



## APPLICATIONS UNDER EXAMINATION

## WHEAT

### WHEAT (*Triticum aestivum*)

**Proposed denomination:** 'Minnedosa'  
**Application number:** 08-6305  
**Application date:** 2008/04/24  
**Applicant:** Agriculture & Agri-Food Canada, Winnipeg, Manitoba  
**Agent in Canada:** Ann de St. Remy, Agriculture & Agri-Food Canada, Lacombe, Alberta  
**Breeder:** P. D. Brown, Agriculture & Agri-Food Canada, Winnipeg, Manitoba

**Varieties used for comparison:** 'AC Vista' and 'Snowwhite 475'

**Summary:** 'Minnedosa' has taller plants, narrower flag leaves, and heads later than 'Snowwhite 475'. 'Minnedosa' has weaker glaucosity of the neck and spike than 'Snowwhite 475'. The width of the shoulder of the lower glume in 'Minnedosa' is narrower than that of 'Snowwhite' 475. 'Minnedosa' has shorter spikes than the reference varieties. The shape of the shoulder of the lower glume is sloping to slightly sloping for 'Minnedosa' whereas it is straight for 'Snowwhite 475'.

#### Description:

**PLANT:** spring type, erect to semi-erect growth habit

**SEEDLING:** absent or very weak intensity of anthocyanin colouration of coleoptile, absent or very pubescence on lower leaf sheaths, absent or very sparse pubescence on lower leaf blades

**FLAG LEAF:** high to very high frequency of plants with recurved/drooping flag leaves, glabrous blades and sheaths, weak anthocyanin colouration of auricles, medium glaucosity of sheath

**CULM NECK:** weak to medium glaucosity, weak curvature

**STRAW:** very thin pith in cross section, no anthocyanin colouration at maturity

**SPIKE:** parallel sided shape, lax to medium density, incline attitude and white at maturity, weak to medium glaucosity, white awns present, medium to long awns, medium spreading awn attitude, sparse to medium hairiness of convex surface of apical segment

**LOWER GLUME:** narrow to medium width, long, sparse pubescence, sloping to slightly sloping shoulder, medium shoulder width, straight to slightly curved beak, medium length beak, sparse internal hairs

**LEMMA:** slightly curved beak

**KERNEL:** hard white type, white, medium sized kernel, medium to long, medium to wide, ovate shape, rounded to angular cheek shape, medium length brush hairs, medium to large sized brush, narrow to medium width crease, deep crease

**GERM:** medium to large, oval shape

**Origin and Breeding:** 'Minnedosa' (experimental designation GP018) originated from a cross between 'AC Vista\*3' and 'Lr18'. Made in 1997 at the Agriculture and Agri-Food Canada Cereal Research Centre, Saskatchewan. The objective of this cross was to introduce new leaf rust resistance genes into various classes of Canadian wheat. Yield, disease and quality testing were conducted in multiple locations from 2000 to 2004. 'Minnedosa' was tested in the 2005 and 2006 Hard White Wheat Co-op and in the 2007 High Yield Wheat co-op tests.

**Tests and Trials:** PBR test and trials for 'Minnedosa' were conducted during the summers of 2007 and 2008 in Portage la Prairie, Manitoba. Plots were 325 meters square with a seeding rate of 300 seeds per meter square. There were 4 replicates arranged in a RCB design with an unrandomized first replicate.

