



2020 Minn-Dak Seed Approval List

Fully Approved Varieties:

- ACH 012
- ACH 228 (Aph)
- ACH 659
- ACH 765
- ACH 771 (Rzc)
- Beta 7099
- Beta 7727 (Aph)
- Beta 7741 (Aph/CLS)
- Beta 7748 (CLS)
- Beta 7755 (Rzc)
- SES/VdH 655
- SES/VdH 762 (CLS)

Conditionally Approved Varieties:

- None

Test Market Varieties:

- Beta 7845 (Aph/CLS)
- SES/VdH 788 (Rzc)

Specialty Varieties:

- None

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

- ACH 830
- Hilleshög 4302 (Rzc)

MDFC Variety Approval Calculations - 2019

* Approved Calculation Mean:

2019 - 7 varieties

2018 - 7 varieties

2017 - 8 varieties

	Sugar Content (%)			Root Yield (Tons per Acre)			Recoverable Sugar / Ton (lbs)			Recoverable Sugar / Acre (lbs)			RST + RSA % App	
	2019	3 Yr Mean	3 Yr % App	2019	3 Yr Mean	3 Yr % App	2019	3 Yr Mean	3 Yr % App	2019	3 Yr Mean	3 Yr % App		
Established Varieties	ACH 012	16.25	16.73	101.0	25.1	26.9	101.8	277.2	284.9	100.3	6,964	7,639	101.9	202.2
	ACH 228	16.57	17.17	103.7	24.6	25.1	95.2	286.0	295.8	104.2	7,006	7,424	99.1	203.2
	ACH 659	16.31	16.90	102.0	24.8	26.8	101.4	277.3	288.2	101.5	6,858	7,713	102.9	204.4
	Beta 7099	16.12	16.75	101.1	24.4	26.8	101.5	274.6	286.0	100.7	6,680	7,650	102.1	202.8
	Hilleshög 4302	15.88	16.44	99.3	24.0	25.0	94.7	273.4	283.6	99.9	6,571	7,078	94.4	194.3
	SES/VdH 655	15.82	16.61	100.3	23.3	27.2	103.0	270.8	286.7	100.9	6,329	7,814	104.3	205.2
	SES/VdH 762	15.72	16.54	99.9	25.2	27.5	104.3	270.1	285.5	100.5	6,837	7,871	105.0	205.6
Established Variety Mean	16.09	16.73		24.5	26.5		275.6	287.2		6,749	7,598			
Conditional & Full Market Candidates	ACH 765	15.78	16.69	100.8	25.9	27.0	102.5	270.4	287.7	101.3	7,015	7,753	103.5	204.7
	ACH 771	16.04	16.64	100.5	27.0	27.7	105.1	273.1	284.6	100.2	7,355	7,833	104.5	204.7
	ACH 830	15.00	15.77	95.3	27.0	28.5	107.8	256.5	270.8	95.4	6,924	7,692	102.6	198.0
	Beta 7727	16.00	16.92	102.2	26.3	27.2	103.0	273.9	291.1	102.5	7,200	7,852	104.8	207.3
	Beta 7741	15.90	16.79	101.4	27.0	27.1	102.5	273.2	289.8	102.1	7,342	7,826	104.4	206.5
	Beta 7748	16.24	17.09	103.2	26.2	26.8	101.5	276.1	292.0	102.8	7,192	7,784	103.9	206.7
	Beta 7755	16.28	17.05	103.0	26.5	27.2	103.1	278.2	292.9	103.1	7,375	7,926	105.8	208.9
Conditional & Full Market Candidate Mean	15.89	16.71		26.6	27.4		271.6	287.0		7,200	7,810			
3 Yr. Approval Calculation Mean*			16.56			26.4			284.0				7,494	
Test Market Candidates	Beta 7845	16.48	17.38	104.3	30.2	28.1	109.3	281.1	300.4	104.3	8,507	8,382	113.3	217.6
	Hilleshög 2228	15.64	16.57	99.5	23.1	25.0	97.3	264.5	285.2	99.0	6,185	7,192	97.2	196.2
	Maribo 806	15.46	16.64	99.9	21.2	22.5	87.6	260.1	285.2	99.0	5,618	6,493	87.8	186.8
	Seedex 1972	15.73	16.58	100.2	26.3	27.8	105.3	268.9	286.9	101.0	7,150	7,983	106.5	207.5
	Seedex 1973	15.97	16.85	101.8	24.3	26.7	101.1	273.7	291.8	102.7	6,727	7,790	103.9	206.7
	Seedex 1985	15.91	16.86	101.2	25.8	26.4	102.5	273.1	293.8	102.0	7,147	7,774	105.1	207.1
	Seedex 1986	16.01	16.98	101.9	25.1	26.3	102.4	275.8	296.7	103.0	6,969	7,840	106.0	209.0
	SES/VdH 788	15.97	16.98	101.9	25.8	26.8	104.1	274.0	296.6	102.9	7,151	7,963	107.6	210.6
	Test Market Candidate Mean	15.90	16.86		25.2	26.2		271.4	292.1		6,932	7,677		
	2 Yr. Approval Calculation Mean*			16.66			25.7			288.1				7,399

^a 3 Yr Mean; 3 Yr % App

MDFC Variety Approval Calculations - 2019

*Approved Calculation Mean:

