



Report No. 29

***MANITOBA
REGIONAL
SUNFLOWER
PERFORMANCE TEST - 2008***

***A report on tests of Commercial Hybrids
Sponsored by the Manitoba Sunflower Committee***

Note: Not for publication. Data cannot be used in whole or in part without the permission of The Manitoba Sunflower Committee.



Manitoba

Building for the Future

**MANITOBA REGIONAL
SUNFLOWER PERFORMANCE TESTS
2008
SPONSORED BY THE
MANITOBA SUNFLOWER COMMITTEE**

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<i>MacGregor Site</i>	Keith Murphy (Murphy et al Inc.)
<i>Minto Site</i>	David Rourke / Ashley Robertson (Ag-Quest)
<i>Altona Site</i>	Khalid Rashid (AAFC) / Luc Remillard

INTRODUCTION

The Manitoba Sunflower Committee (MSC) was organized under the authority of the Minister of Agriculture for Manitoba to provide a vehicle for testing sunflower hybrids in Manitoba. The Committee has conducted performance cooperative trials since 1979. The data generated through these trials is used to support registration of sunflower hybrids in Canada. A minimum of two years performance data is required in order to determine the acceptability of hybrids for registration. However, hybrids can be recommended for registration based on one-year cooperative data supported by another year of private data. The Committee conducted trials at four locations in 2008; Altona, Morden, MacGregor and Minto, and results from three trials (Morden, Altona, and Minto) were used by the Committee for recommending hybrids for registration. Yields, oil contents, and quality from Morden, Altona, and Minto were average to above average in 2008. Data from the MacGregor Trial was not included in the final analysis of the 2008 data due to excess weed infestation, poor vigor and lack of data in some traits

Growing conditions in 2008 were normal in terms of both heat accumulation and rainfall in most areas of Manitoba. The growing season for sunflower was exceptionally long and no severe frosts were reported until the end of September in 2008 in comparison to previous years, and overall good yields and seed quality are expected. Local epidemics of bud worm and rust have been observed in southern Manitoba. Total seeded sunflower acres in 2008 reported by MASC were 110,017 acres of confections and 71,274 acres of oils.

The Manitoba Sunflower Committee hopes that this service will continue to be useful to sunflower breeders, growers, seed companies, processors and the sunflower industry at large.

Khalid Rashid, Test Coordinator
Manitoba Sunflower Committee

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TABLE 1: MANITOBA SUNFLOWER COMMITTEE - 2008 OILSEED CANDIDATE HYBRIDS.

COMPANY	HYBRID		TYPE	YEAR	
SEEDS2000	Teton HO-DMR	(Treated)	HO	1	
MYCOGEN	8N358CL	(Treated)	Nus	2	
MYCOGRN	8N358CLDM	(Treated)	Nus	1	
INTERSTATE	IS-6131DM	(Treated)	Nus	2	
INTERSTATE	DKF29-30	(Treated)	Nus	1	
INTERSTATE	DKF34-80CL	(Treated)	Nus	1	
INTERSTATE	IS7120	(Treated)	HO	1	
CROPLAN GENTICS	803NS-DMR	(Treated)	Nus	2	
PIONEER	63N82- Express	(Treated)	Nus	1	
QUARRY SEED/HUNT	F51122NS-CL-DM	(Treated)	Nus	1	
LA COOP FÉDÉRÉE	CFT08.00 Pomar RM	(Treated)	Oil	1	
LA COOP FÉDÉRÉE	CFT08.01 Pacific RMO	(Treated)	HO	1	
CHS Sunflower	08EXP01	(Treated)	Oil	1	
PIONEER	63M52	(XF306)	(Treated)	Nus	Check
INTERSTATE	6511	(Hysun 511)	(Treated)	Nus	Check

TABLE 2: MANITOBA SUNFLOWER COMMITTEE - 2008 CONFECTIONARY CANDIDATE HYBRIDS.

