



2024 Minn-Dak Seed Approval List

Fully Approved Varieties:

- ACH 125
- ACH 166 (RHC)
- ACH 973 (CLS)
- BTS 7068
- BTS 7845 (RHC)
- HIL 2325

Conditionally Approved Varieties:

- BTS 7181

Test Market Varieties:

- None

Specialty Varieties:

- ACH 011 (RHC)
- ACH 290 (RHC)
- BTS 7170 (RHC)
- BTS 7231 (CLS)

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

- None

2023 Agronomic Performance 1 of 6

Established Varieties	Percent Emergence								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 973	60.8	53.2	73.9	»	57.0	62.6	»	101.3	±	98.4	5	3
Beta 7068	54.7	53.8	75.6	»	54.2	61.3	»	99.3	±	100.5	4	2
Beta 7845	59.8	55.2	73.1	»	57.5	62.7	»	101.4	±	96.9	6	4
Hilleshög 2325	52.4	50.3	71.9	»	51.4	58.2	»	94.1	±	97.3	5	3
Hilleshög 2374	55.2	41.7	75.8	»	48.4	57.5	»	93.1	±	93.8	4	2
1-Year Mean	56.6	50.8	74.0		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	53.7	62.4		Approval Mean			61.8				
3-Year Mean	»	»	60.5		2022 3-Yr Mean			66.5				

Candidate Varieties	Percent Emergence								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 011	53.6	47.7	75.1	»	50.6	58.8	»	95.1	±	92.7	4	2
ACH 125	57.8	52.8	74.1	»	55.3	61.5	»	99.6	±	95.8	3	1
ACH 166	59.6	49.9	71.1	»	54.8	60.2	»	97.4	±	91.4	3	1
Beta 7170	52.8	53.0	71.8	»	52.9	59.2	»	95.8	±	94.2	3	1
Beta 7181	58.9	52.8	75.8	»	55.8	62.5	»	101.1	±	97.1	3	1
1-Year Mean	56.5	51.2	73.5		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	53.9	62.4		Approval Mean			61.8				
3-Year Mean	»	»	60.4		2022 2-Yr Mean			66.2				

Test Market Varieties	Percent Emergence								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 290	58.2	56.1	-	»	57.2	-	»	102.3	±	103.6	2	-
Beta 7231	58.8	52.9	-	»	55.8	-	»	99.8	±	97.5	2	-
1-Year Mean	58.5	54.5			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	56.5			Approval Mean			55.9				
					2022 1-Yr Mean			54.2				

% EMERGENCE

2023 Agronomic Performance 2 of 6

Established Varieties	Percent Sugar								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 973	19.40	18.91	17.11	»	19.16	18.47	»	99.2	‡	99.7	5	3
Beta 7068	18.72	18.83	17.03	»	18.77	18.19	»	97.6	‡	100.4	4	2
Beta 7845	20.06	19.58	17.60	»	19.82	19.08	»	102.4	‡	103.3	6	4
Hilleshög 2325	19.31	19.00	17.38	»	19.16	18.56	»	99.6	‡	100.9	5	3
Hilleshög 2374	19.23	19.03	17.33	»	19.13	18.53	»	99.4	‡	101.8	4	2
1-Year Mean	19.34	19.07	17.29		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	19.21	18.18		Approval Mean			18.63				
3-Year Mean	»	»	18.57		2022 3-Yr Mean			17.68				

% SUGAR

Candidate Varieties	Percent Sugar								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 011	19.21	18.48	16.91	»	18.84	18.20	»	97.7	‡	98.1	4	2
ACH 125	19.78	19.64	17.43	»	19.71	18.95	»	101.7	‡	102.8	3	1
ACH 166	19.90	19.53	17.38	»	19.72	18.94	»	101.6	‡	102.3	3	1
Beta 7170	19.14	18.72	17.15	»	18.93	18.34	»	98.4	‡	99.4	3	1
Beta 7181	19.20	19.01	17.16	»	19.11	18.46	»	99.1	‡	100.2	3	1
1-Year Mean	19.45	19.07	17.21		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	19.26	18.14		Approval Mean			18.63				
3-Year Mean	»	»	18.58		2022 2-Yr Mean			18.04				

Test Market Varieties	Percent Sugar								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 290	18.97	19.26	-	»	19.11	-	»	98.8	‡	99.7	2	-
Beta 7231	19.92	20.22	-	»	20.07	-	»	103.8	‡	104.6	2	-
1-Year Mean	19.44	19.74			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	19.59			Approval Mean			19.34				
					2022 1-Yr Mean			19.32				

2023 Agronomic Performance 3 of 6

Established Varieties	Percent Purity								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 973	90.42	91.89	91.78	»	91.15	91.36	»	100.7	‡	100.6	5	3
Beta 7068	89.31	91.65	91.23	»	90.48	90.73	»	100.0	‡	100.4	4	2
Beta 7845	89.43	90.71	91.20	»	90.07	90.45	»	99.7	‡	99.7	6	4
Hilleshög 2325	89.96	91.60	91.84	»	90.78	91.13	»	100.4	‡	100.4	5	3
Hilleshög 2374	90.02	91.30	91.92	»	90.66	91.08	»	100.4	‡	100.6	4	2
1-Year Mean	89.83	91.43	91.60		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	90.63	91.51		Approval Mean			90.74				
3-Year Mean	»	»	90.95		2022 3-Yr Mean			91.12				

% PURITY

Candidate Varieties	Percent Purity								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 011	89.32	91.34	91.24	»	90.33	90.63	»	99.9	‡	99.8	4	2
ACH 125	89.82	91.48	91.82	»	90.65	91.04	»	100.3	‡	100.2	3	1
ACH 166	90.14	91.53	91.75	»	90.83	91.14	»	100.4	‡	100.2	3	1
Beta 7170	89.53	91.32	91.07	»	90.42	90.64	»	99.9	‡	99.7	3	1
Beta 7181	89.45	91.26	91.49	»	90.35	90.73	»	100.0	‡	99.9	3	1
1-Year Mean	89.65	91.38	91.47		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	90.52	91.43		Approval Mean			90.74				
3-Year Mean	»	»	90.84		2022 2-Yr Mean			91.49				

Test Market Varieties	Percent Purity								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 290	89.19	91.30	-	»	90.25	-	»	100.0	‡	100.0	2	-
Beta 7231	89.81	90.83	-	»	90.32	-	»	100.1	‡	99.5	2	-
1-Year Mean	89.50	91.06			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	90.28			Approval Mean			90.25				
					2022 1-Yr Mean			91.32				

2023 Agronomic Performance 4 of 6

Established Varieties	Yield as Tons/Acre								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 973	26.7	25.4	29.3	»	26.1	27.1	»	107.5	‡	102.7	5	3
Beta 7068	25.3	25.6	30.6	»	25.5	27.2	»	107.6	‡	111.0	4	2
Beta 7845	23.6	23.9	26.4	»	23.7	24.6	»	97.6	‡	97.6	6	4
Hilleshög 2325	24.1	24.2	27.4	»	24.2	25.2	»	100.0	‡	98.4	5	3
Hilleshög 2374	24.0	20.9	27.1	»	22.4	24.0	»	95.0	‡	96.7	4	2
1-Year Mean	24.7	24.0	28.1		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	24.4	26.1		Approval Mean			25.2				
3-Year Mean	»	»	25.6		2022 3-Yr Mean			26.5				

YIELD

Candidate Varieties	Yield as Tons/Acre								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 011	23.5	25.4	29.5	»	24.4	26.1	»	103.6	‡	106.8	4	2
ACH 125	25.0	24.4	26.6	»	24.7	25.3	»	100.3	‡	99.1	3	1
ACH 166	25.7	23.7	27.7	»	24.7	25.7	»	101.8	‡	100.0	3	1
Beta 7170	26.3	26.6	28.8	»	26.5	27.2	»	107.9	‡	107.8	3	1
Beta 7181	26.4	27.0	29.9	»	26.7	27.8	»	110.0	‡	110.7	3	1
1-Year Mean	25.4	25.4	28.5		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	25.4	27.0		Approval Mean			25.2				
3-Year Mean	»	»	26.4		2022 2-Yr Mean			25.7				

Test Market Varieties	Yield as Tons/Acre								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 290	28.0	26.3	-	»	27.2	-	»	110.6	‡	109.1	2	-
Beta 7231	25.5	23.5	-	»	24.5	-	»	99.9	‡	97.6	2	-
1-Year Mean	26.8	24.9			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	25.8			Approval Mean			24.6				
					2022 1-Yr Mean			24.1				

2023 Agronomic Performance 5 of 6

Established Varieties	Recoverable Sugar/Ton (RST)							RST + RSA				
	Trial Year			Average		% of Means *		% of Means *				
	2023	2022	2021	2-Yr	3-Yr	2023	2022	2023	2022			
ACH 973	334.2	332.0	298.9	»	333.1	321.7	»	100.0	±	100.5	207.1	203.5
Beta 7068	316.7	329.5	295.1	»	323.1	313.8	»	97.5	±	101.0	202.2	212.8
Beta 7845	340.9	338.7	305.2	»	339.8	328.2	»	102.0	±	103.1	201.2	203.4
Hilleshög 2325	330.3	332.7	304.1	»	331.5	322.4	»	100.2	±	101.6	200.3	201.2
Hilleshög 2374	329.1	331.4	303.4	»	330.2	321.3	»	99.9	±	102.7	194.4	201.5
1-Year Mean	330.2	332.9	301.3		* Trial Years »		3 yr	3 yr			3 yr	3 yr
2-Year Mean	»	331.5	317.1		Approval Mean		321.7					
3-Year Mean	»	»	321.5		2022 3-Yr Mean		306.3					

