



APPLICATIONS UNDER EXAMINATION

WHEAT

WHEAT (*Triticum aestivum*)

Proposed denomination: 'Ellerslie'
Application number: 18-9525
Application date: 2018/06/20
Applicant: Governors of the University of Alberta, Edmonton, Alberta
Breeder: Dean Spaner, University of Alberta, Edmonton, Alberta

Varieties used for comparison: 'Peace', 'CDC Stanley' and 'AC Splendor'

Summary: At booting, the flag leaf for 'Ellerslie' is longer than that of 'Peace' and 'AC Splendor'. At maturity, the plants of 'Ellerslie' are shorter than those of 'Peace' and 'AC Splendor'. The spike of 'Ellerslie' is shorter than that of 'CDC Stanley'. The lowest lemma beak is strongly curved for 'Ellerslie' while it is straight to slightly curved for 'Peace' and 'AC Splendor'. The thousand kernel weight for 'Ellerslie' is less than that of 'Peace' and 'AC Splendor'. The kernel for 'Ellerslie' is oval shaped while it is elliptical for 'AC Splendor'.

Description:

PLANT: common hard red spring wheat, erect to semi-erect growth habit at the 5 to 9 tiller stage, heads mid-season, matures early to mid-season

SEEDLING: absent or very weak intensity of anthocyanin colouration of coleoptile, glabrous sheath and blade of lower leaves

FLAG LEAF: absent or very weak anthocyanin colouration of auricles, absent or very weak to weak glaucosity of sheath, glabrous blade and sheath

CULM NECK: absent or very weak to weak glaucosity, straight

STRAW (AT MATURITY): very thin pith in cross-section, no anthocyanin colouration

SPIKE: weak to medium glaucosity at heading, parallel sided in profile, medium density, white at maturity, erect attitude

AWNLETS: shorter than length of spike, white at maturity

LOWER GLUME: short to medium length, medium width, glabrous

LOWER GLUME SHOULDER: medium to broad, slightly sloping to straight

LOWER GLUME BEAK: short

LOWEST LEMMA: strongly curved beak

KERNEL: medium red, small to medium sized, short to medium length, narrow to medium width, oval, rounded cheek, short to medium brush hairs, narrow to medium crease, crease of medium depth

GERM: small to medium sized, round to oval

DISEASE REACTION: resistant to Stripe Rust (*Puccinia striiformis*) and Stem Rust (*Puccinia graminis* f. sp. *tritici*), moderately resistant to Leaf Rust (*Puccinia triticina*), moderately resistant to moderately susceptible to Fusarium head blight (*Fusarium graminearum*, *Fusarium* species), susceptible to Common Bunt (*Tilletia caries*, *T. foetida*)

Origin and Breeding: 'Ellerslie' (experimental designations PT784 and UAW1133*008) originated from the cross between 'Peace' and 'CDC Stanley' made in 2011 at the University of Alberta in Edmonton, Alberta. The F1 seed was sent to the Agriculture and Agri-Food Canada Research Centre for Double Haploid Production in Lethbridge, Alberta and the resulting 300 double haploid lines were planted in head rows in New Zealand during the 2012 / 2013 growing season. In 2013, 135 head rows were selected based on plant height, lodging, maturity and disease resistance and tested in replicated preliminary yield trials in Edmonton and Lethbridge and in disease nurseries in Edmonton, Lethbridge and Creston, Alberta. The line designated UAW1133*008 was selected based on agronomic, disease and end-use quality and further evaluated in Parkland

Cooperative B test in 2014. It was further evaluated as PT784 in the Parkland Cooperative Registration Test from 2015 to 2017.

Tests and Trials: The comparative trials for 'Ellerslie' were conducted during the 2017 and 2018 growing seasons at the University of Alberta in Edmonton, Alberta. The plots were planted in a RCB design and consisted of 3 replicates for each variety. Each 4.5 metres squared plot consisted of 6 rows with rows being 4.5 metres in length and having a row spacing of 0.19 metres. The planting density was 300 plants per square metre. Measured characteristics were based on a minimum of 45 measurements per plant or parts of plants per variety except for the thousand kernel weight where 3 measurements were taken per variety in each year. Mean differences were significant at the 5% probability level based on LSD values.

Comparison table for 'Ellerslie'

	'Ellerslie'	'Peace'*	'CDC Stanley'*	'AC Splendor'*
<i>Flag leaf length (cm)</i>				
mean 2017 (LSD=1.0)	20.1	18.4	20.1	18.1
std. deviation 2017	2.8	2.5	3.0	2.3
mean 2018 (LSD=1.0)	20.1	17.3	19.2	18.6
std deviation 2018	2.2	3.0	2.8	2.3
<i>Plant height (at maturity) (including awnlets) (cm)</i>				
mean 2017 (LSD=1.50)	87.4	93.1	89.2	95.8
std. deviation 2017	7.7	8.7	5.9	6.5
mean 2018 (LSD=0.96)	78.4	91.2	79.9	85.0
std deviation 2018	3.1	3.9	3.5	4.1
<i>Spike length (cm)</i>				
mean 2017 (LSD=0.27)	8.6	9.4	10.0	8.5
std. deviation 2017	0.7	0.8	1.0	0.7
mean 2018 (LSD=0.20)	7.5	7.6	8.3	7.2
std deviation 2018	0.6	0.6	0.6	0.5
<i>Kernel weight (grams per 1000 kernels)</i>				
mean 2017 (LSD=1.6)	37.0	40.5	37.0	39.7
std. deviation 2017	0.2	0.2	0	0.2
mean 2018 (LSD=1.4)	36.3	39.9	35.5	38.1
std deviation 2018	0.4	0.9	0.4	0.8

