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CULTIVAR DESCRIPTION

AAC Durafield durum wheat

A.K. Singh, R.M. DePauw, R.E. Knox, J.M. Clarke, T.N. McCaig, R.D. Cuthbert, and Y. Ruan

Abstract: AAC Durafield durum wheat (*Triticum turgidum* L. subsp. *durum* (Desf.) Husn.) is adapted to the durum production area of the Canadian prairies. AAC Durafield combines agronomic traits comparable to the widely adopted cultivar Strongfield with high semolina yield, high semolina yellow pigment, strong gluten, and low grain cadmium concentration.

Key words: Triticum turgidum L. subsp. *durum* (Desf.) Husn., durum wheat, cultivar description, grain yield, semolina yield, yellow pigment, cadmium.

Résumé : AAC Durafield est une variété de blé dur [*Triticum turgidum* L. ssp *durum* (Desf.) Husn.] acclimatée aux régions des Prairies canadiennes consacrées à cette culture. AAC Durafield combine des caractères agronomiques comparables à ceux du très populaire cultivar Strongfield à un rendement élevé en une semoule très jaune, riche en gluten, et à des grains pauvres en cadmium. [Traduit par la Rédaction]

Mots-clés : Triticum turgidum L. ssp *durum* (Desf.) Husn., blé dur, description de cultivar, rendement grainier, rendement en semoule, pigment jaune, cadmium.

Introduction

AAC Durafield durum wheat was developed at the Semiarid Prairie Agricultural Research Centre (SPARC), Agriculture and Agri-Food Canada (AAFC), Swift Current, SK. Plant Breeders' Rights, Certificate No. 5106 was granted on 10 Sept. 2015 and AAC Durafield received registration No. 7478 from the Variety Registration Office, Canadian Food Inspection Agency, on 24 Jan. 2014.

Pedigree and Breeding Method

AAC Durafield (experimental names: DT832, A0345&BV022) was selected from the cross DT749/DT735//Strongfield made in 2003 at Semiarid Prairie Agricultural Research Centre, Swift Current, SK. DT749 (A9822-LH1) is a breeding line derived from a cross of AC Avonlea/Napoleon. DT735 (9781-BW5) is a breeding line derived from a cross of DT696/AC Avonlea. AC Avonlea (Clarke et al. 1998), Napoleon (Humphreys et al. 2010), and Strongfield (Clarke et al. 2005b) are Canadian durum cultivars. The parents were haplotyped with molecular markers linked to lipoxygenase, *Cdu1* controlling cadmium uptake, *Sm1* controlling response to orange wheat blossom midge, FHB (*Fhb1*, and Fhb-5AS), and *Lr34* (Randhawa et al. 2013). DT832 was developed through the doubled haploid (DH) technique at SPARC-AAFC using the wheat-maize pollen system (Knox et al. 2000). The production of a DH population is an on-going generative action but the DH lines are grown outdoors as subsets as they come out of the DH lab prior to the growing season. In 2005, two subsets of DH lines were produced with lot sizes of 190 and 116. In spring 2005, the first subset of 190 doubled haploid genotypes was grown near Swift Current under irrigation. The seed was planted in 1.5 m long rows spaced 23 cm apart with every second row planted with CDC Kestrel winter wheat

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A.K. Singh. Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Box 1030, Swift Current, SK S9H 3X2, Canada; Present address: Department of Agronomy, Iowa State University, Ames, IA 50011, USA.

R.M. DePauw and T.N. McCaig. Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Box 1030, Swift Current, SK S9H 3X2, Canada; Retired.

R.E. Knox, R.D. Cuthbert, and Y. Ruan. Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Box 1030, Swift Current, SK S9H 3X2, Canada.

J.M. Clarke. Department of Plant Sciences, University of Saskatchewan, Saskatoon, SK S7N 5A8, Canada.

Corresponding author: R.M. DePauw (email: ron.depauw1944@gmail.com).