COMPANY	HYBRID		TYPE	YEAR	
SEED2000	Panther-DMR	(Treated)	Con	2	
SEED2000	X3551-DMR	(Treated)	Con	1	
MYCOGEN	8C451	(Treated)	Con	1	
MYCOGEN	8D310	(Treated)	Con	1	
DAHLGREN	DH-9583CL	(Treated)	Con	2	
CHS Sunflower	RH1121	(Treated)	Con	2	
CHS Sunflower	07EXP02	(Treated)	Con	2	
PIONEER	6946	(DE-1950)	(Treated)	Con	Check
INTERSTATE	IS 8048		(Treated)	Con	Check

**Table 3: Performance data from the Manitoba Oilseed Sunflower Co-op Trial 2008
(Altona, Morden and Minto).**

Hybrid*		Yield (kg/ha)	Yield (lbs/acre)	% Oil	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)
63M52	(XF306)	3189	2838	49.8	84	126	160	402	64
6511	(Hysun 511)	3172	2823	46.6	80	123	129	411	60
8N358CL		3030	2697	50.0	87	134	168	371	50
IS-6131DM		2790	2483	48.7	80	121	147	418	53
803NS-DMR		2662	2369	49.1	79	123	153	418	54
Teton HO-DMR		3021	2688	47.7	85	127	161	355	44
8N358CLDM		3201	2849	49.4	87	131	175	381	49
DKF29-30		2941	2618	48.2	80	123	165	408	54
DKF34-80CL		3041	2707	46.7	87	128	165	381	56
IS7120		3190	2839	47.8	82	128	154	384	58
63N82-Express		3405	3030	50.4	83	136	170	438	64
F51122NS-CL-DM		3146	2800	45.5	86	130	167	392	60
CFT08.00 Pomar RM		3622	3224	47.1	87	129	187	397	56
CFT08.01 Pacific RMO		3379	3007	45.3	85	129	183	368	58
08-EXP01		2872	2556	37.8	87	130	179	326	96
Mean (All)		3128	2784	48.0	84	128	163	395	56
Mean (Checks)		3181	2831	48.2	82	124	145	407	62
C.V.		11	11	2.3	3	3	11	3	7
LSD 5%		266	237	0.9	2	3	14	11	3

★ - All varieties had treated seed.

Table 4: Performance data from the Manitoba Oilseed Sunflower Co-op Trial 2008 (Altona).

Hybrid*		Yield (kg/ha)	Yield (lbs/acre)	% Oil	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)	% Moisture*	% Lodged Plants
63M52	(XF306)	2639	2349	50.1	82	126	145	374	64	18	0
6511	(Hysun 511)	2257	2009	47.7	79	124	103	393	56	16	0
8N358CL		2529	2251	50.6	85	137	158	338	43	18	0
IS-6131DM		2183	1943	47.9	81	124	128	394	52	16	0
803NS-DMR		2134	1899	48.0	78	124	148	397	56	15	0
Teton HO-DMR		2245	1998	47.2	88	128	160	331	39	17	0
8N358CLDM		2538	2258	48.8	87	129	179	337	44	21	0
DKF29-30		2381	2119	46.9	78	123	173	379	53	17	0
DKF34-80CL		2046	1821	46.1	87	126	160	345	52	18	0
IS7120		2527	2249	48.6	78	126	135	355	52	17	0
63N82-Express		2561	2279	51.9	82	141	170	426	58	21	0
F51122NS-CL-DM		2523	2246	46.0	87	129	153	363	58	17	0
CFT08.00 Pomar RM		3154	2807	47.8	88	127	180	375	53	18	5
CFT08.01 Pacific RMO		2594	2308	44.4	87	130	181	343	59	21	8
08-EXP01		2564	2282	37.7	86	129	175	311	91	18	5
Mean (All)		2451	2181	48.0	83	128	155	368	53	18	1
Mean (Checks)		2448	2179	48.9	80	125	124	383	60	17	0
C.V.		13	13	1.9	3	2	17	3	7	7	372.6
LSD 5%		439	390	1.3	4	4	37	16	5	3	0.3

★ - All varieties had treated seed.

♣ - Percent moisture is based on Rep 1 and Rep 3.

Seeded: May 21st, 2008

Harvested: October 10th, 2008

Table 5: Performance data from the Manitoba Oilseed Sunflower Co-op Trial 2008 (Morden).

