
Beta 7397	100.1	<input checked="" type="checkbox"/>	103.4	<input checked="" type="checkbox"/>	203.5	<input checked="" type="checkbox"/>	2.20	<input checked="" type="checkbox"/>	4.14	<input checked="" type="checkbox"/>	3.95	<input checked="" type="checkbox"/>
------------------	-------	-------------------------------------	-------	-------------------------------------	-------	-------------------------------------	------	-------------------------------------	------	-------------------------------------	------	-------------------------------------

If the 2025 Requirements are met, VOTE to Approve: YES NO

2025 Approval Status: FULL **TEST MARKET** SPECIALTY FAILED

Specialty Credential [CLS, RHC, APH]: ✓ Denotes Fulfilled Req

Minn-Dak Farmers Cooperative Official Trial Locations 2022-2024



Sabin - Yield Trial

Final Update

46.77598, -96.66408

Cooperator: Matt Krabbenhoft
 Soil Type: Silty Clay Loam

Planted: April 23rd
 Thinned: June 10th
 Harvested: September 26th

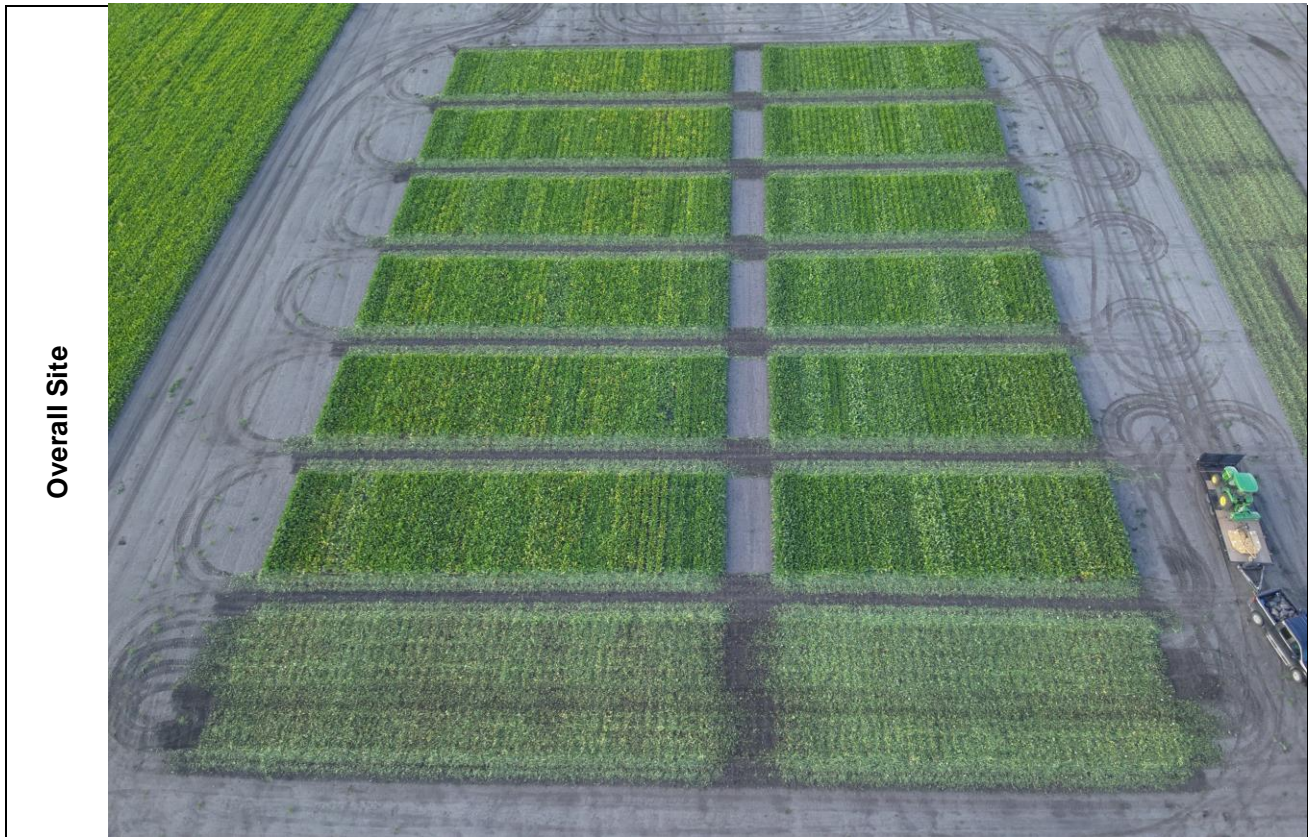
Prev. Crop: Wheat
 Plot Size: 3 Rows
 Orientation: South/North

Date	Pest Control	Rate/Acre
At Plant	Counter 20G	7.5lb/ac
24 April	PRE - Nortron + Dual Magnum	32oz + 8oz
29 May	glyphosate + etho + Dual	28oz + 6oz + 16oz
12 June	Warhawk(chlorpyrifos)	32oz
14 June	PM3 + etho + Outlook	30oz + 6oz + 12oz
27 June	Outlook	12oz

Date	Cercospora Control	Rate/Acre
3 July	EBDC	52oz
9 July	Inspire XT + EBDC	7oz + 52oz
24 July	REAPPLY EBDC + Badge SC	52oz + 32oz
31 July	Tin + EBDC	8oz + 52oz
9 August	REAPPLY Tin + EBDC	8oz + 52oz
19 August	Proline(+NIS) + EBDC	5.7oz + 52oz

Disease	Incidence & Severity
APH	Not Observed
CLS	Low/Low
RHC	Not Observed
FUS	Med/Low
RZM	Not Observed
A-	Overall Score

Comments: This was another of our thinned locations, early stands were tremendous being planted at 3" and then receiving timely rains. The thinning operation went really well and our crew did an outstanding job as a first go-round. As the year progressed, some Fusarium like foliar symptoms could be seen across the site. Yields and quality were both excellent and experiment CV's were very good.