RST

Candidate Varieties	Recoverable Sugar/Ton (RST)							RST + RSA				
	Trial Year			Average		% of Means *		% of Means *				
	2023	2022	2021	2-Yr	3-Yr	2023	2022	2023	2022			
ACH 011	325.3	321.7	293.0	»	323.5	313.3	»	97.4	±	97.7	197.8	202.1
ACH 125	337.9	343.3	304.9	»	340.6	328.7	»	102.2	±	103.1	204.3	204.9
ACH 166	341.8	341.6	303.6	»	341.7	329.0	»	102.3	±	102.6	205.9	204.8
Beta 7170	325.0	325.9	296.8	»	325.5	315.9	»	98.2	±	99.0	203.9	206.0
Beta 7181	325.8	331.0	298.5	»	328.4	318.4	»	99.0	±	100.1	207.6	211.0
1-Year Mean	331.1	332.7	299.3		* Trial Years »		3 yr	2 yr			3 yr	2 yr
2-Year Mean	»	331.9	316.0		Approval Mean		321.7					
3-Year Mean	»	»	321.1		2022 2-Yr Mean		314.5					

Test Market Varieties	Recoverable Sugar/Ton (RST)							RST + RSA				
	Trial Year			Average		% of Means *		% of Means *				
	2023	2022	2021	2-Yr	3-Yr	2023	2022	2023	2022			
ACH 290	320.5	335.7	-	»	328.1	-	»	98.8	±	99.7	207.4	208.3
Beta 7231	340.1	350.5	-	»	345.3	-	»	104.0	±	104.1	207.4	205.5
1-Year Mean	330.3	343.1			* Trial Years »		2 yr	1 yr			2 yr	1 yr
2-Year Mean	»	336.7			Approval Mean		332.1					
					2022 1-Yr Mean		336.8					

2023 Agronomic Performance 6 of 6

Established Varieties	Recoverable Sugar/Acre (RSA)							RST + RSA	
	Trial Year			Average		% of Means *		% of Means *	
	2023	2022	2021	2-Yr	3-Yr	2023	2022	2023	2022
ACH 973	8,959	8,368	8,737	» 8,663	8,688	» 107.1	‡ 103.0	207.1	203.5
Beta 7068	8,071	8,389	9,011	» 8,230	8,490	» 104.7	‡ 111.8	202.2	212.8
Beta 7845	8,067	8,005	8,068	» 8,036	8,047	» 99.2	‡ 100.3	201.2	203.4
Hilleshög 2325	8,058	7,977	8,316	» 8,018	8,117	» 100.1	‡ 99.6	200.3	201.2
Hilleshög 2374	7,913	6,856	8,232	» 7,384	7,667	» 94.5	‡ 98.8	194.4	201.5
1-Year Mean	8,214	7,919	8,473	* Trial Years »		3 yr	3 yr	3 yr	3 yr
2-Year Mean	»	8,066	8,196	Approval Mean		8,113			
3-Year Mean	»	»	8,202	2022 3-Yr Mean		8,097			

RSA

Candidate Varieties	Recoverable Sugar/Acre (RSA)							RST + RSA	
	Trial Year			Average		% of Means *		% of Means *	
	2023	2022	2021	2-Yr	3-Yr	2023	2022	2023	2022
ACH 011	7,666	8,118	8,649	» 7,892	8,144	» 100.4	‡ 104.4	197.8	202.1
ACH 125	8,515	8,275	8,078	» 8,395	8,289	» 102.2	‡ 101.8	204.3	204.9
ACH 166	8,807	8,025	8,393	» 8,416	8,408	» 103.6	‡ 102.2	205.9	204.8
Beta 7170	8,546	8,627	8,556	» 8,586	8,576	» 105.7	‡ 107.0	203.9	206.0
Beta 7181	8,623	8,887	8,931	» 8,755	8,813	» 108.6	‡ 111.0	207.6	211.0
1-Year Mean	8,431	8,386	8,521	* Trial Years »		3 yr	2 yr	3 yr	2 yr
2-Year Mean	»	8,409	8,454	Approval Mean		8,113			
3-Year Mean	»	»	8,446	2022 2-Yr Mean		8,029			

Test Market Varieties	Recoverable Sugar/Acre (RSA)							RST + RSA	
	Trial Year			Average		% of Means *		% of Means *	
	2023	2022	2021	2-Yr	3-Yr	2023	2022	2023	2022
ACH 290	8,996	8,742	-	» 8,869	-	» 108.6	‡ 108.6	207.4	208.3
Beta 7231	8,727	8,162	-	» 8,445	-	» 103.4	‡ 101.4	207.4	205.5
1-Year Mean	8,862	8,452		* Trial Years »		2 yr	1 yr	2 yr	1 yr
2-Year Mean	»	8,657		Approval Mean		8,167			
				2022 1-Yr Mean		8,051			

2023 1st-Year Agronomic Performance

Introductory Varieties	Percent Emergence		Percent Sugar		Percent Purity		Years In Trials
	2023	% of Est.	2023	% of Est.	2023	% of Est.	
ACH 304	56.3	99.5	19.37	100.1	89.21	99.3	1
ACH 335	55.3	97.7	19.63	101.5	90.15	100.4	1
ACH 363	52.2	92.2	19.85	102.7	89.59	99.7	1
ACH 370	53.9	95.3	20.27	104.8	90.04	100.2	1
ACH 392	49.8	88.0	19.92	103.0	89.71	99.9	1
Beta 7308	55.5	98.1	19.69	101.8	89.87	100.0	1
Beta 7344	56.0	99.0	20.01	103.5	89.34	99.5	1
Beta 7353	52.1	92.1	20.33	105.1	90.20	100.4	1
Beta 7397	57.5	101.5	19.43	100.5	89.98	100.2	1
Hilleshög 2481	30.5	53.9	18.68	96.6	88.88	98.9	1
1-Year Mean	51.9		19.72		89.70		
2023 Est. Variety Means	»	56.6	»	19.34	»	89.83	

Introductory Varieties	Yield as Tons/Acre		Recoverable Sugar/Ton		Recoverable Sugar/Acre		% RST + % RSA
	2023	% of Est.	2023	% of Est.	2023	% of Est.	
ACH 304	25.5	103.1	327.6	99.2	8,351	101.7	200.9
ACH 335	22.8	92.3	336.9	102.0	7,715	93.9	196.0
ACH 363	22.0	89.2	337.9	102.3	7,444	90.6	193.0
ACH 370	24.2	98.1	347.8	105.3	8,467	103.1	208.4
ACH 392	24.0	97.3	339.8	102.9	8,177	99.5	202.5
Beta 7308	24.6	99.6	336.8	102.0	8,332	101.4	203.4
Beta 7344	25.0	101.2	339.6	102.9	8,518	103.7	206.6
Beta 7353	21.7	88.0	349.6	105.9	7,616	92.7	198.6
Beta 7397	26.2	106.2	332.6	100.7	8,738	106.4	207.1
Hilleshög 2481	16.7	67.5	314.3	95.2	5,338	65.0	160.2
1-Year Mean	23.3		336.3		7,870		
2023 Est. Variety Means	»	24.7	»	330.2	»	8,214	

1st Year AGRONOMIC

2023 Disease Performance 1 of 4

Established Varieties	Cercospora Leaf Spot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 973	2.14	1.58	1.88	»	1.86	1.86	»	164.7	‡	220.0	5	3
Beta 7068	2.39	2.15	1.97	»	2.27	2.17	»	141.4	‡	179.6	4	2
Beta 7845	3.45	3.69	3.92	»	3.57	3.69	»	83.3	‡	98.4	6	4
Hilleshög 2325	3.64	4.12	3.64	»	3.88	3.80	»	80.8	‡	97.1	5	3
Hilleshög 2374	3.72	4.12	3.71	»	3.92	3.85	»	79.7	‡	96.8	4	2
1-Year Mean	3.07	3.13	3.02		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	3.10	3.08		Established Mean			3.07				
3-Year Mean	»	»	3.07		2022 3-Yr Mean			3.77				

Candidate Varieties	Cercospora Leaf Spot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 011	2.46	1.93	2.02	»	2.20	2.14	»	143.8	‡	192.0	4	2
ACH 125	2.37	1.67	1.64	»	2.02	1.89	»	162.1	‡	228.6	3	1
ACH 166	2.26	1.65	2.08	»	1.96	2.00	»	153.8	‡	203.2	3	1
Beta 7170	2.67	2.16	2.18	»	2.41	2.34	»	131.4	‡	174.6	3	1
Beta 7181	2.60	2.10	2.27	»	2.35	2.32	»	132.2	‡	173.5	3	1
1-Year Mean	2.47	1.90	2.04		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	2.19	1.97		Established Mean			3.07				
3-Year Mean	»	»	2.14		2022 2-Yr Mean			3.79				

Test Market Varieties	Cercospora Leaf Spot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 290	2.63	2.10	-	»	2.36	-	»	131.1	‡	182.5	2	-
Beta 7231	2.10	1.53	-	»	1.82	-	»	170.6	‡	250.0	2	-
1-Year Mean	2.37	1.82			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	2.09			Established Mean			3.10				
					2022 1-Yr Mean			3.83				

CERCOSPORA

2023 Disease Performance 2 of 4

Established Varieties	Rhizoctonia Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 973	3.84	4.61	3.73	»	4.23	4.06	»	95.8	‡	95.8	5	3
Beta 7068	3.58	4.15	3.51	»	3.86	3.74	»	103.9	‡	105.1	4	2
Beta 7845	3.82	3.52	3.67	»	3.67	3.67	»	106.0	‡	105.9	6	4
Hilleshög 2325	4.09	3.99	3.69	»	4.04	3.92	»	99.1	‡	98.3	5	3
Hilleshög 2374	3.75	4.62	3.85	»	4.18	4.07	»	95.5	‡	92.7	4	2
1-Year Mean	3.82	4.18	3.69		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	4.00	3.93		Established Mean			3.89				
3-Year Mean	»	»	3.89		2022 3-Yr Mean			3.79				