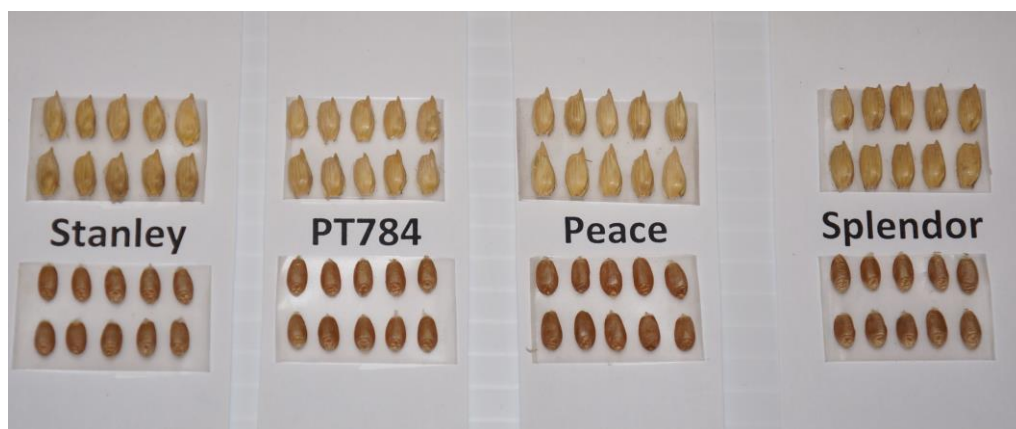
*reference varieties



Wheat: 'Ellerslie' (left) with reference varieties 'Peace' (centre left), 'CDC Stanley' (centre right) and 'AC Splendor' (right)



Wheat: 'Ellerslie' (centre left) with reference varieties 'CDC Stanley' (left), 'Peace' (centre right) and 'AC Splendor' (right)



Wheat: 'Ellerslie' (centre left) with reference varieties 'CDC Stanley' (left), 'Peace' (centre right) and 'AC Splendor' (right)

Proposed denomination: 'Jake'
Application number: 18-9523
Application date: 2018/06/20
Applicant: Governors of the University of Alberta, Edmonton, Alberta
Breeder: Dean Spaner, University of Alberta, Edmonton, Alberta

Varieties used for comparison: 'McKenzie', 'Go Early' and 'Alsen'

Summary: *The intensity of anthocyanin colouration of the coleoptile is absent or very weak on 'Jake' while it is strong on 'McKenzie' and 'Alsen'. At booting, the flag leaf of 'Jake' is longer and wider than that of 'McKenzie' and shorter and narrower than the flag leaf of 'Alsen'. At maturity, the plants of 'Jake' are shorter than those of the reference varieties. In cross section, the straw pith is very thin for 'Jake' while it is thick for 'McKenzie'. The spike for 'Jake' is fusiform in profile while it is tapering in profile for 'Go Early'. The spike of 'Jake' is longer than that of 'McKenzie'. The plants of 'Jake' mature early in the season while the plants of 'Alsen' mature mid-season. At maturity, the straw for 'Jake' has no anthocyanin colouration while the straw of 'McKenzie' has anthocyanin colouration present. The thousand kernel weight for 'Jake' is less than that of 'Go Early'. The germ for 'Jake' is of a medium size while it is small for 'McKenzie' and 'Alsen'.*

Description:

PLANT: common hard red spring wheat, erect to semi-erect growth habit at the 5 to 9 tiller stage, heads and matures early in season

SEEDLING: absent or very weak intensity of anthocyanin colouration of coleoptile, glabrous sheath and blade of lower leaves

FLAG LEAF: absent or very weak anthocyanin colouration of auricles, absent or very weak glaucosity of sheath, glabrous blade and sheath

CULM NECK: absent or very weak to weak glaucosity, straight

STRAW (AT MATURITY): very thin pith in cross-section, no anthocyanin colouration

SPIKE: weak to medium glaucosity at heading, fusiform in profile, medium density, white at maturity, erect attitude

AWNS: shorter than length of spike, white at maturity

LOWER GLUME: medium length and width, glabrous

LOWER GLUME SHOULDER: narrow to medium, predominantly straight

LOWER GLUME BEAK: short to medium, moderately curved

LOWEST LEMMA: straight to slightly curved beak

KERNEL: medium red, small to medium sized, short to medium length, narrow to medium width, oval, rounded cheek, short to medium brush hairs, narrow to medium crease, crease of shallow to medium depth

GERM: medium sized, oval

DISEASE REACTION: resistant to Leaf Rust (*Puccinia triticina*), Stripe Rust (*Puccinia striiformis*) and Stem Rust (*Puccinia graminis* f. sp. *tritici*), resistant to moderately resistant to Common Bunt (*Tilletia caries*, *T. foetida*), moderately susceptible to susceptible to Fusarium head blight (*Fusarium graminearum*, *Fusarium* species)

Origin and Breeding: ‘Jake’ (experimental designations PT782 and UAW1002*F6MBK05) originated from the cross between PT764 and ‘CDC Stanley’ made in 2009-2010 at the University of Alberta in Edmonton, Alberta. It was developed using a modified bulk breeding method. The F1 seed was planted in a greenhouse and the resulting F2 seed was field planted in single rows in Edmonton in 2010. The rows were harvested, bulked and 25 grams of the F3 seed planted in single rows in New Zealand in the 2010-2011 growing season. Resulting plants were selected based on plant height, maturity and disease resistance and 200 heads harvested, bulked and planted as F4 in long rows in Edmonton. In 2010-2011, 70 heads were selected from the F4 plants, based on plant height, maturity and disease resistance and planted as F5 head rows in New Zealand. In 2012, 44 head rows were selected based on plant type, lodging, maturity and disease resistance and tested in unreplicated preliminary yield trials under organic management in Edmonton and disease nurseries in Edmonton and Lethbridge in 2012. The line designated UAW1002*F6MBK05 was selected on the basis of agronomic, disease and end-use quality and further evaluated in replicated multi-location advanced yield trials in Edmonton in 2013 and in Parkland Cooperative B test in 2014. It was further evaluated as PT782 in the Parkland Cooperative Registration Test from 2015 to 2017.

Tests and Trials: The comparative trials for ‘Jake’ were conducted during the 2017 and 2018 growing seasons at the University of Alberta in Edmonton, Alberta. The plots were planted in a RCB design and consisted of 3 replicates for each variety. Each 4.5 metres squared plot consisted of 6 rows with rows being 4.5 metres in length and having a row spacing of 0.19 metres. The planting density was 300 plants per square metre. Measured characteristics were based on a minimum of 60 measurements per plant or parts of plants per variety except for the thousand kernel weight where 3 measurements were taken per variety in each year. Mean differences were significant at the 5% probability level based on LSD values.