Hybrid*	Yield (kg/ha)	Yield (lbs/acre)	% Oil	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)	Meal Protein (%)	Fatty Acids				% Moisture*	% Lodged Plants	
										Palmitate 16:0	Stearate 18:0	Oleate 18:1	Linoleate 18:2			
63M52	(XF306)	3386	3013	50.4	78	127	157	390	56	51	3.7	3.9	65.1	25.9	23	10
6511	(Hysun 511)	3825	3404	46.1	74	119	132	399	59	58	5.0	3.5	41.3	48.9	24	10
8N358CL		3196	2844	50.8	83	137	172	369	46	51	4.1	3.0	62.7	28.7	19	8
IS-6131DM		3062	2725	50.5	72	115	151	423	50	55	4.0	3.5	66.8	24.4	16	50
803NS-DMR		3137	2792	51.2	73	119	142	407	50	53	4.0	3.5	65.8	25.3	18	30
Teton HO-DMR		3309	2945	48.5	78	127	154	342	39	47	3.2	3.5	83.7	8.1	16	0
8N358CLDM		3679	3274	50.8	83	134	167	385	43	53	4.3	3.0	61.1	30.3	26	10
DKF29-30		3319	2954	50.1	72	120	153	406	52	54	4.3	3.7	56.8	34.0	15	30
DKF34-80CL		3257	2899	47.8	83	130	162	364	53	55	4.9	4.4	42.9	46.6	20	5
IS7120		3484	3101	48.8	78	130	157	376	53	52	3.1	3.3	83.9	8.2	22	15
63N82-Express		3961	3525	51.2	79	141	166	440	61	56	3.9	3.3	62.5	28.8	23	0
F51122NS-CL-DM		3511	3125	45.4	80	137	169	388	60	58	4.5	3.8	49.4	41.2	21	0
CFT08.00 Pomar RM		3817	3397	47.8	84	131	182	387	53	53	5.3	4.2	29.2	60.1	24	5
CFT08.01 Pacific RMO		4003	3563	46.7	79	129	183	364	51	53	3.0	2.5	86.8	6.3	19	0
08-EXP01		3211	2858	39.3	82	137	178	313	98	55	N/A	N/A	N/A	N/A	22	0
Mean (All)		3496	3112	49.0	78	128	160	389	52	53	4.1	3.5	61.3	29.8	20	10
Mean (Checks)		3605	3209	48.3	76	123	145	394	58	54	4.4	3.7	53.2	37.4	23	10
C.V.		8	8	1.8	3	3	6	3	5	2	5.4	5.2	7.7	15.1	20	111
LSD 5%		403	359	1.2	3	5	13	16	4	2	0.3	0.3	6.7	6.4	9	1

★ - All varieties had treated seed.

♣ - Percent moisture is based on Rep 1 and Rep 3.

Seeded: May 20th, 2008Harvested: October 29th, 2008

Table 6: Performance data from the Manitoba Oilseed Sunflower Co-op Trial 2008 (Minto).

Hybrid*		Yield (kg/ha)*	Yield (lbs/acre)*	% Oil	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)	% Moisture	% Bird Damage	% Disease [■]	% Stem Break
63M52	(XF306)	3542	3152	49.0	91	126	180	444	73	11	2.5	12.8	8.3
6511	(Hysun 511)	3435	3057	45.9	89	127	154	440	66	11	0	3.3	10.8
8N358CL		3366	2996	48.6	93	129	175	407	61	15	1.3	4.0	2.3
IS-6131DM		3127	2783	47.8	87	125	163	436	56	9	0	12.8	0
803NS-DMR		2715	2416	48.0	87	126	169	449	56	9	1.3	16.5	0.8
Teton HO-DMR		3507	3122	47.5	91	127	171	393	54	12	0	10.3	0
8N358CLDM		3388	3015	48.7	92	129	179	421	58	13	1.3	7.0	3.8
DKF29-30		3123	2779	47.6	89	126	169	438	58	10	1.3	10.8	0.8
DKF34-80CL		3820	3400	46.1	91	129	174	435	64	12	0	7.0	1.5
IS7120		3560	3168	45.9	89	128	169	420	69	12	0	14.0	0
63N82-Express		3693	3286	48.0	89	127	174	449	73	11	0	2.8	0.8
F51122NS-CL-DM		3402	3028	45.2	91	124	179	423	61	10	1.3	7.3	0.8
CFT08.00 Pomar RM		3895	3466	45.8	91	128	200	429	62	11	1.3	5.3	9.0
CFT08.01 Pacific RMO		3541	3151	44.8	88	129	186	398	65	11	6.3	6.0	1.3
08-EXP01		2842	2529	36.4	92	126	185	353	99	9	1.3	5.3	10.0
Mean (All)		3437	3059	47.1	90	127	174	427	63	11	1.2	8.5	2.8
Mean (Checks)		3488	3105	47.5	90	126	167	442	70	11	1.3	8.1	9.6
C.V.		9	9	1.5	1	0	2	2	5	9	186.9	49.3	111.8
LSD 5%		456	406	1.0	1	1	4	15	5	1	3.1	6.0	4.5

★ - All varieties had treated seed.

