MANITOBA CROP ALLIANCE

2021

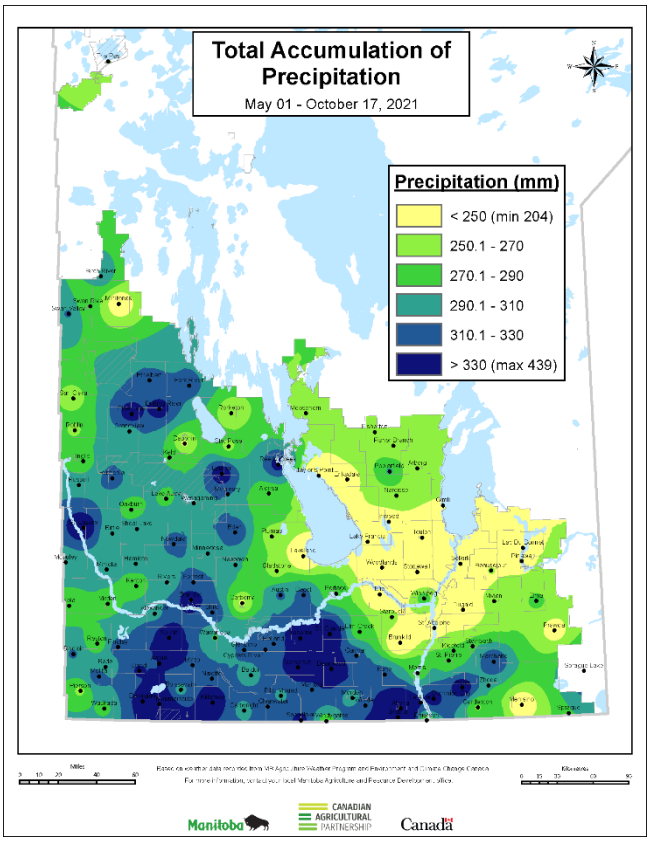
Sunflower Variety Performance Trials

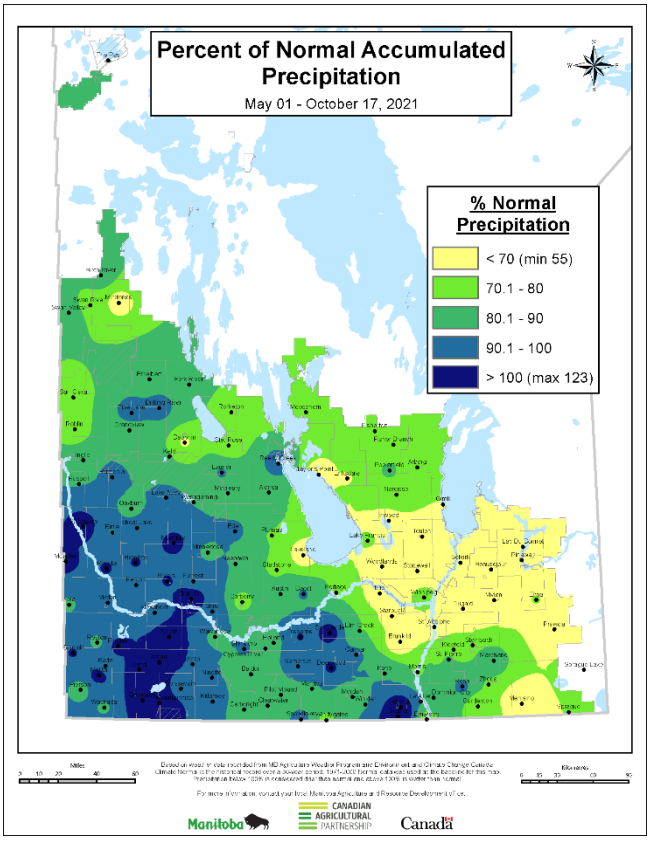
2021 Sunflower Variety Performance Trials

The Manitoba Sunflower Variety Performance Trials (VPT) were organized and conducted by the Manitoba Crop Alliance (MCA) in co-ordination with Manitoba Agriculture and Resource Development (MARD). 2021 was the 15th year that these trials have been coordinated and serve to continue as an important tool for sunflower growers for generating 3rd party, impartial hybrid performance data within Manitoba. The trials included hybrids that are either commercially available and registered within Canada or new hybrids that are being considered for registration. In 2021, the MCA coordinated the VPTs at 4 locations within the province: Carberry, Elm Creek, Melita and Rossendale.

