



## APPLICATIONS UNDER EXAMINATION

## WHEAT

### WHEAT (*Triticum aestivum*)

**Proposed denomination:** '25W36'  
**Application number:** 08-6343  
**Application date:** 2008/05/21  
**Applicant:** Pioneer Hi-Bred International, Inc., Des Moines, Iowa, United States of America  
**Agent in Canada:** Fred Thoonen, Pioneer Hi-Bred Ltd., Caledon, Ontario  
**Breeder:** Greg Marshall, Pioneer Hi-Bred International, Inc., Windfall, Indiana, United States of America

Note: The applicant has requested an exemption from compulsory licensing to allow time to multiply and distribute propagating material of the variety. If the exemption is granted, it may be allowed for two years from the date rights are granted for the variety.

**Varieties used for comparison:** '2737W' and 'Caledonia'

**Summary:** '25W36' has a shorter narrower flag leaf than '2737W' and 'Caledonia'. The flag leaf auricle of '25W36' has stronger anthocyanin colouration than '2737W' and 'Caledonia'. '25W36' has weaker glaucosity of the culm than the reference varieties. The spike of '25W36' is less dense than '2737W' and has a greater nodding attitude at maturity than both reference varieties. '25W36' has a weaker glaucosity of the spike than '2737W'. The hairiness of the convex surface of the apical rachis segment of '25W36' is denser than the reference varieties. '25W36' has a shorter lower glume length than '2737W'. The shape of the shoulder of the lower glume of '25W36' is slightly sloping while it is sloping in '2737W' and straight in 'Caledonia'. '25W36' has a narrower shoulder of the lower glume than 'Caledonia'. The extent of the internal hairs of the lower glume of '25W36' is denser than in 'Caledonia'. '25W36' has a straight beak shape of the lemma while it is slightly curved in '2737W' and moderately curved in 'Caledonia'. The kernel embryo of '25W36' is round while it is oval in '2737W'.

#### **Description:**

**PLANT:** winter type, semi-erect growth habit

**SEEDLING:** absent to very weak anthocyanin colouration of the coleoptile

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

**CULM NECK:** weak glaucosity, straight

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

**SPIKE:** tapering shape, medium density, nodding attitude at maturity, medium glaucosity, white at maturity, very short awnlets present, medium hairiness of the convex surface of the apical rachis segment

**LOWER GLUME:** medium width, medium length, absent or very weak pubescence, slightly sloping medium width shoulder, moderately curved short beak, medium extent of internal hairs

**LEMMA:** straight beak

**KERNEL:** soft white type, white colour, medium size kernel, midlong, midwide, oval shape, rounded cheek shape, midlong brush hairs, midsize germ, round shape of germ, narrow shallow crease, dark colouration reaction to phenol

**AGRONOMIC CHARACTERISTICS:** good winter survival, poor pre-harvest sprouting

**QUALITY CHARACTERISTICS:** fair pastry and biscuit quality

**DISEASE RESISTANCE:** moderately susceptible to susceptible to Fusarium head blight (*Fusarium graminearum*, *Fusarium* sp.) and Wheat soil borne Mosaic virus, moderately resistant to Leaf rust (*Puccinia triticina*) Powdery mildew (*Erysiphe*

*graminis*, f. sp. *tritici*) and Spindle streak Mosaic virus, resistant to Stripe rust (*Puccinia striiformis*), moderately resistant to moderately susceptible to Septoria tritici blotch (*Septoria tritici*)