Table 1. Grain yield (kg ha^{-1}) of AAC Durafield and check cultivars in the Durum Cooperative Test, 2009 to 2012 in zones 1 and 2.[a]

	2009			2010			2011			2012			2009–2012		
	Zone 1	Zone 2	Mean[b]	Zone 1	Zone 2	Mean	Zone 1	Zone 2	Mean	Zone 1	Zone 2	Mean	Zone 1	Zone 2	Mean
AC Avonlea	6211	4279	4922	4466	3607	3895	4312	3700	3823	2947	3008	2991	4521	3658	3919
AC Morse	5961	4172	4771	4907	3746	4133	4245	3876	3949	2723	3352	3162	4495	3786	4005
AC Navigator	5772	4499	4921	3635	3631	3633	3793	3667	3692	2138	3055	2780	3857	3724	3752
Strongfield	6258	4405	5021	4658	3749	4053	4487	3886	4008	2934	3359	3232	4617	3860	4088
Commander	6244	4569	5128	4307	3767	3943	4164	3940	3983	2794	3302	3152	4398	3909	4050
AAC Durafield	5934	4358	4890	4982	3809	4197	4867	3958	4137	2997	3372	3261	4690	3882	4129
$LSD^{c}_{0.05}$	525	217	250	446	339	279	908	207	231	473	383	309	364	219	211
# tests	4	8	12	3	6	9	2	8	10	3	7	10	12	29	41
Mean of checks	6089	4385	4953	4395	3700	3931	4200	3814	3891	2707	3215	3064	4378	3787	3963

[a]Zone 1 (black soils): Indian Head (2009, 2011, 2012), Souris (2009, 2010, 2011, 2012), Brandon (2009, 2010, 2012), Langdon (2009, 2010); Zone 2 (brown and dark brown soils): Swift Current, Stewart Valley (2009, 2011, 2012), Saskatoon, Regina, Lethbridge, Vulcan, Moose Jaw, Pense (2009), Scott (2011).
[b]Means are LS means obtained from PROC MIXED procedure of SAS.
[c]Least significant difference, $P \le 0.05$, includes the appropriate genotype by environment interaction variation.

(Fowler 1997), which is susceptible to leaf (*Puccinia triticina* Eriks.) and stem rust (*Puccinia graminis* Pers.:Pers. f. sp. *tritici* Eriks. and E. Henn.). An irrigated leaf rust and stem rust epiphytotic nursery was established by planting genotypes (spreader row) susceptible to prevalent races of leaf and stem rust in every 12th plot and needle inoculating a sample of plants in each spreader row with leaf rust and stem rust. Representative leaf rust races found the previous year were used to inoculate (McCallum and Seto-Goh 2006). Stem rust races used were: QTHST (C25), RHTSK (C20), RKQSR (C63), RTHJT (C57), TMRTK (C10), and TPMKR (C53) (Roelfs and Martens 1988; Fetch 2005). Based on response to rusts, pathogens causing leaf spots (natural infection), plant height, straw strength, and days to maturity, 160 DH lines were selected. Seed of each selected DH line was grown in 2 m long rows near Leeston, New Zealand, in the fall of 2005. The second subset of 116 DH lines, which included A0345&BV022, were harvested from the greenhouse and were grown in 2 m long rows in the same nursery near Leeston, NZ. Based on plant height, days to maturity and straw strength, 182 DH genotypes were selected from the two subsets, and the rows were individually harvested to serve as the seed source for agronomic trials in Canada. In 2006, the 182 DH genotypes were grown in a single replication 4-row plot test together with checks and parents under dryland conditions near Swift Current and Regina, SK, and Lethbridge, AB. Eleven DH genotypes, including A0345&BV022, were selected based on agronomic performance, disease resistance and grain quality (protein, yellow pigment, gluten strength) and tested in the 2007 Durum A2 test as 4-row plots in a two replication lattice design grown near Swift Current, Regina, Lethbridge and Saskatoon to assess agronomic performance using the check cultivars AC Avonlea, AC Morse, AC Navigator, Commander, and Strongfield. Remnant seed from the yield trials was used to assess grain quality (protein concentration, yellow pigment, and gluten strength). Disease evaluations included response to loose smut [*Ustilago tritici* (Pers.) Rostr.] with a mixture of races T26, T32, and T33 under field conditions near Swift Current, SK. Response to leaf rust and stem rust were evaluated in hill plots in a rust nursery near Glenlea, MB, using a mixture of the selection of races similar to that in the F_2 rust nursery. Response to leaf spotting pathogens was assessed from within the yield plots under conditions of natural inoculums. Response to *Fusarium graminearum* Schwabe (teleomorph *Gibberella zeae* (Schwein. Petch) was assessed in fusarium head blight (FHB) nurseries near Portage la Prairie and Carman, MB, following the field inoculation protocols described by Gilbert and Woods (2006). Plots were assessed for incidence (%) and severity (%), when a significant differential reaction was observed among checks.

