

Saskatchewan Sunflower Regional Trial Report 2016

By William May, AAFC, Indian Head

The regional trial was conducted at 4 locations in 2016 and data from 3 locations is available. The locations were Indian Head, Redvers, Swift Current, and Melfort. The check was 63A21. The grain yield of the check ranged from 1700 to 2700 kg ha⁻¹. The currently available data is presented for each site Tables 1 to 3. Kernel moisture at harvest is the best indicator we have of earliness and suitability of the hybrid for production in Saskatchewan. The commercially available hybrids are 63A21, 8N270, and Honeycomb NS. AC Seirra is an open pollinated cultivar. The hybrids Honeycomb NS (X713) was developed by Brent Hulke with USDA at Fargo ND and a limited amount of seed will be available in 2017. In 2016 AC Sierra matured in 103 days, Honeycomb NS matured in 105 days, 63A21 matured in 109 days and 8N270 matured in 113 days when average over the three locations. In addition, the kernel moisture at harvest followed a similar trend; kernel moisture averaged 15.4% for AC Sierra 14.1% for Honeycomb NS, 16.8% for 63A21 and 17.6% for 8N270. Producers will be able to Honeycomb NS earlier in the fall than the current check, 63A21. In 2016 the grain yield compared to the check, 63A21 for AC Sierra was 47% 100% for Honeycomb NS, and 101% for 8N270. At Indian Head in 2016 for the first time Honeycomb NS had a yield that was below the check. This may be due to the low plant stand, 21,000 plants/acre, that was achieved at this site for Honeycomb NS. Over the last three years (9 site years of data) Honeycomb NS has a yield of 111% of the check and reaching physiological maturity 4 days earlier and a harvest kernel moisture of 13% compared to 18% for the check. This hybrid appears to be adapted to production in most of the growing regions of Saskatchewan. The tables for the varieties of grain crops are shown after Table 3.

Table 1. Saskatchewan Sunflower Hybrid Trial at Melfort in 2016

	Plant Density /m ²	Plant Density /acre	First Bloom days	HEIGHT cm	Lodging 0-10	Maturity days	Harv Moisture %	Grain yield kg/ha	Grain Yield Lbs/ac	Kernel Weight g/1000k	Test weight g/0.5 L
63A21 (11.1 plants m ⁻²)	5.6 a	22544 a	60 b	172.5 a		113 ab	2572 a	2290 a	40.95 d	165.3 b	
AC Sierra (11.1 plants m ⁻²)	3.3 bc	13380 bc	55 c	135 b		104.3 cd	1592 b	1418 b	49.95 c	185.4 a	
8N 270CL DM	3 c	12097 c	65 a	175.8 a		115 a	1645 b	1464 b	38.75 d	163.4 b	
63A21 (8 plants m ⁻²)	3.3 bc	13380 bc	60 b	180.8 a		108.7 bc	1914 b	1704 b	43.05 cd	165.5 b	
Honeycomb NS (X713)	3.8 b	15396 b	63 a	166.3 a		109 b	2814 a	2505 a	62.15 b	189.3 a	
Findland	2 d	8248 d	50 d	89.3 c		102 d	902.8 c	803.8 c	71.45 a	189.4 a	
LSD (P=.05)	0.8	3223.53	3	15.33		4.39	611.883	544.776	8.016	12.515 - 12.995	
CV	15.09	15.09	3.4	6.64		2.22	21.29	21.29	10.42	2.4t	
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001		0.0005	0.0001	0.0001	0.0001	0.0004	

Table 2. Saskatchewan Sunflower Hybrid Trial at Indian Head in 2016

	Plant Density /m ²	Plant Density /acre	First Bloom days	HEIGHT cm	Lodging 0-10	Maturity days	Harv Moisture %	Grain yield kg/ha	Grain Yield Lbs/ac	Kernel Weight g/1000k	Test weight g/0.5 L
63A21 (11.1 plants m ⁻²)	11.2 a	45033 a	69 b	159.5 b	1.5 a	118 a	21.27 a	3023 a	2691 a	56.68 cd	191.6 ab
AC Sierra (11.1 plants m ⁻²)	5.3 c	21509 c	64 c	118.3 c	1.3 a	110 b	17.97 bc	1313 c	1169 c	73.04 ab	192.4 ab
8N 270CL DM	9.7 ab	39299 ab	75 a	177.9 a	1.3 a	120.8 a	18.34 bc	3034 a	2701 a	54.32 d	201.6 a
63A21 (8 plants m ⁻²)	7.4 b	29710 b	70 b	152.4 b	1.3 a	119.5 a	19.65 ab	2798 a	2491 a	64.25 bcd	184.6 b
Honeycomb NS (X713)	5.4 c	21651 c	68 b	151.8 b	1.5 a	110.8 b	16.8 c	2036 b	1813 b	69.98 abc	193.5 ab
Findland	3.3 d	13343 d	56 d	83.1 d	1.3 a	98 c	17.4 bc	558.6 d	497.4 d	83.34 a	160.6 c
LSD (P=.05)	1.30 - 2.81	362.42 - 12027.4	2.6	17.61	0.71	6.44	2.522 - 2.764	667.47	594.265	14.46	3.7897 - 14.844
CV	8.61t	2.03t	2.61	8.32	35.36	3.78	2.96t	20.82	20.82	14.33	2.58t
Treatment Prob(F)	0.0001	0.0001	0.0001	0.0001	0.9053	0.0001	0.028	0.0001	0.0001	0.0062	0.0004

