



**OAT**  
(*Avena sativa* L.)

**Proposed denomination:** 'Bullion'  
**Application number:** 02-3093  
**Application date:** 2002-05-15  
**Applicant:** Institute of Grassland & Environmental Research, Aberystwyth, United Kingdom  
**Agent in Canada:** SW Seed Ltd., Saskatoon, Saskatchewan

**Variety used for comparison:** 'AC Belmont'

**Summary:** 'Bullion' has a less erect juvenile growth habit than 'AC Belmont'. The frequency of plants with recurved/drooping flag leaves in 'Bullion' is less than in 'AC Belmont'. 'Bullion' heads slightly earlier than 'AC Belmont'. The glaucosity of the lemma at the green stage in 'Bullion' is stronger than in 'AC Belmont'.

**Description:**

**PLANT:** medium height, intermediate number of tillers, white straw, medium heading, early maturity

**SEEDLING (5-9 tiller stage):** green coleoptile, semi-erect juvenile growth habit, absent to very sparse pubescence of lower leaf sheath and blade

**LEAF (at booting stage):** absent to very sparse pubescence of the leaf margin, weak intensity of glaucosity, low frequency of plants with recurved/drooping flag leaves

**STEM:** absent to very sparse pubescence/hairiness above and below upper culm node

**PANICLE (just after heading):** equilateral orientation, semi-erect attitude of the branches, medium length

**SPIKELET:** nodding attitude

**GLUMES:** weak glaucosity, medium length

**LEMMA:** white colour at maturity, absent to very sparse pubescence on the lateral and dorsal surface, medium glaucosity at the green stage, medium length, short basal hairs, long rachilla

**KERNEL (primary kernels from upper spikelets):** white colour, large size, low density of hairiness

**DISEASE RESISTANCE:** susceptible to Black Loose Smut (*Ustilago avena*), Covered Smut (*Ustilago kolleri*), Stem Rust (*Puccinia graminis avenae*) and Crown Rust (*Puccinia coronata*), moderately resistant to Barley Yellow Dwarf Virus (BYDV)

**AGRONOMY:** good lodging and shattering resistance, good drought tolerance

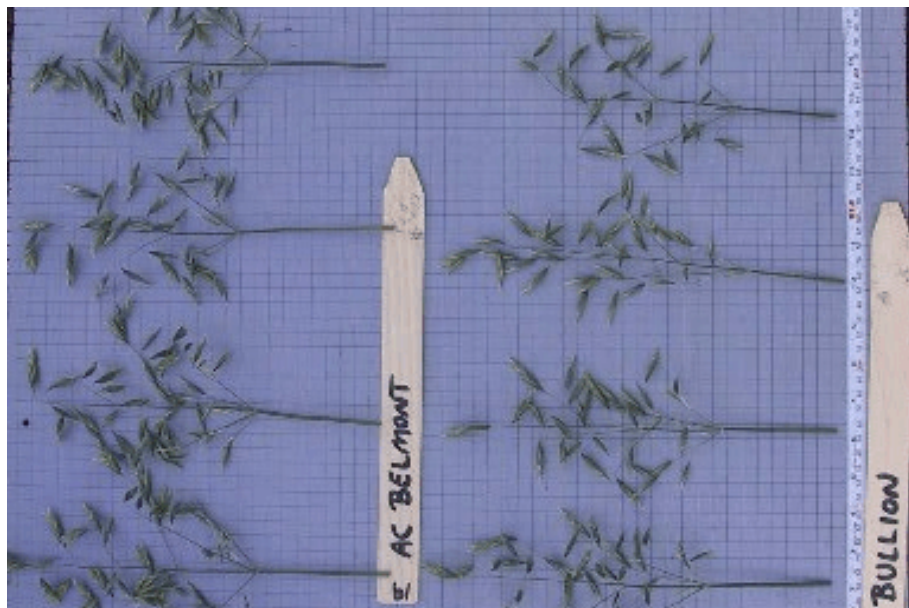
**Origin and Breeding:** 'Bullion' hullless spring oat was developed from the cross 08974Cn x 08944Cn made at the Institute of Grassland and Environmental Research (IGER), Aberystwyth, UK with the final cross made in 1986. The breeding method used was the pedigree method. The variety originates from a single plant selection in the F<sub>5</sub> and repeated selection in F<sub>6/7</sub>. 'Bullion' was designated OT553 and tested in the Western Oat Coop Test 1997-1998. Early generation selection was for naked expression with later selection for yield.

**Tests and Trials:** Test and trials were conducted during the summers of 2003 and 2004 in Saskatoon, Saskatchewan. Plots consisted of 1.5 x 3.0m in area with a row spacing of 15cm. There were 2 reps arranged in an RCB design.

