

Wheat and Durum Variety Trial

Summary

Wheat variety trials were conducted during 2018 to evaluate the performance of several varieties in east-central Alberta. Varieties of durum, winter wheat, CPSR-CNHR, CWRS & CWSWS, CWSP & CWSWS wheat were tested at Oyen and Acadia Valley. These variety trials are part of Alberta's and Saskatchewan's Regional Variety Testing Program.

More information on varieties is available in the seed.ab.ca seed guide published by the Alberta Seed Industry Partnership, the www.seed.ab.ca website or the Varieties of Cereal and Oilseed Crops report on the Alberta Agriculture and Rural Development website at www.agric.gov.ab.ca. Feel free to call the CARA office with your questions.

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Project Description and Precipitation Summary – see “Variety Trials” report section.

Site Information:

Table 1 **Soil Analysis**

Soil Analysis	Acadia Valley	Oyen
Nitrogen* (0-24")	24 lb/A (D)	66 lb/A (D)
Phosphorus* (0-6")	12 lb/A (D)	28 lb/A (D)
Potassium* (0-6")	1200 lb/A (E)	645 lb/A (O)
Sulfate* (0-24")	13 lb/A (M)	71 lb/A (O)
Soil Salinity* (E.C.)	0.43 (G)	0.64 (G)
pH	8 (alkaline)	7.7 (alkaline)
OM (%)	4.6 (normal)	2.5 (normal)
Soil Texture	Clay	Loam

* D = Deficient, M = Marginal, O = Optimum, E = Excess,

Table 2 **Precipitation 2018 (inches)**

Month	Acadia Valley	Oyen
May	1.0	0.9
June	3.1	2.5
July	2.1	1.8
Aug	2.0	0.4
Total	8.2	5.6

Table 3 **Agronomic Information 2018**

	Acadia Valley	Oyen*
Previous crops	Field Peas	Canola
Seeding Date	May 17	Sept 26 2017
Seeding Depth	1.5-2 inches	1.5-2 inches
Seedbed Condition	Good moisture conditions	
Seeding Rate	18 plants per square foot	
Fertilizer**	150 lb/a 26-18-5-3	235 lb/a 19-12-0
Seeder***	Henderson 500 drill	
Seedbed Preparation	Pre-seed glyphosate	
Herbicide	Buctril M + Achieve Liquid Gold +Turbocharge	
Fungicide	None applied	
Harvest Dates:		
Durum	October 16	
All wheat	October 16	August 14

*winter wheat **placed between paired rows *** 5 paired rows on 11" spacing

Results:

Table 4a **Durum – Acadia Valley 2018**

Variety	Yield (lb/A)	Yield (bu/A at 60 lb/bu)	Height (cm)	Protein (%)	Bushel Weight (lb/bu)	TKW (grams)
AAC Stronghold	2791	47	73	11	67.0	45.3
AAC Succeed VB	2869	48	76	12	66.5	39.8
Brigade	2999	50	78	11	66.3	43.5
CDC Alloy	3212	54	78	11	65.8	44.4
CDC Credence	3313	55	83	11	63.9	39.2
CDC Dynamic	2716	45	74	12	65.7	40.4
DT878	3124	52	77	11	67.0	46.0
Strongfield	2669	44	74	11	65.6	42.1
Transcend	2817	47	84	11	67.7	46.2
Mean	2946	49	77	11	66	43
LSD (0.05)	NS					
C.V. %						

Comments: Yield of the durum varieties at the Acadia Valley site in 2018 were not significantly different statistically. Variety yield averages were between 44 to 54 bu/A. The overall yield mean was 49 bu/A. 2018 mean yield was 20 bu/A lower than 2017 for the Durum varieties. Bushel weight average was 6 lb/bu above the industry standard (60 lb/bu).

Table 4b Durum – Oyen 2018

Variety	Yield (lb/A)	Yield (bu/A at 60 lb/bu)	Protein (%)	Bushel Weight (lb/bu)	TKW (grams)
AAC Stronghold	3321	55	13	64.9	42.0
AAC Succeed VB	3424	57	13	65.4	41.0
Brigade	3460	58	13	64.4	42.3
CDC Alloy	3069	51	13	65.3	42.5
CDC Credence	3307	55	14	64.5	42.5
CDC Dynamic	2867	48	13	64.2	42.5
DT878	3381	56	13	75.6	41.5
Strongfield	3334	56	13	65.7	43.7
Transcend	2823	47	13	65.9	43.0
Mean	3221	54	13	65	41
LSD (0.05)	299	5			
C.V. %	9.27				

Comments: Yields of the durum varieties at Oyen for the Alberta Regional Variety Trials performed better than the same varieties in Acadia Valley. Oyen average yield was 8 bu/A higher. Varieties averaged 54 bu/A. Bushel weight average was 5 lb/bu higher than the industry standard (60 lb/bu).