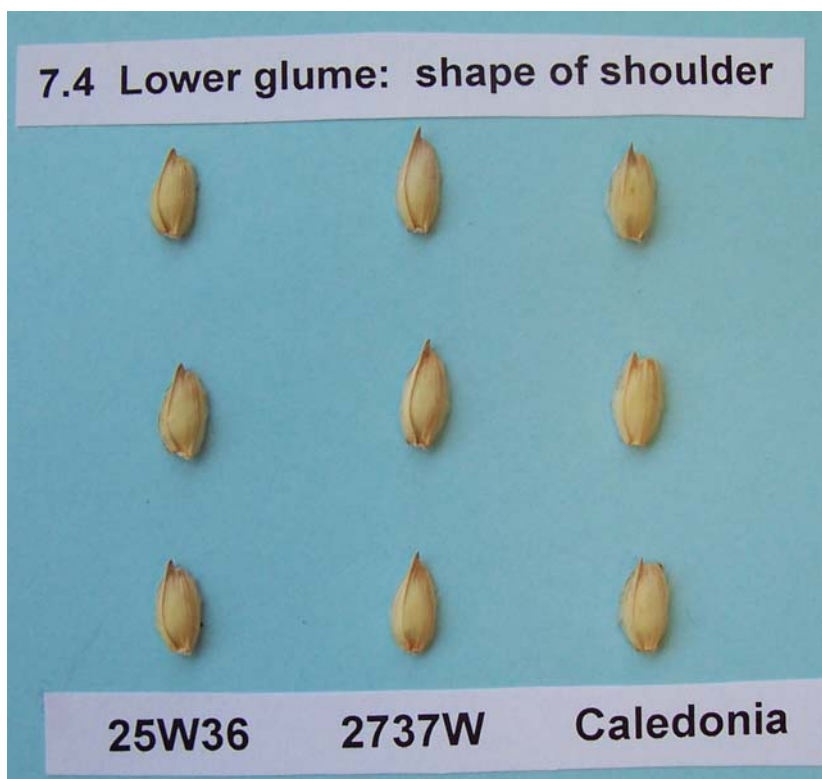
**Origin and Breeding:** '25W36' (experimental designations W960964N1, XW05K) derives from the three-parent cross, WBJ0325D1\*25W33/ WBL0305A1 made in 1995 at the Pioneer Hi-Bred station in Windfall, Indiana. WBJ0325D1 = 2737W sib./ NY6708-18 (PI 499283)// 2548 and WBL0305A1 = 2510 sib./ 3/ Aurora/ Tyler// 2553/ 2550 sib./ 4/ 2737W. The detailed pedigree is 2737W sib./ NY6708-18 (PI 499283)// 2548/ 3/ 25W33/ 5/ 2510 sib./ 3/ Aurora/ Tyler// 2553/2550 sib./ 4/ 2737W. In 1996, the F1 generation was grown in a transplant nursery at Windfall, Indiana. In 1996-1997, the F2 bulk populations were grown in Windfall and Ft. Branch, Indiana where individual spike selections were made at both locations. Headrows from the F2 selections were grown in 1997-1998 in Windfall and Ft. Branch, Indiana where individual rows were selected at Ft. Branch, Indiana. In 1998-1999, the F4 generation was grown as a 3 row X 3 meter observation plot in both Windfall and Ft. Branch, Indiana locations. A meter section of the middle row was harvested from a selected plot and was threshed and bulked. In 1999-2000, a 7 row X 3 meter plot was planted in Windfall and Ft. Branch, Indiana where 50 spikes were harvested from the selected plot and threshed individually. In 2000-2001, 20 headrows of the F5 selection were grown at Windfall and Ft. Branch, Indiana. Selected rows from the Windfall, Indiana location were cut and threshed individually. Preliminary yield testing began in 2001-2002 of an F5 selection from an F6 headrow. This selection was designated W960964N1. Yield testing continued through the F13 generation in 2007-2008. Selection criteria included any or all of the following characteristics in the field: disease resistance, plant type, plant height, head type, straw strength, maturity, grain yield, test weight and milling and baking characteristics.

**Tests and Trials:** Test and trials occurred during the 2007-2008 growing season in Caledon, Ontario. Plots consisted of 6 rows with a row spacing of 30 cm and a row length of 6 m. There were 3 replications. Results were supported by the official PBR technical examination report #200700368 purchased from the Plant Variety Protection office in the USA.