2024 Minn-Dak Official Variety Trial
Commercial & Semi-Commercial Entries
Sabin, MN

Entry Code	Commercial Entries	Emerge %	Bolter #	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
2	* ACH 166	Thinned Location	0	1.40	17.50	92.31	31.0	308.2	97.6	9,569	89.7
8	ACH 290		0	1.70	17.06	92.58	36.1	301.3	95.4	10,878	102.0
3	ACH 370		0	1.50	18.51	92.51	34.4	327.5	103.7	11,271	105.7
1	* ACH 973		0	1.30	17.69	91.98	33.0	310.4	98.3	10,210	95.7
7	* Beta 7068		0	1.20	17.78	92.13	33.9	312.6	99.0	10,617	99.6
4	Beta 7170		1	1.30	17.82	92.00	36.8	312.8	99.1	11,484	107.7
5	Beta 7231		0	1.20	17.79	92.27	35.5	313.3	99.2	11,138	104.5
10	Beta 7344		0	1.40	18.78	92.30	33.6	331.6	105.0	11,143	104.5
9	Beta 7397		0	1.40	18.32	92.30	31.8	323.3	102.4	10,281	96.4
6	* Hilleleshög 2325		0	1.00	17.91	92.55	31.7	316.7	100.3	10,041	94.2
Experiment Mean			0.1	1.34	17.92	92.29	33.8	315.8		10,663	
Coeff. of Var. (%)				38.18	2.42	0.69	9.71	2.81		9.64	
LSD (0.10)				NS	0.42	NS	3.2	8.6		996	
LSD (0.05)				NS	0.50	NS	3.8	10.3		1195	

2024 Minn-Dak Official Variety Trial
Experimental Entries (1st Year)
Sabin, MN

Entry Code	Experimental Entries	Emerge %	Bolter #	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
20	ACH 417	Thinned Location	0	1.40	18.90	92.89	36.4	336.6	102.2	12,255	104.4
11	ACH 430		0	1.60	18.21	92.13	37.1	320.5	97.4	11,895	101.3
15	ACH 454		0	1.20	18.80	92.80	34.6	334.3	101.5	11,566	98.5
12	ACH 472		0	1.60	19.17	91.77	35.7	336.3	102.2	11,997	102.2
16	ACH 489		0	1.20	18.61	92.76	34.3	330.6	100.4	11,350	96.7
13	Beta 7401		0	1.20	18.44	92.40	36.0	325.9	99.0	11,744	100.0
18	Beta 7416		0	1.30	18.81	92.49	35.8	333.1	101.2	11,941	101.7
17	Beta 7439		0	1.50	18.31	92.04	35.4	321.9	97.8	11,383	97.0
19	Beta 7456		0	1.50	19.08	91.15	35.8	331.8	100.8	11,879	101.2
14	Hilleleshög 2517		0	0.90	18.20	92.36	35.5	321.1	97.5	11,386	97.0
Experiment Mean			0.0	1.34	18.65	92.28	35.7	329.2		11,740	
Coeff. of Var. (%)				27.75	2.17	0.65	6.35	2.52		6.76	
LSD (0.10)				0.36	0.39	0.58	NS	8.1		NS	
LSD (0.05)				NS	0.47	0.70	NS	9.7		NS	

% Mean is percent of Experiment Mean

* Established Variety

FARM - Yield Trial

Cooperator: Pat Freese
 Soil Type: Silty Clay Loam

Final Update

Planted: May 13th
 Thinned: ---
 Harvested: September 21st

46.38412, -96.61861

Prev. Crop: Soybean
 Plot Size: 3 Rows
 Orientation: North/South

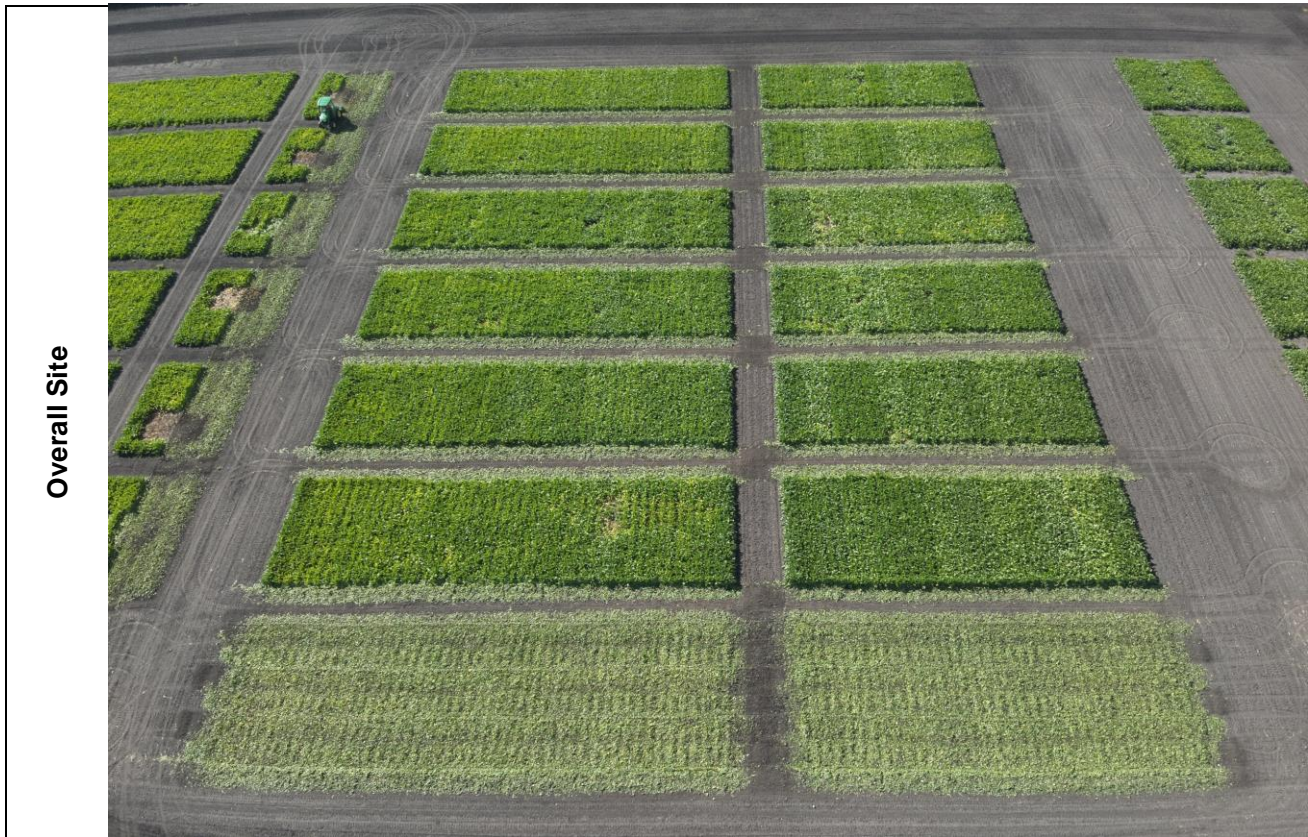
Date	Pest Control	Rate/Acre
At Plant	Counter 20G	7.5lb/ac
14 May	PRE - Nortron + Dual Magnum	32oz + 8oz
12 June	PM3 + etho + Dual	25oz + 4oz + 16oz
25 June	PM3 + etho + StingerHL + Outlook	25oz + 4oz + 2oz + 12oz
3 July	Outlook	12oz
20 August	Mustang Maxx	4oz