Table 4c CPS Durum – Acadia Valley 2018

Variety	Yield (lb/A)	Yield (bu/A at 60 lb/bu)	Height (cm)	Protein (%)	Bushel Weight (lb/bu)	TKW (grams)
AAC Congress	2867	48	70	12	66.1	39.9
AAC Marchwell	2872	48	72	12	65.1	38.2
AAC Raymore	2540	42	68	13	65.4	39.8
AAC Spitfire	2753	46	69	12	66.5	41.3
AAC Stronghold	2923	49	71	12	65.6	39.0
CDC Brigade	3010	50	77	12	64.4	38.0
CDC Carbide	2720	45	75	13	65.6	40.9
CDC Dynamic	2402	40	70	14	65.3	38.5
CDC Fortitude	2734	46	72	13	64.1	38.4
CDC Precision	2745	46	74	13	65.4	40.8
CDC Vivid	2782	46	73	13	65.7	38.6
DT591	2669	44	68	13	64.4	38.6
Strongfield	2854	48	70	13	66.5	43.0
Transcend	2666	44	73	13	66.9	40.6
Mean	2753	46	72	13	66	40
LSD (0.05)	NS					
C.V. %						

Comments: Yield of the CPS durum varieties at Acadia Valley site for 2018 were not statistically significant different with yields ranging from 40 to 50 bu/A and averaging 46 bu/A, 9 bu/A lower than 2017. Bushel weight average was 6 lb/bu above the industry standard (60 lb/bu).

Table 4d Saskatchewan RVT Durum Trial – Acadia Valley 2018

Variety	Yield (lb/A)	Yield (bu/A at 60 lb/bu)	Protein (%)	Bushel Weight (lb/bu)	TKW (grams)
AAC Cabri	3038	51	12	65.5	40.3
AAC Congress	3447	57	13	66.0	40.5
AAC Spitfire	2947	49	14	65.6	38.5
AAC Stronghold	3075	51	14	65.2	40.3
AAC Succeed VB	3285	55	13	64.9	39.3
CDC Alloy	3502	58	12	65.4	38.5
CDC Carbide VB	3118	52	13	63.9	39.5
CDC Credence	3050	51	14	64.9	38.7
CDC Dynamic	2991	50	14	64.3	40.3
CDC Precision	3211	54	13	65.2	40.3
DT587	3470	58	13	65.3	38.6
DT591	3017	50	14	64.9	39.5
DT878	3107	52	13	64.1	45.0
Strongfield	3323	55	13	64.8	40.7
Mean	3184	53	13	65	40
LSD (0.05)	NS				
C.V. %					

Comments: Yields of the Saskatchewan durum trial at Oyen site for 2018 were not statistically significant different, with yields ranging from 49 to 57 bu/A and averaging 53 bu/A. Bushel weight average was 5 lb/bu higher than the industry standard (60 lb/bu).

Table 5. CPRS-CNHR Wheat – Acadia Valley 2018

Variety	Yield (lb/A)	Yield (bu/A at 60 lb/bu)	Height (cm)	Protein (%)	Bushel Weight (lb/bu)	TKW (grams)
AAC Brandon	3145	52	69	12	66.9	33.7
AAC Entice	2920	49	67	12	65.8	40.5
AAC Goodwin	3158	53	73	12	67.0	34.5
AAC Penhold	3188	53	62	12	66.7	39.5
AC Foremost	3255	54	64	12	66.1	41.1
Carberry	2696	45	71	13	67.1	35.2
CDC Terrain	3198	53	69	11	65.3	39.0
HY2003 VB	3021	50	72	11	64.7	37.7
SY Rowyn	2862	48	62	12	66.2	29.8
Mean	3049	51	68	12	66	37
LSD (0.05)	274	5				
C.V. %	11.6					

Comments: Yields for the CPRS wheat at Acadia Valley ranged between 45 to 54 bu/A with an average of 51 bu/A (15 bu/A less than 2017 average yield). There was significant difference in yield (lb/A) between varieties. AC foremost has the higher yield. The protein average was 12%. Bushel weights were all 6 lb/bu above the industry standard 60 lb/bu.