**Comparison table for '25W36'**

	'25W36'	'2737W'*	'Caledonia'*
<i>Flag leaf length (cm)</i>			
mean	14.4	16.6	19.3
std. deviation	1.8	2.2	2.8
<i>Flag leaf width (mm)</i>			
mean	12.2	13.8	14.8
std. deviation	1.1	0.9	1.3

\*reference varieties



Wheat: '25W36' (left) with reference varieties '2737W' (centre) and 'Caledonia' (right)

**Proposed denomination:** '25W43'  
**Application number:** 08-6344  
**Application date:** 2008/05/21  
**Applicant:** Pioneer Hi-Bred International, Inc., Des Moines, Iowa, United States of America  
**Agent in Canada:** Fred Thoonen, Pioneer Hi-Bred Ltd., Caledon, Ontario  
**Breeder:** Greg Marshall, Pioneer Hi-Bred International, Inc., Windfall, Indiana, United States of America

Note: The applicant has requested an exemption from compulsory licensing to allow time to multiply and distribute propagating material of the variety. If the exemption is granted, it may be allowed for two years from the date rights are granted for the variety.

**Varieties used for comparison:** '2737W' and 'Caledonia'

**Summary:** '25W43' has strong intensity of anthocyanin colouration of the coleoptile while it is absent in '2737W' and 'Caledonia'. The flag leaf of '25W43' is shorter and narrower than 'Caledonia'. '25W43' has stronger anthocyanin colouration of the flag leaf auricle than the reference varieties. The culm of '25W43' has a weaker glaucosity than the reference varieties. '25W43' has anthocyanin colouration of the straw at maturity while the reference varieties do not. The spike of '25W43' is denser than 'Caledonia'. '25W43' has a spike with a greater nodding attitude at maturity than the reference varieties. The spike of '25W43' has weaker glaucosity than '2737W'. '25W43' has a denser hairiness of the convex surface of the apical rachis segment than 'Caledonia'. The lower glume of '25W43' is shorter than '2737W'. '25W43' has a straight shape to the shoulder of the lower glume while it is sloping in '2737W'. The shoulder width of the lower glume of '25W43' is narrower than 'Caledonia'. '25W43' has sparser internal hairs of the lower glume than '2737W'. The beak shape of the lemma of '25W43' is slightly curved while it is moderately curved in 'Caledonia'. '25W43' has an oval shaped kernel while it is broad elliptical in 'Caledonia'. The kernel embryo of '25W43' is oval while it is round in 'Caledonia'.

**Description:**

PLANT: winter type, semi-erect growth habit

SEEDLING: strong anthocyanin colouration of the coleoptile

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

CULM NECK: weak glaucosity, straight

STRAW: thin pith in cross section, anthocyanin colouration present at maturity

SPIKE: parallel sided shape, dense, nodding attitude at maturity, medium glaucosity, white at maturity, very short awnlets present, sparse hairiness of the convex surface of the apical rachis segment

LOWER GLUME: medium width, medium length, absent or very weak pubescence, straight medium width shoulder, moderately curved short beak, sparse extent of internal hairs

LEMMA: slightly curved beak

KERNEL: soft white type, white colour, medium size kernel, midlong, midwide, oval shape, rounded cheek shape, midlong brush hairs, midsize germ, oval shape of germ, narrow shallow crease, dark colouration reaction to phenol

AGRONOMIC CHARACTERISTICS: good winter survival, poor pre-harvest sprouting

QUALITY CHARACTERISTICS: fair pastry and biscuit quality

DISEASE RESISTANCE: moderately susceptible to Fusarium head blight (*Fusarium graminearum*, *Fusarium* sp.), moderately resistant to Leaf rust (*Puccinia triticina*) and Wheat soil borne Mosaic virus, moderately resistant to moderately susceptible to Septoria tritici blotch (*Septoria tritici*) Powdery mildew (*Erysiphe graminis*, f. sp. *tritici*) Stripe rust (*Puccinia striiformis*) and Spindle streak Mosaic virus,