Comparison table for ‘Jake’

	‘Jake’	‘McKenzie’*	‘Go Early’*	‘Alsen’**
<i>Flag leaf length (cm)</i>				
mean 2017 (LSD=1.0)	19.2	15.7	20.6	21.5
std. deviation 2017	3.8	3.1	3.2	2.5
mean 2018 (LSD=1.0)	19.9	15.8	18.4	21.1
std deviation 2018	2.6	2.7	1.8	2.5

<i>Flag leaf width (mm)</i>				
mean 2017 (LSD=0.6)	14.0	13.2	15.7	15.3
std. deviation 2017	2.0	1.8	2.1	1.6
mean 2018 (LSD=0.5)	12.4	11.2	12.6	13.1
std deviation 2018	1.3	1.1	1.0	1.0
<i>Plant height (at maturity) (including awns) (cm)</i>				
mean 2017 (LSD=1.5)	89.2	94.9	96.8	92.8
std. deviation 2017	4.8	6.7	6.9	4.9
mean 2018 (LSD=1.0)	77.6	81.6	82.2	84.8
std deviation 2018	2.9	3.5	3.5	3.3
<i>Spike length (cm)</i>				
mean 2017 (LSD=0.27)	9.3	8.0	9.6	8.8
std. deviation 2017	0.9	0.9	1.0	0.7
mean 2018 (LSD=0.20)	8.0	7.0	8.9	7.8
std deviation 2018	0.7	0.5	0.9	0.6
<i>Kernel weight (grams per 1000 kernels)</i>				
mean 2017 (LSD=1.6)	37.1	36.4	42.5	37.8
std. deviation 2017	1.2	1.1	0.6	0.8
mean 2018 (LSD=1.4)	36.9	36.4	42.6	39.8
std deviation 2018	0.2	0.4	0.7	0.6

*reference varieties



Wheat: 'Jake' (left) with reference varieties 'Alsen' (centre left), 'McKenzie' (centre right) and 'Go Early' (right)



Wheat: 'Jake' (centre) with reference varieties 'McKenzie' (left) and 'Alsen' (right)



Wheat: 'Jake' (centre left) with reference varieties 'Go Early' (left), 'Alsen' (centre right) and 'McKenzie' (right)

Proposed denomination: 'Maida'
Application number: 17-9339
Application date: 2017/12/01
Applicant: Céréla inc., St-Hugues, Quebec
Breeder: Annie Archambault, Céréla inc., St-Hugues, Quebec

Varieties used for comparison: 'Memphré', 'AAC Synox' and 'Toundra'

Summary: *The anthocyanin colouration of the flag leaf auricle for 'Maida' is absent or very weak to weak whereas it is of medium intensity for 'AAC Synox' and of medium to strong intensity for 'Toundra'. At booting, the flag leaf of 'Maida' is wider than the flag leaf of 'Toundra'. The plants of 'Maida' head earlier than those of 'AAC Synox' and 'Toundra'. The glaucosity of the spike for 'Maida' is of a medium degree whereas it is weak for 'Memphré'. At maturity, the plants of 'Maida' are taller than those of 'Memphré' and 'AAC Synox'. The spike of 'Maida' is shorter than those of 'AAC Synox' and 'Toundra'. The lower glume for 'Maida' is narrow to medium in width whereas it is medium to wide for 'AAC Synox'. The lower glume shoulder is narrow and straight for 'Maida' whereas it is of medium width and slightly sloping for 'AAC Synox'.*

The plants of 'Maida' mature earlier than those of 'AAC Synox' and 'Toundra'. The thousand kernel weight is greater for 'Maida' than that of 'Memphré' and 'AAC Synox'.

Description:

PLANT: common hard red spring wheat, erect to semi-erect growth habit at the 5 to 9 tiller stage, matures mid-season to late in season

SEEDLING (4-leaf stage): absent or very weak intensity of anthocyanin colouration of the coleoptile, glabrous sheath and blade of lower leaves

FLAG LEAF: absent or very weak to weak intensity of anthocyanin colouration of auricles, medium to strong glaucosity of sheath

CULM: straight to very slightly curved neck

STRAW (AT MATURITY): very thin to thin pith in cross section

SPIKE: medium glaucosity at heading, tapering to fusiform in profile, medium density, white at maturity, medium hairiness of convex surface of apical rachis segment

AWNS: equal in length to longer than spike

LOWER GLUME: narrow to medium width, pubescent

LOWER GLUME SHOULDER: medium width, straight

LOWER GLUME BEAK: short to medium, slightly curved

KERNEL: medium red, broad elliptical, angular cheek, medium length brush hairs, shallow to medium depth of crease

GERM: medium sized from dorsal view

Origin and Breeding: 'Maida' (experimental designations BS10-759 and C1M17174) originated from the cross 'AC Walton' // FE 20 / BS97-332 /// 'AC Walton' conducted at Céréla Research Station Inc. in St. Hugues, Quebec, Canada in 2002. The F1 to F5 generations were mass cultivated in Ste. Rosalie Quebec from 2003 to 2007 where seed selections were made based on grain density at each generation. Spikes were selected from the F5 plants in 2009 and planted in single rows. F6 individual rows were selected on the basis of disease resistance and performance. The line designated as 'BS10-759' was initially evaluated in screening trials based on yield, lodging and disease resistance from 2011 to 2014 and further evaluated in registration trials conducted by the Réseau Grandes Cultures du Québec in 2015 and 2016.

Tests and Trials: The comparative trials for 'Maida' were conducted at Céréla Inc. in St-Hugues, Quebec, during the 2017 and 2018 growing seasons. Plots consisted of 5 rows, each row 5 metres long with an inter-row spacing of 0.19 metres. The seeding density was approximately 425 seeds per squared metre. There were 2 replications per variety arranged in an RCB design. Measured plant characteristics were based on a minimum of 20 measurements per variety per year. Mean differences are significant at the 5% probability level based on a paired Student's t-test.

