WHEAT
(Triticum aestivum)

Proposed denomination: **'CDC Abound'**
Application number: 07-5718
Application date: 2007/01/15
Applicant: University of Saskatchewan, Saskatoon, Saskatchewan
Breeder: Pierre Hucl, University of Saskatchewan, Saskatoon, Saskatchewan

Varieties used for comparison: 'AC Barrie', 'Superb' and 'CDC Imagine'

Summary: *'CDC Abound' has stronger anthocyanin colouration of the flag leaf auricles than 'AC Barrie' and 'CDC Imagine'. The spike of 'CDC Abound' is tapering while it is parallel sided in 'AC Barrie' and 'CDC Imagine'. 'CDC Abound' has an awned spike while it is apically awnletted in 'AC Barrie' and 'CDC Imagine'. The brush hairs on the kernel of 'CDC Abound' are shorter than in 'CDC Imagine'. 'CDC Abound' has a round shaped embryo while it is oval shaped in the reference varieties. The plant height of 'CDC Abound' is shorter than 'AC Barrie' and slightly shorter than 'Superb' and 'CDC Imagine'. 'CDC Abound' and 'CDC Imagine' are resistant to Imidazolinine herbicides (Imazamox) while 'AC Barrie' and 'Superb' are not.*

Description:
PLANT: spring type, erect to semi-erect growth habit, glabrous upper internode
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: medium green, medium frequency of plants with recurved/drooping flag leaves, glabrous blades and sheaths, strong anthocyanin colouration of auricles, weak pubescence of margins or auricles, weak glaucosity of sheath, horizontal to erect attitude

CULM NECK: weak glaucosity, very weak to weak curvature
STRAW: hollow pith in cross section, no anthocyanin colouration at maturity

SPIKE: tapering shape, medium density, erect and white at maturity, very weak to weak glaucosity, white awns present, awns equal in length to spike, strong to very strong spreading awn attitude, sparse hairiness of convex surface of apical segment, no supernumary spikelets
LOWER GLUME: medium width, medium length, absent to very weak pubescence, slightly sloping to straight shape of shoulder, medium shoulder width, straight to slightly curved beak, short to medium length beak, sparse internal hairs, absent to small internal imprint
LEMMA: straight beak

KERNEL: hard red type, medium red colour, medium sized kernel, midlong, midwide, broad elliptical shape, slightly angular to angular cheek shape, short brush hairs, medium sized brush, medium sized germ, round shape of germ, midwide and shallow to mid-deep crease, brown colour reaction to phenol

DISEASE RESISTANCE: highly susceptible to Fusarium head blight (*Fusarium graminearum* Fusarium species) and Leaf rust (*Puccinia triticina*), moderately resistant to moderately susceptible to Loose smut (*Ustilago tritici*) and resistant to stem rust (*Puccinia graminis* F. sp. *tritici*)

QUALITY: good bread making

HERBICIDE REACTION: resistant to imazamox

Origin and Breeding: 'CDC Abound' originated from the cross Superb*2/BW755 made in 1998 at the University of Saskatchewan, Saskatoon, Saskatchewan. BW755 = Grandin*3/Fidel-FS2 and is the donor of the Imidazolinone tolerance

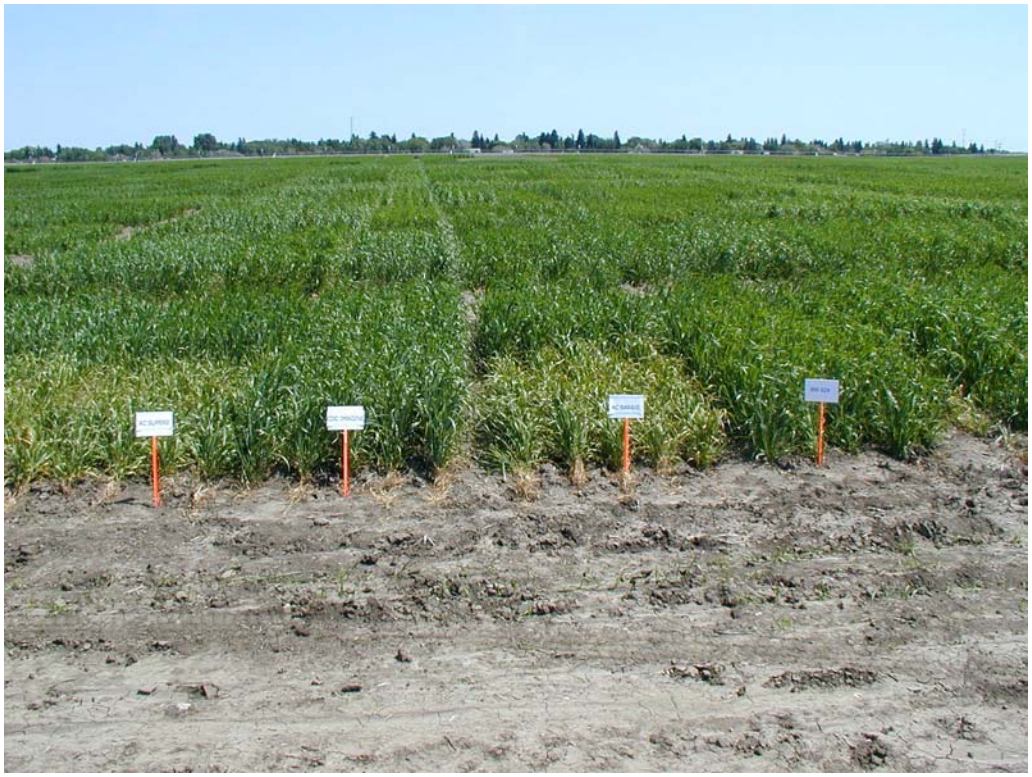
gene carried by 'CDC Abound'. 'CDC Abound' was tested as BW824 and is a doubled haploid line. The herbicide Imazamox was used as the selection agent for BW824 in field plots in 2000 and 2001. BW824 was evaluated as IR01013 in yield trials in 2001 and in the Western Bread Wheat 'B' test in 2002. BW824 was subsequently evaluated in the Western Bread Wheat Cooperative Test from 2003 to 2005.