2019 - 7 varieties

2018 - 7 varieties

2017 - 8 varieties

		Years of Testing	Field Emergence %		Rhizoctonia Root Ratings			Aphanomyces Root Ratings			Cercospora Leaf Spot Ratings		
			2019	3 Yr Mean	2019	2 Yr Mean	3 Yr Mean	2019	2 Yr Mean	3 Yr Mean	2019	2 Yr Mean	3 Yr Mean
Established Varieties	ACH 012	10	74.3	71.6	4.02	3.84	3.88	4.38	4.14	4.20	4.36	4.51	4.44
	ACH 228	8	74.2	71.6	4.30	4.52	4.28	2.79	3.09	2.93	4.43	4.37	4.48
	ACH 659	4	80.0	74.8	3.98	3.89	3.99	3.85	4.14	4.09	3.96	3.98	3.89
	Beta 7099	10	75.5	75.4	3.85	3.87	3.94	4.06	3.97	3.87	4.37	4.38	4.38
	Hilleshög 4302	6	70.6	67.9	3.83	3.69	3.75	4.56	4.29	4.58	3.89	4.03	4.10
	SES/VdH 655	5	73.5	69.9	4.00	4.13	4.05	3.64	3.88	4.08	3.22	3.83	3.95
	SES/VdH 762	4	74.7	68.7	4.12	4.11	4.03	4.01	3.81	3.95	3.83	4.07	3.85
	Established Variety Mean			74.7	71.4	4.01	4.01	3.99	3.90	3.90	3.96	4.01	4.17
Conditional & Full Market Candidates	ACH 765	3	78.6	75.9	4.28	4.27	4.19	3.87	3.60	3.72	4.12	4.13	4.05
	ACH 771	3	77.0	72.1	3.65	3.41	3.57	3.96	3.86	3.95	4.25	4.21	4.16
	ACH 830	12	78.5	74.1	4.21	3.86	3.70	4.95	4.40	4.35	4.65	4.87	5.03
	Beta 7727	3	70.1	70.0	3.86	3.94	3.82	2.92	3.04	2.87	4.19	4.21	4.19
	Beta 7741	3	78.9	73.3	4.04	3.93	4.01	3.24	3.28	3.17	3.91	3.87	3.77
	Beta 7748	3	79.1	74.5	3.85	3.64	3.79	3.92	3.85	3.80	3.71	3.78	3.62
	Beta 7755	3	68.8	71.3	3.89	3.43	3.58	4.14	4.01	3.93	4.30	4.34	4.23
	Conditional & Full Market Candidate Mean			75.9	73.0	3.97	3.78	3.81	3.86	3.72	3.69	4.16	4.20
Test Market Candidates	Beta 7845	2	78.5	73.9	4.12	3.80		2.97	2.98		3.56	3.78	
	Hilleshög 2228	2	80.0	71.0	5.30	5.12		4.35	3.98		3.52	3.85	
	Maribo 806	2	73.5	64.5	5.03	4.60		5.26	4.57		3.40	3.40	
	Seedex 1972	3	73.9	71.9	3.56	3.95		4.73	4.37		4.36	4.62	
	Seedex 1973	3	60.2	66.9	3.94	4.00		4.83	4.38		3.95	4.44	
	Seedex 1985	2	63.5	63.2	3.89	3.84		4.12	3.89		4.25	4.54	
	Seedex 1986	2	70.7	69.4	3.96	4.09		4.37	4.10		3.94	4.21	
	SES/VdH 788	2	71.4	69.0	3.54	3.73		4.23	3.83		4.14	4.39	
	Test Market Candidate Mean			71.5	68.7	4.17	4.14		4.36	4.01		3.89	4.15

- Lower numbers indicate better disease resistance.

^a 3 Yr Mean

2019 First Year Agronomic

Introductory Varieties	Years of Testing	Percent Sugar		Yield as Tons/Acre		Recoverable Sugar/Ton		Recoverable Sugar/Acre		RST + RSA % of Established
		2019	% of	2019	% of	2019	% of	2019	% of	
			Established		Established		Established		Established	
ACH 910	1	16.06	99.8	26.0	106.0	276.2	100.2	7,179	106.4	206.6
ACH 936	1	15.78	98.1	29.8	121.7	269.0	97.6	8,046	119.2	216.8
ACH 949	1	16.28	101.2	23.0	93.9	278.3	101.0	6,466	95.8	196.8
ACH 950	1	15.97	99.3	29.3	119.7	272.0	98.7	8,008	118.7	217.3
ACH 968	1	15.58	96.9	25.1	102.5	265.6	96.4	6,764	100.2	196.6
ACH 970	1	16.42	102.0	27.9	114.0	277.7	100.7	7,756	114.9	215.7
ACH 973	1	15.63	97.2	27.4	112.0	267.9	97.2	7,388	109.5	206.7
Beta 7901	1	15.62	97.1	29.5	120.4	268.5	97.4	7,938	117.6	215.1
Beta 7917	1	15.76	98.0	26.7	109.1	269.3	97.7	7,249	107.4	205.1
Beta 7923	1	15.73	97.7	27.7	113.1	265.4	96.3	7,384	109.4	205.7
Beta 7931	1	16.23	100.9	28.1	114.5	278.9	101.2	7,826	116.0	217.2
Beta 7962	1	15.85	98.5	27.1	110.5	271.8	98.6	7,436	110.2	208.8
Beta 7974	1	15.77	98.0	28.6	116.9	269.9	97.9	7,779	115.3	213.2
Beta 7996	1	15.62	97.0	27.6	112.7	266.7	96.8	7,411	109.8	206.6
Hilleshög 2321	1	16.06	99.8	23.9	97.4	275.2	99.8	6,623	98.1	198.0
Hilleshög 2322	1	15.49	96.2	21.7	88.6	261.4	94.8	5,723	84.8	179.6
Hilleshög 2323	1	15.63	97.1	24.7	100.7	264.3	95.9	6,571	97.4	193.3
Hilleshög 2324	1	15.61	97.0	26.3	107.3	268.3	97.3	7,073	104.8	202.1
Hilleshög 2325	1	15.77	98.0	24.7	101.0	268.4	97.4	6,745	99.9	197.3
Maribo 904	1	15.77	98.0	23.5	95.9	265.4	96.3	6,276	93.0	189.3
Maribo 905	1	16.10	100.0	25.2	102.7	272.3	98.8	6,887	102.0	200.8
Maribo 906	1	15.16	94.2	21.0	85.6	257.7	93.5	5,634	83.5	177.0
SES/VdH 691	1	15.88	98.7	26.4	107.7	270.3	98.1	7,185	106.5	204.6
SES/VdH 692	1	15.56	96.7	25.4	103.8	264.3	95.9	6,828	101.2	197.1
SES/VdH 694	1	15.70	97.6	24.8	101.4	268.0	97.2	6,764	100.2	197.5
SES/VdH 696	1	16.20	100.7	27.6	112.8	277.6	100.7	7,683	113.8	214.6
SES/VdH 697	1	15.95	99.1	25.5	104.0	272.2	98.8	7,004	103.8	202.6
1-Year Mean		15.82		26.1		269.7		7,097		
2019 Established Variety Means		16.09		24.5		275.6		6,749		