Candidate Varieties	Rhizoctonia Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 011	3.29	3.95	3.79	»	3.62	3.68	»	105.8	‡	98.4	4	2
ACH 125	3.53	4.35	3.85	»	3.94	3.91	»	99.5	‡	92.9	3	1
ACH 166	3.66	3.72	3.12	»	3.69	3.50	»	111.2	‡	111.5	3	1
Beta 7170	3.50	3.62	3.19	»	3.56	3.43	»	113.3	‡	111.9	3	1
Beta 7181	3.92	4.29	4.53	»	4.11	4.25	»	91.5	‡	86.3	3	1
1-Year Mean	3.58	3.99	3.70		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	3.78	3.84		Established Mean			3.89				
3-Year Mean	»	»	3.75		2022 2-Yr Mean			3.81				

Test Market Varieties	Rhizoctonia Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average		% of Means *						
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 290	3.14	4.01	-	»	3.57	-	»	112.0	‡	96.1	2	-
Beta 7231	3.66	4.10	-	»	3.88	-	»	103.1	‡	93.9	2	-
1-Year Mean	3.40	4.05			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	3.73			Established Mean			4.00				
					2022 1-Yr Mean			3.85				

RHIZOCTONIA

2023 Disease Performance 3 of 4

Established Varieties	Aphanomyces Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 973	3.43	3.16	4.22	»	3.30	3.61	»	100.1	‡	95.0	5	3
Beta 7068	3.99	3.06	4.16	»	3.53	3.74	»	96.6	‡	99.1	4	2
Beta 7845	3.06	3.26	3.54	»	3.16	3.29	»	109.7	‡	110.1	6	4
Hilleshög 2325	3.80	3.63	3.68	»	3.72	3.71	»	97.4	‡	94.9	5	3
Hilleshög 2374	3.58	3.64	3.97	»	3.61	3.73	»	96.8	‡	91.6	4	2
1-Year Mean	3.57	3.35	3.92		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	3.46	3.63		Established Mean			3.61				
3-Year Mean	»	»	3.61		2022 3-Yr Mean			3.48				

Candidate Varieties	Aphanomyces Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 011	3.81	3.98	5.42	»	3.90	4.40	»	82.0	‡	77.2	4	2
ACH 125	3.25	3.42	3.76	»	3.34	3.48	»	103.8	‡	101.0	3	1
ACH 166	3.53	3.49	4.10	»	3.51	3.71	»	97.3	‡	95.6	3	1
Beta 7170	3.62	3.20	3.91	»	3.41	3.58	»	100.9	‡	102.1	3	1
Beta 7181	4.19	4.24	4.38	»	4.22	4.27	»	84.5	‡	84.2	3	1
1-Year Mean	3.68	3.67	4.31		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	3.68	3.99		Established Mean			3.61				
3-Year Mean	»	»	3.89		2022 2-Yr Mean			3.63				

Test Market Varieties	Aphanomyces Root Rot								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 290	4.00	2.91	-	»	3.45	-	»	100.2	‡	118.7	2	-
Beta 7231	3.76	3.29	-	»	3.53	-	»	98.1	‡	104.8	2	-
1-Year Mean	3.88	3.10			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	3.49			Established Mean			3.46				
					2022 1-Yr Mean			3.45				

APHANOMYCES

2023 Disease Performance 4 of 4

Established Varieties	Fusarium								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 973	2.88	3.64	3.08	»	3.26	3.20	»	145.1	‡	178.9	5	3
Beta 7068	3.60	3.29	2.08	»	3.45	2.99	»	155.2	‡	211.2	4	2
Beta 7845	3.59	3.59	4.42	»	3.59	3.87	»	120.0	‡	137.1	6	4
Hilleshög 2325	6.32	4.83	7.67	»	5.57	6.27	»	74.0	‡	86.0	5	3
Hilleshög 2374	6.85	5.63	8.08	»	6.24	6.85	»	67.7	‡	82.2	4	2
1-Year Mean	4.65	4.20	5.07		* Trial Years »			3 yr		3 yr		
2-Year Mean	»	4.42	4.63		Established Mean			4.64				
3-Year Mean	»	»	4.64		2022 3-Yr Mean			4.72				

Candidate Varieties	Fusarium								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 011	3.33	3.53	2.50	»	3.43	3.12	»	148.8	‡	180.9	4	2
ACH 125	3.24	3.20	1.25	»	3.22	2.56	»	181.0	‡	244.9	3	1
ACH 166	3.43	3.49	2.25	»	3.46	3.06	»	151.8	‡	189.9	3	1
Beta 7170	3.74	3.58	3.17	»	3.66	3.50	»	132.7	‡	161.5	3	1
Beta 7181	2.21	2.15	1.25	»	2.18	1.87	»	248.1	‡	320.6	3	1
1-Year Mean	3.19	3.19	2.08		* Trial Years »			3 yr		2 yr		
2-Year Mean	»	3.19	2.64		Established Mean			4.64				
3-Year Mean	»	»	2.82		2022 2-Yr Mean			5.45				

Test Market Varieties	Fusarium								Years In Trials	Years Comm.		
	Trial Year			Average			% of Means *					
	2023	2022	2021	2-Yr	3-Yr	2023	2022					
ACH 290	3.54	3.54	-	»	3.54	-	»	124.9	‡	129.3	2	-
Beta 7231	3.43	3.05	-	»	3.24	-	»	136.5	‡	150.1	2	-
1-Year Mean	3.49	3.29			* Trial Years »			2 yr		1 yr		
2-Year Mean	»	3.39			Established Mean			4.42				
					2022 1-Yr Mean			4.57				

2023, 2022, 2021 Un-Adjusted Field Data

FUSARIUM

2023 1st Year Disease Performance

Introductory Varieties	Cercospora		Rhizoctonia		Aphanomyces		Years In Trials
	2023	% of Est.	2023	% of Est.	2023	% of Est.	
ACH 304	2.24	137.2	3.58	106.6	4.02	88.8	1
ACH 335	2.04	150.2	3.44	111.0	3.73	95.7	1
ACH 363	2.01	152.4	3.57	106.9	2.94	121.5	1
ACH 370	1.78	172.8	3.54	108.0	3.94	90.7	1
ACH 392	3.83	80.2	3.36	113.8	3.27	109.3	1
Beta 7308	3.66	84.0	3.37	113.3	3.18	112.2	1
Beta 7344	2.11	145.2	3.53	108.2	3.02	118.0	1
Beta 7353	1.93	159.0	3.68	103.9	3.59	99.4	1
Beta 7397	2.26	136.0	3.60	106.1	4.32	82.6	1
Hilleshög 2481	4.01	76.6	3.83	99.7	4.55	78.4	1
1-Year Mean	2.59		3.55		3.66		
2023 Est. Variety Means	»	3.07	»	3.82	»	3.57	

Introductory Varieties	Fusarium	
	2023	% of Est.
ACH 304	2.35	206.4
ACH 335	3.32	146.1
ACH 363	3.01	161.1
ACH 370	4.08	119.0
ACH 392	2.94	165.2
Beta 7308	3.22	150.9
Beta 7344	2.89	168.1
Beta 7353	3.59	135.3
Beta 7397	2.31	210.4
Hilleshög 2481	5.96	81.4
1-Year Mean	3.36	
2023 Est. Variety Means	»	4.85

1st Year DISEASE

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		
2021	4	29.3	6	298.9	27	8,737	5 of 36	1.88	6	3.73	9	4.22	17		
2022	5	25.4	5	332.0	23	8,368	7 of 29	1.58	7	4.61	25	3.16	4		
2023	6	26.7	2	334.2	12	8,959	2 of 22	2.14	7	3.84	20	3.43	7		
2023 Avg. for Approval		27.1		321.7		8,688	RST + RSA	1.86		4.06		3.61			
ACH 973				100.0	✓	107.1	✓	207.1	✓	1.86	✓	4.06	✓	3.61	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 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		
2021	2	30.6	1	295.1	33	9,011	1 of 36	1.97	8	3.51	5	4.16	15		
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		
2023 Avg. for Approval		27.2		313.8		8,490	RST + RSA	2.17		3.74		3.74			
Beta 7068				97.5	✓	104.7	✓	202.2	✓	2.17	✓	3.74	✓	3.74	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: **FULL** TEST MARKET SPECIALTY FAILED

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

Established Variety for Full Approval

Variety	Beta 7845	
Company	Betaseed	
Contact	Cody Lehman	

TRIAL		AGRONOMY						DISEASE							
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank		
2021	3	26.4	22	305.2	8	8,068	22 of 36	3.92	24	3.67	6	3.54	2		
2022	4	23.9	16	338.7	17	8,005	17 of 29	3.69	22	3.52	1	3.26	6		
2023	5	23.6	17	340.9	4	8,067	15 of 22	3.45	17	3.82	18	3.06	3		
2023 Avg. for Approval		24.6		328.2		8,047	RST + RSA	3.69		3.67		3.29			
Beta 7845				102.0	✓	99.2	✓	201.2	✓	3.69	✓	3.67	✓	3.29	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: **FULL** TEST MARKET SPECIALTY FAILED

Specialty Credential [CLS, RHC, APH]: **RHC** ✓ 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
2021	3	27.4	14	304.1	10	8,316	14 of 36	3.64	18	3.69	7	3.68	4
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
2023 Avg. for Approval		25.2		322.4		8,117	RST + RSA	3.80		3.92		3.71	
Hilleshög 2325		100.2	✓	100.1	✓	200.3	✓	3.80	✓	3.92	✓	3.71	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: **FULL** TEST MARKET SPECIALTY FAILED

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

Established Variety for Full Approval

Variety **Hilleshög 2374**
 Company *Hilleshög*
 Contact *Adam Hansen*

TRIAL		AGRONOMY						DISEASE					
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank
2021	2	27.1	17	303.4	13	8,232	16 of 36	3.71	21	3.85	14	3.97	9
2022	3	20.9	28	331.4	24	6,856	27 of 29	4.12	26	4.62	26	3.64	18
2023	4	24.0	16	329.1	15	7,913	17 of 22	3.72	20	3.75	17	3.58	9
2023 Avg. for Approval		24.0		321.3		7,667	RST + RSA	3.85		4.07		3.73	
Hilleshög 2374		99.9	✓	94.5		194.4	✓	3.85	✓	4.07	✓	3.73	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: FULL TEST MARKET SPECIALTY **FAILED**