Comparison table for 'Minnedosa'

	'Minnedosa'	'AC Vista**	'Snowwhite 475'*
<i>Flag leaf width (mm)</i>			
mean	13	13	15
std. deviation	1	1	1
<i>Days to heading</i>			
mean	48.3	48.0	46.0
<i>Height (stem plus spike, including awns)(cm)</i>			
mean	97.5	97.3	92.6
std. deviation	4	5	5
<i>Spike length (excluding awns and awnlets)(cm)</i>			
mean	7.9	8.1	8.6
std. deviation	0.3	0.4	0.4

\*reference varieties



Wheat: 'Minnedosa' (center) with reference varieties 'AC Vista' (left) and 'Snowwhite 475' (right)



Wheat: 'Minnedosa' (center) with reference varieties 'AC Vista' (left) and 'Snowwhite 475' (right)

**Proposed denomination:** 'Stettler'  
**Application number:** 08-6306  
**Application date:** 2008/04/24  
**Applicant:** Agriculture & Agri-Food Canada, Swift Current, Saskatchewan  
**Agent in Canada:** Ann de St. Remy, Agriculture & Agri-Food Canada, Lacombe, Alberta  
**Breeder:** Ron De Pauw, Agriculture & Agri-Food Canada, Swift Current, Saskatchewan

**Varieties used for comparison:** 'AC Barrie', 'AC Elsa', 'Infinity', 'Prodigy' and 'Superb'

**Summary:** 'Stettler' has weaker anthocyanin colouration of the coleoptile than 'Superb'. The growth habit of 'Stettler' is semi-erect whereas it is intermediate for 'AC Barrie' and 'Infinity'. 'Stettler' has fewer plants with recurved/drooping flag leaves than 'AC Barrie'. The anthocyanin colouration of the flag leaf auricles is weaker in 'Stettler' than it is in 'Superb'. 'Stettler' has a shorter plant height than 'AC Barrie', 'Infinity' and 'Prodigy'. The lower glumes of 'Stettler' are shorter than those of 'AC Barrie', 'Infinity' and 'Superb'. 'Stettler' has longer spikes than 'AC Barrie', 'AC Elsa', 'Prodigy' and 'Superb'. 'Stettler' has smaller kernels than 'Superb'. The germ size of 'Stettler' is larger than it is in 'AC Elsa'. The shape of the germ for 'Stettler' is rounded whereas it is oval for 'Infinity', 'Prodigy' and 'Superb'. 'Stettler' shows more resistance to *Fusarium* head blight than 'AC Elsa' and 'Infinity'. Resistance to common bunt in 'Stettler' is higher than in 'AC Elsa'. 'Stettler' shows more resistance to loose smut than 'AC Barrie', 'Prodigy' and 'Superb'. Resistance to leaf rust in 'Stettler' is higher than in 'AC Barrie' and 'Superb', but lower than in 'AC Elsa' and 'Infinity'.

**Description:**

PLANT: spring type, semi-erect growth habit

SEEDLING: weak to medium intensity of anthocyanin colouration of coleoptile, sparse pubescence on lower leaf sheaths, sparse pubescence on lower leaf blades

FLAG LEAF: low to medium frequency of plants with recurved/drooping flag leaves, glabrous blades and sheaths, absent or very weak anthocyanin colouration of auricles, medium glaucosity of sheath

CULM NECK: medium glaucosity, weak curvature

STRAW: thin pith in cross section, very weak to weak anthocyanin colouration at maturity

SPIKE: parallel sided shape, medium density, incline attitude and white at maturity, weak to medium glaucosity, white awns present, strongly spreading awn attitude

LOWER GLUME: narrow to medium width, medium to long, glabrous pubescence, predominantly straight shape of shoulder, predominantly narrow shoulder, predominantly slightly curved beak, predominantly short beak

KERNEL: hard red type, red, small to medium sized kernel, oval to ovate shape, angular cheek shape, medium length brush hairs, medium to wide crease, shallow to medium deep crease

GERM: round shape, large

AGRONOMY: good resistance to shattering, drought and pre-harvest sprouting

DISEASE RESISTANCE: moderately susceptible to Fusarium head blight (*Fusarium graminearum*, *Fusarium* species), moderately resistant to Common bunt (*Tilletia caries*, *Tilletia foetida*), resistant to Loose smut (*Ustilago tritici*), moderately susceptible to Leaf rust (*Puccinia triticina*) and resistant to Stem rust (*Puccinia graminis* f.sp. *tritici*)