2019 First Year Disease

Introductory Varieties	Years of Testing	Emergence (%)		Rhizoctonia Root Rating		Aphanomyces Root Rating		Cercospora Leaf Spot Rating	
		% of		% of		% of		% of	
		2019	Established	2019	Established	2019	Established	2019	Established
ACH 910	1	78.1	104.6	4.48	89.5	3.63	107.6	3.53	113.5
ACH 936	1	84.6	113.3	4.43	90.6	3.70	105.5	3.93	102.0
ACH 949	1	63.7	85.3	3.89	103.0	3.69	105.7	3.44	116.6
ACH 950	1	81.3	108.8	3.94	101.7	3.69	105.6	3.34	120.2
ACH 968	1	72.9	97.6	3.82	105.1	4.94	78.9	2.72	147.6
ACH 970	1	81.5	109.1	4.65	86.3	3.12	125.1	3.65	109.9
ACH 973	1	74.4	99.6	3.91	102.5	3.99	97.9	1.65	243.5
Beta 7901	1	76.5	102.4	3.46	115.8	3.93	99.3	4.44	90.3
Beta 7917	1	59.3	79.4	4.38	91.5	3.57	109.4	3.81	105.3
Beta 7923	1	80.6	107.8	5.41	74.1	3.95	98.6	3.69	108.8
Beta 7931	1	73.7	98.7	4.33	92.7	3.55	110.0	3.93	102.1
Beta 7962	1	70.0	93.7	4.02	99.8	4.85	80.4	3.62	110.7
Beta 7974	1	71.9	96.2	3.47	115.7	3.47	112.5	2.52	159.2
Beta 7996	1	69.9	93.5	4.61	87.1	4.54	85.9	1.90	211.3
Hilleshög 2321	1	59.8	80.1	3.90	102.7	4.55	85.8	3.61	111.0
Hilleshög 2322	1	78.2	104.7	4.74	84.6	5.26	74.1	3.65	109.9
Hilleshög 2323	1	76.9	103.0	4.98	80.6	4.45	87.6	4.80	83.6
Hilleshög 2324	1	76.3	102.1	3.91	102.5	4.17	93.6	5.17	77.6
Hilleshög 2325	1	61.6	82.5	3.40	118.0	3.94	99.0	3.73	107.4
Maribo 904	1	75.6	101.2	4.99	80.4	4.29	90.8	3.86	103.9
Maribo 905	1	66.9	89.6	3.75	106.9	4.31	90.4	3.19	125.8
Maribo 906	1	69.7	93.3	4.07	98.5	5.68	68.7	3.87	103.7
SES/VdH 691	1	67.0	89.7	4.07	98.6	3.77	103.5	3.70	108.4
SES/VdH 692	1	68.2	91.3	4.12	97.3	3.58	108.8	4.28	93.7
SES/VdH 694	1	77.9	104.2	3.70	108.3	4.70	83.0	4.08	98.2
SES/VdH 696	1	74.0	99.0	4.18	95.9	3.15	123.7	4.68	85.6
SES/VdH 697	1	80.3	107.5	4.52	88.6	4.52	86.4	3.90	102.9
1-Year Mean		73.0		4.19		4.11		3.65	
2019 Established Variety Means		74.7		4.01		3.90		4.01	