Date	Cercospora Control	Rate/Acre
-	-	-
9 July	Inspire XT + EBDC	7oz + 52oz
23 July	REAPPLY EBDC + Badge SC	52oz + 32oz
2 August	Tin + EBDC	8oz + 52oz
19 August	Proline(+NIS) + EBDC	5.7oz + 52oz

Disease	Incidence & Severity
APH	Low/Low
CLS	Low/Low
RHC	Low/Low
FUS	Not Observed
RZM	Not Observed

A-	Overall Score
----	----------------------

Comments: Our first experiment on the NEW research farm. Soil conditions were good from the start and stands were excellent. No more than typical plant loss through the year. Root disease was present but minor. Leaf disease was managed well. Location had a late insecticide application for flea beetles.



2024 Minn-Dak Official Variety Trial
Commercial & Semi-Commercial Entries
Research Farm - Kent, MN

Entry Code	Commercial Entries	Emerge %	Bolter #	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
2	* ACH 166	78.1	0	1.10	18.62	92.10	32.1	327.7	105.2	10,535	105.9
8	ACH 290	75.1	0	0.90	17.40	90.96	34.2	300.8	96.5	10,299	103.5
3	ACH 370	76.9	0	1.20	19.07	91.25	30.0	332.1	106.6	9,959	100.1
1	* ACH 973	84.6	0	1.20	17.56	91.19	32.9	304.6	97.8	10,033	100.8
7	* Beta 7068	81.1	0	1.00	17.12	90.50	33.1	293.7	94.3	9,733	97.8
4	Beta 7170	80.1	0	1.20	17.39	91.23	36.1	301.6	96.8	10,887	109.4
5	Beta 7231	74.6	0	1.10	18.47	91.12	32.4	320.7	102.9	10,379	104.3
10	Beta 7344	81.8	0	1.00	18.23	90.67	29.7	314.3	100.9	9,332	93.8
9	Beta 7397	82.3	0	1.00	17.86	91.03	31.8	309.2	99.2	9,849	99.0
6	* Hilleshög 2325	80.1	0	0.90	17.79	91.71	27.2	311.0	99.8	8,481	85.2
Experiment Mean		79.5	0.0	1.06	17.95	91.18	32.0	311.6		9,949	
Coeff. of Var. (%)		7.32		20.48	2.55	0.07	8.27	2.91		9.30	
LSD (0.10)		5.6		NS	0.44	0.62	2.6	8.8		897	
LSD (0.05)		NS		NS	0.53	0.75	3.1	10.6		1076	

2024 Minn-Dak Official Variety Trial
Experimental Entries (1st Year)
Research Farm - Kent, MN

Entry Code	Experimental Entries	Emerge %	Bolter #	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
20	ACH 417	73.1	0	1.60	19.05	91.04	31.9	330.7	102.5	10,529	101.9
11	ACH 430	80.8	0	1.00	18.57	91.42	32.4	323.8	100.4	10,463	101.3
15	ACH 454	82.1	0	1.10	18.90	91.32	31.7	329.2	102.0	10,391	100.6
12	ACH 472	81.6	0	1.10	18.78	90.49	33.1	323.2	100.2	10,686	103.4
16	ACH 489	87.8	0	1.10	18.18	91.51	33.7	317.1	98.3	10,696	103.5
13	Beta 7401	80.6	0	1.10	18.05	91.31	32.4	314.0	97.3	10,171	98.5
18	Beta 7416	78.1	0	1.10	18.81	91.42	33.3	328.1	101.7	10,892	105.4
17	Beta 7439	85.1	0	1.00	18.78	91.05	32.2	325.8	101.0	10,463	101.3
19	Beta 7456	88.1	0	1.10	18.88	90.55	33.9	325.4	100.9	10,977	106.3
14	Hilleshög 2517	85.3	0	0.80	17.86	90.97	26.0	309.0	95.8	8,038	77.8
Experiment Mean		82.3	0.0	1.10	18.59	91.11	32.1	322.6		10,331	
Coeff. of Var. (%)		6.82		48.60	2.40	0.57	6.69	2.67		6.60	
LSD (0.10)		5.4		NS	0.43	0.51	2.1	8.4		661	
LSD (0.05)		6.5		NS	0.52	0.61	2.5	10.0		793	

% Mean is percent of Experiment Mean

* Established Variety

Rothsay - Yield Trial

Final Update

46.37019, -96.36448

Cooperator: Larry Morris
 Soil Type: Fine Sandy Loam

Planted: April 22nd
 Thinned: June 14th
 Harvested: September 28th

Prev. Crop: Soybean
 Plot Size: 3 Rows
 Orientation: West/East

Date	Pest Control	Rate/Acre
At Plant	Counter 20G	7.5lb/ac
24 April	PRE - Nortron + Dual Magnum	32oz + 8oz
23 May	glyphosate + Nortron + Dual + StingerHL	28oz + 6oz + 16oz + 2oz
14 June	PM3 + etho + Outlook	30oz + 6oz + 12oz
27 June	Outlook	12oz

Date	Cercospora Control	Rate/Acre
3 July	EBDC	52oz
9 July	Inspire XT + EBDC	7oz + 52oz
24 July	REAPPLY EBDC + Badge SC	52oz + 32oz
2 August	Tin + EBDC	8oz + 52oz
19 August	Proline(+NIS) + EBDC	5.7oz + 52oz

Disease	Incidence & Severity
APH	Not Observed
CLS	Low/Low
RHC	Low/Low
FUS	Not Observed
RZM	Not Observed
A-	Overall Score

Comments: Our first planted site for the year. Seedbed conditions were lovely and early stands were very strong, however, some early losses prompted this site be a candidate for our thinning operation. Stands were thinned to ~200 average in June and the site maintained a high quality stand until harvest. Yields and quality were impressive and this site was our highest producer.