❖ - Yield is adjusted for 10% moisture.

■ - Percent disease is based on natural infection.

Seeded: May 14th, 2008Harvested: October 28th, 2008

Table 7: Performance data from the Manitoba Oilseed Sunflower Co-op Trial 2008 (MacGregor). (for information only, not included in the summarization of the 2008 data)

Hybrid*		Yield (kg/ha)*	Yield (lbs/acre)*	% Oil*	Plant Height (cm)*	% Moisture	% Stem Breakage	%Scl. Head Rot [■]
63M52	(XF306)	3287	2932	51.3	172	20	0.5	2.2
6511	(Hysun 511)	2532	2259	51.4	152	20	0.5	2.5
8N358CL		2608	2326	45.1	175	22	0	0.8
IS-6131DM		2896	2584	52.6	156	14	0	8.0
803NS-DMR		2862	2553	53.8	158	12	0.5	16.3
Teton HO-DMR		2759	2461	48.1	171	18	0	2.2
8N358CLDM		2704	2412	48.6	181	22	0	3.3
DKF29-30		3247	2897	53.3	164	14	0	7.2
DKF34-80CL		3012	2687	49.0	181	21	0.5	3.8
IS7120		3533	3152	49.4	170	17	0.5	3.3
63N82-Express		2648	2362	42.4	179	23	0	1.3
F51122NS-CL-DM		2914	2599	46.4	173	21	0	2.2
CFT08.00 Pomar RM		2673	2384	46.8	191	20	0	0
CFT08.01 Pacific RMO		2822	2517	47.0	187	19	0	1.3
08-EXP01		2714	2421	37.3	171	22	0.5	1.3
Mean (All)		2893	2580	49.0	172	19	0.2	3.8
Mean (Checks)		2910	2596	51.4	162	20	0.5	2.3
C.V.		14	14		3	5	338.1	60.3
LSD 5%		560	499	1.7	8	1	0.7	3.3

★ - All varieties had treated seed.

❖ - Yield is adjusted for 10% moisture.

☆ - Oil is based on one replicate of data.

♣ - Plant height was estimated as shortl, medium, and tall and then converted to a measurement.

■ - Sclerotinia head rot is based on natural infection.

Seeded: May 14th, 2008

Harvested: October 9th, 2008

Table 8: Performance data from the Manitoba Oilseed Sunflower Co-op Trials, candidate and check hybrids, 2007 and 2008 combined.

Hybrid	Year *	Yield (kg/ha)	Yield (lbs/acre)	% Oil	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)
8N358CL	2007 (3)*	3063	2726	47.6	80	124	180	407	49
	2008 (3)*	3030	2697	50.0	87	134	168	371	50
Mean		3046	2711	48.8	84	129	174	389	49
IS-6131DM	2007 (3)*	2576	2293	47.6	75	116	162	437	50
	2008 (3)*	2790	2483	48.7	80	121	147	418	53
Mean		2683	2388	48.2	77	119	155	427	51
803NS-DMR	2007 (3)*	2574	2291	48.5	74	114	160	436	49
	2008 (3)*	2662	2369	49.1	79	123	153	418	54
Mean		2618	2330	48.8	77	118	156	427	52
Oil Check (6511)	2007 (3)*	2694	2398	45.1	74	114	153	426	56
	2008 (3)*	3172	2823	46.6	80	123	129	411	60
Mean		2933	2610	45.9	77	119	141	418	58
Nusun Check (63M52)	2007 (3)*	2768	2464	48.9	79	118	171	427	63
	2008 (3)*	3189	2838	49.8	84	126	160	402	64
Mean		2978	2651	49.4	81	122	166	415	64

• - Value between parentheses is the number of trials tested per year.

★ - These varieties had treated seed.