**Origin and Breeding:** ‘Stettler’ (experimental designation BW867) originated from the cross made in 1999 between ‘Prodigy’ and ‘Superb’ near Swift Current, Saskatchewan. Seed of individual doubled haploid lines was inoculated with common bunt. Spikes were selected from the disease resistant doubled haploid lines that also matured early and had strong stems of acceptable height and were grown near Irwell, New Zealand. Agronomic performance was assessed in nurseries near Swift Current, Regina, Indian Head (Saskatchewan), Lethbridge (Alberta) and Morden (Manitoba). Doubled haploid lines were screened for reaction to leaf rust, stem rust, loose smut and common bunt and resulted in an experimental doubled line B9962&AR12 being identified. This experimental line was evaluated from 2003 to 2007 in the Western bread Wheat Cooperative. It received registration No. 6516 from the Variety Registration Office, Plant Production Division, Canadian Food Inspection Agency on 2008, October 16 and named ‘Stettler’.

**Tests and Trials:** Test and trials for ‘Stettler’ were conducted during the summers of 2007 and 2008 in Swift Current, Saskatchewan. Plots consisted of 4 rows with a row spacing of 23 centimeters with a seeding rate of 220 seeds per meter square. There were 4 replicates.

**Comparison table for ‘Stettler’**

	‘Stettler’	‘AC Barrie’*	‘AC Elsa’*	‘Infinity’*	‘Prodigy’*	‘Superb’*
<i>Plant height(including awns) (cm)</i>						
mean	90.3	94.6	94.1	97.3	101.0	91.6
std. deviation	3.6	2.2	3.3	4.8	3.5	2.4
<i>Lower glume length (mm)</i>						
mean	7.4	7.9	7.4	8.2	7.6	8.1

\*reference varieties



Wheat: 'Stettler' (BW 867) (left) with reference varieties 'AC Barrie' (centre left), 'AC Elsa' (centre), 'Prodigy' (centre right) and 'Superb' (right).

## WHEAT

(*Triticum turgidum* subsp. *durum*)

**Proposed denomination:** 'Brigade'  
**Application number:** 08-6332  
**Application date:** 2008/05/07  
**Applicant:** Agriculture & Agri-Food Canada, Swift Current, Saskatchewan  
**Agent in Canada:** Ann de St. Remy, Agriculture & Agri-Food Canada, Lacombe, Alberta  
**Breeder:** John Clarke, Agriculture & Agri-Food Canada, Swift Current, Saskatchewan

**Varieties used for comparison:** 'AC Avonlea', 'Commander', 'AC Navigator' and 'Strongfield'

**Summary:** 'Brigade' has weaker anthocyanin colouration of the coleoptile than 'AC Avonlea' and 'Strongfield'. 'Brigade' has longer awns at the spike tip than 'AC Avonlea' and 'AC Strongfield'. The plants of 'Brigade' are taller than those of the reference varieties. 'Brigade' has longer spikes than 'Commander' and 'AC Navigator'. The awn colour of 'Brigade' is black whereas it is white for 'AC Avonlea' and 'AC Strongfield'.

### Description:

**PLANT:** durum type, erect growth habit

**SEEDLING:** weak intensity of anthocyanin colouration of coleoptile, no pubescence on lower leaf sheaths, no pubescence on lower leaf blades

**FLAG LEAF:** low frequency of plants with recurved/drooping flag leaves, glabrous blades and sheaths, moderate anthocyanin colouration of auricles, strong to very strong glaucosity of sheath

**CULM NECK:** strong to very strong glaucosity

**STRAW:** thin pith in cross section, no anthocyanin colouration at maturity

**SPIKE:** tapering shape, dense, yellow at maturity, strong to very strong glaucosity, black awns present, medium length awns, very strongly spreading awn attitude