2024 Minn-Dak Official Variety Trial
Commercial & Semi-Commercial Entries
Rothsay, MN

Entry Code	Commercial Entries	Emerge %	Bolter #	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
2	* ACH 166	Thinned Location	0	1.50	17.72	92.69	37.6	313.8	104.2	11,789	101.6
8	ACH 290		0	1.30	16.81	92.27	42.6	295.4	98.1	12,603	108.6
3	ACH 370		0	1.80	18.08	92.38	36.8	319.2	106.0	11,720	101.0
1	* ACH 973		0	1.70	16.84	92.27	37.4	296.0	98.3	11,084	95.5
7	* Beta 7068		0	1.40	16.45	91.19	41.3	284.5	94.5	11,749	101.3
4	Beta 7170		0	1.40	17.01	92.16	40.2	298.8	99.2	12,012	103.5
5	Beta 7231		0	1.50	17.30	92.37	37.9	304.8	101.2	11,574	99.8
10	Beta 7344		0	1.70	17.21	92.36	38.5	303.2	100.7	11,661	100.5
9	Beta 7397		0	1.90	16.80	92.16	36.5	294.9	97.9	10,744	92.6
6	* Hilleshög 2325		0	1.20	17.14	92.08	36.9	300.7	99.9	11,094	95.6
Experiment Mean			0.0	1.54	17.14	92.19	38.6	301.1		11,603	
Coeff. of Var. (%)				15.37	2.52	0.69	6.45	2.92		6.44	
LSD (0.10)				0.23	0.42	0.61	2.4	8.5		725	
LSD (0.05)				0.28	0.50	0.74	2.9	10.2		869	

2024 Minn-Dak Official Variety Trial
Experimental Entries (1st Year)
Rothsay, MN

Entry Code	Experimental Entries	Emerge %	Bolter #	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
20	ACH 417	Thinned Location	0	1.70	17.67	91.69	38.9	308.6	102.4	12,014	109.4
11	ACH 430		0	1.50	17.01	92.60	37.0	300.4	99.7	11,099	101.0
15	ACH 454		0	1.60	17.60	92.41	33.8	310.5	103.1	10,487	95.5
12	ACH 472		0	2.10	17.62	91.12	36.4	305.3	101.3	11,094	101.0
16	ACH 489		0	1.60	17.09	92.49	37.5	301.4	100.0	11,296	102.8
13	Beta 7401		0	2.10	16.75	91.92	35.6	292.9	97.2	10,428	94.9
18	Beta 7416		0	2.10	17.48	91.71	38.0	305.3	101.3	11,600	105.6
17	Beta 7439		0	1.90	17.18	91.96	35.9	300.9	99.9	10,798	98.3
19	Beta 7456		0	2.20	17.37	90.74	38.1	299.1	99.3	11,410	103.9
14	Hilleshög 2517		0	1.40	16.49	92.03	33.4	288.7	95.8	9,623	87.6
Experiment Mean			0.0	1.82	17.23	91.87	36.5	301.3		10,985	
Coeff. of Var. (%)				22.08	1.84	0.63	7.70	2.35		7.45	
LSD (0.10)				0.39	0.31	0.56	2.7	6.9		793	
LSD (0.05)				0.46	0.37	0.67	3.3	8.2		951	

% Mean is percent of Experiment Mean

* Established Variety

Kindred - Yield Trial

Final Update

46.61235, -96.97092

Cooperator: David Braaten
 Soil Type: Silty Clay Loam

Planted: April 22nd
 Thinned: ---
 Harvested: September 25th

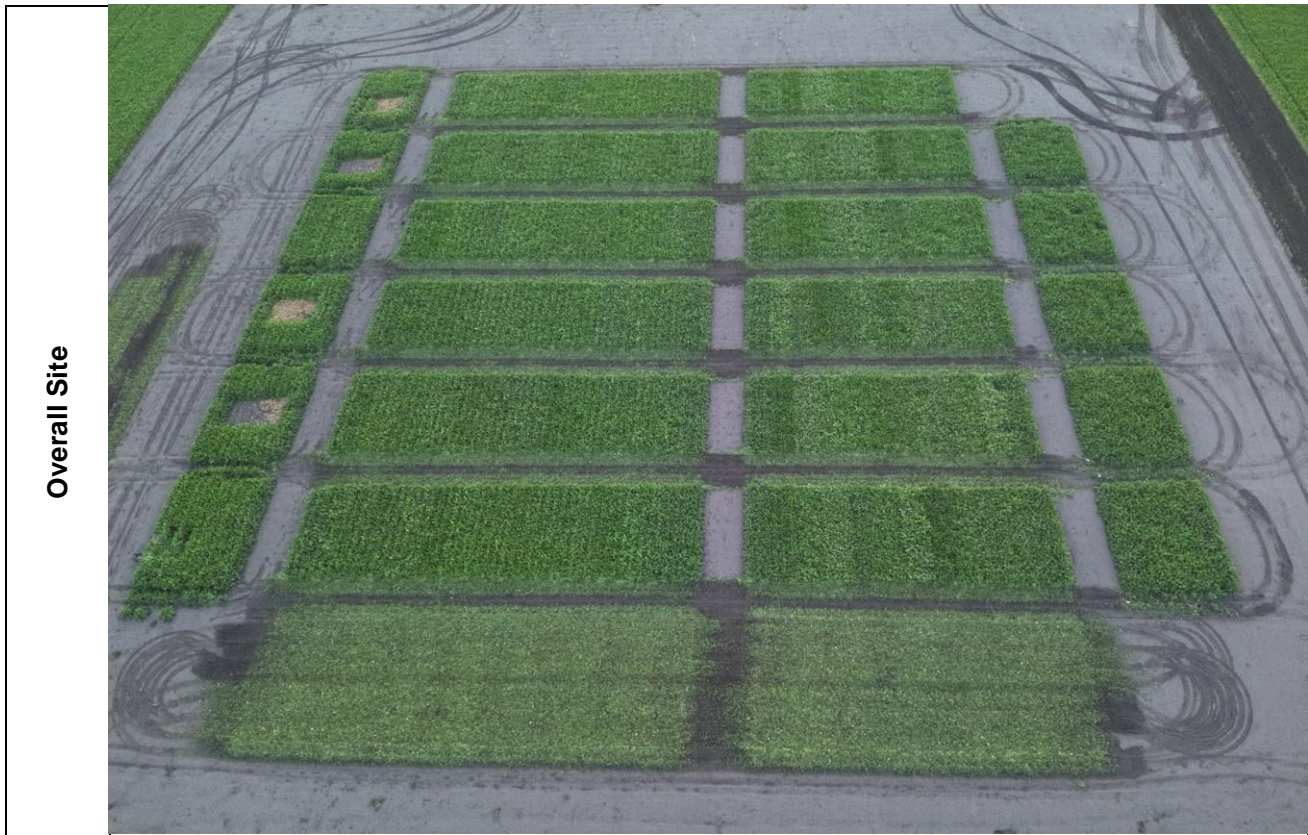
Prev. Crop: Wheat
 Plot Size: 3 Rows
 Orientation: East/West