2019 Minn-Dak Official Variety Trial
Foxhome, MN

Commercial Trial	Entry Code	Emerg. (%)	Bolter (#/A)	Tare (%)	Sugar (%)	Purity (%)	Yield (TPA)	RST (lbs)	RST (% Mean)	RSA (lbs)	RSA (% Mean)
ACH 012	5	82.3	0	3.80	16.64	89.81	29.88	282.2	102.6	8,424	105.8
ACH 228	6	86.2	0	3.45	16.69	90.38	25.52	285.6	103.9	7,291	91.6
ACH 659	13	90.6	0	3.65	16.54	89.78	27.99	280.4	101.9	7,854	98.7
ACH 765	8	84.1	0	2.76	16.03	90.49	27.43	274.2	99.7	7,528	94.6
ACH 771	4	84.4	0	3.45	16.04	89.82	31.28	271.8	98.8	8,500	106.8
ACH 830	10	84.9	0	3.23	15.26	90.22	33.05	259.4	94.3	8,577	107.8
Beta 7099	3	84.6	0	3.22	16.32	89.72	27.75	276.2	100.4	7,662	96.3
Beta 7727	7	81.3	0	3.33	16.24	90.22	27.00	276.6	100.6	7,444	93.5
Beta 7741	12	86.7	0	2.66	15.71	90.15	28.49	267.2	97.2	7,622	95.8
Beta 7748	14	85.9	0	4.05	16.40	89.74	29.71	277.7	101.0	8,258	103.7
Beta 7755	1	76.6	0	3.35	16.69	90.04	30.03	284.2	103.3	8,530	107.2
Hilleshög 4302	2	84.4	0	3.20	16.00	90.54	29.30	273.9	99.6	8,022	100.8
SES/vdH 655	9	80.7	0	4.02	15.93	90.63	29.08	273.1	99.3	7,956	100.0
SES/vdH 762	11	82.8	0	3.53	15.70	90.35	29.01	267.8	97.4	7,761	97.5
Comm. Trial Mean		83.97		3.41	16.16	90.13	28.96	275.02		7,959	
Coeff. of Var. (%)		6.23		18.75	2.00	0.76	7.90	2.60		8.27	
LSD (0.05)		6.03		0.74	0.37	0.80	2.64	8.24		759.03	
LSD (0.10)		5.04		0.62	0.31	0.66	2.20	6.89		634.18	

2019 Minn-Dak Official Variety Trial
Norcross, MN

Commercial Trial	Entry Code	Emerg. (%)	Bolter (#/A)	Tare (%)	Sugar (%)	Purity (%)	Yield (TPA)	RST (lbs)	RST (% Mean)	RSA (lbs)	RSA (% Mean)
ACH 012	5	65.9	0	2.17	15.53	90.49	19.16	265.3	100.0	5,143	90.7
ACH 228	6	65.4	0	2.05	16.15	91.52	22.02	280.5	105.7	6,187	109.1
ACH 659	13	65.6	0	2.07	15.90	90.45	21.53	271.8	102.5	5,885	103.8
ACH 765	8	70.8	0	1.78	15.20	90.95	23.17	261.2	98.5	6,052	106.7
ACH 771	4	72.4	0	2.28	15.52	90.59	24.47	265.4	100.0	6,494	114.5
ACH 830	10	74.2	0	1.66	14.31	90.75	21.09	244.5	92.2	5,157	91.0
Beta 7099	3	66.1	0	1.87	15.60	90.66	18.11	267.3	100.8	4,883	86.1
Beta 7727	7	62.5	0	2.00	15.77	91.10	25.45	272.0	102.5	6,938	122.4
Beta 7741	12	72.9	0	1.69	15.50	91.23	24.38	267.6	100.9	6,520	115.0
Beta 7748	14	67.7	0	2.57	16.05	90.52	23.60	274.8	103.6	6,500	114.6
Beta 7755	1	56.0	0	1.81	15.60	90.07	22.24	264.8	99.8	5,913	104.3
Hilleshög 4302	2	63.0	0	1.79	15.36	90.97	16.85	264.1	99.6	4,502	79.4
SES/vdH 655	9	64.1	0	1.95	15.28	90.23	16.79	260.0	98.0	4,449	78.5
SES/vdH 762	11	65.9	0	1.58	14.92	90.49	18.19	254.4	95.9	4,750	83.8
Comm. Trial Mean		66.61		1.95	15.48	90.71	21.22	265.28		5,670	
Coeff. of Var. (%)		9.78		18.32	2.85	0.84	19.41	3.68		20.56	
LSD (0.05)		7.51		0.41	0.51	0.87	4.75	11.25		1,343.89	
LSD (0.10)		6.28		0.34	0.43	0.73	3.97	9.40		1,122.84	

2019 Minn-Dak Official Variety Trial
Wolverton, MN

Commercial Trial	Entry Code	Emerg. (%)	Bolter (#/A)	Tare (%)	Sugar (%)	Purity (%)	Yield (TPA)	RST (lbs)	RST (% Mean)	RSA (lbs)	RSA (% Mean)
ACH 012	5	80.5	0	4.00	16.23	89.51	31.90	273.7	102.2	8,733	100.7
ACH 228	6	81.0	0	3.94	16.27	90.12	31.64	277.0	103.4	8,766	101.1
ACH 659	13	91.4	0	3.87	16.05	89.02	30.63	268.6	100.2	8,225	94.8
ACH 765	8	89.8	0	3.26	15.87	90.06	33.58	269.7	100.7	9,057	104.4
ACH 771	4	82.3	0	4.42	16.05	88.87	32.46	268.2	100.1	8,695	100.2
ACH 830	10	81.3	0	4.03	14.99	89.76	34.32	253.0	94.4	8,674	100.0
Beta 7099	3	83.6	0	4.96	15.96	89.01	32.36	267.0	99.6	8,635	99.5
Beta 7727	7	76.0	0	3.81	15.93	89.71	34.25	269.4	100.5	9,226	106.4
Beta 7741	12	82.8	0	3.38	15.76	89.85	33.77	266.8	99.6	9,009	103.9
Beta 7748	14	87.5	0	3.99	15.85	88.83	31.92	264.4	98.7	8,435	97.2
Beta 7755	1	77.6	0	3.71	16.08	89.43	32.95	270.9	101.1	8,929	102.9
Hilleshög 4302	2	79.2	0	4.05	15.74	89.76	30.15	266.1	99.3	8,021	92.5
SES/VdH 655	9	80.7	0	4.88	15.85	90.08	31.13	269.4	100.6	8,386	96.7
SES/VdH 762	11	79.9	0	4.00	15.69	90.18	32.43	267.0	99.6	8,651	99.7
Comm. Trial Mean		82.40		4.02	15.88	89.59	32.39	267.94		8,674	
Coeff. of Var. (%)		7.08		17.82	2.16	0.66	3.59	2.86		4.32	
LSD (0.05)		6.73		0.83	0.40	0.69	1.34	8.83		432.03	
LSD (0.10)		5.62		0.69	0.33	0.57	1.12	7.38		360.97	