**Table 9: Performance data from the Manitoba Confectionary Sunflower Co-op Trial 2008
(Altona, Morden and Minto).**

Hybrid*	Yield (kg/ha)	Yield (lbs/acre)	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)	% Nut- meat	Seed Size % Over Screen		
									>22	20-22	16-20
6946 (DE-1950)	3423	3047	81	125	164	321	119	60	29	38	29
IS 8048	2977	2649	79	127	164	347	138	54	32	35	29
Panther-DMR	3152	2805	80	127	166	329	138	51	38	35	25
DH-9583CL	3000	2670	89	135	191	294	129	55	35	39	22
RH 1121	3174	2825	88	133	196	300	139	47	67	22	10
07-EXP02	3022	2689	86	131	187	309	153	48	35	39	23
X3551-DMR	3297	2935	83	127	171	339	110	60	17	37	42
8C451	3143	2797	86	131	178	308	145	51	49	31	17
8D310	3010	2679	82	130	181	368	84	65	3	8	73
Mean (All)	3107	2765	84	130	178	324	125	56	31	31	33
Mean (Checks)	3200	2848	80	126	164	334	129	57	31	36	29
C.V.	15	15	4	3	11	4	9	3	33	25	27
LSD 5%	377	335	3	3	15	11	9	2	8	6	7

★ - All varieties had treated seed.

Table 10: Performance data from the Manitoba Confectionary Sunflower Co-op Trial 2008 (Altona).

Hybrid*	Yield (kg/ha)	Yield (lbs/acre)	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)	% Nut- meat	Seed Size % Over Screen			% Moisture*	% Lodged Plants
									>22	20-22	16-20		
6946 (DE-1950)	2834	2522	78	123	153	305	106	61	26	38	33	15	20
IS 8048	2177	1938	76	127	143	332	122	54	29	32	33	16	0
Panther-DMR	2800	2492	77	125	148	309	136	51	48	28	22	14	0
DH-9583CL	2245	1998	89	141	178	283	115	58	31	35	27	18	0
RH 1121	2586	2302	85	131	188	290	125	47	63	22	13	16	0
07-EXP02	2359	2099	87	130	170	303	134	48	26	41	30	15	0
X3551-DMR	3131	2787	82	123	160	319	101	60	17	31	47	14	30
8C451	2692	2396	86	129	165	288	122	51	42	34	19	16	8
8D310	2849	2536	79	127	173	352	78	65	3	8	68	14	0
Mean (All)	2624	2335	82	128	165	309	113	56	30	29	35	16	6
Mean (Checks)	2505	2230	77	125	148	318	114	58	27	35	33	16	10
C.V.	12	12	5	2	12	4	8	4	23	19	20	8	87
LSD 5%	455	405	6	3	29	16	12	3	10	8	10	3	1

★ - All varieties had treated seed.

♣ - Percent moisture is based on Rep 1 and Rep 3.

Seeded: May 21st, 2008

Harvested: October 10th, 2008

Table 11: Performance data from the Manitoba Confectionary Sunflower Co-op Trial 2008 (Morden).

Hybrid*	Yield (kg/ha)	Yield (lbs/acre)	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)	% Nut- meat	Seed Size % Over Screen			% Moisture*	% Lodged Plants
									>22	20-22	16-20		
6946 (DE-1950)	4014	3572	81	128	166	321	115	60	18	38	40	16	18
IS 8048	3406	3031	77	129	170	349	133	54	19	37	40	14	15
Panther-DMR	3347	2979	78	131	171	316	123	48	27	38	32	15	0
DH-9583CL	3440	3061	85	137	201	284	126	54	33	40	24	22	0
RH 1121	3049	2713	86	139	193	288	127	46	56	29	12	20	5
07-EXP02	3859	3435	84	137	188	312	145	47	30	41	25	21	5
X3551-DMR	3896	3467	82	132	175	336	108	59	9	29	58	16	10
8C451	3624	3226	85	136	183	320	137	51	32	40	24	16	10
8D310	3361	2991	79	136	179	357	78	64	1	4	73	17	0
Mean (All)	3521	3133	82	134	180	319	119	55	23	32	39	18	6
Mean (Checks)	3710	3302	79	128	168	335	124	57	18	37	40	15	16
C.V.	11	11	4	2	4	3	7	4	32	14	14	11	112
LSD 5%	569	506	4	4	11	15	11	3	11	6	8	4	1

★ - All varieties had treated seed.

♣ - Percent moisture is based on Rep 1 and Rep 3.