Two DH lines from population A0345 including A0345&BV022 were tested in the 2008 Durum-B test in

Table 2. Agronomic characteristics of AAC Durafield and check cultivars in the Durum Cooperative Test, 2009–2012.

	Days to maturity[a,b]			Test weight (kg hL^{-1})[a]			1000-kernel weight (g)[a]	Height (cm)[a]	Lodging (1–9)[c]
	Zone 1	Zone 2	Mean	Zone 1	Zone 2	Mean			
AC Avonlea	100.8	110.0	107.8	75.0	78.4	77.3	41.3	89.8	2.5
AC Morse	100.7	109.8	107.6	74.1	78.1	76.8	41.2	86.3	1.7
AC Navigator	101.6	110.9	108.7	74.4	79.4	77.7	44.0	78.5	2.2
Strongfield	100.4	109.8	107.5	75.9	79.6	78.4	42.1	88.0	2.8
Commander	101.3	110.5	108.2	74.1	78.6	77.1	44.2	76.1	2.0
AAC Durafield	100.3	110.0	107.6	76.4	79.7	78.6	41.6	88.3	2.4
LSD[d]$_{0.05}$	1.4	0.7	0.6	1.2	0.7	0.7	1.1	1.5	0.7
# tests	8	25	33	12	29	41	41	40	14

[a]Zone 1 (black soils): Indian Head (2009, 2011, 2012), Souris (2009, 2010, 2011, 2012), Brandon (2009, 2010, 2012), Langdon (2009, 2010); Zone 2 (brown and dark brown soils): Swift Current, Stewart Valley (2009, 2011, 2012), Saskatoon, Regina, Lethbridge, Vulcan, Moose Jaw, Pense (2009), Scott (2011). 2012 Regina was not used for plant height analysis.

[b]All Zone 1 and Zone 2 locations used except Langdon (in Zone 1), Souris in 2010 and 2011, and Stewart Valley (in Zone 2).

[c]Straw strength rated on a scale of 1 indicating that all plants in plot are erect to 9 indicating that all plants in a plot are lying horizontal. Lodging scored at trials near Regina, Saskatoon (2009, 2011, 2012), Souris (2010, 2012), Brandon (2009), Swift Current (2010), Moose Jaw (2011, 2012), Stewart Valley (2012).

[d]Least significant difference, $P \leq 0.05$, includes the appropriate genotype by environment interaction variation.

Table 3. Grain protein concentration (13.5% moisture basis) of AAC Durafield and check cultivars measured on grain samples bulked across replications at each location of the Durum Cooperative Test, 2009–2012.