Tests and Trials: Test and trials were conducted during the summers of 2006 and 2007 in Saskatoon, Saskatchewan. Plots consisted of 5 rows with a row spacing of 20.3 cm and a row length of 3.6 meters. There were 4 replicates arranged in a Randomized Complete Block design.

Comparison table for 'CDC Abound'

	'CDC Abound'	'AC Barrie'*	'Superb'*	'CDC Imagine'*
Plant height (cm)				
mean	93.55	102.85	97.38	96.95
std. deviation	2.66	3.59	2.57	2.61

*reference varieties



Wheat: 'CDC Abound' (BW824) (right) with reference varieties 'Superb' (far left), 'CDC Imagine' (centre left) and 'AC Barrie' (centre right)

Wheat: 'CDC Abound' (BW824) (left) with reference varieties 'AC Barrie' (centre left), 'Superb' (centre right) and 'CDC Imagine' (right)

Proposed denomination: **'Faller'**
Application number: 08-6333
Application date: 2008/05/12
Applicant: NDSU Research Foundation, Fargo, North Dakota, United States of America
Agent in Canada: FP Genetics Inc., Regina, Saskatchewan
Breeder: Mohamed Mergoum, NDSU, Fargo, North Dakota, United States of America

Varieties used for comparison: 'Superb' and 'Glenn'

Summary: *'Faller' heads later than 'Glenn'. The frequency of plants with recurved/drooping flag leaves is higher in 'Faller' than in 'Superb' and 'Glenn'. 'Faller' has a stronger anthocyanin colouration of the flag leaf auricles than 'Superb' and 'Glenn'. The spike of 'Faller' has stronger glaucosity than 'Superb'. 'Faller' has a less erect spike at maturity than 'Superb'.*

Description:
PLANT: spring type, semi-erect growth habit
SEEDLING: absent or very weak pubescence on lower leaf sheaths, absent or very weak pubescence on lower leaf blades

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

STRAW: thin pith in cross section

SPIKE: parallel sided shape, lax to medium density, incline attitude and white at maturity, medium glaucosity, white awns present, short to medium length awns, medium to strong spreading awn attitude, dense to very dense hairiness of convex surface of apical rachis segment

KERNEL: hard red type, light red colour, medium sized kernel, short to midlong, midwide to wide, oval shape

Origin and Breeding: 'Faller' (experimental designation ND805) is the result of the final cross using the modified pedigree and bulk methods made at North Dakota State University (NDSU), Fargo, North Dakota in the fall of 1997. The pedigree is ND2710/ND688/3/Kitt/Amidon//Grandin/Stoa Sib, where ND2710 = ND2603/Grandin, ND688 = Grandin/3/IAS20*4/H567.71//Amidon, Kitt = University of Minnesota variety, Amidon = NDSU variety, Grandin = NDSU variety, and Stoa sib is a sister line of Stoa, an NDSU variety. The F1 plants were grown in a greenhouse at NDSU in 1998. It was grown in the fall-winter 1998/99 in a winter nursery in New Zealand where 100 heads were selected and threshed individually and advanced as F3 head rows. In the summer of 1999, 10 spikes from the F3 were selected and advanced to the F4. In the summer of 2000, the F4 was grown and 5 spikes were selected and individually threshed and advanced as an F5 as head-rows in the winter nursery in New Zealand. In the following summer of 2001, the F5 was grown in yield trials at NDSU research farms in Casselton and Prosper, North Dakota. A selected plot from Casselton was harvested and bulked for yield trials in 2002. The F6 was grown in 2002 at the same two locations, where again a selected plot from Casselton was harvested and bulked for use as an F7 in an Elite yield trial in 2003. ND805 was designated at this time. The line was tested in the summers of 2004-2006 in Elite yield trials and statewide yield trials. It was released in January 2007. Selection criteria in the early generations included plant vigor, height, maturity and pest resistance. In later generations selection criteria included grain yield, lodging resistance, shattering resistance, test and kernel weights, disease resistance and milling and bread making qualities.

Tests and Trials: Tests and trials were conducted during the summer of 2008 in Minto, Manitoba. Plots consisted of six rows with a row length of 5.5 meters and row spacing of 20 cm. There were 4 replicates. The tests and trials for 'Faller' were supported by the test report purchased from the Plant Variety Protection Office, Beltsville, Maryland, USA PVPO# 200700328.

Comparison table for 'Faller'

	'Faller'	'Superb'*	'Glenn'*
Days to heading			
mean	63	62	60

*reference varieties

Wheat: 'Faller'

Wheat: Reference variety 'Superb'

Wheat: Reference variety ‘Glenn’