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

Candidate Variety for Full Approval

Variety **ACH 011**
 Company *ACH*
 Contact *Jake Boersma*

TRIAL		AGRONOMY						DISEASE							
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank		
2021	2	29.5	4	293.0	36	8,649	8 of 36	2.02	9	3.79	13	5.42	34		
2022	3	25.4	6	321.7	29	8,118	12 of 29	1.93	14	3.95	4	3.98	24		
2023	4	23.5	18	325.3	18	7,666	19 of 22	2.46	13	3.29	2	3.81	15		
2023 Avg. for Approval		26.1		313.3		8,144	RST + RSA	2.14		3.68		4.40			
ACH 011				97.4		100.4	✓	197.8	✓	2.14	✓	3.68	✓	4.40	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: *FULL* TEST MARKET **SPECIALTY** FAILED

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

Candidate Variety for Full Approval

Variety **ACH 125**
 Company *ACH*
 Contact *Jake Boersma*

TRIAL		AGRONOMY						DISEASE							
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank		
2021	1	26.6	21	304.9	9	8,078	21 of 36	1.64	2	3.85	14	3.76	5		
2022	2	24.4	11	343.3	13	8,275	9 of 29	1.67	9	4.35	19	3.42	10		
2023	3	25.0	11	337.9	9	8,515	9 of 22	2.37	11	3.53	8	3.25	5		
2023 Avg. for Approval		25.3		328.7		8,289	RST + RSA	1.89		3.91		3.48			
ACH 125				102.2	✓	102.2	✓	204.3	✓	1.89	✓	3.91	✓	3.48	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: **FULL** TEST MARKET SPECIALTY FAILED

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

Candidate Variety for Full Approval

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

TRIAL		AGRONOMY						DISEASE							
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank		
2021	1	27.7	13	303.6	12	8,393	12 of 36	2.08	10	3.12	2	4.10	12		
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		
2023 Avg. for Approval		25.7		329.0		8,408	RST + RSA	2.00		3.50		3.71			
ACH 166				102.3	✓	103.6	✓	205.9	✓	2.00	✓	3.50	✓	3.71	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 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		
2021	1	28.8	9	296.8	30	8,556	10 of 36	2.18	11	3.19	3	3.91	7		
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		
2023 Avg. for Approval		27.2		315.9		8,576	RST + RSA	2.34		3.43		3.58			
Beta 7170				98.2		105.7	✓	203.9	✓	2.34	✓	3.43	✓	3.58	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: FULL TEST MARKET **SPECIALTY** FAILED

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

Candidate Variety for Full Approval

Variety	Beta 7181												
Company	Betaseed												
Contact	Cody Lehman												

TRIAL		AGRONOMY						DISEASE							
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank		
2021	1	29.9	2	298.5	28	8,931	2 of 36	2.27	12	4.53	28	4.38	21		
2022	2	27.0	1	331.0	25	8,887	1 of 29	2.10	17	4.29	16	4.24	28		
2023	3	26.4	3	325.8	17	8,623	6 of 22	2.60	14	3.92	21	4.19	20		
2023 Avg. for Approval		27.8		318.4		8,813	RST + RSA	2.32		4.25		4.27			
Beta 7181				99.0		108.6	✓	207.6	✓	2.32	✓	4.25	✓	4.27	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: FULL TEST MARKET SPECIALTY **CONDITIONAL** FAILED

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

Candidate Variety for Test Market

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		
2021	-	-	-	-	-	-	-	-	-	-	-	-	-		
2022	1	26.3	3	335.7	19	8,742	2	2.10	16	4.01	7	2.91	1		
2023	2	28.0	1	320.5	20	8,996	1	2.63	15	3.14	1	4.00	18		
2023 Avg. for Approval		27.2		328.1		8,869		RST + RSA	2.36	3.57		3.45			
ACH 290				98.8		108.6	✓	207.4	✓	2.36	✓	3.57	✓	3.45	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: FULL TEST MARKET **SPECIALTY** FAILED

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

Candidate Variety for Test Market

Variety	Beta 7231												
Company	Betaseed												
Contact	Cody Lehman												

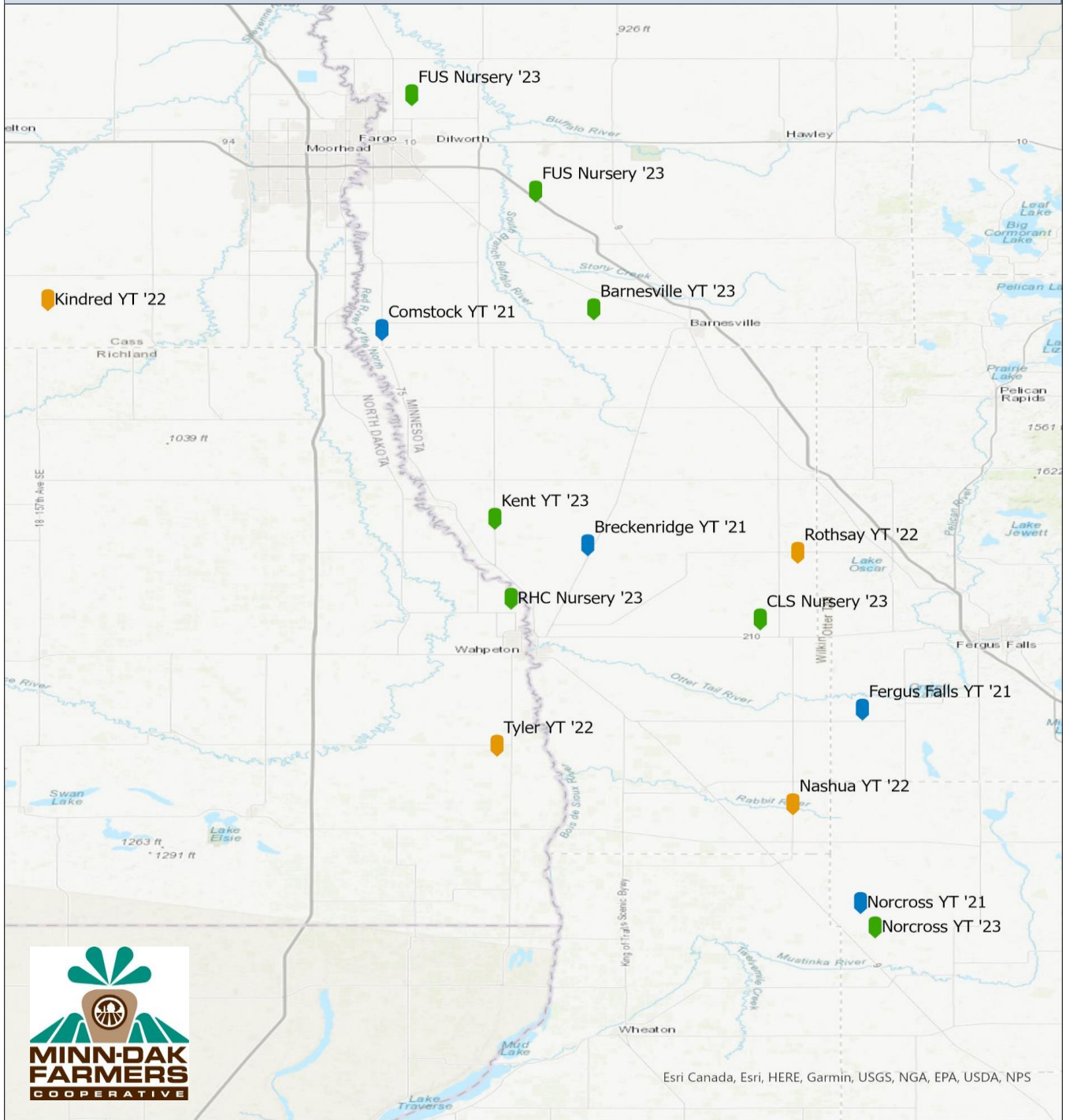
TRIAL		AGRONOMY						DISEASE							
Year	#	Yield	Rank	RST	Rank	RSA	Rank	CLS	Rank	RHC	Rank	APH	Rank		
2021	-	-	-	-	-	-	-	-	-	-	-	-	-		
2022	1	23.5	18	350.5	3	8,162	11	1.53	6	4.10	9	3.29	7		
2023	2	25.5	7	340.1	5	8,727	5	2.10	5	3.66	15	3.76	13		
2023 Avg. for Approval		24.5		345.3		8,445		RST + RSA	1.82	3.88		3.53			
Beta 7231				104.0	✓	103.4	✓	207.4	✓	1.82	✓	3.88	✓	3.53	✓