Seeded: May 20th, 2008

Harvested: October 8th, 2008

Table 12: Performance data from the Manitoba Confectionary Sunflower Co-op Trial 2008 (Minto).

Hybrid*	Yield (kg/ha)*	Yield (lbs/acre)*	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)	% Nut- meat	Seed Size % Over Screen			% Moisture	% Bird Damage	% Disease [■]	% Stem Break
									>20	18-20	16-18				
6946 (DE-1950)	3422	3046	85	125	173	338	136	60	44	40	14	9	2.5	3.8	5.3
IS 8048	3346	2978	85	127	179	359	160	54	50	34	14	10	5.0	7.5	5.0
Panther-DMR	3309	2945	85	126	179	362	154	54	38	39	22	9	2.5	6.5	0
DH-9583CL	3316	2951	92	128	193	315	146	54	42	41	15	13	7.5	1.9	0
RH 1121	3888	3461	93	130	209	322	164	48	82	14	4	12	2.5	1.3	0
07-EXP02	2847	2534	87	127	204	311	179	49	49	35	13	14	2.5	5.9	3.3
X3551-DMR	2865	2550	85	125	179	362	121	60	26	50	23	8	1.3	7.0	9.0
8C451	3112	2770	87	129	186	316	178	50	73	19	7	12	0	6.3	1.9
8D310	2820	2510	88	128	192	396	96	66	4	12	79	10	1.3	9.0	1.4
Mean (All)	3177	2827	88	127	188	343	143	56	41	31	25	11	2.6	5.4	3.6
Mean (Checks)	3384	3012	85	126	176	348	148	57	47	37	14	10	3.8	5.7	5.2
C.V.	12	12	1	0	2	4	7	3	22	26	34	15	158.0	74.7	103.6
LSD 5%	554	493	1	1	4	19	15	2	13	12	13	2	6.0	5.9	5.4

★ - All varieties had treated seed.

❖ - Yield is adjusted for 10% moisture.

■ - Percent disease is based on natural infection.

Seeded: May 14th, 2008

Harvested: October 29th, 2008

**Table 13: Performance data from the Manitoba Confectionary Sunflower Co-op Trial 2008 (MacGregor).
(for information only, not including in summarizing the 2008 data).**

Hybrid*	Yield (kg/ha)*	Yield (lbs/acre)*	Plant Height (cm)*	% Nut- meat*	Seed Size % Over Screen*			% Moisture	% Stem Breakage	% Scl. Head Rot [■]
					>22	20-22	16-20			
6946 (DE-1950)	2611	2329	160	62	33	44	21	14.1	0.8	2.2
IS 8048	2589	2309	177	53	38	36	24	15.9	3.0	7.2
Panther-DMR	2750	2453	179	50	29	40	28	13.9	4.2	2.2
DH-9583CL	2668	2380	191	55	20	48	29	18.4	1.3	0.8
RH 1121	3269	2916	198	44	64	25	8	16.8	1.7	3.0
07-EXP02	3705	3305	191	45	8	33	51	17.3	0.5	2.5
X3551-DMR	3329	2970	173	59	24	41	32	13.9	2.5	1.7
8C451	2355	2101	187	53	29	45	24	14.1	7.5	1.7
8D310	3110	2775	179	68	0	4	80	14.2	2.2	3.3
Mean (All)	2910	2596	181	55	25	35	35	16.0	2.3	2.5
Mean (Checks)	2600	2319	169	57	35	40	23	15.0	1.9	4.7
C.V.	17	17	4					9.5	112.1	77.5
LSD 5%	705	629	11	5	11	8	12	2.2	3.8	2.8

★ - All varieties had treated seed.

❖ - Yield is adjusted for 10% moisture.

☆ - Percent nutmeat and seed size % over screen is based on one replicate of data.

♣ - Plant height was estimated as short, medium, and tall and then converted to a measurement.

■ - Sclerotinia head rot is based on natural infection.

Seeded: May 14th, 2008

Harvested: October 9th, 2008

Table 14: Performance data from the Manitoba Confectionary Sunflower Co-op Trials, candidate and check hybrids, 2007 and 2008 combined.