Date	Pest Control	Rate/Acre
At Plant	Counter 20G	7.5lb/ac
24 April	PRE - Nortron + Dual Magnum	32oz + 8oz
29 May	glyphosate + etho + Dual	28oz + 6oz + 16oz
14 June	PM3 + etho + Outlook	30oz + 6oz + 12oz
27 June	Outlook	12oz

Date	Cercospora Control	Rate/Acre
3 July	EBDC	52oz
9 July	Inspire XT + EBDC	7oz + 52oz
23 July	REAPPLY EBDC + Badge SC	52oz + 32oz
31 July	Tin + EBDC	8oz + 52oz
9 August	REAPPLY Tin + EBDC	8oz + 52oz
19 August	Proline(+NIS) + EBDC	5.7oz + 52oz

Disease	Incidence & Severity
APH	Not Observed
CLS	Low/Low
RHC	Low/Low
FUS	Not Observed
RZM	Not Observed
A-	Overall Score

Comments: This location was exceptional for most of the year. Stands were near perfect from the beginning with almost 100% emergence. However, as the summer progressed it became apparent that the fertility was a bit abundant. This field has a history of manure application and N is present below sampling depths. Disease pressures were very low with excellent root and canopy health. Sugars were underperforming compared to others but very good tonnage.



2024 Minn-Dak Official Variety Trial
Commercial & Semi-Commercial Entries
Kindred, ND

Entry Code	Commercial Entries	Emerge %	Bolter #	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
2	* ACH 166	99.5	0	1.40	15.56	89.04	41.2	260.1	101.5	10,715	101.8
8	ACH 290	96.5	0	1.50	15.21	88.47	44.4	251.8	98.2	11,166	106.1
3	ACH 370	98.0	0	1.60	16.02	89.28	38.9	269.3	105.0	10,476	99.6
1	* ACH 973	91.0	0	1.60	14.71	88.52	42.0	243.3	94.9	10,216	97.1
7	* Beta 7068	99.0	0	1.40	15.01	89.00	43.5	250.3	97.6	10,865	103.3
4	Beta 7170	100.0	0	1.30	14.76	88.56	43.5	244.3	95.3	10,614	100.9
5	Beta 7231	92.0	0	1.40	15.84	89.46	39.7	266.7	104.0	10,596	100.7
10	Beta 7344	98.5	0	1.50	15.68	89.05	40.3	262.3	102.3	10,570	100.4
9	Beta 7397	93.0	0	1.70	15.36	88.88	39.9	256.1	99.9	10,191	96.8
6	* Hilleshög 2325	82.1	0	1.20	15.36	89.77	37.9	259.5	101.2	9,821	93.3
Experiment Mean		95.0	0.0	1.46	15.35	89.00	41.1	256.4		10,523	
Coeff. of Var. (%)		3.27		19.06	2.76	1.02	3.10	3.85		5.02	
LSD (0.10)		4.4		0.27	0.41	NS	1.2	9.6		512	
LSD (0.05)		5.3		0.32	0.49	NS	1.5	11.5		614	

2024 Minn-Dak Official Variety Trial
Experimental Entries (1st Year)
Kindred, ND

Entry Code	Experimental Entries	Emerge %	Bolter #	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
20	ACH 417	96.0	0	1.80	16.08	89.44	40.4	270.8	103.8	10,934	106.6
11	ACH 430	91.5	0	1.40	15.17	88.48	41.1	251.2	96.3	10,312	100.5
15	ACH 454	91.0	0	2.30	15.67	89.03	39.9	262.0	100.4	10,447	101.8
12	ACH 472	90.5	0	1.30	16.02	88.52	41.2	266.1	102.0	10,966	106.9
16	ACH 489	93.5	0	1.30	15.35	88.89	41.6	255.8	98.1	10,643	103.8
13	Beta 7401	91.5	0	1.60	15.94	89.34	39.1	267.9	102.7	10,473	102.1
18	Beta 7416	89.1	0	1.60	15.83	89.34	40.0	266.0	102.0	10,652	103.8
17	Beta 7439	96.0	0	1.40	15.50	89.20	39.6	259.7	99.6	10,290	100.3
19	Beta 7456	97.0	0	1.60	15.61	88.19	40.4	257.5	98.7	10,416	101.5
14	Hilleshög 2517	97.5	0	1.10	14.95	89.58	29.6	251.5	96.4	7,448	72.6
Experiment Mean		93.4	0.0	1.54	15.61	89.00	39.3	260.9		10,258	
Coeff. of Var. (%)		3.42		38.12	2.11	1.07	3.52	3.07		4.49	
LSD (0.10)		4.5		0.57	0.32	NS	1.3	7.8		447	
LSD (0.05)		5.5		NS	0.38	NS	1.6	9.3		535	