If the 2024 Requirements are met, VOTE to Approve: YES NO

2024 Approval Status: FULL TEST MARKET **SPECIALTY** FAILED

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

Minn-Dak Farmers Cooperative Official Variety Trial Locations 2021-2023



Barnesville - Yield Trial

October Final Draft

46.66225, -96.52562

Cooperator: Andy Maier
 Soil Type: Silty Clay Loam

Planted: May 20th
 Harvested: September 22nd

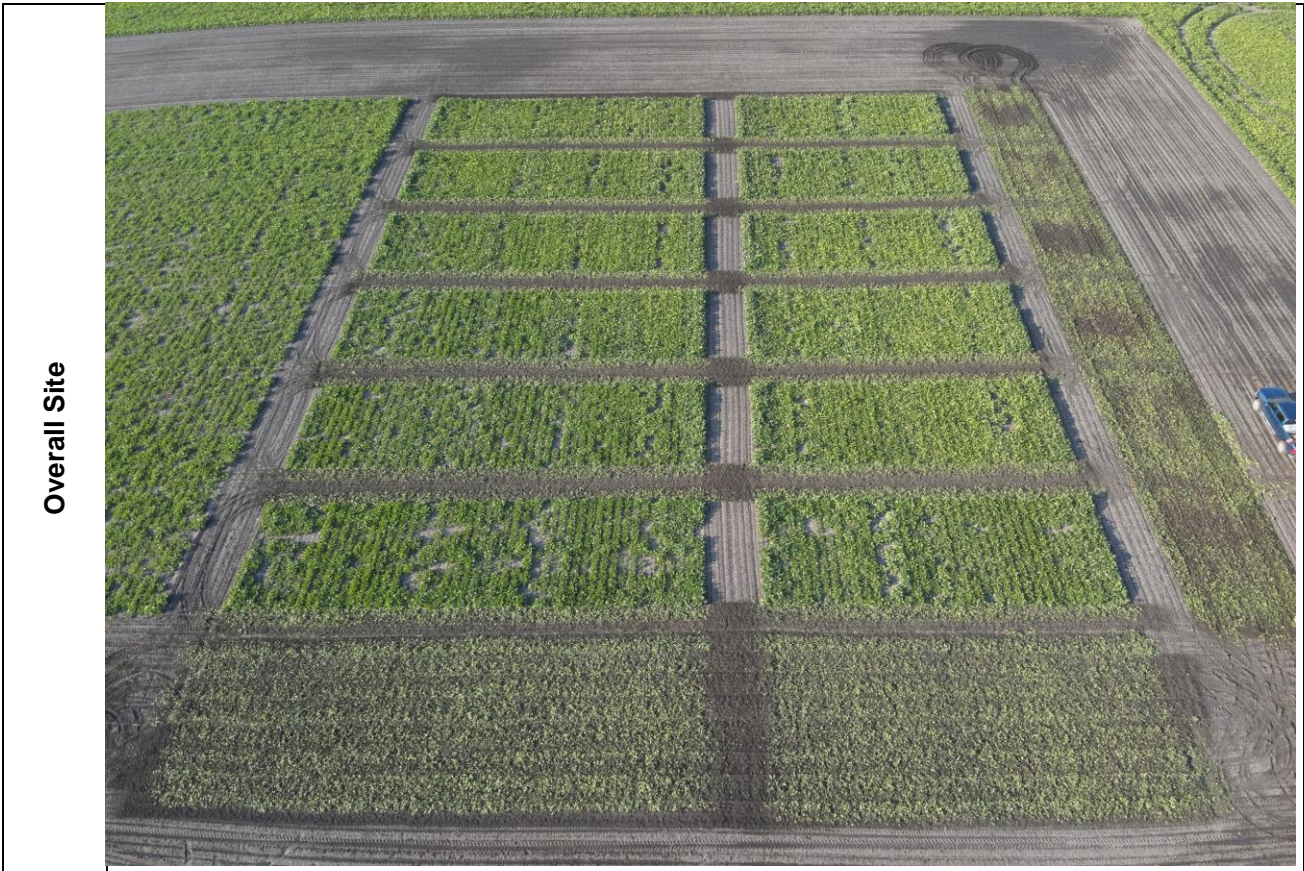
Prev. Crop: Wheat
 Plot Size: 3 Rows
 Orientation: South/North

Date	Pest Control	Rate/Acre
At Plant	Counter 20G	7.5lb/ac
22 May	PRE - ethofumasate + S-metolachlor	32oz + 8oz
8 June	glyphosate + ethofumasate + Fusilade	32oz + 4oz + 8oz
15 June	Asana XL	9.6oz
21 June	Asana XL	9.6oz
30 June	glyphosate + etho + Outlook + Stinger	32oz + 4oz + 12oz + 2.4oz
3 July	Outlook + Fusilade	12oz + 8oz

Date	Cercospora Control	Rate/Acre
-	EBDC	52oz
11 July	Proline + EBDC	5.7oz + 52oz
24 July	EBDC + Badge SC	52oz + 32oz
3 August	TPTH + EBDC	8oz + 52oz
15 August	EBDC + Badge SC	52oz + 32oz
29 August	Inspire + EBDC	7oz + 52oz

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

Comments: This location had an interesting secret that became apparent throughout the summer. Symptoms of a significant discontinuation in soil type emerged with the lack of rain and unseasonably hot weather early on. Variable stands across the front ranges were the outcome. Weed control was good and efforts were made to control a cutworm infestation. Our least performing location this year.



2023 Minn-Dak Official Variety Trial

Commercial & Semi-Commercial Entries

Barnesville, MN

Entry Code	Commercial Entries	Emerg. %	Bolter #/A	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
9	ACH 011	55.2	0	2.5	19.42	88.08	19.7	322.8	98.7	6,341	90.7
12	ACH 125	60.2	0	1.4	19.62	88.44	20.1	327.9	100.2	6,613	94.6
10	ACH 166	65.0	0	1.7	19.93	89.36	22.8	338.2	103.4	7,705	110.2
3	ACH 290	63.3	0	1.5	19.34	88.26	24.4	322.4	98.6	7,871	112.6
2	* ACH 973	63.3	0	1.8	19.76	90.11	23.1	338.9	103.6	7,812	111.7
8	* Beta 7068	56.8	0	1.1	18.37	88.49	19.9	306.7	93.8	6,160	88.1
7	Beta 7170	58.2	0	1.2	19.65	88.69	21.1	329.8	100.8	6,950	99.4
6	Beta 7181	61.7	0	1.2	19.61	87.75	23.3	324.4	99.2	7,565	108.2
11	Beta 7231	60.2	0	1.6	19.81	88.83	22.2	333.1	101.8	7,400	105.8
5	* Beta 7845	66.2	0	1.4	19.98	88.71	19.8	335.7	102.6	6,657	95.2
4	* Hilleshög 2325	53.7	0	2.2	18.90	89.11	19.9	318.7	97.4	6,398	91.5
1	* Hilleshög 2374	59.2	0	1.8	19.31	89.24	19.7	326.8	99.9	6,430	92.0
Experiment Mean		60.3	0.0	1.6	19.48	88.76	21.3	327.1		6,992	
Coeff. of Var. (%)		11.46		57.28	3.61	0.88	8.19	3.75		9.82	
LSD (0.10)		NS		1.3	NS	1.10	2.5	NS		963	
LSD (0.05)		NS		NS	NS	NS	3.0	NS		1,162	

2023 Minn-Dak Official Variety Trial

1st Year Introductory Entries

Barnesville, MN

Entry Code	Introductory Entries	Emerg. %	Bolter #/A	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
18	ACH 304	61.9	0	1.8	19.26	87.73	23.8	318.3	95.8	7,619	106.2
22	ACH 335	61.3	0	1.0	19.67	89.31	19.9	333.3	100.4	6,648	92.6
19	ACH 363	57.3	0	1.1	19.88	89.02	21.3	335.5	101.0	7,149	99.6
21	ACH 370	59.5	0	1.4	20.18	89.28	22.2	341.9	102.9	7,589	105.7
20	ACH 392	60.4	0	1.3	20.11	88.84	22.1	338.5	101.9	7,504	104.6
17	Beta 7308	59.0	0	1.3	19.65	88.93	21.3	331.2	99.7	7,081	98.7
16	Beta 7344	57.3	0	1.0	19.97	88.42	22.6	334.0	100.6	7,529	104.9
13	Beta 7353	54.3	0	1.6	20.25	90.03	19.8	347.1	104.5	6,884	95.9
15	Beta 7397	66.8	0	1.6	19.24	89.22	24.7	325.4	98.0	8,069	112.4
14	Hilleshög 2481	38.8	0	1.0	18.88	88.57	17.9	316.0	95.1	5,692	79.3
Experiment Mean		57.7	0.0	1.3	19.71	88.94	21.6	332.1		7,176	
Coeff. of Var. (%)		10.55		37.90	2.11	1.31	7.17	3.60		8.58	
LSD (0.10)		5.9		0.5	0.40	NS	1.5	11.6		597	
LSD (0.05)		7.1		NS	0.48	NS	1.8	13.9		716	

% Mean is percent of Experiment Mean

* Established Variety

Kent - Yield Trial

October Final Draft

46.41053, -96.63424

Cooperator: Matt Moxness
 Soil Type: Clay

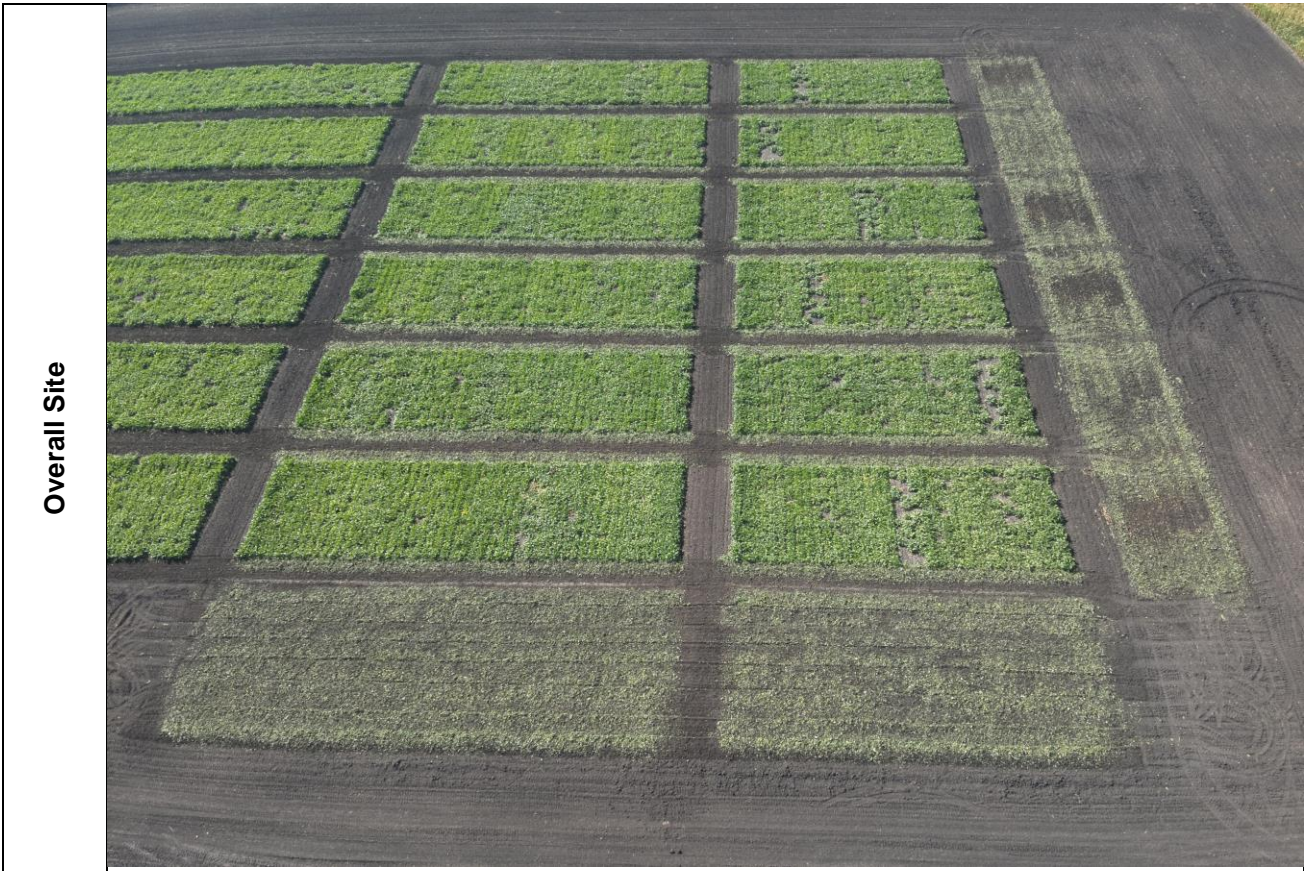
Planted: May 17th
 Harvested: September 20th