	Protein concentration (%)												
	2009			2010			2011			2012			
	Z1[a]	Z2	Mean[b]	Z1	Z2	Mean	Z1	Z2	Mean	Z1	Z2	Mean	4 yr mean
AC Avonlea	12.7	14.4	13.9	15.4	13.3	13.8	15.8	12.5	13.2	16.1	15.2	15.5	14.1
AC Morse	12.5	13.8	13.5	14.2	12.7	13.1	15.3	12.4	13.0	15.4	14.1	14.5	13.5
AC Navigator	12.6	13.4	13.2	14.7	12.5	13.1	14.5	12.0	12.5	15.3	14.3	14.6	13.4
Strongfield	13.1	14.1	13.9	15.8	13.4	14.0	15.4	12.4	13.0	16.2	14.9	15.3	14.1
Commander	12.7	13.3	13.1	14.8	12.8	13.3	14.9	11.8	12.4	14.9	14.3	14.5	13.4
AAC Durafield	13.1	14.3	13.9	15.5	13.4	13.9	15.3	12.4	12.9	15.9	14.7	15.1	14.0
LSD[c]$_{0.05}$	0.5	0.4	0.3	0.9	0.5	0.4	0.9	0.4	0.4	0.9	0.6	0.5	0.3
# tests	3	8	11	2	6	8	2	8	10	3	7	10	39

[a]Z1 = Zone 1 (black soils): Indian Head (2009, 2011, 2012), Souris (2009, 2010, 2011, 2012), Brandon (2009, 2010, 2012); Z2 = Zone 2 (brown and dark brown soils): Swift Current, Stewart Valley (2009, 2011, 2012), Saskatoon, Regina, Lethbridge, Vulcan, Moose Jaw, Pense (2009), Scott (2011).

[b]Means are LS means obtained from PROC MIXED procedure of SAS.

[c]Least significant difference, $P \leq 0.05$, includes the appropriate genotype by environment interaction variation.

an alpha-lattice design with two replications near Swift Current, Regina, Saskatoon, Floral, SK, Lethbridge, AB, and Brandon, MB, using the same check cultivars as in the 2007 Durum A2 test. Response to diseases was measured using protocols similar to that for the A-level tests described above. Remnant seed from the yield trials was used to assess end-use suitability by the Central Quality Lab, Cereal Research Centre, MB, and included protein, yellow pigment, milling properties, gluten strength, and Hagberg Falling Number. This procedure identified DH line A0345&BV022 as having met all of the selection criteria at each stage of selection.

A0345&BV022 was advanced to the Durum Cooperative Test and evaluated as DT832 from 2009 to 2012. A fourth year of testing was necessitated due to excessively wet conditions and high disease pressure at all trial locations in 2010, resulting in the grain samples being unsuitable for assessment of end-use suitability. The Durum Cooperative Test was grown as a 4 row test at up to 12 locations annually in a 6×5 lattice design including five check cultivars, with two replications in two repetitions. The check cultivars were AC Avonlea (Clarke et al. 1998), AC Morse, AC Navigator (Clarke et al. 2000), Commander (Clarke et al. 2005a),

Table 4. Summary of disease reactions of AAC Durafield and check cultivars grown in the Durum Cooperative Test, 2009–2012.