Hybrid	Year *	Yield (kg/ha)	Yield (lbs/acre)	Days to 80% Bloom	Days to Maturity	Plant Height (cm)	Kernel Density (g/litre)	Kernel Weight (mg)	% Nut- meat	Seed Size % Over Screen		
										(2007) >20	18-20	16-18
										(2008) >22	20-22	16-20
Panther-DMR	2007 (3)*	3304	2940	73	120	176	341	127	51	47	37	12
	2008 (3)*	3152	2805	80	127	166	329	138	51	38	35	25
Mean		3228	2873	77	123	171	335	133	51	42	36	19
DH-9583CL	2007 (3)*	3091	2751	77	123	200	331	134	53	59	27	9
	2008 (3)*	3000	2670	89	135	191	294	129	55	35	39	22
Mean		3046	2711	83	129	195	312	132	54	47	33	15
RH1121	2007 (3)*	3334	2968	78	123	193	332	140	47	79	12	5
	2008 (3)*	3174	2825	88	133	196	300	139	47	67	22	10
Mean		3254	2896	83	128	195	316	139	47	73	17	7
07EXP02	2007 (3)*	2635	2345	77	127	202	326	148	47	55	33	9
	2008 (3)*	3022	2689	86	131	187	309	153	48	35	39	23
Mean		2828	2517	81	129	194	317	150	47	45	36	16
6946 (DE-1950)	2007 (3)*	3260	2901	76	115	179	351	112	58	39	42	14
	2008 (3)*	3423	3047	81	125	164	321	119	60	29	38	29
Mean		3342	2974	78	120	171	336	116	59	34	40	22
IS 8048	2007 (3)*	2779	2473	74	120	186	363	133	51	59	27	9
	2008 (3)*	2977	2649	79	127	164	347	138	54	32	35	29
Mean		2878	2561	77	124	175	355	136	53	46	31	19

• - Value between parentheses is the number of trials tested per year.

★ - These varieties had treated seed.

Table 15: Disease reactions of the Manitoba Sunflower Co-operative Trial 2008.

Hybrids		Mean Rust Index*				Verticillium* Wilt Index Nursery	% Resistance*		% Survivor Sclerotinia With Inoculum
		Race 2		Race 3			Downy Mildew		
		Score	Class	Score	Class		Race 2	Race 3	
Oil Type									
Checks									
63M52	(XF306)	5.0	HS	5.0	HS	2.4	79	0	35
6511*	(Hysun 511)	5.0	HS	5.0	HS	2.4	68	13	55
2 Year Entry									
8N358CL		5.0	HS	5.0	HS	2.7	78	2	50
IS-6131DM*		3.0	MS	5.0	HS	3.0	56	92	38
803NS-DMR*		3.0	MS	5.0	HS	3.1	41	98	11
1 Year Entry									
Teton HO-DMR		5.0	HS	5.0	HS	2.7	100	88	31
8N358CLDM*		4.0	S	5.0	HS	2.6	69	92	7
DKF29-30*		4.0	S	5.0	HS	2.6	56	80	51
DKF34-80CL*		5.0	HS	5.0	HS	2.7	79	83	46
IS7120*		4.0	S	5.0	HS	2.4	48	85	35
63N82-Express*		5.0	HS	5.0	HS	2.7	62	3	47
F51122NS-CL-DM*		4.0	S	5.0	HS	2.3	51	2	49
CFT08.00 Pomar RM*		2.0	MR	5.0	HS	2.2	89	90	33
CFT08.01 Pacific RMO*		2.0	MR	5.0	HS	2.4	62	46	43
08-EXP01*		5.0	HS	5.0	HS	2.5	0	2	51
Non-Oil Type									
Checks									
6946	(DE-1950)	4.0	S	5.0	HS	2.8	15	0	17
IS 8048		2.0	MR	5.0	HS	3.6	27	6	20
2 Year Entry									
Panther-DMR		5.0	HS	5.0	HS	3.7	96	92	17
DH-9583CL		2.0	MR	5.0	HS	3.6	21	0	23
RH 1121		0.0	HR-I	5.0	HS	3.1	33	0	24
07-EXP02		5.0	HS	5.0	HS	3.0	0	2	23
1 Year Entry									
X3551-DMR		5.0	HS	5.0	HS	3.1	65	88	20
8C451		3.0	MS	5.0	HS	3.7	28	8	10
8D310		4.0	S	5.0	HS	2.7	65	0	15

* - These hybrids had treated seed.