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

Date	Pest Control	Rate/Acre
At Plant	Counter 20G	7.5lb/ac
18 May	PRE - ethofumasate + S-metolachlor	32oz + 8oz
5 June	glyphosate	32oz
15 June	Asana XL	9.6oz
21 June	Asana XL	9.6oz
30 June	Outlook	12oz
3 July	glyphosate + etho + Outlook	32oz + 4oz + 12oz

Date	Cercospora Control	Rate/Acre	Disease	Incidence & Severity
-	EBDC	52oz	APH	Not Observed
11 July	Proline + EBDC	5.7oz + 52oz	CLS	Low / Low
24 July	EBDC + Badge SC	52oz + 32oz	RHC	Low / Low
3 August	TPTH + EBDC	8oz + 52oz	FUS	Not Observed
15 August	EBDC + Badge SC	52oz + 32oz	RZM	Not Observed
29 August	Inspire + EBDC	7oz + 52oz		
			B-	Overall Score

Comments: Our most uniform site in the end, but did not start that way. Planted into a stale seedbed from fear of clods, this site was challenged shortly after by unseasonably hot and dry weather. A cutworm presence early also challenged the site. After mid-summer rains and some time, the stand reached a level of acceptable homogeneity and translated into uniform harvest data.



2023 Minn-Dak Official Variety Trial

Commercial & Semi-Commercial Entries

Kent, MN

Entry Code	Commercial Entries	Emerg. %	Bolter #/A	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
9	ACH 011	53.5	0	0.9	18.53	88.71	25.0	310.4	99.0	7,782	98.7
12	ACH 125	56.1	0	1.1	19.12	89.01	24.6	322.2	102.8	7,937	100.7
10	ACH 166	60.7	0	1.2	19.20	88.62	25.1	321.8	102.6	8,102	102.8
3	ACH 290	54.5	0	0.9	18.06	88.06	28.4	299.3	95.5	8,491	107.7
2	* ACH 973	57.0	0	1.3	18.53	89.33	24.1	313.5	100.0	7,566	96.0
8	* Beta 7068	50.5	0	1.2	18.24	88.52	27.0	304.5	97.1	8,218	104.2
7	Beta 7170	49.7	0	1.1	18.46	88.45	27.3	307.9	98.2	8,398	106.5
6	Beta 7181	57.1	0	1.2	18.13	88.33	26.5	301.7	96.2	7,990	101.3
11	Beta 7231	56.9	0	1.1	19.41	88.24	23.9	323.3	103.1	7,724	98.0
5	* Beta 7845	58.8	0	1.3	19.59	88.74	24.0	329.0	104.9	7,896	100.2
4	* Hilleshög 2325	54.8	0	0.9	18.84	88.92	22.6	316.9	101.1	7,168	90.9
1	* Hilleshög 2374	55.8	0	1.1	18.48	89.17	23.6	311.8	99.4	7,338	93.1
Experiment Mean		55.5	0.0	1.1	18.72	88.68	25.2	313.5		7,884	
Coeff. of Var. (%)		7.27		30.39	2.37	0.77	6.16	2.87		6.95	
LSD (0.10)		3.9		NS	0.43	0.66	1.5	8.7		529	
LSD (0.05)		4.7		NS	0.51	NS	1.8	10.4		634	

2023 Minn-Dak Official Variety Trial

1st Year Introductory Entries

Kent, MN

Entry Code	Introductory Entries	Emerg. %	Bolter #/A	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
18	ACH 304	53.8	0	1.4	18.57	87.97	26.4	307.5	97.4	8,108	111.8
22	ACH 335	47.8	0	0.9	18.69	88.89	22.6	314.2	99.5	7,090	97.7
19	ACH 363	44.4	0	0.9	19.35	88.87	22.5	325.4	103.1	7,316	100.9
21	ACH 370	46.5	0	1.1	19.42	88.84	22.5	326.7	103.5	7,336	101.1
20	ACH 392	44.8	0	0.9	19.19	88.77	24.1	322.3	102.1	7,756	106.9
17	Beta 7308	49.3	0	0.8	18.75	88.86	25.6	315.1	99.8	8,103	111.7
16	Beta 7344	49.4	0	1.0	19.24	88.26	24.5	320.6	101.6	7,862	108.4
13	Beta 7353	43.8	0	1.2	19.70	88.98	21.6	332.2	105.2	7,166	98.8
15	Beta 7397	50.2	0	0.9	18.55	88.77	27.0	310.9	98.5	8,402	115.8
14	Hilleshög 2481	15.3	0	1.1	17.29	87.13	12.0	282.0	89.3	3,402	46.9
Experiment Mean		44.5	0.0	1.0	18.88	88.53	22.9	315.7		7,254	
Coeff. of Var. (%)		11.06		28.94	2.74	1.03	10.29	3.58		9.99	
LSD (0.10)		4.8		NS	0.50	0.89	2.3	10.9		703	
LSD (0.05)		5.7		NS	0.60	1.06	2.7	13.1		843	

% Mean is percent of Experiment Mean

* Established Variety

Norcross - Yield Trial

October Final Draft

45.91949, -96.21650

Cooperator: Vipond Grain Farms
 Soil Type: Loam

Planted: May 9th
 Harvested: September 18th

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

Date	Pest Control	Rate/Acre
At Plant	Counter 20G	7.5lb/ac
12 May	PRE - ethofumasate + S-metolachlor	32oz + 8oz
23 May	glyphosate + ethofumasate	32oz + 4oz
6 June	glyphosate + ethofumasate + Outlook	32oz + 4oz + 12oz
16 June	Asana XL	9.6
21 June	Outlook	12oz

Date	Cercospora Control	Rate/Acre
29 June	EBDC	52oz
12 July	Proline + EBDC	5.7oz + 52oz
24 July	EBDC + Badge SC	52oz + 32oz
3 August	TPTH + EBDC	8oz + 52oz
15 August	EBDC + Badge SC	52oz + 32oz
28 August	Inspire + EBDC	7oz + 52oz

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

Comments: Planted into moisture, excessive moisture with a couple rows, this site emerged early. Through the summer Rhizoctonia was present and did effect stand. This location was very dry through most of the growing season which helped give elevated RST values. Weed and insect control was good. Overall location had the highest RSA values but the most variable TONS values.



2023 Minn-Dak Official Variety Trial

Commercial & Semi-Commercial Entries

Norcross, MN

Entry Code	Commercial Entries	Emerg. %	Bolter #/A	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
9	ACH 011	52.0	0	0.8	19.68	91.17	25.9	342.7	97.6	8,874	85.6
12	ACH 125	57.0	0	0.8	20.60	92.01	30.2	363.5	103.5	10,996	106.1
10	ACH 166	53.1	0	1.1	20.58	92.44	29.1	365.3	104.0	10,613	102.4
3	ACH 290	56.9	0	0.8	19.50	91.26	31.3	339.7	96.7	10,625	102.5
2	* ACH 973	62.2	0	1.1	19.92	91.82	32.9	350.2	99.7	11,500	111.0
8	* Beta 7068	56.8	0	0.7	19.54	90.93	29.0	339.0	96.5	9,836	94.9
7	Beta 7170	50.4	0	0.7	19.31	91.44	30.6	337.3	96.0	10,289	99.3
6	Beta 7181	58.0	0	1.3	19.86	92.28	29.4	351.3	100.0	10,314	99.5
11	Beta 7231	59.2	0	0.9	20.53	92.36	30.5	363.9	103.6	11,058	106.7
5	* Beta 7845	54.3	0	1.0	20.62	90.83	27.0	357.9	101.9	9,648	93.1
4	* Hilleshög 2325	48.7	0	1.0	20.20	91.84	29.9	355.3	101.2	10,608	102.4
1	* Hilleshög 2374	50.5	0	0.8	19.89	91.64	28.6	348.6	99.3	9,970	96.2
Experiment Mean		54.9	0.0	0.9	20.02	91.67	29.5	351.2		10,361	
Coeff. of Var. (%)		11.76		32.16	2.29	0.66	8.18	2.48		8.44	
LSD (0.10)		6.2		0.3	0.44	0.58	2.3	8.4		845	
LSD (0.05)		7.5		0.3	0.53	0.70	2.8	10.1		1,012	