% Mean is percent of Experiment Mean

* Established Variety

Foxhome - CLS Nursery

Final Update

46.29593, -96.34413

Cooperator: Etzler Farms
 Soil Type: Clay loam

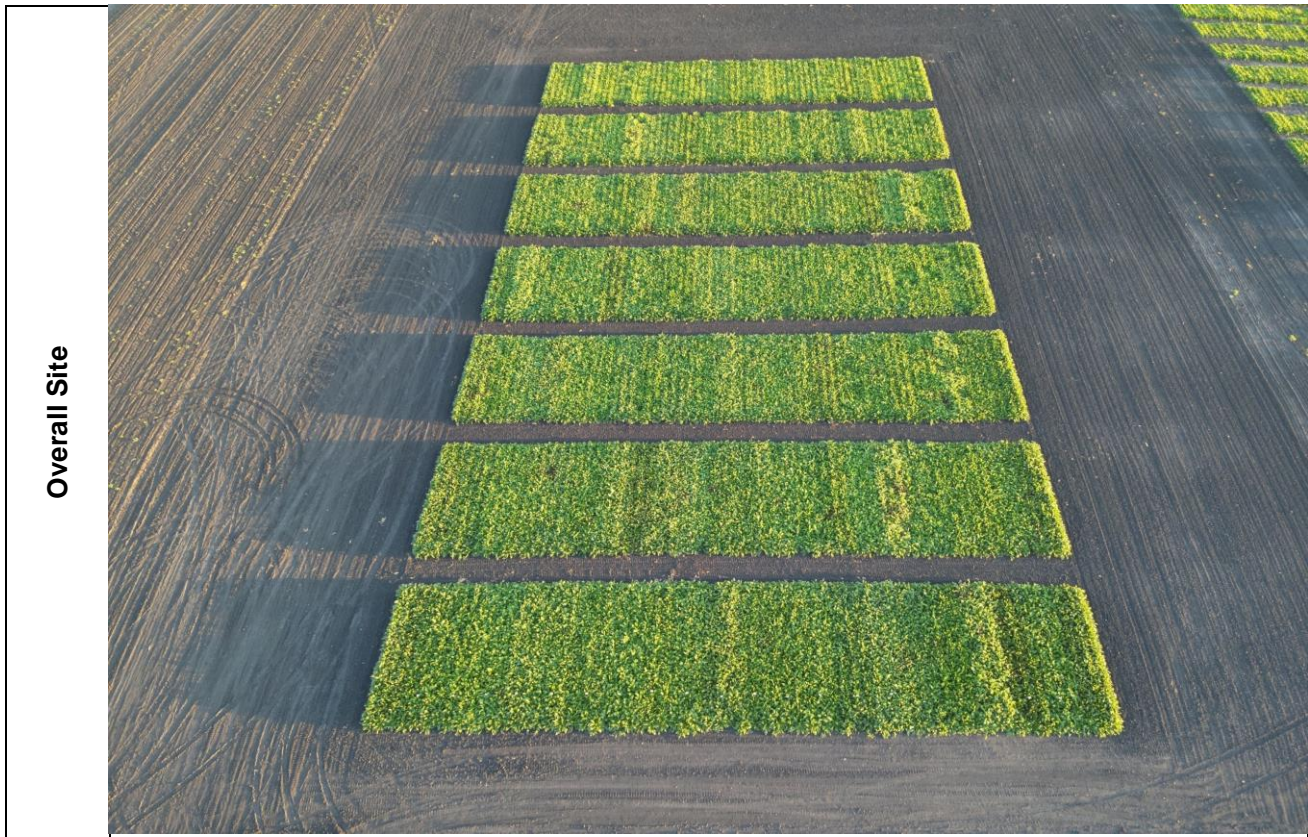
Planted: April 23rd
 Inoculated: July 10th
 Harvested: N/A

Prev. Crop: Wheat
 Plot Size: 3 rows
 Orientation: North/South

Date	Pest Control	Rate/Acre
At Plant	Counter 20G	7.5lb/ac
24 April	PRE - Nortron + Dual Magnum	32oz + 8oz
29 May	PM3 + Dual + etho +	25oz + 16oz +6oz
15 June	PM3 + etho + Outlook	30oz + 6oz + 12oz
27 June	Outlook	12oz

Date	Cercospora Rating	Score Range	Disease	Incidence & Severity
10 July	Inoculated	-	APH	Not Observed
13 August	1st Rating	1-3	CLS	High/Low
20 August	2nd Rating	2-4	RHC	Low/Low
27 August	3rd Rating	2-5	FUS	Not Observed
3 September	4th Rating	2-6	RZM	Not Observed
10 September	5th Rating	2-8		
17 September	6th Rating	3-10		
			A-	Overall Score

Comments: This experiment had excellent canopy and root health from the beginning of the year. Inoculation was done in early July with the NDSU crew. Infection was late to start and failed to impress compared to our other CLS trial site. Scores were taken until the weakest varieties reached a '10'. Variety separation was clear and significant statistical differences were achieved, it just took longer than usually.



Shed 8 - RHC Nursery

Final Update

46.3144, -96.6165

Cooperator: MDFC
Soil Type: Clay loam

Planted: June 13th
Inoculated: June 13th + July 19th
Harvested: September 19th

Prev. Crop: Sugarbeet
Plot Size: 2 Rows
Orientation: West/East

Date	Pest Control	Rate/Acre
At Plant	Counter 20G	7.5lb/ac
29 May	Betamix + StingerHL	48oz + 2.4oz
June 17th	PRE - PM3 + Nortron + Dual Magnum	30oz + 32oz + 8oz

Date	Cercospora Control	Rate/Acre
-	-	-
25 July	Inspire XT + Manzate	7oz + 52oz
19 August	Proline(+NIS) + EBDC	5.7oz + 52oz

Disease	Incidence & Severity
APH	Not Observed
CLS	Low/Low
RHC	Mod/Mod
FUS	Not Observed
RZM	Not Observed
B-	
Overall Score	

Comments: We were able to get a typical outcome from this nursery in spite of the latest-ever planting date. The site was twice inoculated as usual and infections were a solid 'average'. Scores were taken the day after lifting and layup.