♣ - Reaction to rust races 2 and 3 under growth room controlled conditions. In 2008, race 3 was identified in 60% of collected isolates, and race 4 in 40%. Disease index 1-5 based on % leaf area infected; 0-1=highly resistant(0-5%); 2=moderately resistant (5-10%); 3=moderately susceptible (10-30%); 4=susceptible (30-50%); and 5=susceptible (>50%); MR=Resistant to Race 2, Susceptible to Race 3; S & HS=Susceptible to both races.

* - Field reaction to Verticillium wilt in naturally infested soil. Indices of 1 (healthy), 2(mild), 3 (moderate), 4 (severe), and 5 (dead) were assigned; the mean disease index was obtained by multiplying the number of plants in each class by the corresponding index, and the total divided by the total number of plants.

* - Reaction to downy mildew races 2 and 3 under controlled conditions in growth rooms.

◇ - Field reaction to early Sclerotinia infection using artificial inoculum at Morden, as a percent of the control.

**Table 16: Mean disease reactions of the Manitoba Sunflower Co-operative Trial
(2007 - 2008)**

Hybrids	Year	Mean Rust Index*			Verticillium*		% Resistance* Downy Mildew			
		Race		Class	Wilt		Race			
		2	3		Index	Class	2	3	Class	
Oil Type										
Checks										
63M52	(XF306)	2007	5.0	4.0		2.3		54	4	
		2008	5.0	5.0		2.4		79	0	
		Mean	5.0	4.5	HS	2.4	MR	67	2	S
6511	(Hysun 511)	2007	5.0	5.0		2.2		67	76	
		2008*	5.0	5.0		2.4		68	13	
		Mean	5.0	5.0	HS	2.3	MR	68	45	S
Candidate Hybrids										
8N358CL		2007	5.0	5.0		2.3		35	17	
		2008	5.0	5.0		2.7		78	2	
		Mean	5.0	5.0	HS	2.5	MR	57	10	S
IS-6131DM		2007*	0.0	4.0		2.4		88	51	
		2008*	3.0	5.0		3.0		56	92	
		Mean	1.5	4.5	MS	2.7	MR	72	72	MR
803NS-DMR		2007*	1.0	3.0		2.5		95	83	
		2008*	3.0	5.0		3.1		41	98	
		Mean	2.0	4.0	MS	2.8	MR	68	91	MR
Non-Oil Type										
Checks										
6946	(DE-1950)	2007	3.0	4.0		2.5		45	0	
		2008	4.0	5.0		2.8		15	0	
		Mean	3.5	4.5	S	2.7	MR	30	0	HS
IS 8048	(X5432)	2007	5.0	4.0		3.4		21	76	
		2008	2.0	5.0		3.6		27	6	
		Mean	3.5	4.5	S	3.5	MS	24	41	HS
Candidate Hybrids										
Panther-DMR		2007	3.0	4.0		3.3		98	98	
		2008	5.0	5.0		3.7		96	92	
		Mean	4.0	4.5	HS	3.5	MS	97	95	R
DH-9583CL		2007	4.0	5.0		3.0		2	0	
		2008	2.0	5.0		3.6		21	0	
		Mean	3.0	5.0	S	3.3	MS	12	0	HS
RH1121		2007*	0.0	5.0		2.8		6	5	
		2008	0.0	5.0		3.1		33	0	
		Mean	0.0	5.0	MR	3.0	MS	20	3	HS
07EXP02		2007*	0.0	2.0		2.9		0	0	
		2008	5.0	5.0		3.0		0	2	
		Mean	2.5	3.5	MS	3.0	MS	0	1	HS

★ - These varieties had treated seed.

❖ - Reaction to rust races 2 and 3 under growth room controlled conditions. Disease Index 1-5 based on % leaf area infected; 0-1=highly resistant(0-5%); 2=moderately resistant (5-10%); 3=moderately susceptible (10-30%); 4=susceptible (30-50%); and 5=susceptible (>50%); MR=Resistant to Race 2, Susceptible to Race 3; S & HS=Susceptible to both races.

* - Field reaction to Verticillium wilt in naturally infested soil. Indices of 1 (healthy), 2(mild), 3 (moderate), 4 severe),and 5(dead) were assigned; the mean disease index was obtained by multiplying the number of plants in each class by the corresponding index, and the total divided by the total number of plants.

* - Reaction to downy mildew races 2 and 3 under controlled conditions in growth rooms.