**KERNEL:** durum type, amber colour, large, elliptic shape, rounded cheek, short brush hairs, medium width crease, medium deep crease

**DISEASE RESISTANCE:** resistance to lead rust (*Puccinia triticina*) and stem rust (*Puccinia graminis* f. sp. *tritici*), moderately resistant to moderately susceptible to Tan spot (*Pyrenophora tritici-repentis*), moderately resistant to moderately susceptible to Septoria tritici blotch (*Septoria tritici*), moderately resistant to moderately susceptible to Fusarium head blight (*Fusarium graminearum*, *Fusarium* species), resistant to Common bunt (*Tilletia caries*, *Tilletia foetida*)

**Origin and Breeding:** ‘Brigade’ was selected from the cross DT513/DT696 made in 1999. F1 plants were grown in the greenhouse, from which seed was harvested and bulked. The F2 generation was grown in a space-planted field nursery near Lincoln, New Zealand in 1999-2000 and selected for plant height, straw strength and maturity. Individual heads from selected plants were grown as F3 rows near Swift Current in 2000, and selected rows were bulk-harvested and evaluated for test weight, grain pigment and cadmium concentration. Three heads of each selected lines were sown in individual F4 rows in a nursery near Irwell, New Zealand and selected for plant height, straw strength and maturity. The F5 generation was grown in un-replicated yield trials near Swift Current and Regina, Saskatchewan and near Lethbridge and Vauxhall (irrigated), Alberta in 2001, selected for agronomic performance, disease resistance, grain cadmium concentration and quality (protein, pigment, gluten strength). Five heads of each of selected lines were sown in individual F6 rows in a nursery near Irwell, New Zealand and selected for plant height, straw strength and maturity. An un-replicated F7 yield trial was grown near Swift Current, Regina, and Indian Head, Saskatchewan and Lethbridge, Alberta in 2002 and selected for agronomic performance, disease resistance, grain cadmium concentration and quality (protein, pigment, gluten strength). An F5-derived F8 line designated A9909-HD3D was advanced to the Durum Central A Test in 2003, and to the Durum B test in 2004, each grown at six locations in Alberta, Saskatchewan and Manitoba. From 2005 to 2007, A9909-HD3D was assessed in the Durum Cooperative Test as DT773. Leaf and stem rust reactions were assessed in hill plots in the F7 generation in a rust nursery near Glenlea, Manitoba, and Fusarium Head Blight was assessed in an inoculated nursery near Minto, Manitoba. The Cooperative Test entries were screened in inoculated nurseries for the rusts, loose smut and fusarium, Manitoba, and for common bunt near Lethbridge, Alberta.