2019 Minn-Dak Official Variety Trial
Galchutt, ND

Commercial Trial	Entry Code	Emerg. (%)	Bolter (#/A)	Tare (%)	Sugar (%)	Purity (%)	Yield (TPA)	RST (lbs)	RST (% Mean)	RSA (lbs)	RSA (% Mean)
ACH 012	5	68.8	0	4.75	16.61	91.16	19.32	287.4	100.4	5,556	99.3
ACH 228	6	64.3	0	2.97	17.16	92.08	19.17	301.1	105.2	5,779	103.3
ACH 659	13	72.4	0	4.30	16.74	90.81	18.93	288.3	100.7	5,467	97.7
ACH 765	8	69.8	0	2.89	16.02	91.12	19.60	276.4	96.6	5,424	96.9
ACH 771	4	69.0	0	4.12	16.56	91.35	19.92	287.3	100.3	5,730	102.4
ACH 830	10	73.7	0	2.83	15.44	91.91	19.67	269.1	94.0	5,286	94.5
Beta 7099	3	67.7	0	4.66	16.61	91.36	19.24	288.1	100.6	5,539	99.0
Beta 7727	7	60.7	0	2.83	16.06	91.19	18.57	277.7	97.0	5,193	92.8
Beta 7741	12	73.2	0	3.03	16.65	91.90	21.31	291.0	101.6	6,216	111.1
Beta 7748	14	75.3	0	5.00	16.64	91.06	19.39	287.5	100.4	5,577	99.7
Beta 7755	1	64.8	0	3.68	16.76	91.83	20.88	292.8	102.3	6,127	109.5
Hilleshög 4302	2	56.0	0	2.61	16.40	92.65	19.81	289.5	101.1	5,739	102.6
SES/VdH 655	9	68.5	0	4.58	16.20	91.36	16.14	280.7	98.0	4,526	80.9
SES/VdH 762	11	70.1	0	3.81	16.57	92.33	21.23	291.3	101.7	6,188	110.6
Comm. Trial Mean		68.15		3.72	16.46	91.58	19.51	286.29		5,596	
Coeff. of Var. (%)		9.11		24.52	1.74	0.99	12.53	2.65		12.79	
LSD (0.05)		7.16		1.05	0.33	1.05	2.82	8.75		825.26	
LSD (0.10)		5.98		0.88	0.28	0.87	2.36	7.31		689.52	