Table 6. **CWSP & CWSWS Wheat – Acadia Valley 2018**

Variety	Yield (lb/A)	Yield (bu/A at 60 lb/bu)	Height (cm)	Protein (%)	Bushel Weight (lb/bu)	TKW (grams)
AAC Awesome	2975	50	68	12	64	40
AAC Brandon	2790	46	66	13	65	34
AAC Paramount	3517	59	72	11	64	38
AC Andrew	3156	53	65	11	63	35
AC Sadash	3355	56	71	11	64	37
Carberry	2659	44	69	14	65	35
KWS Alderon	3483	58	51	12	62	38
KWS Charing	3462	58	56	11	63	36
KWS Sparrow	3289	55	57	12	63	37
Pasteur	3275	55	57	12	65	37
Mean	3196	53	63	12	64	37
LSD (.05)	NS					
C.V. %						

Comments: The CWSP & CWSWS wheat varieties at Acadia Valley site averaged 53 bu/A ranging from 44 to 59 bu/A. AAC Paramount had the highest yield while Carberry had the lower. These variety yields were no significant different among them. The protein average was 12%

Table 7 CWRS & CWSH Wheat – Acadia Valley 2018

Variety	Yield (lb/A)	Yield (bu/A at 60 lb/bu)	Height (cm)	Protein (%)	Bushel Weight (lb/bu)	TKW (grams)
AAC Alida VB	2895	48	73	15	65	37
AAC Brandon	3067	51	69	14	66	35
AAC Cirrus	2716	45	64	15	65	30
AAC Jatharia VB	2763	46	77	14	65	34
AAC Tisdale	2835	47	69	15	64	34
AAC Viewfield	2937	49	62	15	66	34
AAC Warman VB	2877	48	75	14	64	34
BW1041	2902	48	69	14	64	36
BW1045	2814	47	69	14	63	35
BW1049	2736	46	71	15	65	35
BW5005	2529	42	65	14	64	35
BW5007	2737	46	69	14	65	35
BW5011	2907	48	69	15	65	37
BW5013	3231	54	65	14	66	36
Carberry	2694	45	66	15	65	35
CDC Adamant	2843	47	66	14	65	33
CDC Go	3048	51	74	14	64	39
CDC Hughes	2567	43	67	15	65	38
CDC Landmark VB	2455	41	68	15	65	36
Parata	2976	50	72	14	64	33
Parkland	2254	38	64	16	64	32
PT596	3063	51	66	13	63	28
PT782	2714	45	77	14	70	31
PT785	2702	45	66	13	63	29
Stettler	2791	47	69	14	65	33
SY Sovite	2612	44	69	15	64	36
Mean	2795	47	69	14	65	34
LSD (0.05)	390	6				
C.V. %	12					

Comments: The CWRS & CWSH wheat varieties at Acadia Valley averaged 47 bu/A, ranging from 38 to 54 bu/A. Protein levels averaged 14%.

Table 8. Winter Wheat – Oyen 2018

Variety	Yield (lb/A)	Yield (bu/A at 60 lb/bu)	Height (cm)	Protein (%)	Bushel Weight (lb/bu)	TKW (grams)
AAC Elevate	2029	34	72	13	65	35
AAC Gateway	2196	37	78	12	67	35
AAC Goldrush	2729	45	83	13	64	34
AAC Icefield	1437	24	76	13	66	34
AAC Wildfire	3081	51	77	11	65	36
CDC Buteo	2545	42	73	12	65	34
Radiant	2819	47	77	13	64	36
W520	3065	51	76	11	64	32
W522	1939	32	81	13	64	34
Mean	2500	42	77	12	65	35
LSD (.05)	757	13				
C.V. %	26					

Comments: The winter wheat varieties at the Oyen averaged 42 bu/a. Average yield for 2018 was lower than previous year for at least 10 bu/A. The protein average was 12%. A significant difference in yield (lb/A) was found between varieties. Bushel weights were 5 lb/bu higher than the industry standard of 60 lb/bu.

For the summaries data of average yield of all variety tested in East Central Alberta please refer to previous years of the CARA's Annual Project Reports.