2024 Minn-Dak Official Variety Trial
Cercospora Ratings
KWS (Randolph, MN) & MDFC (Foxhome, MN)

Entry Code	Commercial & Experimental Entries	Unadjusted				Adjusted				
		Randolph 9 Dates	Foxhome 6 Dates	Randolph 9 Dates	Foxhome 6 Dates	2024 2 Loc.	2023 2 Loc.	2022 2 Loc.	2 Yr.	3 Yr.
2	* ACH 166	3.65	3.76	2.52	2.55	2.53	2.26	1.65	2.40	2.15
8	ACH 290	4.13	3.48	2.86	2.36	2.61	2.63	2.10	2.62	2.44
3	ACH 370	3.15	2.76	2.18	1.87	2.02	1.78	---	1.90	---
1	* ACH 973	2.28	2.82	1.58	1.91	1.74	2.14	1.58	1.94	1.82
7	* Beta 7068	3.45	3.44	2.39	2.33	2.36	2.39	2.15	2.38	2.30
4	Beta 7170	4.07	3.88	2.81	2.63	2.72	2.67	2.16	2.70	2.52
5	Beta 7231	2.45	3.29	1.69	2.23	1.96	2.10	1.53	2.03	1.87
10	Beta 7344	2.13	2.85	1.47	1.93	1.70	2.11	---	1.91	---
9	Beta 7397	2.80	3.44	1.94	2.33	2.13	2.26	---	2.20	---
6	* Hilleshög 2325	4.98	4.65	3.44	3.15	3.30	3.64	4.12	3.47	3.69
20	ACH 417	2.07	2.47	1.43	1.67	1.55	---	---	---	---
11	ACH 430	2.62	3.68	1.81	2.49	2.15	---	---	---	---
15	ACH 454	2.95	3.40	2.04	2.30	2.17	---	---	---	---
12	ACH 472	1.75	2.50	1.21	1.69	1.45	---	---	---	---
16	ACH 489	4.58	5.58	3.17	3.78	3.47	---	---	---	---
13	Beta 7401	2.92	3.49	2.02	2.36	2.19	---	---	---	---
18	Beta 7416	3.52	3.05	2.43	2.06	2.25	---	---	---	---
17	Beta 7439	3.78	3.19	2.61	2.16	2.39	---	---	---	---
19	Beta 7456	2.38	2.75	1.65	1.86	1.75	---	---	---	---
14	Hilleshög 2517	2.50	4.27	1.73	2.89	2.31	---	---	---	---
Established Mean		3.59	3.67	2.48	2.48	2.48	2.61	2.38	2.54	2.49
Exp/Trial Mean		3.11	3.44	2.15	2.33	2.24				
CV (%)		15.18	13.08							
LSD (P=0.05)		0.57	0.52							
Adjustment Factor				0.69153	0.67691					

* Established varieties used to calculate the adjustment factors

Lower disease values indicate better disease tolerance: (0)=No Disease >>>> (10)=Dead Canopy

Ratings adjusted for disease severity on the basis of the Established Varieties [4-year adjusted mean, 2020-2023]

Ratings x Adjustment Factor = Adjusted Rating

Average ratings based upon multiple rating dates and individuals

2024 Minn-Dak Official Variety Trial
Rhizoctonia Ratings
BSDF (Frankenmuth, MI) & MDFC (Wahpeton, ND)

Entry Code	Commercial & Experimental Entries	Unadjusted		Adjusted						
		BSDF	MDFC	BSDF	MDFC	2024 2 Loc.	2023 2 Loc.	2022 2 Loc.	2 Yr.	3 Yr.
2	* ACH 166	4.88	3.75	3.49	3.58	3.53	3.66	3.72	3.59	3.64
8	ACH 290	5.18	2.38	3.70	2.27	2.99	3.14	4.01	3.06	3.38
3	ACH 370	5.38	4.75	3.84	4.54	4.19	3.54	---	3.86	---
1	* ACH 973	5.31	4.54	3.79	4.34	4.07	3.84	4.61	3.95	4.17
7	* Beta 7068	5.04	3.58	3.60	3.42	3.51	3.58	4.15	3.55	3.75
4	Beta 7170	5.35	3.25	3.82	3.11	3.46	3.50	3.62	3.48	3.53
5	Beta 7231	5.84	3.42	4.17	3.27	3.72	3.66	4.10	3.69	3.83
10	Beta 7344	5.42	4.46	3.87	4.26	4.07	3.53	---	3.80	---
9	Beta 7397	5.73	5.50	4.09	5.26	4.67	3.60	---	4.14	---
6	* Hilleshög 2325	5.78	3.83	4.13	3.66	3.89	4.09	3.99	3.99	3.99
20	ACH 417	5.16	2.92	3.68	2.79	3.24	---	---	---	---
11	ACH 430	5.18	3.71	3.70	3.55	3.62	---	---	---	---
15	ACH 454	4.56	4.00	3.26	3.82	3.54	---	---	---	---
12	ACH 472	5.58	2.75	3.98	2.63	3.31	---	---	---	---
16	ACH 489	5.61	3.04	4.01	2.91	3.46	---	---	---	---
13	Beta 7401	5.86	2.92	4.18	2.79	3.49	---	---	---	---
18	Beta 7416	4.47	3.50	3.19	3.34	3.27	---	---	---	---
17	Beta 7439	5.23	4.08	3.73	3.90	3.82	---	---	---	---
19	Beta 7456	5.06	2.92	3.61	2.79	3.20	---	---	---	---
14	Hilleshög 2517	5.29	4.67	3.78	4.46	4.12	---	---	---	---
Established Mean		5.25	3.93	3.75	3.75	3.75	3.79	4.11	3.77	3.89
Exp/Trial Mean		5.30	3.70	3.78	3.53	3.66				
CV (%)		10.96	18.06							
LSD (P=0.05)		0.73	0.77							
Adjustment Factor				0.71414	0.95568					

* Established varieties used to calculate the adjustment factors

Lower values indicate better disease tolerance: (0)=Excellent >>>> (9)=Dead Plant

Ratings adjusted for disease severity on the basis of the Established Varieties [4-year adjusted mean, 2020-2023]