2019 Minn-Dak Official Variety Trial
Foxhome, MN

Experimental Trial	Entry Code	Emerg. (%)	Bolter (#/A)	Tare (%)	Sugar (%)	Purity (%)	Yield (TPA)	RST (lbs)	RST (% Mean)	RSA (lbs)	RSA (% Mean)
ACH 910	42	85.9	0	2.91	16.25	91.18	25.90	280.9	102.4	7,277	94.5
ACH 936	38	87.2	0	2.84	15.81	90.40	30.11	270.0	98.4	8,130	105.6
ACH 949	24	74.5	0	2.17	16.38	90.49	25.09	280.4	102.2	7,035	91.4
ACH 950	40	87.5	0	3.42	15.96	90.20	31.51	271.9	99.1	8,571	111.3
ACH 968	48	77.6	0	2.22	15.84	90.56	31.63	271.0	98.8	8,570	111.3
ACH 970	34	88.8	0	3.06	16.64	89.88	26.32	282.5	103.0	7,448	96.7
ACH 973	25	83.9	0	2.93	15.89	90.93	30.78	273.5	99.7	8,412	109.2
Beta 7845	46	84.6	0	3.21	16.63	89.94	30.24	282.7	103.1	8,553	111.1
Beta 7901	20	78.9	0	2.31	15.50	91.24	30.91	267.7	97.6	8,264	107.3
Beta 7917	22	70.8	0	2.12	16.25	90.75	29.12	279.3	101.8	8,147	105.8
Beta 7923	26	85.2	0	3.44	16.16	90.06	27.77	274.8	100.2	7,619	98.9
Beta 7931	43	80.7	0	2.64	16.29	90.88	29.04	280.5	102.3	8,146	105.8
Beta 7962	18	79.4	0	3.07	16.03	90.92	32.45	275.9	100.6	8,961	116.4
Beta 7974	44	78.1	0	2.33	15.85	90.75	32.86	272.1	99.2	8,943	116.1
Beta 7996	32	76.6	0	2.77	15.70	90.78	30.39	269.4	98.2	8,190	106.4
Hilleshög 2228	30	88.5	0	2.66	15.83	90.20	24.49	269.5	98.3	6,616	85.9
Hilleshög 2321	49	71.4	0	2.59	16.26	90.57	29.34	278.6	101.6	8,173	106.1
Hilleshög 2322	36	88.5	0	3.75	15.61	89.91	20.23	264.5	96.4	5,350	69.5
Hilleshög 2323	29	88.8	0	2.92	15.66	89.52	24.77	263.8	96.2	6,567	85.3
Hilleshög 2324	17	82.6	0	2.49	15.56	90.72	25.89	266.8	97.3	6,910	89.7
Hilleshög 2325	39	75.3	0	2.40	16.10	90.77	28.60	276.6	100.8	7,914	102.8
Maribo 806	15	82.3	0	2.45	15.55	90.04	21.56	263.9	96.2	5,725	74.3
Maribo 904	21	83.6	0	2.89	15.83	89.46	20.66	266.7	97.2	5,543	72.0
Maribo 905	33	77.6	0	2.79	16.25	90.14	26.46	276.7	100.9	7,319	95.0
Maribo 906	47	82.3	0	3.24	15.48	90.97	30.25	266.3	97.1	8,054	104.6
Seedex 1972	28	85.9	0	2.47	16.18	91.16	28.83	279.6	102.0	8,065	104.7
Seedex 1973	31	72.4	0	2.77	16.08	90.61	27.14	275.6	100.5	7,481	97.2
Seedex 1985	27	74.5	0	2.60	16.12	91.08	29.26	278.2	101.4	8,142	105.7
Seedex 1986	37	78.1	0	2.80	16.04	91.35	27.77	277.8	101.3	7,753	100.7
SES/VdH 691	41	76.6	0	2.46	16.19	90.68	28.42	277.8	101.3	7,891	102.5
SES/VdH 692	45	76.0	0	3.17	15.97	90.90	29.36	274.8	100.2	8,064	104.7
SES/VdH 694	23	85.2	0	2.87	15.92	90.44	29.01	272.1	99.2	7,889	102.5
SES/VdH 696	16	80.7	0	2.67	16.46	90.67	28.15	282.7	103.1	7,957	103.3
SES/VdH 697	19	85.9	0	2.32	16.08	90.67	28.63	275.9	100.6	7,892	102.5
SES/VdH 788	35	77.3	0	2.74	16.16	91.13	28.42	279.0	101.7	7,938	103.1
Exp.Trial Mean		80.95		2.76	16.01	90.57	28.04	274.27		7,700	
Coeff. of Var. (%)		8.05		30.39	2.08	0.69	10.84	2.71		11.34	
LSD (0.05)		7.43		0.96	0.38	0.71	3.46	8.47		995.50	
LSD (0.10)		6.22		0.80	0.32	0.60	2.90	7.10		834.05	

2019 Minn-Dak Official Variety Trial

Norcross, MN

Experimental Trial	Entry Code	Emerg. (%)	Bolter (#/A)	Tare (%)	Sugar (%)	Purity (%)	Yield (TPA)	RST		RSA	
								(lbs)	(% Mean)	(lbs)	(% Mean)
ACH 910	42	65.9	0	2.06	15.67	91.51	20.87	271.8	104.9	5,679	117.1
ACH 936	38	77.3	0	1.92	15.20	91.05	24.95	261.6	101.0	6,539	134.8
ACH 949	24	45.6	0	1.09	15.67	90.64	14.11	268.6	103.7	3,840	79.2
ACH 950	40	71.4	0	2.04	15.47	91.02	23.62	266.3	102.8	6,323	130.3
ACH 968	48	63.5	0	1.13	14.67	90.49	14.02	249.9	96.5	3,520	72.6
ACH 970	34	67.2	0	2.13	15.93	90.51	25.61	272.5	105.2	6,975	143.8
ACH 973	25	57.6	0	1.43	15.11	91.16	19.41	260.3	100.5	5,079	104.7
Beta 7845	46	64.8	0	2.51	16.11	91.51	27.86	279.7	108.0	7,796	160.7
Beta 7901	20	66.7	0	1.35	15.24	91.22	23.09	262.9	101.5	6,078	125.3
Beta 7917	22	43.8	0	1.53	14.92	90.78	20.41	255.6	98.7	5,220	107.6
Beta 7923	26	70.6	0	2.70	14.82	89.97	23.12	250.7	96.8	5,800	119.6
Beta 7931	43	60.2	0	1.65	15.95	91.61	22.73	277.2	107.0	6,302	129.9
Beta 7962	18	53.4	0	2.03	14.98	91.08	17.60	257.7	99.5	4,581	94.4
Beta 7974	44	56.3	0	1.31	15.10	90.69	20.66	258.4	99.8	5,359	110.5
Beta 7996	32	59.4	0	1.31	15.04	90.76	19.05	257.6	99.5	4,928	101.6
Hilleshög 2228	30	66.7	0	2.45	14.79	89.83	15.94	249.7	96.4	4,016	82.8
Hilleshög 2321	49	45.3	0	1.55	15.36	91.22	12.61	265.2	102.4	3,356	69.2
Hilleshög 2322	36	61.5	0	1.59	14.79	90.51	14.61	252.1	97.4	3,717	76.6
Hilleshög 2323	29	61.2	0	1.42	15.05	91.03	19.63	258.8	100.0	5,130	105.8
Hilleshög 2324	17	68.8	0	1.41	15.29	91.68	20.37	265.4	102.5	5,438	112.1
Hilleshög 2325	39	42.7	0	1.47	14.83	90.13	14.83	251.5	97.1	3,784	78.0
Maribo 806	15	57.6	0	1.63	14.53	89.62	13.93	244.4	94.4	3,486	71.9
Maribo 904	21	57.3	0	2.05	15.06	90.11	19.36	255.5	98.7	4,942	101.9
Maribo 905	33	51.3	0	1.74	15.36	90.05	19.18	260.7	100.7	5,009	103.3
Maribo 906	47	42.7	0	1.71	13.86	89.46	3.24	232.0	89.6	774	16.0
SES/VdH 691	41	53.6	0	1.45	15.12	90.82	19.36	259.3	100.2	5,075	104.6
SES/VdH 692	45	53.6	0	1.56	14.50	89.94	16.13	244.9	94.6	4,005	82.6
SES/VdH 694	23	70.1	0	1.49	14.78	90.77	12.80	252.8	97.6	3,275	67.5
SES/VdH 696	16	63.0	0	1.73	15.71	91.33	24.71	271.7	104.9	6,716	138.4
SES/VdH 697	19	71.9	0	1.43	15.07	90.92	17.21	258.8	99.9	4,480	92.4
SES/VdH 788	35	60.9	0	1.31	15.17	90.73	18.24	259.8	100.3	4,772	98.4
Seedex 1972	28	58.6	0	1.57	14.59	90.78	18.58	249.7	96.4	4,655	96.0
Seedex 1973	31	45.8	0	1.32	15.07	90.54	16.14	257.3	99.4	4,168	85.9
Seedex 1985	27	48.2	0	1.44	15.02	90.94	17.09	257.9	99.6	4,463	92.0
Seedex 1986	37	57.0	0	1.36	15.37	91.20	17.05	265.2	102.4	4,508	92.9
Exp.Trial Mean		58.89		1.65	15.12	90.73	18.52	258.95		4,851	
Coeff. of Var. (%)		12.61		29.49	3.48	0.98	22.78	4.60		24.40	
LSD (0.05)		8.46		0.56	0.60	1.02	4.81	13.56		1348.93	
LSD (0.10)		7.09		0.47	0.50	0.85	4.03	11.36		1130.16	