Comparison table for 'Maida'

	'Maida'	'Memphré'*	'AAC Synox'*	'Toundra'*
<i>Flag leaf width (mm)</i>				
mean 2017	14.6	13.5	13.1	11.1
std. deviation 2017	3.7	4.4	3.5	2.5
mean 2018	13.6	13.4	13.6	12.2
std deviation 2018	1.6	1.3	1.3	1.1
<i>Days to heading (50% heads fully emerged)</i>				
2017	53	52	48	47
2018	52	51	48	47
<i>Plant height (at maturity) (including awns) (cm)</i>				
mean 2017	118	116	104	118
std. deviation 2017	1.8	2.8	4.1	4.7
mean 2018	89.1	85.4	81.2	90.2
std deviation 2018	3.5	4.5	2.7	3.4

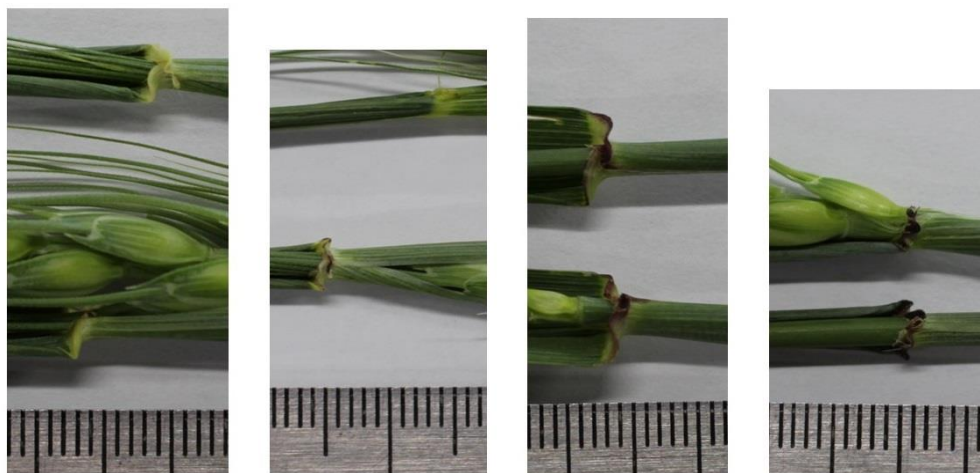
Spike length (cm)

mean 2017	8.4	8.6	9.3	9.3
std. deviation 2017	0.8	0.7	0.6	0.6
mean 2018	8.6	9.4	9.7	9.3
std deviation 2018	0.6	0.8	0.7	0.8

Kernel weight (grams per 1000 kernels)

mean 2017	36.9	33.9	35.0	36.8
std. deviation 2017	0.75	0.34	0.58	0.51
mean 2018	38.5	35.4	35.7	37.6
std deviation 2018	0.61	0.67	0.38	0.70

*reference varieties



Maida

Memphré

AAC Synox

Toundra

Wheat: 'Maida' (left) with reference varieties 'Memphré' (centre left), 'AAC Synox' (centre right) and 'Toundra' (right)



Maida

Memphré

AAC Synox

Toundra

Wheat: 'Maida' (left) with reference varieties 'Memphré' (centre left), 'AAC Synox' (centre right) and 'Toundra' (right)



Maida

Memphré

AAC Synox

Toundra

Wheat: 'Maida' (left) with reference varieties 'Memphré' (centre left), 'AAC Synox' (centre right) and 'Toundra' (right)

Proposed denomination: 'Minot'
Application number: 17-9338
Application date: 2017/11/28
Applicant: Céréla inc., St-Hugues, Quebec
Breeder: Annie Archambault, Céréla inc., St-Hugues, Quebec

Varieties used for comparison: 'Memphré', 'AAC Synox' and 'Dagon'

Summary: *At booting, the flag leaf of 'Minot' is longer and wider than the flag leaf of 'Dagon'. The flag leaf sheath for 'Minot' has a medium to very strong degree of glaucosity whereas it is medium for 'Memphré' and weak to medium for 'Dagon'. The plants of 'Minot' head earlier than those of 'AAC Synox' and 'Dagon'. At maturity, the plants of 'Minot' are taller than those of 'AAC Synox' and 'Dagon'. The spike of 'Minot' is shorter than those of 'Memphré' and 'AAC Synox'. The kernel colour is light red for 'Minot' whereas it is dark red for 'AAC Synox'. The thousand kernel weight is greater for 'Minot' than the reference varieties. The length of the kernel brush hairs is medium to long for 'Minot' while they are short for 'AAC Synox'.*

Description:

PLANT: common hard red spring wheat, erect to semi-erect growth habit at the 5 to 9 tiller stage, heads mid-season, matures mid-season

SEEDLING (4-leaf stage): absent or very weak to weak intensity of anthocyanin colouration of the coleoptile, glabrous sheath and blade of lower leaves

FLAG LEAF: absent or very weak intensity of anthocyanin colouration of auricles, strong glaucosity of sheath

CULM: straight neck

STRAW (AT MATURITY): very thin to thin pith in cross section

SPIKE: weak to medium glaucosity at heading, tapering to fusiform in profile, lax to medium density, white at maturity, sparse to dense hairiness of convex surface of apical rachis segment

AWNS: equal in length to spike, white at maturity

LOWER GLUME: narrow to medium width, glabrous to very weakly pubescent, sparse extent of internal hair

LOWER GLUME SHOULDER: narrow to medium width, slightly sloping to straight

LOWER GLUME BEAK: medium to long, slightly curved

KERNEL: light red, oval to broad elliptical, medium to long brush hairs, shallow to medium crease