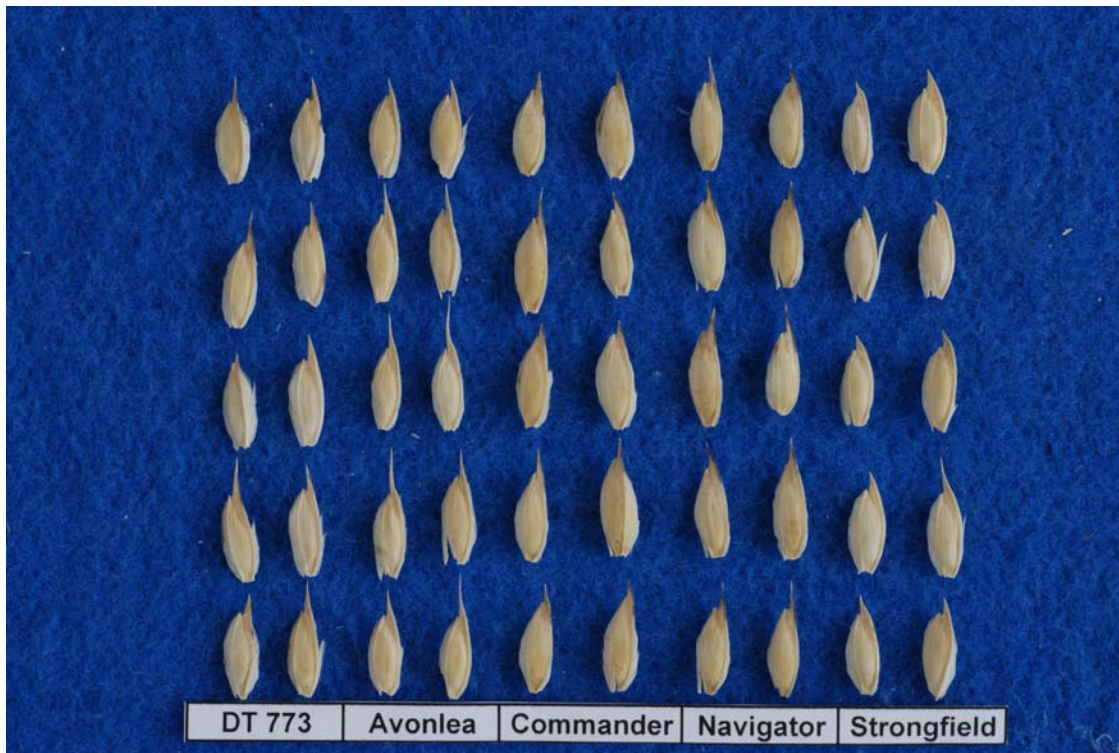
**Tests and Trials:** Test and trials for ‘Brigade’ were conducted during the summers of 2007 and 2008 in Swift Current, Saskatchewan. Plot size was 2.73 meters square and consisted of 4 rows. There were 4 replicates arranged in a RCB design.

**Comparison table for ‘Brigade’**

	‘Brigade’	‘AC Avonlea’*	‘Commander’*	‘AC Navigator’*	‘Strongfield’*
<i>Spike length (excluding awns) (cm)</i>					
mean	7.20	7.83	6.10	5.47	7.01
std. deviation	0.36	0.40	0.23	0.30	0.42
<i>Plant height (cm)</i>					
mean	93.75	89.25	76.75	83.5	84.5
std. deviation	3.28	4.27	2.82	2.07	3.16

\*reference varieties





Wheat: 'Brigade' (DT773) (left) with reference varieties 'AC Avonlea' (centre left), 'Commander' (centre), 'AC Navigator' (right centre) and 'Strongfield' (right)



Wheat: 'Brigade' (DT773) (left) with reference varieties 'AC Avonlea' (centre left), 'Commander' (centre), 'AC Navigator' (right centre) and 'Strongfield' (right)



Wheat: 'Brigade' (DT773) (upper left) with reference varieties 'AC Avonlea' (upper centre), 'Commander' (upper left), 'AC Navigator' (bottom left) and 'Strongfield' (bottom right)

**Proposed denomination:** 'Eurostar'  
**Application number:** 08-6301  
**Application date:** 2008/04/22  
**Applicant:** Agriculture & Agri-Food Canada, Swift Current, Saskatchewan  
**Agent in Canada:** Ann de St. Remy, Agriculture & Agri-Food Canada, Lacombe, Alberta  
**Breeder:** John Clarke, Agriculture & Agri-Food Canada, Swift Current, Saskatchewan

**Varieties used for comparison:** 'AC Avonlea', 'Commander', 'AC Navigator' and 'Strongfield'

**Summary:** 'Eurostar' has stronger anthocyanin colouration of the coleoptile than 'Commander' and 'AC Navigator'. 'Eurostar' has stronger anthocyanin colouration of the flag leaf auricles than 'AC Avonlea', 'Commander' and 'Strongfield'. The plants of 'Eurostar' are taller than those of the reference varieties. 'Eurostar' has longer awns than 'AC Avonlea' and 'Strongfield'. The spike colour of 'Eurostar' is white whereas it is black for 'Commander' and 'AC Navigator'. 'Eurostar' has longer spikes than 'Commander', 'AC Navigator' and 'Strongfield'.