		Stem rust								
		U of M	Glenlea	Leaf rust	Common bunt	Loose smut	Leaf spot		Stripe rust	
	Year	Rtn[a]/Rxn[b]	Rtn/Rxn	Rxn[b,c]	Rtn/Rxn	Rtn/Rxn	GL[d]	SK[e]	LB-1[f]	LB-2
AC Avonlea	2009	5(R)	10(RMR)	R	1(R)	90(S)	24.0(MR)	—	—	—
	2010	10(R)	3(R)	R	20(MS)	51(I)	10.0(R)	7.2(I)	—	—
	2011	20(MR)	5(R)	R	1(MR)	27(MR)	37.0(MS)	8.5(MS)	25(I)	25(I)
	2012	20(MR)		R	1(R)	37(I)	4.6(R)	8.5(MS)	2(VR)	5(R)
AC Morse	2009	5(R)	3(R)	R	0(R)	75(MS)	31.7(MR)	—	—	—
	2010	5(R)	1(R)	R	7(R-MR)	56(MS)	19.0(MR)	9.7(S)	—	—
	2011	10(MR)	1(R)	R	2MR	70(MS)	39.3(MS)	10.5(S)	20(I)	10(R)
	2012	20(MR)		R	0(R)	69(MS)	3.4(R)	9.8(S)	5(R)	0(VR)
AC Navigator	2009	10(RMR)	10(RMR)	R	2(R)	67(MS)	28.0(MR)	—	—	—
	2010	10(R)	2(R)	R	2(R-MR)	29(MR)	36.0(MS)	8.5(MS)	—	—
	2011	5(R)	1(R)	R	0(R)	15(R)	49.7(S)	10.0(S)	1(VR)	35(I)
	2012	30(I)		R	0(R)	44(I)	12.2(I)	10.0(S)	2(VR)	0(VR)
Strongfield	2009	5(R)	5(R)	R	2(R)	70(MS)	39.7(I)	—	—	—
	2010	5(R)	2(R)	R	2(R-MR)	52(I)	17.0(MR)	7.7(I)	—	—
	2011	1(R)	1(R)	R	2(MR)	26(MR)	43.3(S)	8.5(MS)	1(VR)	30(I)
	2012	15(MR)		R	2(R)	33(MR)	6.6(MR)	7.8(I)	5(R)	0(VR)
Commander	2009	1(R)	1(R)	R	1(R)	100(S)	50.3(MS)	—	—	—
	2010	3(R)	2(R)	R	1(R-MR)	41(I)	28.0(I)	7.7(I)	—	—
	2011	1(R)	1(R)	R	0(R)	9(R)	41.0(S)	9.8(S)	8(R)	35(I)
	2012	5(R)		R	1(R)	71(MS)	13.0(I)	9.5(S)	1(VR)	5(R)
AAC Durafield	2009	1(R)	1(R)	R	1(R)	88(S)	35.7(I)	—	—	—
	2010	5(R)	3(R)	R	5(R-MR)	82(S)	22.7(MR)	7.8(I)	—	—
	2011	1(R)	1(R)	R	0(R)	39(I)	30.3(MS)	9.3(MS)	1(VR)	25(I)
	2012	15(MR)		R	6(R)	38(I)	5.8(MR)	8.5(MS)	0(VR)	0(VR)

[a]Rtn, rating as % infection.
[b]Rxn, reaction type; Reaction types: VR, very resistant; R, resistant; MR, moderately resistant; I, intermediate; MS, moderately susceptible; S, susceptible.
[c]Checks and AAC Durafield had 0% leaf rust infection in all 4 yr.
[d]GL, Glenlea.
[e]Adult plant, rated mid-grainfill at Swift Current, McFadden scale (0 = no symptoms, 11 = severe symptoms) (McFadden 1991).
[f]LB, Lethbridge (LB-1 is the rating in first planting date of the nursery and LB-2 is the rating in the second planting date of the nursery i.e., two distinct stripe rust nurseries).

and Strongfield (Clarke et al. 2005b). The Durum Wheat Cooperative test operating protocols are described in the Prairie Recommending Committee for Wheat Rye and Triticale operating procedures (http://www.pgdc.ca/committees_wrt.html). The PROC MIXED procedure was used to analyze the data annually and to perform a combined analysis over years using a mixed model with environments and replications considered random effects and genotypes considered fixed effects (SAS Institute Inc. 2003). Least significant differences were calculated using appropriate mean squares and degrees of freedom, and differences were declared significant at the 5% probability level.

The durum wheat cooperative test entries were evaluated in inoculated nurseries to determine the response to leaf rust, stem rust, and loose smut near Glenlea, MB. Fusarium head blight was assessed in inoculated nurseries near Carman and Glenlea, MB, Ottawa, ON, and Charlottetown, PEI. Stem rust inoculum consisted of races of TPM, TMR, QTH, RKQ, RHT, and RTH, which comprised select historical races representing a range of virulence genes (Fetch 2005), whereas the leaf rust inoculums were representative of recently occurring races (McCallum and Seto-Goh 2006). The loose smut inoculum consisted of races T26, T32, and T33. Response to common bunt caused by *Tilletia laevis* Kuhn in Rabenh., and *T. tritici* (Bjerk.) G. Wint. in Rabenh., was assessed in a nursery grown near Lethbridge, AB, using mixture of prevalent races: T-1, T-6, T-13, T-19, L-1, and L-16 (Gaudet and Puchalski 1989). The race designations are those described

Table 5. Summary of fusarium head blight (FHB) reactions of AAC Durafield and check cultivars grown in the Durum Cooperative Test, 2009–2012.

