

Supplemental Tables

Table S1. F-values from the analysis of variance of eight durum wheat cultivars grown under two different environments (Swift Current and Regina) during two growing seasons (2010 and 2011).

Environment and Year	Source of Variation	Yield	DM ^a	Height	PC(%) ^b	TW ^c (kg hl ⁻¹)	TKW(g) ^d	SPAD	Δ ^e	LAI ^f
SC-2010	Cultivar	6.7***	.	48.4 ns	5.5***	29.4***	34.0***	0.4 ns	16.3***	3.5**
	Seed Rate	16.9***	.	0.68 ns	0.4 ns	1.2 ns	7.5***	0.2 ns	4.1**	10.2***
	Gx SR ^h	0.7 ns	.	1.09 ns	0.9 ns	1.0 ns	1.0 ns	0.2 ns	0.7 ns	0.7 ns
SC-2011	Cultivar	2.8*	13.4***	37.0***	7.1***	13.0***	50.2***	56.1***	71.1***	17.1***
	Seed Rate	8.8***	1.6 ns	2.69*	1.5 ns	1.5 ns	3.7**	9.0***	1.3 ns	13.0***
	Gx SR ^h	0.7 ns	1.3 ns	0.88 ns	1.0 ns	1.0 ns	1.2 ns	1.2 ns	1.1 ns	12.0***
RG-2010	Cultivar	18.8***	26.1***	91.5***	33.7***	21.5***	20.6***	31.0***	30.8***	6.0***
	Seed Rate	6.7***	16.0***	1.0 ns	1.6 ns	2.9*	0.8 ns	1.0 ns	1.1 ns	5.6***
	Gx SR ^h	0.9 ns	1.5 ns	0.8 ns	0.9 ns	0.6 ns	0.9 ns	0.7 ns	1.0 ns	0.9 ns
RG-2011	Cultivar	8.7***	12.3***	50.4***	11.9***	151***	50.7***	29.1***	124.1***	12.5***
	Seed Rate	10.9***	5.3***	0.73 ns	3.2*	8.3***	0.7 ns	11.0***	15.9***	12.7***
	Gx SR ^h	1.0 ns	0.5 ns	1.08 ns	1.1 ns	1.0 ns	1.1 ns	0.9 ns	0.92 ns	1.0 ns

^a DM: days to maturity

^b GPC: grain protein content (%)

^c TW: test weight

^d TKW: thousand kernel weight

^e CID: carbon isotope discrimination

^f LAI: leaf area index

^g MTA: Mean tilt angle

^h Genotype by seeding rate interaction

ns, P ≥ 0.05; *, P < 0.05; **, P < 0.01; ***, P < 0.001

Table S2. Least Square means values of yield and related traits for eight durum cultivars grown under two different environments (Swift Current and Regina) during two growing seasons (2010 and 2011) at different seeding rates. Levels not connected with the same letter are significantly different.