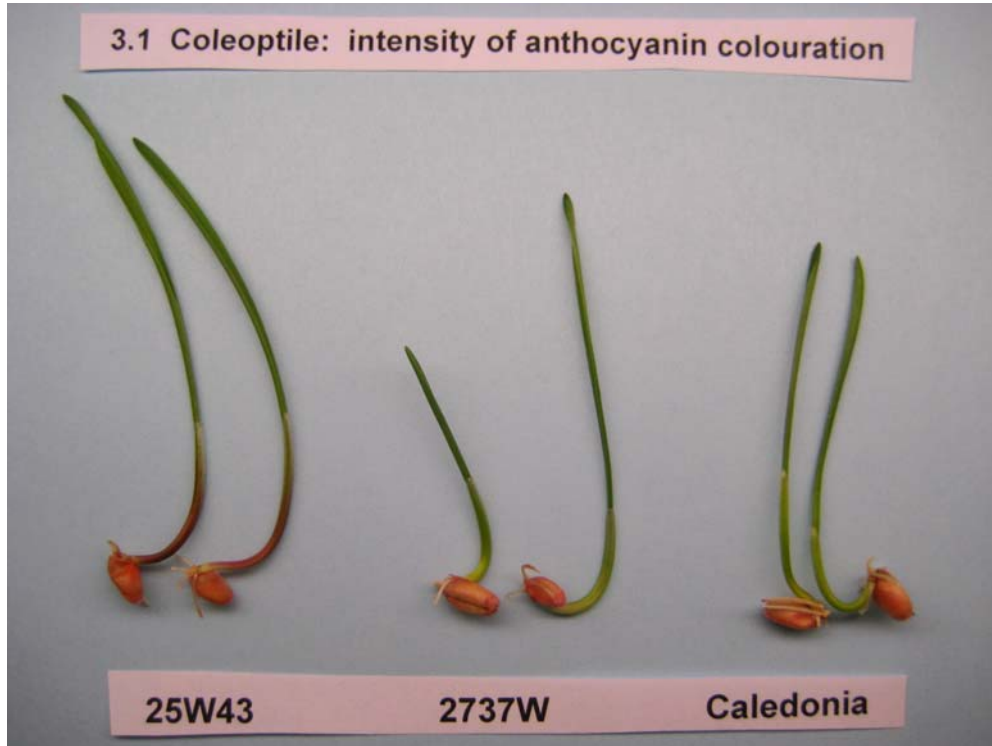
**Origin and Breeding:** '25W43' (experimental designations W960937D1, XW05J) derives from the three-parent cross, SC8021V2/ 25W33/ WBL0305A1 made in 1995 at the Pioneer Hi-Bred station in Windfall, Indiana. SC8021V2 (PI 554142) was a white kernalled spring wheat germplasm line from Agriculture and Agri-Food Canada and WBL0305A1 = 2510 sib./ 3/ Aurora/ Tyler// 2553/ 2550 sib./ 4/ 2737W. The detailed pedigree is SC8021V2/ 25W33/ 5/ 2510 sib./ 3/ Aurora/ Tyler// 2553/2550 sib./ 4/ 2737W. In 1996, the F1 generation was grown in a transplant nursery at Windfall, Indiana. In 1996-1997, the F2 bulk populations were grown in Windfall and Ft. Branch, Indiana where individual spike selections were made at both locations. Headrows from the F2 selections were grown in 1997-1998 in Windfall and Ft. Branch, Indiana where individual rows were selected at Ft. Branch, Indiana. In 1998-1999, the F4 generation was grown as a 3 row X 3 meter observation plot in both Windfall and Ft. Branch, Indiana locations. A meter section of the middle row was harvested from a selected plot and was threshed and bulked. In 1999-2000, a 7 row X 3 meter plot was planted in Windfall and Ft. Branch, Indiana where 50 spikes were harvested from the selected plot and threshed individually. In 2000-2001, 20 headrows of the F5 selection were grown at Windfall and Ft. Branch, Indiana. Selected rows from the Ft. Branch, Indiana location were cut and threshed individually. Preliminary yield testing began in 2001-2002 of an F5 selection from an F6 headrow. This selection was designated W960937D1. Yield testing continued through the F13 generation in 2007-2008. Selection criteria included any or all of the following characteristics in the field: disease resistance, plant type, plant height, head type, straw strength, maturity, grain yield, test weight and milling and baking characteristics.