**Description:**

PLANT: durum type, erect growth habit

SEEDLING: strong to very strong intensity of anthocyanin colouration of coleoptile, glabrous lower leaf sheaths, glabrous on lower leaf blades

FLAG LEAF: low frequency of plants with recurved/drooping flag leaves, glabrous blades and sheaths, weak to moderate anthocyanin colouration of auricles, strong to very strong glaucosity of sheath

CULM NECK: strong glaucosity

STRAW: thin pith in cross section, no anthocyanin colouration at maturity

SPIKE: tapering shape, dense, yellow at maturity, strong to very strong glaucosity, white awns present, medium length awns, very strongly spreading awn attitude



LOWER GLUME: medium to long, glabrous, slightly sloping to elevated shoulder, very narrow to narrow shoulder, straight to slightly curved beak, short to long beak

KERNEL: durum type, amber colour, medium to large kernel, elliptic shape, angular cheek shape, short brush hairs, medium width crease, medium deep crease

GERM: large, oval shape

DISEASE RESISTANCE: moderately susceptible to Fusarium head blight (*Fusarium graminearum*, *Fusarium* species), resistant to Common bunt (*Tilletia caries*, *Tilletia foetida*), moderately susceptible to susceptible to Loose smut (*Ustilago tritici*), resistant to Leaf rust (*Puccinia triticina*), resistant to Stem rust (*Puccinia graminis* f.sp. *tritici*), moderately resistant to moderately susceptible to Tan spot (*Pyrenophora tritici-repentis*), and moderately resistant to moderately susceptible to Septoria tritici blotch (*Septoria tritici*)