2019 Minn-Dak Official Variety Trial

Wolverton, MN

Experimental Trial	Entry Code	Emerg. (%)	Bolter (#/A)	Tare (%)	Sugar (%)	Purity (%)	Yield (TPA)	RST		RSA	
								(lbs)	(% Mean)	(lbs)	(% Mean)
ACH 910	42	82.6	0	3.60	16.26	89.96	31.13	276.0	99.6	8,582	99.5
ACH 936	38	89.3	0	3.83	16.33	89.45	34.41	275.3	99.4	9,470	109.8
ACH 949	24	71.1	0	3.16	16.80	90.05	29.79	286.0	103.2	8,522	98.8
ACH 950	40	84.9	0	3.73	16.48	89.38	32.86	277.7	100.2	9,129	105.8
ACH 968	48	77.6	0	3.48	16.25	89.95	29.69	276.1	99.6	8,203	95.1
ACH 970	34	88.5	0	4.03	16.69	88.57	31.85	277.9	100.3	8,846	102.5
ACH 973	25	81.8	0	3.45	15.89	90.04	32.16	270.0	97.4	8,673	100.5
Beta 7845	46	85.9	0	4.31	16.71	89.24	32.64	281.0	101.4	9,172	106.3
Beta 7901	20	83.9	0	3.36	16.10	90.36	34.48	274.9	99.2	9,474	109.8
Beta 7917	22	63.3	0	3.52	16.12	89.80	30.69	273.0	98.5	8,380	97.1
Beta 7923	26	85.9	0	4.76	16.20	88.90	32.26	270.7	97.7	8,732	101.2
Beta 7931	43	80.2	0	3.48	16.45	89.84	32.40	279.0	100.7	9,030	104.7
Beta 7962	18	77.1	0	3.64	16.53	90.18	31.14	281.9	101.7	8,767	101.6
Beta 7974	44	81.3	0	3.50	16.35	90.30	32.37	279.2	100.8	9,034	104.7
Beta 7996	32	73.7	0	3.69	16.11	89.83	33.42	273.0	98.5	9,116	105.7
Hilleshög 2228	30	84.9	0	3.89	16.31	89.29	28.90	274.2	99.0	7,923	91.8
Hilleshög 2321	49	62.8	0	3.06	16.56	90.02	29.62	281.7	101.6	8,340	96.7
Hilleshög 2322	36	84.6	0	3.17	16.06	88.70	30.31	267.6	96.5	8,104	93.9
Hilleshög 2323	29	80.7	0	3.69	16.17	88.96	29.61	270.4	97.6	8,016	92.9
Hilleshög 2324	17	77.6	0	3.22	15.98	90.30	32.61	272.6	98.4	8,873	102.8
Hilleshög 2325	39	66.9	0	3.58	16.37	89.74	30.77	277.2	100.0	8,537	99.0
Maribo 806	15	80.7	0	3.62	16.31	88.75	28.00	272.0	98.1	7,644	88.6
Maribo 904	21	85.9	0	4.62	16.43	88.76	30.43	274.1	98.9	8,341	96.7
Maribo 905	33	71.9	0	4.00	16.68	88.96	29.87	279.4	100.8	8,332	96.6
Maribo 906	47	84.1	0	3.45	16.12	90.22	29.41	274.8	99.2	8,072	93.6
Seedex 1972	28	77.1	0	3.73	16.43	89.58	31.45	277.5	100.2	8,730	101.2
Seedex 1973	31	62.5	0	3.46	16.78	90.64	29.62	288.2	104.0	8,532	98.9
Seedex 1985	27	68.0	0	3.30	16.59	90.26	31.20	283.3	102.2	8,834	102.4
Seedex 1986	37	77.1	0	4.82	16.62	90.44	30.39	284.5	102.7	8,646	100.2
SES/VdH 691	41	70.8	0	3.29	16.34	89.07	31.39	273.8	98.8	8,590	99.6
SES/VdH 692	45	75.0	0	3.94	16.21	89.46	30.81	273.3	98.6	8,414	97.5
SES/VdH 694	23	78.4	0	4.00	16.40	90.05	32.71	279.1	100.7	9,128	105.8
SES/VdH 696	16	78.1	0	4.21	16.43	89.80	30.09	278.5	100.5	8,377	97.1
SES/VdH 697	19	83.1	0	3.34	16.69	89.59	30.61	282.1	101.8	8,639	100.1
SES/VdH 788	35	76.0	0	3.97	16.59	90.23	30.89	283.1	102.2	8,742	101.3
Exp.Trial Mean		78.10		3.71	16.38	89.68	31.14	277.12		8,627	
Coeff. of Var. (%)		8.58		25.31	2.04	0.93	6.39	2.92		6.96	
LSD (0.05)		7.64		1.07	0.38	0.95	2.27	9.22		684.12	
LSD (0.10)		6.40		0.90	0.32	0.80	1.90	7.73		573.16	