2023 Minn-Dak Official Variety Trial

1st Year Introductory Entries

Norcross, MN

Entry Code	Introductory Entries	Emerg. %	Bolter #/A	Tare %	Sugar %	Purity %	Yield TPA	RST		RSA	
								lbs	% Mean	lbs	% Mean
18	ACH 304	53.2	0	1.0	20.27	91.92	26.2	357.0	98.9	9,325	101.6
22	ACH 335	56.8	0	1.0	20.52	92.25	25.9	363.3	100.6	9,408	102.5
19	ACH 363	54.8	0	0.9	20.33	90.89	22.3	352.9	97.7	7,868	85.7
21	ACH 370	55.8	0	0.9	21.22	92.00	28.0	374.9	103.8	10,476	114.1
20	ACH 392	44.3	0	0.7	20.47	91.53	25.9	358.7	99.3	9,271	101.0
17	Beta 7308	58.2	0	0.6	20.67	91.83	26.9	364.0	100.8	9,812	106.9
16	Beta 7344	61.4	0	0.9	20.83	91.33	27.9	364.3	100.9	10,164	110.7
13	Beta 7353	58.3	0	0.9	21.05	91.59	23.8	369.4	102.3	8,797	95.8
15	Beta 7397	55.4	0	1.1	20.51	91.95	27.0	361.5	100.1	9,742	106.1
14	Hilleshög 2481	37.5	0	0.7	19.87	90.93	20.1	345.0	95.5	6,921	75.4
Experiment Mean		53.6	0.0	0.9	20.57	91.62	25.4	361.1		9,178	
Coeff. of Var. (%)		16.48		37.84	1.86	0.65	12.93	2.07		13.01	
LSD (0.10)		8.6		NS	0.37	0.58	3.2	7.2		1,158	
LSD (0.05)		10.3		NS	0.45	0.69	3.8	8.7		1,389	

% Mean is percent of Experiment Mean

** Established Variety*

Foxhome - CLS Nursery

October Final Draft

46.28959, -96.34287

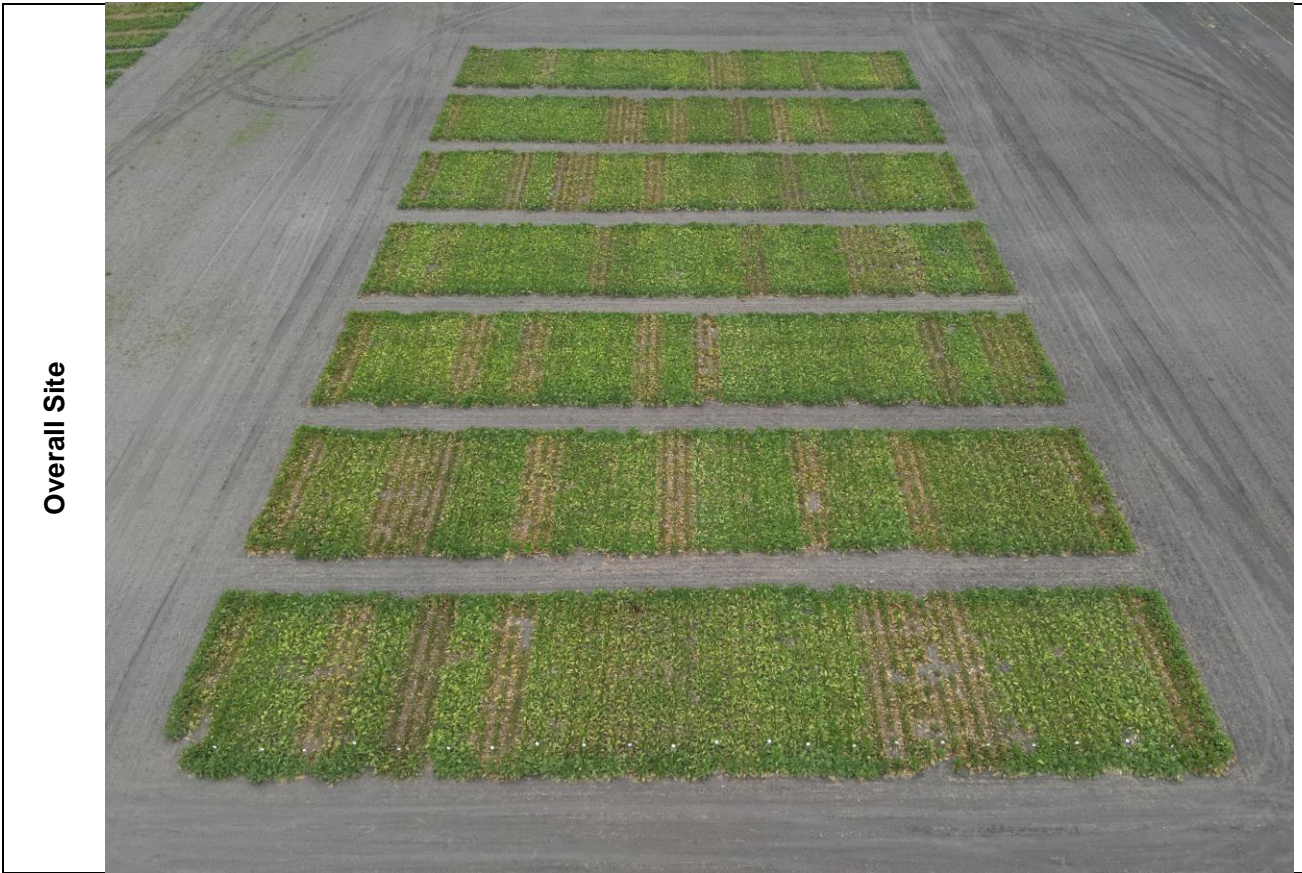
Cooperator: Etzler Farms
 Soil Type: Clay loam

Planted: May 5th
 Terminated: September 1st

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

Date	Pest Control	Rate/Acre	Date	Cercospora Rating	Avg Score	Disease	Incidence & Severity
At Plant	Counter 20G	7.5lb/ac	12 July	Inoculated	-	APH	Not Observed
12 May	PRE - ethofumasate + S-metolachlor	32oz + 8oz	10 August	1st Rating	2.75	CLS	High / High
23 May	glyphosate + ethofumasate + Fusilade + Stinger HL	32oz + 4oz + 8oz + 2.4oz	14 August	2nd Rating	2.89	RHC	Low / Low
6 June	glyphosate + ethofumasate + Outlook	32oz + 4oz + 12oz	18 August	3rd Rating	3.12	FUS	Not Observed
16 June	Asana XL	9.6	23 August	4th Rating	3.83	RZM	Not Observed
21 June	glyphosate + ethofumasate + Outlook	32oz + 4oz + 12oz	28 August	5th Rating	4.39		
			1 September	6th Rating	5.60	A	Overall Score

Comments: Our most aesthetically pleasing location. Stand was excellent throughout the year along with weed and insect control. NDSU inoculated this trial on July 12th. Disease onset/pressure was somewhat delayed, but exploded in early August and lead to an excellent nursery with good variety separations.



Overall Site

Shed 8 - RHC Nursery

October Final Draft

46.3144, -96.6165

Cooperator: MDFC
Soil Type: Clay loam

Planted: May 24th
Inoculated: July 10th & Aug 9th
Scored: September 16th

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

Date	Pest Control	Rate/Acre	Date	Cercospora Control	Rate/Acre	Disease	Incidence & Severity
At Plant	Counter 20G	7.5lb/ac	-	EBDC	52oz	APH	Not Observed
25 May	PRE - ethofumasate + S-metolachlor	32oz + 8oz	12 July	Proline + EBDC	5.7oz + 52oz	CLS	Low / Low
15 June	glyphosate + ethofumasate	32oz + 4oz	24 July	EBDC + Badge SC	52oz + 32oz	RHC	High / Mod
11 July	glyphosate + etho + Outlook	32oz + 4oz + 21oz	3 August	TPTH + EBDC	8oz + 52oz	FUS	Not Observed
			15 August	EBDC + Badge SC	52oz + 32oz	RZM	Not Observed
			29 August	Inspire + EBDC	7oz + 52oz		
						C+	Overall Score

Comments: This site had a good, friable, moist seedbed, but unseasonably hot temperatures shortly after planting challenged the stand early. Multiple inoculations were applied to maximize disease pressure. In spite of a lack-luster stand and canopy appearance, below ground symptoms were decent with a raw average root score of 4.23, which is typical for this nursery.



2023 Minn-Dak Official Variety Trial
Cercospora Ratings
Betaseed (Randolph, MN) & MDFC (Foxhome, MN)

Entry Code	Commercial & Introductory Entries	Unadjusted				Adjusted				
		Randolph 5 Dates	Foxhome 6 Dates	Randolph 5 Dates	Foxhome 6 Dates	2023 2 Loc.	2022 2 Loc.	2021 2 Loc.	2 Yr.	3 Yr.
9	ACH 011	2.28	3.03	2.85	2.06	2.46	1.93	2.02	2.20	2.14
12	ACH 125	2.05	3.18	2.57	2.17	2.37	1.67	1.64	2.02	1.89
10	ACH 166	1.92	3.10	2.40	2.11	2.26	1.65	2.08	1.96	2.00
3	ACH 290	2.42	3.27	3.03	2.23	2.63	2.10	---	2.36	---
2	* ACH 973	1.97	2.66	2.47	1.81	2.14	1.58	1.88	1.86	1.86
8	* Beta 7068	2.10	3.17	2.63	2.16	2.39	2.15	1.97	2.27	2.17
7	Beta 7170	2.40	3.43	3.00	2.34	2.67	2.16	2.18	2.41	2.34
6	Beta 7181	2.15	3.67	2.69	2.50	2.60	2.10	2.27	2.35	2.32
11	Beta 7231	1.82	2.83	2.28	1.93	2.10	1.53	---	1.82	---
5	* Beta 7845	2.42	5.67	3.03	3.86	3.45	3.69	3.92	3.57	3.69
4	* Hilleshög 2325	2.78	5.57	3.48	3.79	3.64	4.12	3.64	3.88	3.80
1	* Hilleshög 2374	2.98	5.44	3.73	3.71	3.72	4.12	3.71	3.92	3.85
18	ACH 304	1.98	2.93	2.48	2.00	2.24	---	---	---	---
22	ACH 335	1.65	2.97	2.07	2.02	2.04	---	---	---	---
19	ACH 363	1.57	3.03	1.97	2.06	2.01	---	---	---	---
21	ACH 370	1.63	2.22	2.04	1.51	1.78	---	---	---	---
20	ACH 392	2.75	6.19	3.44	4.22	3.83	---	---	---	---
17	Beta 7308	2.57	6.01	3.22	4.09	3.66	---	---	---	---
16	Beta 7344	1.68	3.12	2.10	2.13	2.11	---	---	---	---
13	Beta 7353	1.73	2.49	2.17	1.70	1.93	---	---	---	---
15	Beta 7397	1.92	3.10	2.40	2.11	2.26	---	---	---	---
14	Hilleshög 2481	3.28	5.74	4.11	3.91	4.01	---	---	---	---
Established Mean		2.45	4.50	3.07	3.07	3.07	3.13	3.02	3.10	3.07
Exp/Trial Mean		2.18	3.76	2.73	2.56	2.65				
CV (%)		10.27	13.38							
LSD (P=0.05)		0.27	0.58							
Adjustment Factor				1.25181	0.68124					

