



APPLICATIONS UNDER EXAMINATION

WHEAT

WHEAT
(Triticum aestivum)

Proposed denomination: '25R39'
Application number: 09-6636
Application date: 2009/04/29
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: '25R49' and '25R56'

Summary: '25R39' has a longer flag leaf than '25R56'. The flag leaf width of '25R39' is narrower than '25R49' and '25R56'. '25R39' has a higher frequency of plants with recurved flag leaves than '25R56'. The plant height of '25R39' is taller than '25R49' and '25R56'. The shape of the neck of the culm of '25R39' is straight while it is weakly curved in '25R49' and '25R56'. '25R39' has a lax spike while it is medium density in '25R49' and dense in '25R56'. '25R39' has a longer spike than '25R49' and '25R56'. The hairiness of the convex surface of the apical rachis segment of the spike of '25R39' is sparse while it is absent or very sparse in '25R49' and medium in '25R56'. '25R39' has a shorter lower glume than '25R49'. The shoulder of the lower glume of '25R39' is slightly sloping while it is sloping in '25R49'. '25R39' has a wider lower glume shoulder than the reference varieties. The extent of the internal hairs of the lower glume of '25R39' is sparse while it is medium density in '25R56'. '25R39' has a slightly curved beak shape of the lemma, while it is moderately curved in '25R49' and straight in '25R56'. The kernel shape of '25R39' is elliptical while it is oval in the reference varieties. '25R39' has longer brush hairs on the kernel than '25R49'. The germ shape of '25R39' is round while it is oval in '25R56'.

Description:

PLANT: winter type, semi-erect growth habit, medium maturity
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, absent or very weak intensity of anthocyanin colouration of auricles, medium glaucosity of sheath

CULM NECK: medium glaucosity, straight
STRAW: thin pith in cross section, no anthocyanin colouration at maturity

SPIKE: tapering shape, lax density, incline attitude at maturity, weak glaucosity, white at maturity, very short to 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, slightly sloping medium width shoulder, slightly curved short beak, sparse extent of internal hairs
LEMMA: slightly curved beak

KERNEL: soft red type, medium red colour, medium size kernel, midlong, midwide, elliptical shape, rounded cheek shape, midlong brush hairs, midsize germ, round shape of germ, narrow shallow to mid-deep crease, medium colouration reaction to phenol

AGRONOMIC CHARACTERISTICS: fair to good winter survival, fair pre-harvest sprouting

QUALITY CHARACTERISTICS: fair pastry and biscuit quality

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

INSECT RESISTANCE: susceptible to Hessian fly biotype E

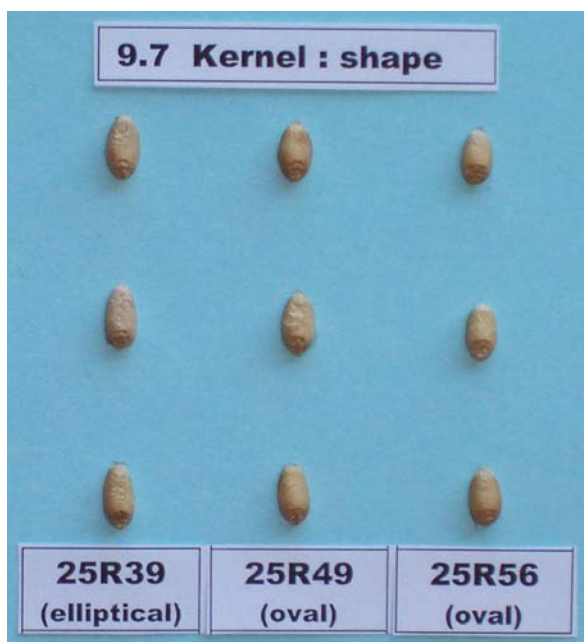
Origin and Breeding: '25R39' (experimental designations W970761Z1, XW06M) is a soft red winter wheat that was bred and developed using a modified pedigree selection method. It was derived from the final cross 'WBJ0323G2' / '25R49' made in 1996 in Windfall, Indiana, USA. 'WBJ0323G2' is a Pioneer experimental line derived from the cross 2737W sib / 2548 // 2548. The F1 thru F4 generations were grown in either Windfall or Ft. Branch, Indiana from 1997 to 2000. In 2000/2001, a seven row by three meter plot was planted at Windfall and Ft. Branch, Indiana. Fifty spikes were harvested from the selected plot and threshed individually. In 2001/2002, 20 headrows of the F5 selection were grown at Windfall and Ft. Branch, Indiana. Selected rows were cut and threshed individually. This selection was made at Ft. Branch, Indiana. Preliminary yield testing of the F5 selection from an F6 headrow began in 2002/2003. This selection was designated W970761Z1. Advanced yield testing of W970761Z1 occurred in 2003/2004 with 200 individual spikes being harvested from a small bulk increase. Elite yield testing with selection occurred from 2004/2005 to 2007/2008. In 2007/2008 the line was designated XW06M. Selection criteria included 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 were conducted in Caledon, Ontario during the 2008-2009 growing season. Plots consisted of 6 rows with a row spacing of 0.3 meters and a row length of 6 meters. There were three replicates with the second and third replicates being randomized. Measured characteristics were based on a minimum of 24 measurements per variety. The tests and trials for '25R39' were supported by the test report purchased from the Plant Variety Protection Office, Beltsville, Maryland, USA PVPO# 200800369.

Comparison table for '25R39'

	'25R39'	'25R49'*	'25R56'*
<i>Flag leaf length (cm)</i>			
mean	16.4	17.4	14.8
std. deviation	2.4	3.9	2.2
<i>Flag leaf width (mm)</i>			
mean	12.7	13.9	15.8
std. deviation	1.0	1.8	1.5
<i>Plant height (including awns) (cm)</i>			
mean	93.8	85.7	86.5
std. deviation	3.8	3.9	3.2
<i>Spike length (excluding awns) (cm)</i>			
mean	10.4	9.2	9.5
std. deviation	0.6	0.6	0.7

*reference varieties



Wheat: '25R39' (left) with reference varieties '25R49' (centre) and '25R56' (right)



Wheat: '25R39' (left) with reference varieties '25R49' (centre) and '25R56' (right)