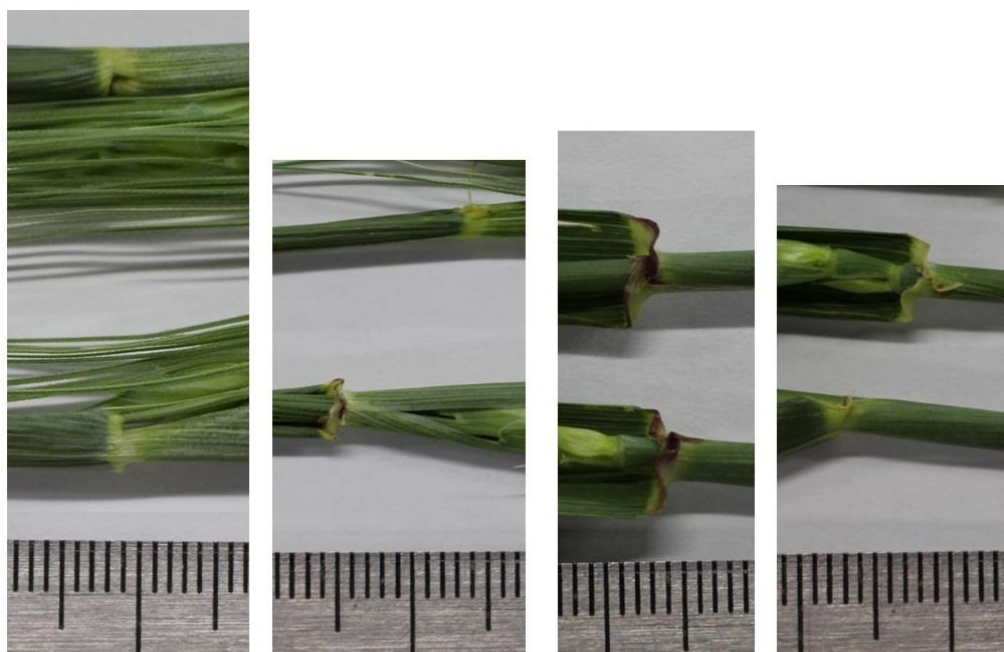
Origin and Breeding: ‘Minot’ (experimental designations BS10-422 and C1M16149) originated from the cross FE47 / ‘AC Walton’ // ‘AC Walton’ conducted at Céréla Research Station Inc. in St. Hugues, Quebec, Canada in 2002. The F1 to F5 generations were mass cultivated in Ste. Rosalie Quebec from 2003 to 2007 where seed selections were made at each generation based on grain density. Spikes were selected from the F5 plants in 2009 and planted in single rows. F6 individual rows were selected on the basis of disease tolerance and performance. The line designated as BS10-422 was initially evaluated in screening trials in 2014 based on yield, lodging and disease resistance and further evaluated in the registration trials conducted by the Réseau Grandes Cultures du Québec in 2015 and 2016.

Tests and Trials: The comparative trials for ‘Minot’ were conducted at Céréla Inc. in St-Hugues, Quebec, during the 2017 and 2018 growing seasons. Plots consisted of 5 rows, each row 5 metres long with an inter-row spacing of 0.19 metres. The seeding density was approximately 425 seeds per squared metre. There were 2 replications per variety arranged in an RCB design. Measured plant characteristics were based on a minimum of 20 measurements per variety per year. Mean differences are significant at the 5% probability level based on a paired Student’s t-test.

Comparison table for ‘Minot’

	‘Minot’	‘Memphré’*	‘AAC Synox’*	‘Dagon’*
<i>Flag leaf length (cm)</i>				
mean 2017	21.5	19.9	21.8	18.3
std. deviation 2017	3.7	4.4	3.5	2.5
mean 2018	18.1	18.7	18.2	16.2
std deviation 2018	3.6	2.5	2.3	3.4
<i>Flag leaf width (mm)</i>				
mean 2017	13.1	13.5	13.1	11.0
std. deviation 2017	1.6	1.9	1.9	1.5
mean 2018	13.2	13.4	13.6	11.7
std deviation 2018	1.7	1.3	1.3	2.1
<i>Days to heading (50% heads fully emerged)</i>				
2017	50	52	48	46
2018	50	51	48	47
<i>Plant height (at maturity) (including awns) (cm)</i>				
mean 2017	114.0	116.0	104.0	97.0
std. deviation 2017	4.3	2.8	4.1	3.2
mean 2018	86.7	85.4	81.8	75.4
std deviation 2018	2.8	4.6	2.7	2.6
<i>Spike length (cm)</i>				
mean 2017	8.2	8.6	9.3	9.0
std. deviation 2017	0.54	0.68	0.63	0.67
mean 2018	8.6	9.4	9.7	8.6
std deviation 2018	0.67	0.75	0.67	0.82
<i>Kernel weight (grams per 1000 kernels)</i>				
mean 2017	39.7	33.9	35.0	35.8
std. deviation 2017	0.37	0.34	0.58	0.48
mean 2018	40.2	35.4	35.7	38.7
std deviation 2018	0.49	0.67	0.38	0.52

*reference varieties



Minot

Memphré

AAC Synox

Dagon

Wheat: 'Minot' (left) with reference varieties 'Memphré' (centre left), 'AAC Synox' (centre right) and 'Dagon' (right)



Minot

Memphré

AAC Synox

Dagon

Wheat: 'Minot' (left) with reference varieties 'Memphré' (centre left), 'AAC Synox' (centre right) and 'Dagon' (right)



Minot

Memphré

AAC Synox

Dagon

Wheat: 'Minot' (left) with reference varieties 'Memphré' (centre left), 'AAC Synox' (centre right) and 'Dagon' (right)

Proposed denomination: 'Rednet'
Application number: 18-9524
Application date: 2018/06/20
Applicant: Governors of the University of Alberta, Edmonton, Alberta
Breeder: Dean Spaner, University of Alberta, Edmonton, Alberta

Varieties used for comparison: 'Alsen', 'Go Early' and 'Carberry'

Summary: *The intensity of anthocyanin colouration of the coleoptile is weak to medium on 'Rednet' whereas it is strong on 'Alsen' and absent or very weak on 'Go Early'. The plants of 'Rednet' head later than those of 'Carberry'. At maturity, the plants of 'Rednet' are taller than those of 'Alsen' and 'Carberry'. The spike of 'Rednet' is shorter than that of 'Go Early' and longer than that of 'Carberry'. The lower glume shoulder for 'Rednet' is sloping to straight whereas it is elevated to strongly elevated for 'Alsen'. The plants of 'Rednet' mature late in the season while the plants of 'Alsen' and 'Carberry' mature mid-season and the plants of 'Go Early' mature early in the season.*

Description:

PLANT: common hard red spring wheat, erect to semi-erect growth habit at the 5 to 9 tiller stage, heads mid-season, matures late in season

SEEDLING: weak to medium intensity of anthocyanin colouration of coleoptile, glabrous sheath and blade of lower leaves