PLANTING RATE CHART

ACH SEEDS / BETASEED / HILLESOG [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

SES / VANDERHAVE [ACRES PLANTED PER BOX]

22" ROWS	SEED SPACING	MINI PELLETS	REGULAR PELLETS
	<i>Units/Box</i>	6	4
	<i>Packages/Box</i>	2	2
	3" Spacing	6.3	4.2
	4" Spacing	8.4	5.6
	5" Spacing	10.5	7.0
30" ROWS	SEED SPACING	MINI PELLETS	REGULAR PELLETS
	3" Spacing	8.6	5.7
	4" Spacing	11.5	7.6
	5" Spacing	14.3	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

2020 BEET SEED PRICES PER UNIT

APPROX. COST / ACRE @ 4.5" SPACING WITH 22" ROWS (63,360 Seeds/Acre)

VARIETY	\$/UNIT	\$/ACRE
ACH SEED	MINI PELLETT/REGULAR PELLETT/ELS	
ACH RR012	\$318	\$202
ACH RR228	\$318	\$202
ACH D659	\$323	\$205
ACH D765	\$330	\$210
ACH D771	\$330	\$210
ACH RR830	\$312	\$198
BETASEED	MINI PELLETT/REGULAR PELLETT/PRO 200	
BTS 7845	\$344	\$218
BTS 70RR99	\$322	\$204
BTS 7727	\$336	\$213
BTS 7741	\$336	\$213
BTS 7748	\$336	\$213
BTS 7755	\$336	\$213
HILLESOG	2M/4M/S2	
HM 4302RR	\$285	\$181

SESVanderHave*	MINI PELLETT	
SV 655	\$326	\$207
SV 762	\$326	\$207
SV 788	\$326	\$207
SESVanderHave*	REGULAR PELLETT	
SV 655	\$341	\$217
SV 762	\$341	\$217
SV 788	\$341	\$217

*NO EARLY ORDER DISCOUNT AVAILABLE ON SES VARIETIES

2020 SEED TREATMENT PRICING

SPECIALTY SEED TREATMENTS	AVAILABLE ON*	APPROXIMATE CHARGE / UNIT
<p style="text-align: center;"><u>ACH SEEDS</u></p> <p style="text-align: center;">T45 Poncho Beta Poncho-Beta + T45</p>	<p>RP RP RP</p>	<p>\$20 \$48 \$68</p>
<p style="text-align: center;"><u>BETASEED</u></p> <p style="text-align: center;">T45 Poncho-Beta Poncho-Beta + T45</p>	<p>RP RP RP</p>	<p>\$20 \$48 \$68</p>
<p style="text-align: center;"><u>HILLESOG</u></p> <p style="text-align: center;">T45 CruiserMaxx CruiserMaxx + T45</p>	<p>RP RP RP</p>	<p>\$18 \$48 \$66</p>
<p style="text-align: center;"><u>SES/VDH</u></p> <p style="text-align: center;">T45 NipsIT SUITE NipsIT SUITE + T45</p>	<p>RP RP RP</p>	<p>\$21.25 \$48.50 \$69.75</p>

* RP=Regular Pellet

Note: Early Order Discounts Applied When Available

2020 EARLY DISCOUNT

ACH SEEDS	JANUARY 15 FEBRUARY 20	3% Early Order 3% Early Pay
BETASEED	JANUARY 10 FEBRUARY 20	4% Early Order 3% Early Pay
HILLESOG	JANUARY 17 JANUARY 17	4% Early Order 5% Early Pay
SES / VDH	JANUARY 10	5.5% Early Pay

2020 REPLANT DISCOUNT & RETURN POLICY

****Maximum return allowed will be 5% of your original seed order***

ACH SEEDS	50% replant discount when Crystal brand seed used over any sugarbeet seed brand. No Return on Tach or Poncho Treatments
BETASEED	50% replant discount when Betaseed brand seed used over any sugarbeet seed brand. No Return on Tach or Poncho Treatments
HILLESOG	50% replant discount for Hilleshog brand seed used over any sugarbeet seed brand. Tachigaren treated seed is Non-Returnable
SES / VDH	50% replant discount when SES/VdH brand seed used over any sugarbeet seed brand.