		Fusarium head blight scores								
		Carman		Glenlea		PEI (Index[a])				
	Year	Index[a]	Rxn[b]	Index[a]	Rxn[b]	Early	Late	Ottawa	DON[c] (ppm)	ISD[d]
AC Avonlea	2009	25.8	MS	49	S	32	55	—	24	19
	2010	64.5	S	38	S	86	100	98	41	20
	2011	—	—	17	MS	55	95	62	5	5
	2012	34.0	I	23	S	—	—	83		
AC Morse	2009	33.6	MS	54	S	47	66	—	37	27
	2010	68.1	S	21	I	75	98	54	38	18
	2011	—	—	25	S	54	90	80	11	8
	2012	54.6	MS	24	S	—	—	88		
AC Navigator	2009	35.5	MS	41	S	21	47	—	36	25
	2010	58.6	S	43	S	71	99	90	40	20
	2011	—	—	21	S	54	100	83	11	8
	2012	65.5	S	10	I	—	—	85		
Strongfield	2009	38.4	MS	59	S	24	40	—	27	21
	2010	60.7	S	44	S	80	91	72	49	24
	2011	—	—	15	I	31	80	73	8	6
	2012	54.5	MS	12	I	—	—	90		
Commander	2009	28.6	MS	57	S	38	61	—	27	21
	2010	60.8	S	59	S	82	99	53	52	26
	2011	—	—	15	MS	27	87	58	14	8
	2012	79.2	S	26	S	—	—	72		
AAC Durafield	2009	24.3	MS	61	S	—	—	—	25	15
	2010	61.5	MS	42	S	55	100	72	28	15
	2011	—	—	13	I	11	74	57	5	5
	2012	56.2	S	21	S	—	—	68		

[a]Fusarium head blight index: [(mean percent incidence × mean percent severity)/100].
[b]Rxn is the reaction type which were: I, intermediate; MS, moderately susceptible; S, susceptible.
[c]DON is the mycotoxin deoxynivalenol.
[d]ISD (Incidence, Severity, DON) is calculated as (0.3 × Avg. Incidence) + (0.3 × Avg. Severity) + (0.4 × DON) for a given entry.

by Roelfs and Martens (1988) for stem rust, Long and Kolmer (1989) for leaf rust, Hoffmann and Metzger (1976) for common bunt, and Nielsen (1987) for loose smut. Leaf spot reaction was determined with natural infestation at SK and MB locations.

Performance

In four years of cooperative testing, grain yield of AAC Durafield was not significantly different from the checks AC Avonlea, AC Morse, Strongfield, and Commander (Table 1). Averaged over four years, AAC Durafield had significantly higher grain yield than AC Navigator. AAC Durafield had significantly higher grain yield than AC Navigator in Zone 2 but not Zone 1. Days to maturity of AAC Durafield was similar to Strongfield in both soil zones and significantly earlier than AC Navigator in Zone 2 and averaged over both zones (Table 2). Test weight (kg hL^{-1}) of AAC Durafield was significantly greater than all checks except Strongfield in Zone 1 and averaged over both Zones, while the 1000-kernel weight (g) was significantly smaller than Commander and AC Navigator. AAC Durafield had plant height similar to Strongfield and slightly taller than the semidwarf cultivars AC Navigator and Commander. Straw strength was similar to the checks. Grain protein concentration of AAC Durafield was similar to AC Avonlea and Strongfield, and significantly higher than other checks (Table 3).

AAC Durafield was resistant to leaf rust, stem rust, stripe rust, and common bunt (Table 4). AAC Durafield was susceptible to loose smut. AAC Durafield had intermediate resistance to leaf spot, similar to Strongfield. The FHB reaction and deoxynivalenol (DON) accumulation of AAC Durafield was similar to the checks (Table 5).