FLAG LEAF: absent or very weak anthocyanin colouration of auricles, medium glaucosity of sheath, glabrous blade and sheath

CULM NECK: absent or very weak to weak glaucosity, straight

STRAW (AT MATURITY): very thin pith in cross-section, no anthocyanin colouration

SPIKE: absent or very weak to weak glaucosity at heading, fusiform in profile, medium density, white at maturity, erect to incline attitude

AWNS: shorter than length of spike, white at maturity

LOWER GLUME: short to medium length, narrow to medium width, glabrous

LOWER GLUME SHOULDER: narrow, slightly sloping to straight

LOWER GLUME BEAK: short to medium, moderately curved

LOWEST LEMMA: slightly curved beak

KERNEL: medium red, small to medium sized, short to medium length, narrow to medium width, oval, rounded cheek, short brush hairs, medium to wide crease, shallow to medium crease

GERM: small, oval

DISEASE REACTION: resistant to Leaf Rust (*Puccinia triticina*), Stripe Rust (*Puccinia striiformis*) and Stem Rust (*Puccinia graminis* f. sp. *tritici*), moderately resistant to Fusarium head blight (*Fusarium graminearum*, *Fusarium* species), susceptible to Common Bunt (*Tilletia caries*, *T. foetida*)

Origin and Breeding: ‘Rednet’ (experimental designations PT783 and UAW1149*064) originated from the cross (BYT10-07/ ‘Carberry’) / ‘CDC Stanley’ made in 2011 at the University of Alberta in Edmonton, Alberta. The F1 seed was sent to the Agriculture and Agri-Food Canada Research Centre for Double Haploid Production in Lethbridge, Alberta and the resulting 77 double haploid lines were planted in head rows in New Zealand during the 2012-2013 growing season. In 2013, 46 head rows were selected based on plant height, lodging, maturity and disease resistance and tested in replicated preliminary yield trials in Edmonton and Lethbridge and in disease nurseries in Edmonton, Lethbridge and Creston, Alberta. The line designated UAW1149*064 was selected and further evaluated in the Parkland Cooperative B test in 2014. It was further evaluated as PT783 in the Parkland Cooperative Registration Test from 2015 to 2017.

Tests and Trials: The comparative trials for ‘Rednet’ were conducted during the 2017 and 2018 growing seasons at the University of Alberta in Edmonton, Alberta. The plots were planted in a RCB design and consisted of 3 replicates for each variety. Each 4.5 metres squared plot consisted of 6 rows with rows being 4.5 metres in length and having a row spacing of 0.19 metres. The planting density was 300 plants per square metre. Measured characteristics were based on a minimum of 60 measurements per plant or parts of plants per variety. Mean differences were significant at the 5% probability level based on LSD values.

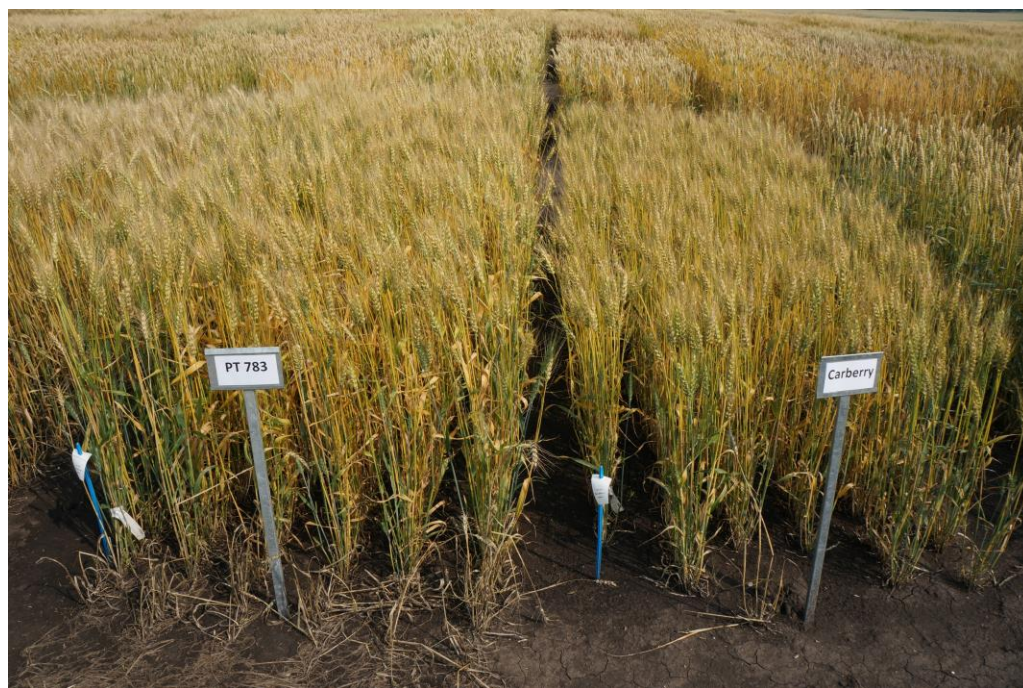
Comparison table for ‘Rednet’

	‘Rednet’	‘Alsen’*	‘Go Early’*	‘Carberry’*
<i>Days to heading (50% of heads fully emerged from boot)</i>				
2017 (LSD=0.86)	48.0	47.3	47.3	45.3
2018 (LSD=0.67)	51.0	49.7	48.7	47.3
<i>Plant height (at maturity) (including awns) (cm)</i>				
mean 2017 (LSD=1.50)	96.1	92.8	96.8	81.4
std. deviation 2017	6.8	4.9	6.9	5.6
mean 2018 (LSD=0.96)	86.8	84.8	82.2	74.9
std deviation 2018	2.6	3.3	3.5	3.3
<i>Spike length (cm)</i>				
mean 2017 (LSD=0.27)	9.2	8.8	9.6	8.8
std. deviation 2017	1.0	0.7	1.0	0.8
mean 2018 (LSD=0.20)	7.8	7.8	8.9	7.6
std deviation 2018	0.5	0.6	0.9	0.6

*reference varieties



Wheat: 'Rednet' (left) with reference varieties 'Carberry' (centre left), 'Alsen' (centre right) and 'Go Early' (right)