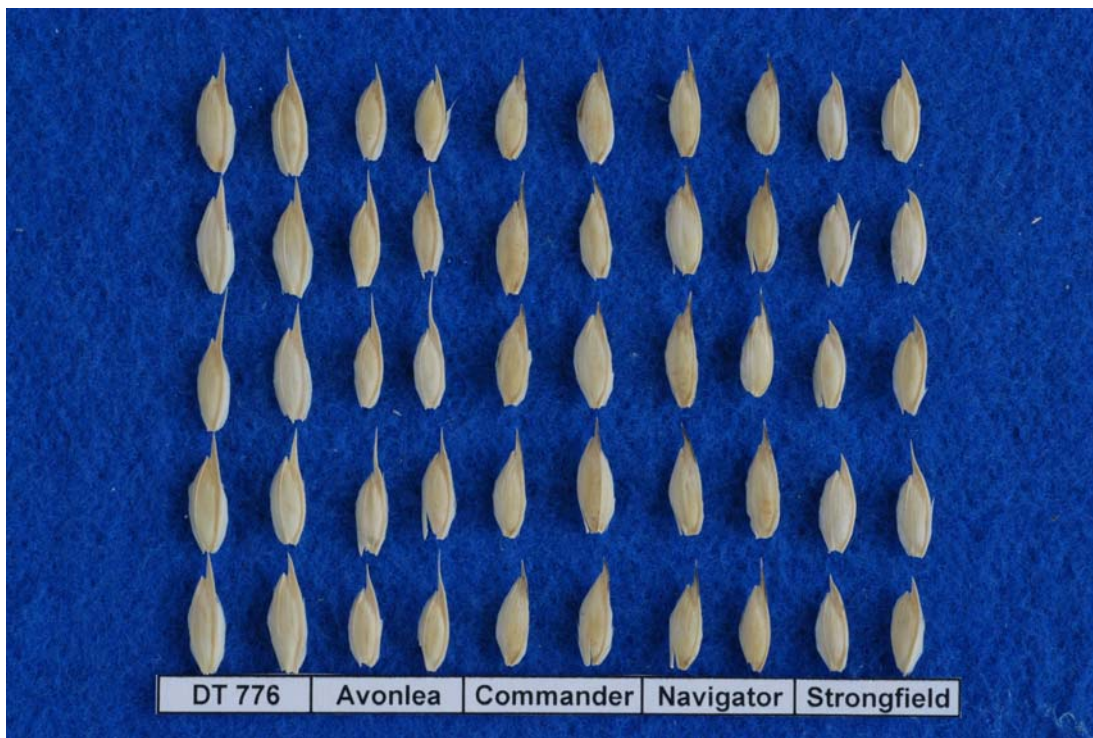
**Origin and Breeding:** ‘Eurostar’ was selected from the cross G9575B-AA09C/ DT498//DT691 made in 1999. F1 plants were grown in the greenhouse, from which seed was harvested and bulked. The F2 generation was grown in a space-planted leaf and stem rust epiphytic field nursery near Swift Current in 2000 and selected for rust resistance, plant height, straw strength and maturity. Individual heads from selected plants were grown in F3 rows near Lincoln, New Zealand, in 2000-2001 and selected for plant height, straw strength and maturity. The F4 generation was grown in un-replicated yield trials near Swift Current and Regina, Saskatchewan, in 2001 and evaluated for test weight, grain pigment and protein concentration, and five heads per selected line were sown in individual F5 rows in a nursery near Irwell, New Zealand, and selected for plant height, straw strength and maturity. The F6 generation was grown in un-replicated yield trials near Swift Current and Regina, Saskatchewan, and Lethbridge, Alberta, in 2002, selected for agronomic performance, disease resistance and quality (protein, pigment, gluten strength), and five heads per selected line were sown in individual F7 rows in a nursery near Irwell, New Zealand. Un-replicated F8 yield trials were grown near Swift Current (rain fed and irrigated), Regina and Lethbridge (irrigated) in 2003 and selected for agronomic performance, disease resistance and quality (protein, pigment, gluten strength). An F6-derived F9 line designated A9930-QX2C was advanced to the Durum Central A Test (five locations) in 2004, where evaluation included Fusarium head blight (FHB) assessment in a nursery near Portage la Prairie, Manitoba, and loose smut leaf and stem rust in nurseries near Glenlea, Manitoba. Reactions to these diseases were further evaluated in the Durum Cooperative Test at nurseries near Glenlea and Carman, Manitoba, along with common bunt, which was evaluated in a nursery near Lethbridge, Alberta. A9930-QX2C was tested from 2005 to 2007 in the four replicate Durum Cooperative Test as DT776.

**Tests and Trials:** Test and trials for ‘Eurostar’ were conducted during the summers of 2007 and 2008 in Swift Current, Saskatchewan. The plot size was 2.73 meter square and consisted of 4 rows. There were 4 replicates arranged in a RCB design.

**Comparison table for ‘Eurostar’**

	‘Eurostar’	‘AC Avonlea’*	‘Commander’*	‘AC Navigator’*	‘Strongfield’*
<i>Plant height(including awns) (cm)</i>					
mean	92.25	89.25	76.75	83.50	84.50
std. deviation	3.45	4.27	2.82	2.07	3.16
<i>Spike length(excluding awns) (cm)</i>					
mean	7.98	7.83	6.10	5.47	7.01
std. deviation	0.53	0.40	0.23	0.30	0.42

\*reference varieties



Wheat: 'Eurostar' (DT776) (left) with reference varieties 'AC Avonlea' (centre left), 'Commander' (centre), 'AC Navigator' (centre right) and 'Strongfield' (right)



Wheat: 'Eurostar' (DT776) (left) with reference varieties 'AC Avonlea' (centre left), 'Commander' (centre), 'AC Navigator' (centre right) and 'Strongfield' (right)



Wheat: 'Eurostar' (DT776) (upper left) with reference varieties 'AC Avonlea' (upper centre), 'Commander' (upper right), 'AC Navigator' (bottom left) and 'Strongfield' (bottom right)