* 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, 2019-2022]

Ratings x Adjustment Factor = Adjusted Rating

Average ratings based upon multiple rating dates and individuals

2023 Minn-Dak Official Variety Trial
Rhizoctonia Ratings
BSDF (Frankenmuth, MI) & MDFC (Wahpeton, ND)

Entry Code	Commercial & Introductory Entries	Unadjusted		Adjusted						
		BSDF	MDFC	BSDF	MDFC	2023 2 Loc.	2022 2 Loc.	2021 2 Loc.	2 Yr.	3 Yr.
9	ACH 011	4.87	3.47	3.70	2.88	3.29	3.95	3.79	3.62	3.68
12	ACH 125	4.79	4.13	3.64	3.43	3.53	4.35	3.85	3.94	3.91
10	ACH 166	5.18	4.07	3.93	3.38	3.66	3.72	3.12	3.69	3.50
3	ACH 290	4.84	3.13	3.68	2.60	3.14	4.01	---	3.57	---
2	* ACH 973	4.88	4.80	3.71	3.98	3.84	4.61	3.73	4.23	4.06
8	* Beta 7068	4.70	4.33	3.57	3.59	3.58	4.15	3.51	3.86	3.74
7	Beta 7170	4.98	3.87	3.78	3.21	3.50	3.62	3.19	3.56	3.43
6	Beta 7181	5.09	4.80	3.87	3.98	3.92	4.29	4.53	4.11	4.25
11	Beta 7231	4.97	4.27	3.77	3.54	3.66	4.10	---	3.88	---
5	* Beta 7845	5.39	4.27	4.09	3.54	3.82	3.52	3.67	3.67	3.67
4	* Hilleshög 2325	5.32	5.00	4.04	4.15	4.09	3.99	3.69	4.04	3.92
1	* Hilleshög 2374	4.84	4.60	3.68	3.82	3.75	4.62	3.85	4.18	4.07
18	ACH 304	4.99	4.07	3.79	3.38	3.58	---	---	---	---
22	ACH 335	4.77	3.93	3.62	3.26	3.44	---	---	---	---
19	ACH 363	4.68	4.33	3.55	3.59	3.57	---	---	---	---
21	ACH 370	4.73	4.20	3.59	3.48	3.54	---	---	---	---
20	ACH 392	4.69	3.80	3.56	3.15	3.36	---	---	---	---
17	Beta 7308	4.73	3.80	3.59	3.15	3.37	---	---	---	---
16	Beta 7344	4.63	4.27	3.52	3.54	3.53	---	---	---	---
13	Beta 7353	5.09	4.20	3.87	3.48	3.68	---	---	---	---
15	Beta 7397	4.53	4.53	3.44	3.76	3.60	---	---	---	---
14	Hilleshög 2481	4.54	5.08	3.45	4.21	3.83	---	---	---	---
Established Mean		5.03	4.60	3.82	3.82	3.82	4.18	3.69	4.00	3.89
Exp/Trial Mean		4.87	4.23	3.70	3.51	3.60				
CV (%)		14.06	17.18							
LSD (P=0.05)		NS	0.91							
Adjustment Factor				0.75939	0.82972					

* 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, 2019-2022]

Ratings x Adjustment Factor = Adjusted Rating

Average ratings based upon multiple individual ratings

2023 Minn-Dak Official Variety Trial
Aphanomyces Ratings
Betaseed (Shakopee, MN) & SMBSC (Renville, MN)

Entry Code	Commercial & Introductory Entries	Unadjusted				Adjusted				
		Shakopee	Renville	Shakopee	Renville	2023 2 Loc.	2022 2 Loc.	2021 1 Loc.	2 Yr.	3 Yr.
9	ACH 011	3.12	2.73	3.88	3.74	3.81	3.98	5.42	3.90	4.40
12	ACH 125	2.58	2.40	3.21	3.29	3.25	3.42	3.76	3.34	3.48
10	ACH 166	2.63	2.77	3.27	3.79	3.53	3.49	4.10	3.51	3.71
3	ACH 290	3.38	2.77	4.21	3.79	4.00	2.91	---	3.45	---
2	* ACH 973	2.87	2.40	3.57	3.29	3.43	3.16	4.22	3.30	3.61
8	* Beta 7068	3.15	2.96	3.92	4.05	3.99	3.06	4.16	3.53	3.74
7	Beta 7170	2.90	2.65	3.61	3.63	3.62	3.20	3.91	3.41	3.58
6	Beta 7181	2.95	3.44	3.67	4.71	4.19	4.24	4.38	4.22	4.27
11	Beta 7231	3.27	2.52	4.07	3.45	3.76	3.29	---	3.53	---
5	* Beta 7845	2.33	2.35	2.90	3.22	3.06	3.26	3.54	3.16	3.29
4	* Hilleshög 2325	3.02	2.81	3.76	3.85	3.80	3.63	3.68	3.72	3.71
1	* Hilleshög 2374	2.98	2.52	3.71	3.45	3.58	3.64	3.97	3.61	3.73
18	ACH 304	2.63	3.48	3.27	4.77	4.02	---	---	---	---
22	ACH 335	2.90	2.81	3.61	3.85	3.73	---	---	---	---
19	ACH 363	2.63	1.90	3.27	2.60	2.94	---	---	---	---
21	ACH 370	3.07	2.96	3.82	4.05	3.94	---	---	---	---
20	ACH 392	2.75	2.27	3.42	3.11	3.27	---	---	---	---
17	Beta 7308	2.55	2.33	3.17	3.19	3.18	---	---	---	---
16	Beta 7344	2.45	2.19	3.05	3.00	3.02	---	---	---	---
13	Beta 7353	2.93	2.58	3.65	3.53	3.59	---	---	---	---
15	Beta 7397	2.88	3.69	3.59	5.05	4.32	---	---	---	---
14	Hilleshög 2481	3.67	3.31	4.57	4.53	4.55	---	---	---	---
Established Mean		2.87	2.61	3.57	3.57	3.57	3.35	3.92	3.46	3.61
Exp/Trial Mean		2.89	2.72	3.60	3.73	3.66				
CV (%)		15.93	18.63							
LSD (P=0.05)		0.55	0.74							
Adjustment Factor				1.24480	1.36985					

* 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, 2019-2022]

Ratings x Adjustment Factor = Adjusted Rating

Average ratings based upon multiple individual ratings

2023 Minn-Dak Official Variety Trial
Fusarium Ratings
ACSC (Sabin, MN) & Magno Seed (Moorhead, MN)

Entry Code	Commercial & Introductory Entries	Unadjusted						
		Sabin Early	Moorhead	2023 2 Loc.	2022 2 Loc.	2021 1 Loc.	2 Yr.	3 Yr.
9	ACH 011	4.51	2.15	3.33	3.53	2.50	3.43	3.12
12	ACH 125	4.61	1.87	3.24	3.20	1.25	3.22	2.56
10	ACH 166	4.14	2.72	3.43	3.49	2.25	3.46	3.06
3	ACH 290	4.58	2.50	3.54	3.54	---	3.54	---
2	* ACH 973	3.91	1.85	2.88	3.64	3.08	3.26	3.20
8	* Beta 7068	4.30	2.90	3.60	3.29	2.08	3.45	2.99
7	Beta 7170	5.02	2.46	3.74	3.58	3.17	3.66	3.50
6	Beta 7181	2.53	1.89	2.21	2.15	1.25	2.18	1.87
11	Beta 7231	4.58	2.28	3.43	3.05	---	3.24	---
5	* Beta 7845	4.17	3.01	3.59	3.59	4.42	3.59	3.87
4	* Hilleshög 2325	6.37	6.26	6.32	4.83	7.67	5.57	6.27
1	* Hilleshög 2374	5.52	8.17	6.85	5.63	8.08	6.24	6.85
18	ACH 304	3.35	1.35	2.35	---	---	---	---
22	ACH 335	4.66	1.98	3.32	---	---	---	---
19	ACH 363	4.71	1.31	3.01	---	---	---	---
21	ACH 370	4.87	3.28	4.08	---	---	---	---
20	ACH 392	3.85	2.02	2.94	---	---	---	---
17	Beta 7308	4.11	2.32	3.22	---	---	---	---
16	Beta 7344	4.31	1.46	2.89	---	---	---	---
13	Beta 7353	4.98	2.19	3.59	---	---	---	---
15	Beta 7397	3.23	1.38	2.31	---	---	---	---
14	Hilleshög 2481	5.61	6.30	5.96	---	---	---	---
Established Mean		4.85	4.44	4.65	4.20	5.07	4.42	4.64
Trial Mean		4.45	2.80	3.63				
CV (%)		12.18	33.34					
LSD (P=0.05)		0.86	1.54					
Adjustment Factor								

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
<i>(INCHES)</i>	<i>(ACRES)</i>	<i>(ACRES)</i>
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

2024 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 2M / 4M / S2 4M / S2</p>	<p>\$18 \$42 \$60</p>

Note: Early Order Discounts Applied When Available