Wheat: 'Rednet' (left) with reference variety 'Carberry' (right)



Wheat: 'Rednet' (centre left) with reference varieties 'Go Early' (left), 'Alsen' (centre right) and 'Carberry' (right)

Proposed denomination: 'Sheba'
Application number: 18-9522
Application date: 2018/06/20
Applicant: Governors of the University of Alberta, Edmonton, Alberta
Breeder: Dean Spaner, University of Alberta, Edmonton, Alberta

Varieties used for comparison: 'Peace', 'CDC Stanley' and 'AC Splendor'

Summary: *At booting, the flag leaf of 'Sheba' is narrower than that of 'Peace'. The plants of 'Sheba' head later than those of 'AC Splendor'. At maturity, the plants of 'Sheba' are taller than those of 'CDC Stanley' and shorter than those of 'AC Splendor'. The spike of 'Sheba' is shorter than that of 'CDC Stanley' and longer than that of 'AC Splendor'. The kernel for 'Sheba' is oval shaped with medium length brush hairs whereas the kernel is elliptical with short brush hairs for 'AC Splendor'.*

Description:

PLANT: common hard red spring wheat, erect to semi-erect growth habit at the 5 to 9 tiller stage, matures mid-season

SEEDLING: absent or very weak intensity of anthocyanin colouration of coleoptile, glabrous sheath and blade of lower leaves

FLAG LEAF: absent or very weak anthocyanin colouration of auricles, absent or very weak glaucosity of sheath, glabrous blade and sheath

CULM NECK: absent or very weak glaucosity, straight

STRAW (AT MATURITY): very thin pith in cross-section, no anthocyanin colouration

SPIKE: absent or very weak glaucosity at heading, fusiform to parallel sided shape in profile, medium density, white at maturity, erect attitude

AWNLETS: shorter than length of spike, white at maturity

LOWER GLUME: medium length and width, glabrous

LOWER GLUME SHOULDER: narrow to medium, slightly sloping to straight

LOWER GLUME BEAK: short

LOWEST LEMMA: slightly to moderately curved beak

KERNEL: medium red, small to medium, short to medium length, narrow to medium width, oval, rounded cheek, medium length brush hairs, narrow to medium crease, crease of medium depth

GERM: small to medium, oval

DISEASE REACTION: resistant to Leaf Rust (*Puccinia triticina*), Stripe Rust (*Puccinia striiformis*), Stem Rust (*Puccinia graminis* f. sp. *tritici*) and Common Bunt (*Tilletia caries*, *T. foetida*), moderately resistant to moderately susceptible to Fusarium head blight (*Fusarium graminearum*, *Fusarium* species)

Origin and Breeding: ‘Sheba’ (experimental designations NH004 and UAW1133*080) originated from the cross between ‘Peace’ and ‘CDC Stanley’ made in 2011 at the University of Alberta in Edmonton, Alberta. The F1 seed was sent to the Agriculture and Agri-Food Canada Research Centre for Double Haploid Production in Lethbridge, Alberta and the resulting 300 double haploid lines were planted in head rows in New Zealand during the 2012-2013 growing season. In 2013, 135 head rows were selected based on plant height, lodging, maturity and disease resistance and tested in replicated preliminary yield trials in Edmonton and disease nurseries in Edmonton, Lethbridge and Creston, Alberta. The line designated UAW1133*080 was selected based on agronomic, disease and end-use quality and further evaluated in General (Special) Purpose Cooperative Registration B test in 2014 and in the Milling Wheat Cooperative Registration Test in 2015. It was further evaluated as NH004 in the Canada Northern Hard Red Cooperative Registration Test in 2016 and 2017.

Tests and Trials: The comparative trials for ‘Sheba’ were conducted during the 2017 and 2018 growing seasons at the University of Alberta in Edmonton, Alberta. The plots were planted in a RCB design and consisted of 3 replicates for each variety. Each 4.5 metres squared plot consisted of 6 rows with rows being 4.5 metres in length and having a row spacing of 0.19 metres. The planting density was 300 plants per square metre. Measured characteristics were based on a minimum of 45 measurements per plant or parts of plants per variety. Mean differences were significant at the 5% probability level based on LSD values.

Comparison table for ‘Sheba’

	‘Sheba’	‘Peace’*	‘CDC Stanley’*	‘AC Splendor’*
<i>Flag leaf width (mm)</i>				
mean 2017 (LSD=0.57)	14.8	16.4	16.0	15.5
std. deviation 2017	1.6	1.8	1.5	2.0
mean 2018 (LSD=0.50)	12.2	13.0	12.2	12.2
std deviation 2018	1.2	1.1	1.3	1.3
<i>Days to heading (50% of heads fully emerged from boot)</i>				
2017 (LSD=0.86)	48.3	49.0	49.0	46.3
2018 (LSD=0.67)	50	50.7	51	47
<i>Plant height (at maturity) (including awnlets) (cm)</i>				
mean 2017 (LSD=1.5)	93.1	93.1	89.2	95.8
std. deviation 2017	7.6	8.7	5.9	6.5
mean 2018 (LSD=0.96)	83.1	91.2	79.9	85.0
std deviation 2018	2.8	3.9	3.5	4.1
<i>Spike length (cm)</i>				
mean 2017 (LSD=0.27)	9.2	9.4	10.0	8.5
std. deviation 2017	1.4	0.8	1.0	0.7
mean 2018 (LSD=0.20)	8.1	7.6	8.3	7.2
std deviation 2018	0.5	0.6	0.6	0.5

*reference varieties



Wheat: 'Sheba' (left) with reference varieties 'Peace' (centre left), 'CDC Stanley' (centre right) and 'AC Splendor' (right)



Wheat: 'Sheba' (centre left) with reference varieties 'CDC Stanley' (left), 'Peace' (centre right) and 'AC Splendor' (right)



Wheat: 'Sheba' (centre left) with reference varieties 'CDC Stanley' (left), 'Peace' (centre right) and 'AC Splendor' (right)

Proposed denomination: 'Tracker'
Application number: 18-9526
Application date: 2018/06/20
Applicant: Governors of the University of Alberta, Edmonton, Alberta
Breeder: Dean Spaner, University of Alberta, Edmonton, Alberta

Varieties used for comparison: 'Peace', 'CDC Stanley' and 'AC Splendor'

Summary: At booting, the flag leaf for 'Tracker' is longer and narrower than that of 'Peace' and 'AC Splendor' and narrower than that of 'CDC Stanley'. At maturity, the plants of 'Tracker' are shorter than those of 'Peace' and 'AC Splendor'. The spike of 'Tracker' is shorter than that of 'CDC Stanley' and longer than the spike of 'AC Splendor'. The plants of 'Tracker' mature early to mid-season while they mature mid-season to late in the season for 'CDC Stanley'. The kernel for 'Tracker' is of medium length while that of 'CDC Stanley' is short. The thousand kernel weight for 'Tracker' is less than that of 'Peace' and 'AC Splendor'.