The 2021 growing season was dry for the majority of the growing season. The trials were all initially planted the first part of May, but due to herbicide damage at the Elm Creek location the trials were replanted on June 4. The smaller seeded oilseed hybrids seemed to germinate and emerge more evenly than the larger seeded confection hybrids, creating more plant population variability in the confection trial. Variability was noted throughout the season due to the previous crop residue and soil moisture availability. Birds did not seem to be much of an issue in the trials this year. Both the Melita and Carberry locations desiccated the trials prior to harvesting. All the trials were harvested, but due to a high CV the confection trial data at Carberry was not published.

A big “Thank-you” to all the producers, seed companies and site contractors that provided the land for the trials, seed of the hybrids being tested, and the hard work conducting the trials and generating the trial results.


Total Accumulation of Precipitation
May 01 - October 17, 2021
Precipitation (mm)
< 250 (min 204)
250.1 - 270
270.1 - 290
290.1 - 310
310.1 - 330
> 330 (max 439)
Miles
Kilometers
Manitoba
CANADIAN AGRICULTURAL PARTNERSHIP
Canada


Percent of Normal Accumulated Precipitation
May 01 - October 17, 2021
% Normal Precipitation
< 70 (min 55)
70.1 - 80
80.1 - 90
90.1 - 100
> 100 (max 123)
Miles
Kilometers
Manitoba
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Canada

SUNFLOWERS - CONFECTIONARY TYPE

Comments:

These varieties were tested and data donated by the Manitoba Crop Alliance (MCA).
All sunflowers varieties listed are susceptible to sclerotinia and sunflower rust strains present in Manitoba.
Genetic resistance to verticillium wilt is rated as moderately susceptible to moderately resistant for all sunflower varieties presented.
Plant population and environment will contribute greatly to the final product.

Variety Descriptions

Company	Hybrid	Genetic Traits [1]	Site Years	Yield % Check	Maturity [2] (+/- check)	Height (inches)	Seed Sizing (%) [3] >22/64	>20/64	<20/64
NuSeed	6946 DMR	DM	31	100	0	0	35	30	33
NuSeed	Panther DMR	DM	39	100	0	-2	53	26	17
Experimental lines tested/proposed for registration in Canada									
CHS Sunflower	20-EXP3	ExSun	3	90	6	-1	51	24	25
CHS Sunflower	21-EXP1	ExSun	3	94	6	4	26	35	38
MCA	EX 35957	ExSun	6	110	-3	2	53	21	26
NuSeed	N6L377 CL	CL	3	97	1	-1	47	25	29
	CHECK CHARACTERISTICS								
	6946 DMR		31 site years	3022 lb/ac	121 days	65 inches			

1 Genetic traits include CL = Clearfield tolerance; ExSun = Express tolerance; DM = Downy Mildew Resistance.
2 Physiological maturity for sunflowers is R9, where the bracts on the head are almost completely brown.
3 Totals may not add to 100% due to rounding; information based off three sites at Elm Creek, Melita, and Rossendale.
Refer to the MCA website at www.mbcropalliance.ca for more details.