Table 3. Saskatchewan Sunflower Hybrid Trial at Redvers in 2016

	Plant Density /m ²	Plant Density /acre	First Bloom days	HEIGHT cm	lodging 0-10	Maturity days	Harv Moisture %	Grain yield kg/ha	Grain Yield Lbs/ac	Kernel Weight g/1000k	Test weight g/0.5 L
63A21 (11 plants m ⁻²)	9.7 a	39204 a	61 b	159.8 a	2.8 a	96.5 b	12.35 ab	1692 b	1506 b		
AC Sierra (11 plants m ⁻²)	7.3 a	29403 a	57 c	126.1 b	3.8 a	96 bc	12.92 ab	489.9 c	436 c		
8N 270CL DM	7.1 a	28586 a	65 a	171 a	3.3 a	103.8 a	16.82 a	2684 a	2388 a		
63A21 (8 plants m ⁻²)	7.3 a	29675 a	61 b	163.9 a	2.8 a	96.8 b	14.61 ab	1845 ab	1642 ab		
Honeycomb NS (X713)	6.2 a	25047 a	61 b	164.9 a	3 a	96.8 b	11.43 b	2466 ab	2195 ab		
Findland	6 a	24230 a	47 d	90.9 c	2.3 a	91.3 c	8.09 c	164.7 c	146.5 c		
LSD (P=.05)	2.65	10716.4	1.3	13.67	1.12	4.88	3.057 - 4.482	931.206	828.773		
CV	24.22	24.22	1.42	6.21	25.13	3.34	7.4t	32.88	32.88		
Treatment Prob(F)	0.1021	0.1021	0.0001	0.0001	0.1569	0.0028	0.0039	0.0006	0.0006		

Sunflower (Oilseed)

EMSS (Early Maturing)

Main Characteristics of Hybrids and Varieties

Variety	Years Tested	Yield as % of 63A21	Average Maturity (days)	Harvest Moisture %
63A21	7	100	110	18.5
Honeycomb NS	3	111	106	13.3
AC Sierra	7	68	105	16.1

Full Season

Main Characteristics of Hybrids and Varieties

Variety	Years Tested	Yield as % of 63A21	Average Maturity (days)	Harvest Moisture %
63A21	7	100	110	18.5
8N 270*	7	92	115	23.6
Talon*	2	92	113	30.1
Cobalt II*	3	76	115	30.4

* has herbicide tolerance.

Sunflower requires 105-125 days to mature, depending on the cultivar and the growing season. Oilseed sunflower has been grown in the Dark Brown and Black Soil Zones in southeastern Saskatchewan. Harvest moisture is a good indication of how quickly these hybrids will be ready to combine in the field. The EMSS varieties are adapted to production in most areas of Saskatchewan. **AC Sierra** is open pollinated and not a hybrid.

The Saskatchewan Sunflower Committee has been conducting trials in Saskatchewan for the purpose of registration and demonstration since 1983. Sunflowers no longer require three years of yield testing to be sold in Saskatchewan. Saskatchewan Sunflower Committee will publish results from each year. For the complete data set please email or call Sherri Roberts with Saskatchewan Agriculture (sherri.roberts@gov.sk.ca) (306) 848-2856.

SUNFLOWER

AC Sierra	AAFC (Saskatoon)	AAFC (Indian Head)
63A21	Pioneer Hi-Bred	Pioneer Hi-Bred
8N 270	Hyland Seeds	Mycogen Seeds
Talon	Nuseed Americas	Nuseed Americas
Cobalt II	Nuseed Americas	Nuseed Americas
Honeycomb NS	USDA	Quarry Seed