AAC Durafield has low grain cadmium concentration similar to Strongfield (Table 6). Semolina yield and gluten index of AAC Durafield were improved relative to

Table 6. End-use suitability[a,b,c] measured on yearly composite samples of AAC Durafield and check cultivars evaluated from 2009, 2011, and 2012 Durum Cooperative Tests.

	FN (s)	Test Wt (kg hL^{-1})	HVK (%)	Cd (mg kg^{-1})	Semo Yld (%)	Semo Ash (%)	Wht Prot (%)	Semo Prot (%)	GI (%)	P/L	W (ergs)	Semo YP (mg kg^{-1})	Colour 85Cb*	Colour 85Ca*	Cooked pasta texture cut force (g)
AC Avonlea	408	82.6	89	0.21	67.4	0.66	13.8	12.9	10	0.48	107	8.66	65.2	5.5	635
AC Morse	445	81.3	88	0.17	66.9	0.67	13.3	12.3	49	0.83	170	8.42	63.7	5.5	607
AC Navigator	442	82.8	87	0.25	68.2	0.67	13.0	12.0	60	1.02	208	9.64	65.7	7.2	618
Commander	452	81.9	87	0.25	67.9	0.64	12.9	12.0	91	1.56	296	9.83	66.6	6.6	604
Strongfield	420	82.9	93	0.08	67.1	0.62	13.8	12.7	55	0.69	181	8.92	64.6	5.6	607
AAC Durafield	427	83.4	92	0.09	68.5	0.66	13.6	12.6	72	1.07	216	10.20	66.8	6.4	606
Std. dev.[d]	5			0.001	0.4	0.006	0.06	0.05	3	0.04	6	0.04	0.3	0.1	34

[a]American Association of Cereal Chemists methods were followed by the Grain Research Laboratory (GRL), Canadian Grain Commission (CGC) for determining the various end-use suitability traits on a composite of 8 to 9 locations each year. 2010 Durum Cooperative Test was not used for end-use suitability traits due to poor seed quality resulting from excessively wet weather.

[b]FN, Hagberg falling number; HVK, Hard Vitreous Kernel; Cd, Grain Cadmium; Semo Yld, Semolina yield; Wht Prot, Wheat Protein; GI, Gluten Index; P/L and W values determined through Alveograph; YP, yellow pigment; spectrophotometer colour b* = yellowness; a* = redness on the CIE scale. Wheat protein and semolina protein is expressed on a 13.5% moisture basis.

[c]Means are from 2009, 2011 and 2012 durum composites, except colour (85°) and cooked pasta texture cut force that are mean from 2011 and 2012.

[d]Std. dev. is the standard deviation based on repeated testing of check samples with replicate tests carried out over an extended period of time each season, provided by GRL, CGC.

Strongfield. Grain yellow pigment concentration of AAC Durafield was greater than the checks.

Other Characteristics

SPIKES: Tapering to parallel-sided in profile, mid-dense to dense, erect; off-white to yellow at maturity; awns longer than spike with blackish color.

KERNEL: Colour amber; kernel size large, elliptical.

LOWER GLUME: Medium to long length, medium width; glabrous.

LOWER GLUME SHOULDER: Narrow to medium width; strongly elevated to sloping.

LOWER GLUME BEAK: Slightly to moderately curved.

END-USE SUITABILITY: Eligible for the grades of Canada Western Amber Durum wheat market class.

Maintenance and Distribution of Pedigreed Seed

The 66 breeder lines originate from spikes picked from a space planted row grown near Swift Current in 2009. Up to five spikes per plant from each of 100 plants were picked, threshed and planted in 72 (3 m) rows in 2010 near Swift Current, SK. From these, the 67 rows deemed most uniform were grown in 2012 as triplicate breeder rows near Indian Head, SK, which led to the 66 most uniform breeder rows of AAC Durafield (DT832; A0345&BV022). Breeder seed will be maintained by the Seed Increase Unit, Agriculture and Agri-Food Canada, Indian Head, SK S0G 2K0. Distribution and multiplication of pedigreed seed stocks will be handled by SeCan, 501-300 March Road, Kanata, ON K2K 2E2, Canada.

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