Ratings x Adjustment Factor = Adjusted Rating

Average ratings based upon multiple individual ratings

2024 Minn-Dak Official Variety Trial
Aphanomyces Ratings
KWS (Shakopee, MN) & SMBSC (Renville, MN)

Entry Code	Commercial & Experimental Entries	Unadjusted		Adjusted						
		Shakopee	Renville	Shakopee	Renville	2024 2 Loc.	2023 2 Loc.	2022 2 Loc.	2 Yr.	3 Yr.
2	* ACH 166	3.22	2.68	2.62	3.80	3.21	3.53	3.49	3.37	3.41
8	ACH 290	4.32	2.35	3.52	3.33	3.42	4.00	2.91	3.71	3.44
3	ACH 370	4.65	2.55	3.78	3.62	3.70	3.94	---	3.82	---
1	* ACH 973	4.83	2.63	3.93	3.73	3.83	3.43	3.16	3.63	3.48
7	* Beta 7068	5.10	2.63	4.15	3.73	3.94	3.99	3.06	3.96	3.66
4	Beta 7170	5.28	2.40	4.30	3.40	3.85	3.62	3.20	3.74	3.56
5	Beta 7231	4.63	2.60	3.77	3.69	3.73	3.76	3.29	3.74	3.59
10	Beta 7344	4.48	2.30	3.65	3.26	3.45	3.02	---	3.24	---
9	Beta 7397	4.22	2.63	3.43	3.73	3.58	4.32	---	3.95	---
6	* Hilleshög 2325	4.83	2.38	3.93	3.38	3.65	3.80	3.63	3.73	3.70
20	ACH 417	3.97	2.10	3.23	2.98	3.10	---	---	---	---
11	ACH 430	4.30	2.43	3.50	3.45	3.47	---	---	---	---
15	ACH 454	3.88	2.28	3.16	3.23	3.20	---	---	---	---
12	ACH 472	4.80	2.08	3.91	2.95	3.43	---	---	---	---
16	ACH 489	4.37	1.73	3.56	2.45	3.01	---	---	---	---
13	Beta 7401	4.00	2.18	3.26	3.09	3.17	---	---	---	---
18	Beta 7416	4.77	2.40	3.88	3.40	3.64	---	---	---	---
17	Beta 7439	5.48	2.45	4.46	3.47	3.97	---	---	---	---
19	Beta 7456	4.53	2.38	3.69	3.38	3.53	---	---	---	---
14	Hilleshög 2517	6.87	2.98	5.59	4.23	4.91	---	---	---	---
Established Mean		4.50	2.58	3.66	3.66	3.66	3.69	3.34	3.67	3.56
Exp/Trial Mean		4.63	2.41	3.77	3.41	3.59				
CV (%)		17.89	15.56							
LSD (P=0.05)		1.02	0.55							
Adjustment Factor				0.81397	1.41814					

* Established varieties used to calculate the adjustment factors

Lower values indicate better disease tolerance: (0)=Excellent >>>> (9)=Dead Plant

Ratings adjusted for disease severity on the basis of the Established Varieties [4-year adjusted mean, 2020-2023]

Ratings x Adjustment Factor = Adjusted Rating

Average ratings based upon multiple individual ratings

2024 Minn-Dak Official Variety Trial
Fusarium Ratings
ACSC (Sabin, MN) & Magno Seed (Moorhead, MN)

Entry Code	Commercial & Experimental Entries	Unadjusted						
		Sabin	Moorhead	2024 2 Loc.	2023 2 Loc.	2022 2 Loc.	2 Yr.	3 Yr.
2	* ACH 166	1.77	1.25	1.51	3.43	3.49	2.47	2.81
8	ACH 290	1.60	1.46	1.53	3.54	3.54	2.54	2.87
3	ACH 370	1.39	1.13	1.26	4.08	---	2.67	---
1	* ACH 973	1.63	1.17	1.40	2.88	3.64	2.14	2.64
7	* Beta 7068	1.35	1.25	1.30	3.60	3.29	2.45	2.73
4	Beta 7170	1.68	1.33	1.51	3.74	3.58	2.62	2.94
5	Beta 7231	1.87	1.13	1.50	3.43	3.05	2.47	2.66
10	Beta 7344	1.16	0.92	1.04	2.89	---	1.96	---
9	Beta 7397	1.39	1.00	1.20	2.31	---	1.75	---
6	* Hilleshög 2325	2.93	3.25	3.09	6.32	4.83	4.70	4.75
20	ACH 417	1.51	1.21	1.36	---	---	---	---
11	ACH 430	1.55	1.38	1.47	---	---	---	---
15	ACH 454	1.39	1.33	1.36	---	---	---	---
12	ACH 472	1.34	1.29	1.32	---	---	---	---
16	ACH 489	1.28	1.33	1.31	---	---	---	---
13	Beta 7401	1.58	1.38	1.48	---	---	---	---
18	Beta 7416	1.75	1.38	1.57	---	---	---	---
17	Beta 7439	1.66	1.42	1.54	---	---	---	---
19	Beta 7456	1.49	1.08	1.29	---	---	---	---
14	Hilleshög 2517	2.12	1.58	1.85	---	---	---	---
Established Mean		1.92	1.73	1.83	4.06	3.81	2.94	3.23
Trial Mean		1.62	1.36	1.49				
CV (%)		15.37	23.60					
LSD (P=0.05)		0.43	0.49					

VALUES ARE UNADJUSTED FIELD DATA

Lower values indicate better disease tolerance: (0)=Excellent >>>> (9)=Dead Plant

Average ratings based upon multiple dates and individual ratings

PLANTING RATE CHART

ACH SEEDS / BETASEED / HILLESBROG [ACRES PLANTED PER BOX]

22" ROWS	SEED SPACING	MINI PELLETS	REGULAR PELLETS	ELS / PRO 200 / S2
	<i>Units/Box</i>	4	4	4
	<i>Packages/Box</i>	1 (Bulk)	1 (Bulk)	1 (Bulk)
	3" Spacing	4.2	4.2	4.2
	4" Spacing	5.6	5.6	5.6
	5" Spacing	7.0	7.0	7.0
30" ROWS	SEED SPACING	MINI PELLETS	REGULAR PELLETS	ELS / PRO 200 / S2
	3" Spacing	5.7	5.7	5.7
	4" Spacing	7.6	7.6	7.6
	5" Spacing	9.6	9.6	9.6

ACRES PLANTED PER UNIT

SEED SPACING	22" ROWS	30" ROWS
(INCHES)	(ACRES)	(ACRES)
3.0	1.05	1.43
3.5	1.23	1.67
4.0	1.40	1.91
4.5	1.58	2.15
5.0	1.75	2.39
5.5	1.93	2.63
6.0	2.10	2.87

2025 SEED TREATMENT PRICING

SPECIALTY SEED TREATMENTS	AVAILABLE ON	APPROXIMATE CHARGE / UNIT
<p style="text-align: center;"><u>ACH SEEDS</u> Poncho Beta + T35</p>	RP / ELS	\$40
<p style="text-align: center;"><u>BETASEED</u> Poncho Beta + T35</p>	RP / PRO 200	\$40
<p style="text-align: center;"><u>HILLESHÖG</u> T45 CruiserMaxx CruiserMaxx + T45</p>	<p>4M / S2</p> <p>2M / 4M / S2</p> <p>4M / S2</p>	<p>\$18</p> <p>\$42</p> <p>\$60</p>

Note: Early Order Discounts Applied When Available