**Tests and Trials:** Test and trials occurred during the 2007-2008 growing season in Caledon, Ontario. Plots consisted of 6 rows with a row spacing of 30 cm and a row length of 6 m. There were 3 replications. Results were supported by the official PBR technical examination report #200700370 purchased from the Plant Variety Protection office in the USA.

**Comparison table for '25W43'**

	'25W43'	'2737W'*	'Caledonia'*
<i>Flag leaf length (cm)</i>			
mean	16.3	16.6	19.3
std. deviation	1.9	2.2	2.8
<i>Flag leaf width (mm)</i>			
mean	12.8	13.8	14.8
std. deviation	2.3	0.9	1.3

\*reference varieties



Wheat: '25W43' (left) with reference varieties '2737W' (centre) and 'Caledonia' (right)

**Proposed denomination:** '5702PR'  
**Application number:** 07-5786  
**Application date:** 2007/03/07  
**Applicant:** Syngenta Seeds Canada Inc., Morden, Manitoba  
**Breeder:** Kevin McCallum, Syngenta Seeds Canada Inc., Morden, Manitoba

**Variety used for comparison:** '5700PR'

**Summary:** '5702PR' is taller than '5700PR'. The flag leaf of '5702PR' is narrower than '5700PR'. '5702PR' has a lower frequency of plants with recurved/drooping flag leaves than '5700PR'. The auricle of the flag leaf of '5702PR' has weaker anthocyanin colouration than '5700PR'.

**Description:**

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

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

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

**CULM NECK:** absent or very weak glaucosity, very weak to weak curvature

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

**SPIKE:** tapering shape, lax to medium density, erect at maturity, very weak to weak glaucosity, white at maturity, light brown to white awns present, awns long in relation to length of spike, medium to slightly spreading awn attitude, sparse hairiness of convex surface of apical segment

**LOWER GLUME:** medium in width, short to medium length, weak pubescence, slightly sloping shape of shoulder, narrow shoulder width, straight long beak, sparse internal hairs

**KERNEL:** hard red type, dark red colour, large kernel, midlong to long, medium width, elliptical shape, rounded cheek shape, midlong to long brush hairs, small germ, round to broad elliptical shape of germ, midwide and shallow to mid-deep crease

**AGRONOMICS:** fair resistance to shattering, poor pre-harvest sprouting

**DISEASE RESISTANCE:** Susceptible to Common root rot (*Cochliobolus sativus Fusarium* sp.) and Fusarium head blight (*Fusarium graminearum Fusarium* sp. ), moderately susceptible to Black point and smudge (*Cochliobolus sativus Alternaria* species *Pseudomonas syrange* pv. *atrofaciens*) and Septoria tritici blotch (*Septoria tritici*), moderately resistant to moderately susceptible to Leaf rust (*Puccinia triticina*), moderately resistant to Septoria nodorum blotch (*Septoria nodorum*) and Common bunt (*Tilletia caries*, *Tilletia foetida*)

**Origin and Breeding:** '5702PR' (experimental designation HY977) originated from the cross HY437/3/Russ//Sumai#3/Dalen made in 1998 in Berthoud, Colorado, USA. Individual head selections were made from an F2 population of this cross at an AgriPro breeding nursery at Rosebank, Manitoba in 1999. Single seed descent was used to advance these selections through the F3 and F4 generations in the greenhouse. In 2000, F5 headrows were individually bulked from a selection nursery at Rosebank, Manitoba. These bulks were screened and selected from a four location observation nursery in 2001. One of the selections was designated 99S3088-05 and tested in the Proven Seed Research plots in 2002 and 2003. It was tested in the High Yielding Wheat Co-op trials as HY977 during the 2004-2006 seasons.