		Yield kg ha ⁻¹	DM ^a days	Height cm	GPC ^b %	TW ^c kg hl ⁻¹	TKW ^d g	SPAD ^e -	CID ^f ‰	LAI ^g -	MTA ^h
SC	Brigade	3742 a	.	85.7 b	11.3 c	76.0	43.1 a	49.2 a	18.4	1.4 a	62.4a
	CDC Verona	3431 bc	.	80.0d	11.6 bc	76.6	40.2	49.6 a	18.6	1.2	68.6a
	Commander	3112 c	.	64.0 e	12.3 ab	73.1 d	37.5	49.6 a	18.8 a	1.3	65.6a
	Transcend	3259 bc	.	79.7 cd	11.9 bc	75.7	38.9	48.6 a	18.2	1.1	66.4a
	Enterprise	3507 ab	.	80.7 cd	12.3 ab	75.7	36.4 e	49.4 a	18.2	1.4 a	65.8a
	Eurostar	3643 a	.	84.1 bc	11.7 bc	77.7 a	42.2 a	49.0 a	18.1	1.3	67.6a
	Kyle	3453 b	.	95.1 a	11.6 bc	77.1 a	42.0	47.8 a	18.1 e	1.3	62.1a
	Strongfield	3132 d	.	77.0 d	12.5 a	75.2 c	39.6b	54.5 a	18.4 c	1.1 b	67.4a
s.e ^j		123		1.8	0.26	0.4	0.6	0.7	4.6	0.1	3.2
SC	Brigade	4065 ab	103.0 a	82.4 bc	13.9 c	79.8	41.7 b	49.9 d	15.5 c	3.1 a	60.6a
	CDC Verona	3799 b	102.9 a	79.2 cd	14.8 ab	79.3	41.9 b	52.9 cd	15.5	2.6 c	61.6a
	Commander	3958 ab	101.8 bc	69.2 e	14.0 c	78.9 c	45.7 a	53.3 a	16.8 a	3.2	58.4b
	Transcend	3876 ab	102.2 ab	82.8 bc	14.8 ab	79.3	39.9 c	52.8 cd	15.5	2.5 c	62.1a
	Enterprise	3787 b	101.1 c	79.0 cd	14.8 ab	79.0 c	35.9 d	51.9 b	15.8 b	2.8 b	58.8 b
	Eurostar	4083 a	102.9 a	83.3 b	14.6 bc	80.4 a	42.1 b	53.0 d	15.3 d	2.9	60.7 a
	Kyle	3851 ab	101.7 bc	89.0 a	14.4 bc	78.8 c	41.0	50.8 d	15.2 d	2.5 c	61.9a
	Strongfield	3883 ab	100.8 c	78.0 d	15.1 a	79.1 c	40.4	55.7 a	16.0 b	2.6 c	61.1a
s.e ^j		94	0.3	1.3	0.2	0.2	0.5	0.3	0.1	0.8	1.0
RG	Brigade	5071 a	118.2 a	97.5 b	12.9 d	78.0	46.0 a	51.4 c	18.9	2.7 a	62.4a
	CDC Verona	4574 bc	117.1 ab	91.2 cd	13.8 c	78.6 b	42.2	51.7 bc	18.8	2.4	65.4a
	Commander	4196 cd	114.5 e	73.4 e	13.9 c	76.7 f	46.0 a	54.4 a	19.9 a	2.5	62.6a
	Transcend	4732 ab	116.8 bc	96.6 b	14.4 ab	77.6	43.4 b	53.0 b	19.0	2.4	64.1a
	Enterprise	4428 bc	115.6 cd	93.7 bc	14.1 bc	78.4	40.3 c	51.6 cd	18.8	2.5	62.2a
	Eurostar	4182 de	115.8 cd	91.4 cd	13.9 c	79.8 a	46.1 a	51.0 bc	18.7 c	2.4	63.3a
	Kyle	3922 e	114.8 de	103.7 a	13.9 c	77.3	43.4 b	49.9 d	18.7	2.6	61.0a
	Strongfield	4087 de	114.9 de	87.7 d	14.8 a	77.1	42.2	55.4 a	19.0 b	2.3 c	64.3a
s.e ^j		124	0.4	1.0	0.1	0.3	0.7	0.5	0.1	0.1	1.5
RG	Brigade	5378 a	97 a	93.9 a	11.4 d	83.9 a	44.4 b	46.4 e	17.1 c	3.5 a	60.5a
	CDC Verona	4913 ab	96 ab	87.6 ab	12.6 bc	82.9	42.5 c	50.5 bc	16.8 d	2.6	65.3a
	Commander	4942 ab	93 d	74.4 b	11.9 cd	81.2	46.0 a	51.7 ab	18.2 a	2.9	64.6a
	Transcend	4650 bc	95 b	92.4 a	13.3 a	82.3 a	42.3 c	51.2 ab	16.8 d	2.8	63.5a
	Enterprise	4744 b	95 bc	86.4 ab	12.4 bc	82.5	38.5 d	49.6 cd	17.1 c	3.0 b	58.6b
	Eurostar	4802 b	95 bc	91.6 a	12.2 c	84.0 c	44.4 b	49.6 cd	16.6 e	3.0 b	63.0a
	Kyle	4177 c	95 bc	82.6 ab	12.3 c	82.1 c	43.5	48.6 d	16.7	2.9 b	58.6b
	Strongfield	4702 bc	94 cd	88.5 a	13.1 ab	82.3	42.1 c	52.1 a	17.3 b	2.7	63.9a
s.e ^j		160	0.4	1.3	0.2	0.1	0.4	0.5	0.1	0.1	1.1

Note: Means within a column not sharing a lowercased letter differ significantly at the P < 0.05 level. ^a DM: days to maturity;

^c PC: protein concentration; ^d TW: test weight; ^e TKW: thousand kernel weight; ^e SPAD: Soil plant analyzer development; ^f CID: carbon isotope discrimination; ^g LAI: leaf area index; ^h MTA: mean tilt angle; ⁱ s.e: standard error.

^j s.e: standard error.