Site Comparisons

	Elm Creek						Melita						Rossendale					
	Yield	Maturity[1]	2021 Seed Sizing (%)[2]			Test Wt	Yield	Maturity[1]	2021 Seed Sizing (%)[2]			Test Wt	Yield	Maturity*	2021 Seed Sizing (%)[2]			Test Wt
Hybrid	(lb/ac)	(days to R9)	>22/64	>20/64	<20/64	(lb/bu A)	(lb/ac)	(days to R9)	>22/64	>20/64	<20/64	(lb/bu A)	(lb/ac)	(days to R9)	>22/64	>20/64	<20/64	(lb/bu A)
6946 DMR	1934	106	1	4	95	25.0	2670	--	45	29	26	26.1	1896	113	19	46	34	17.8
Panther DMR	1672	101	8	28	65	22.7	2968	--	62	23	15	25.7	1925	114	35	42	23	16.5
Experimental lines being tested/proposed for registration in Canada																		
20-EXP3	1339	114	10	33	57	17.4	2762	--	75	17	8	23.4	1723	116	67	21	11	16.3
21-EXP1	1278	113	18	30	51	13.4	3166	--	33	40	27	23.8	1697	118	28	36	35	16.5
EX 35957	1749	103	1	16	84	27.3	2771	--	62	20	19	26.5	1674	113	57	31	12	17.8
N6L377 CL	1566	106	8	27	66	21.6	2811	--	66	22	12	22.8	1935	114	66	27	8	14.6
Site Average	1637					21.7	2858					24.7	1808	115				16.6
CV%	11.8						12.1						11.0					
Sign Diff	Yes						No						No					
LSD (0.05)	344						--						--					
Planting Date	04-Jun						12-May						12-May					
Desiccation Date	--						--						28-Sep					
Harvest Date	22-Oct						06-Oct						11-Oct					

1 Physiological maturity for sunflowers is R9, where the bracts on the head are almost completely brown.
2 Totals may not add to 100% due to rounding
Refer to the MCA website at www.mbcropalliance.ca for more details.

SUNFLOWERS - OIL TYPE

Comments:

These varieties were tested and data donated by the Manitoba Crop Alliance (MCA).
Oil Sunflower markets - include birdfood, oil crush and de-hull. Variety selection becomes more important when trying to capture de-hull markets. Choose varieties with better de-hull ratio, larger size and higher test weight. Environment will contribute greatly to final product.
Plant population and environment will contribute greatly to the final product.
Percent (%) oil content was unavailable at press time, visit www.mbcropalliance.ca for more detail.

Variety Descriptions

Company	Variety	Herbicide/Disease Tolerance [1]	Site Years	Yield (% check)	Maturity[2] (+/- check)	Height (inches)	% Oil	Oil Type[3]	Test Weight[4]
Pioneer Hi-Bred	P63HE60	ExSun / DM	15	101	3	-4	45.5	HO	31.7
Pioneer Hi-Bred	P63ME80	ExSun / DM	18	100	0	0	48.4	NS	30.9
NuSeed	N4H302 E	ExSun	9	94	-4	2	44.0	HO	28.6
NuSeed	N4HM354	CL / DM	15	112	-2	-7	47.7	NS	33.0
NuSeed	Talon	ExSun	18	102	-3	-3	44.1	NS	28.2
Experimental lines tested/proposed for registration in Canada									
Pioneer Hi-Bred	P63HE501	ExSun	5	106	-1	2	42.9	HO	28.1
CHS Sunflower	8D310CL	CL	5	113	3	5	39.5	CO	24.8
NuSeed	N4H161 CL	CL	3	98	-5	-7	44.0	HO	28.0
NuSeed	NLKP74437	CL	3	120	-1	7	44.6	NS	27.7
WinField United | CROPLAN	CP432E	ExSun	5	114	-2	0	43.4	NS	28.1
WinField United | CROPLAN	CP455E	ExSun	5	126	2	2	45.2	HO	27.8
	CHECK CHARACTERISTICS								
	P63ME80		18 site years	3012 lb/ac	126 days	65 inches			

1 Genetic traits include CL = Clearfield herbicide tolerance; ExSun = Express SG herbicide tolerance; DM = Downy Mildew Resistance.