**Tests and Trials:** Tests and trials were conducted during the summers of 2006 and 2007 in Rosebank, Manitoba. Plot size was 4.0 m x 1.2 m with 5 rows per plot. There were 4 replicates arranged in a Random Complete Block design.

**Comparison table for '5702PR'**

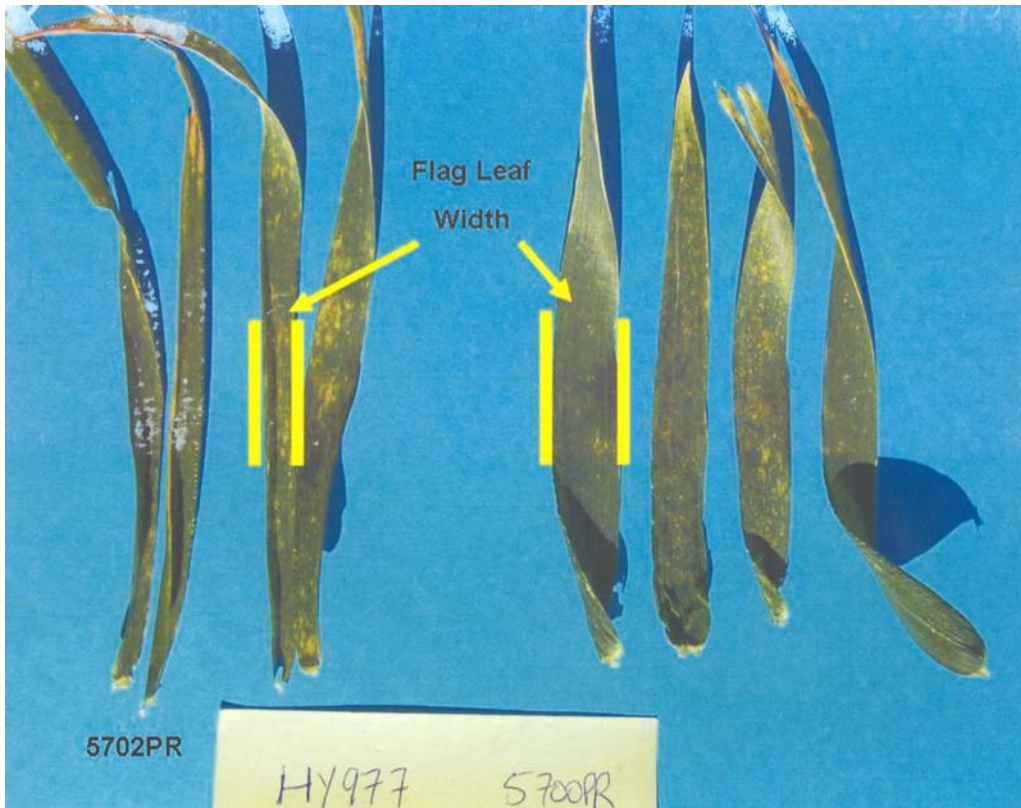
	'5702PR'	'5700PR'*
<i>Plant height (cm)</i>		
mean 2006	94.1	88.9
std. deviation	1.02	1.02
mean 2007	88.8	81.9
std. deviation	1.2	0.97
<i>Flag leaf width (mm)</i>		
mean 2006	12.4	16.0
std. deviation	0.81	0.79
mean 2007	12.2	15.0
std. deviation	0.81	0.69

\*reference variety





Wheat: '5702PR' (right) with reference variety '5700PR' (left)



Wheat: '5702PR' (left) with reference variety '5700PR' (right)