Description:

PLANT: common hard red spring wheat, erect to semi-erect growth habit at the 5 to 9 tiller stage, heads early to mid-season, matures early to mid-season

SEEDLING: absent or very weak intensity of anthocyanin colouration of coleoptile, glabrous sheath and blade of lower leaves

FLAG LEAF: absent or very weak anthocyanin colouration of auricles, absent or very weak to weak glaucosity of sheath, glabrous blade and sheath

CULM NECK: weak to medium glaucosity, straight

STRAW (AT MATURITY): very thin pith in cross-section, no anthocyanin colouration

SPIKE: absent or very weak to weak glaucosity at heading, parallel sided in profile, medium density, white at maturity, erect attitude

AWNLETS: shorter than length of spike, white at maturity

LOWER GLUME: short to medium length, medium width, glabrous

LOWER GLUME SHOULDER: narrow to medium in width, slightly sloping to straight

LOWER GLUME BEAK: short

LOWEST LEMMA: moderately curved beak

KERNEL: medium red, small to medium sized, medium to long, narrow to medium width, oval, rounded cheek, short to medium brush hairs, narrow to medium crease, crease of medium depth

GERM: small to medium sized, oval

DISEASE REACTION: resistant to Leaf Rust (*Puccinia triticina*), Stripe Rust (*Puccinia striiformis*) and Stem Rust (*Puccinia graminis* f. sp. *tritici*), moderately resistant to moderately susceptible to Fusarium head blight (*Fusarium graminearum*, *Fusarium* species), susceptible to Common Bunt (*Tilletia caries*, *T. foetida*)

Origin and Breeding: 'Tracker' (experimental designations PT785 and UAW1133*009) originated from the cross between 'Peace' and 'CDC Stanley' made in 2011 at the University of Alberta in Edmonton, Alberta. The F1 seed was sent to the Agriculture and Agri-Food Canada Research Centre for Double Haploid Production in Lethbridge, Alberta and the resulting 300 double haploid lines were planted in head rows in New Zealand during the 2012 - 2013 growing season. In 2013, 135 head rows were selected based on plant height, lodging, maturity and disease resistance and tested in replicated preliminary yield trials in Edmonton and Lethbridge and in disease nurseries in Edmonton, Lethbridge and Creston, Alberta. The line designated UAW1133*009 was selected based on agronomic, disease and end-use quality and further evaluated in the Parkland Cooperative B test in 2014. It was further evaluated as PT785 in the Parkland Cooperative Registration Test from 2015 to 2017.

Tests and Trials: The comparative trials for 'Tracker' were conducted during the 2017 and 2018 growing seasons at the University of Alberta in Edmonton, Alberta. The plots were planted in a RCB design and consisted of 3 replicates for each variety. Each 4.5 metres squared plot consisted of 6 rows with rows being 4.5 metres in length and having a row spacing of

0.19 metres. The planting density was 300 plants per square metre. Measured characteristics were based on a minimum of 45 measurements per plant or parts of plants per variety except for the thousand kernel weight where 3 measurements were taken per variety in each year. Mean differences were significant at the 5% probability level based on LSD values.

Comparison table for 'Tracker'

	'Tracker'	'Peace'*	'CDC Stanley'*	'AC Splendor'*
<i>Flag leaf length (cm)</i>				
mean 2017 (LSD=1.0)	19.9	18.4	20.1	18.1
std. deviation 2017	2.7	2.5	3.0	2.3
mean 2018 (LSD=1.0)	20.8	17.3	19.2	18.6
std deviation 2018	2.5	3.0	2.8	2.3
<i>Flag leaf width (mm)</i>				
mean 2017 (LSD=0.57)	13.7	16.4	16.0	15.5
std. deviation 2017	1.7	1.8	1.5	2.0
mean 2018 (LSD=0.50)	11.4	13.0	12.2	12.2
std deviation 2018	0.9	1.1	1.3	1.3
<i>Plant height (at maturity) (including awnlets) (cm)</i>				
mean 2017 (LSD=0.96)	90.1	93.1	89.2	95.8
std deviation 2017	6.8	8.7	5.9	6.5
mean 2018 (LSD=1.50)	78.8	91.2	79.9	85.0
std. deviation 2018	3.0	3.9	3.5	4.1
<i>Spike length (cm)</i>				
mean 2017 (LSD=0.27)	9.0	9.4	10.0	8.5
std. deviation 2017	0.7	0.8	1.0	0.7
mean 2018 (LSD=0.20)	7.9	7.6	8.3	7.2
std deviation 2018	0.5	0.6	0.6	0.5
<i>Kernel weight (grams per 1000 kernels)</i>				
mean 2017 (LSD=1.6)	36.7	40.5	37.0	39.7
std. deviation 2017	0.5	0.2	0	0.2
mean 2018 (LSD=1.4)	35.3	39.9	35.5	38.1
std deviation 2018	1.2	0.9	0.4	0.8

*reference varieties



Wheat: 'Tracker' (left) with reference varieties 'Peace' (centre left), 'CDC Stanley' (centre right) and 'AC Splendor' (right)



Wheat: 'Tracker' (centre left) with reference varieties 'CDC Stanley' (left), 'Peace' (centre right) and 'AC Splendor' (right)



Wheat: 'Tracker' (centre left) with reference varieties 'CDC Stanley' (left), 'Peace' (centre right) and 'AC Splendor' (right)