2 Physiological maturity for sunflowers is R9, where the bracts on the head are almost completely brown.

3 Oil Type designations are NS=NuSun; HO=High Oleic; CO = ConOil

4 Test weights reported in lbs per Avery (Canadian) bushel.

Site Comparisons

	Carberry					Elm Creek					Melita					Rossendale				
Hybrid	Yield (lb/ac)	Moisture (%)	Maturity[1] (days to R9)	Test Wt[2] (lb/bu)	Oil (%)	Yield (lb/ac)	Moisture (%)	Maturity[1] (days to R9)	Test Wt[2] (lb/bu)	Oil (%)	Yield (lb/ac)	Moisture (%)	Maturity[1] (days to R9)	Test Wt[2] (lb/bu)	Oil (%)	Yield (lb/ac)	Moisture (%)	Maturity[1] (days to R9)	Test Wt[2] (lb/bu)	Oil (%)
N4H302 E	2265	15.1	139	26.4	47.7	1612	12.9	110	29.7	45.3	2769	8.0	--	30.5	48.1	1180	9.6	115	21.5	39.8
N4HM354	2573	12.8	139	27.5	50.6	1799	13.9	106	32.6	48.3	2871	7.7	--	32.9	50.0	1405	9.1	114	29.1	46.1
Talon	2713	14.9	142	26.4	46.3	1647	15.0	104	29.0	44.6	2794	7.9	--	28.6	47.1	1336	9.5	113	20.6	37.6
P63HE60	2546	12.7	140	26.9	47.4	1212	13.3	113	29.7	42.1	2374	8.4	--	30.1	44.4	1548	9.2	114	27.7	40.3
P63ME80	2714	12.5	142	29.3	48.9	1251	13.6	114	28.8	41.9	2381	8.5	--	30.3	47.2	1270	8.9	119	25.8	44.7
Experimental lines being tested/proposed for registration in Canada																				
8D310CL	3104	15.5	145	27.1	42.7	1858	13.8	115	28.2	36.7	2769	9.0	--	27.8	40.5	1556	8.9	120	19.3	35.2
P63HE501	2270	12.1	139	28.4	45.0	1679	13.0	105	32.6	42.2	2946	7.8	--	32.0	42.9	1495	9.1	117	25.8	39.2
N4H161 CL	2266	14.8	144	27.3	46.2	1094	11.2	92	33.6	45.1	2610	8.5	--	31.1	46.6	1334	8.7	108	25.7	39.1
NLKP74437	2881	20.3	139	26.5	45.8	1659	15.1	114	28.0	40.4	3242	9.7	--	31.0	46.3	1537	9.1	121	27.7	41.8
CP432E	2826	12.5	142	28.4	46.4	1316	12.6	105	30.9	39.4	3065	8.1	--	31.1	44.4	1678	10.0	115	26.2	40.1
CP455E	3379	16.4	142	27.4	46.2	1649	14.1	114	31.5	41.7	3412	9.0	--	31.3	48.0	1837	9.0	119	26.3	43.9
Site Average	2685	14.5	141	27.4	46.7	1525	13.5	108	30.4	42.5	2839	8.4		30.6	46.0	1471	9.2	116	24.9	40.7
CV%	7.4					10.2					8.4					14.5				
Sign Diff	Yes					Yes					Yes					Yes				
LSD (0.05)	444					265					405					365				
Planting Date	12-May					04-Jun					12-May					12-May				
Desiccation Date	29-Sep					--					21-Sep					28-Sep				
Harvest Date	12-Oct					22-Oct					06-Oct					11-Oct				

1 Physiological maturity for sunflowers is R9, where the bracts on the head are almost completely brown.
2 Test weights are reported in lbs per Avery (Canadian) bushel.
Refer to the MCA website at www.mbcropalliance.ca for more details.

DISTRIBUTOR CONTACTS FOR TESTED VARIETIES

Distributor	Seed Brand/Company	Phone Number
CHS Sunflower		1-701-484-5313
Corteva AgriScience	Pioneer Brand Seeds	1-800-667-3852
Manitoba Crop Alliance (MCA)		1-204-745-6661
Nuseed Americas Inc.	Nuseed	1-701-652-5021
WinField United Canada	CROPLAN	1-888-975-4769

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