**Comparison table for 'Bullion'**

	'Bullion'	'AC Belmont'*
Heading (number of days from planting to 50% heads fully emerged)	60.25	61.25

\* reference variety



Oat: 'Bullion' (right) with reference variety 'AC Belmont' (left)

**Proposed denomination:** 'CDC Weaver'  
**Application number:** 05-4518  
**Application date:** 2005-01-20  
**Applicant:** University of Saskatchewan, Saskatoon, Saskatchewan  
**Breeder:** Brian Rossnagel, University of Saskatchewan, Saskatoon, Saskatchewan

**Varieties used for comparison:** 'AC Assiniboia', 'CDC Dancer' and, 'CDC Orrin'

**Summary:** 'CDC Weaver' has denser pubescence of the lower leaf blade than 'CDC Orrin' but sparser than 'AC Assiniboia'. The pubescence of the leaf margin in 'CDC Weaver' is sparser than in 'AC Assiniboia'. 'CDC Weaver' has lower frequency of plants with recurved/drooping flag leaves than 'AC Assiniboia'. The flag leaf of 'CDC Weaver' is longer than in 'CDC Dancer' and 'CDC Orrin'. 'CDC Weaver' has denser pubescence of the stem above and below the upper culm node than 'CDC Orrin'. The panicle of 'CDC Weaver' is slightly longer than the reference varieties. 'CDC Weaver' has fewer, shorter hairs or spines on the lowest panicle node than 'AC Assiniboia'. The length of the rachilla between the primary and secondary floret of 'CDC Weaver' is longer than in 'AC Assiniboia' and 'CDC Orrin'. 'CDC Weaver' has shorter grooves of the rachilla than 'CDC Dancer' and 'CDC Orrin'. The lower glume of 'CDC Weaver' is slightly longer than in 'CDC Dancer' and 'CDC Orrin'. 'CDC Weaver' has a longer lemma than 'CDC Dancer' and 'CDC Orrin'. The glaucosity of the lemma of 'CDC Weaver' is weaker than in 'CDC Dancer'. 'CDC Weaver' has a weaker tendency to be awned than 'AC Assiniboia' and 'CDC Orrin'. The kernel of 'CDC Weaver' is slightly longer than in 'CDC Dancer' and 'CDC Orrin'. 'CDC Weaver' has denser groat pubescence than 'CDC Dancer' and 'CDC Orrin'.

**Description:**

PLANT: intermediate juvenile growth habit, medium to dense pubescence on the lower leaf sheath, sparse to medium

pubescence on the lower leaf blade, medium green colour, very sparse to sparse pubescence on leaf margin, strong glaucosity of the leaves

FLAG LEAF: medium frequency of plants with recurved/drooping, dense pubescence of the stem above and below the upper culm node

PANICLE (just after heading): equilateral orientation, medium density, semi-erect to horizontal attitude of the branches, 30-45 degrees between the rachis and the dominant side branch, medium number of medium length spines at the lowest node

SPIKELET: fracture separation, nodding attitude

RACHILLA (at maturity): long length between the primary and secondary floret, short to medium length grooves, medium pubescence

GLUME: medium glaucosity

LEMMA: yellow colour, sparse pubescence on the lateral and dorsal surface, weak glaucosity, small to medium overlap on palea, absent to very weak tendency to be awned

KERNEL (primary kernels from upper spikelets): short basal hairs, cream to yellow colour, two grains per spikelet, pointed tip to the medium sized scutellum, dense groat pubescence

DISEASE RESISTANCE: susceptible to Barley Yellow Dwarf Virus (BYDV), resistant to Crown Rust (*Puccinia coronata*), Stem Rust (*Puccinia graminis* f. sp. *avenae*, Races NA8, 16, 25, 27, 55), Black Loose Smut (*Ustilago avenae*, Races A13, 60 617) and Covered Smut (*Ustilago kollerii*).

AGRONOMY: fair to good lodging resistance, good shattering resistance, day-light sensitive

**Origin and Breeding:** OT398 was developed by the Crop Development Centre's oat breeding program using a pedigree breeding system. It originates from the cross OT369 x W95116 made at the Crop Development Centre in 1997. The F<sub>1</sub> generation was grown as a bulk population in a winter nursery in New Zealand and the subsequent F<sub>2</sub> was grown as a bulk population in Saskatoon, Saskatchewan in 1998. The F<sub>3</sub>-F<sub>4</sub> generations were grown as single seed derived lines during the winter of 1998 and 1999 where OT398 was grown and selected in the field as a F<sub>5</sub> hill plot in Saskatoon, Saskatchewan in 1999. The seed from the F<sub>5</sub> hill plot was bulked as the line that became 'CDC Weaver'. It was tested in CDC yield trials in 2000-2001, followed by testing in the Western Canadian Oat Cooperative Trials during 2002 and 2003. Selection criteria included grain and milling yield, kernel plumpness, kernel weight and disease resistance.

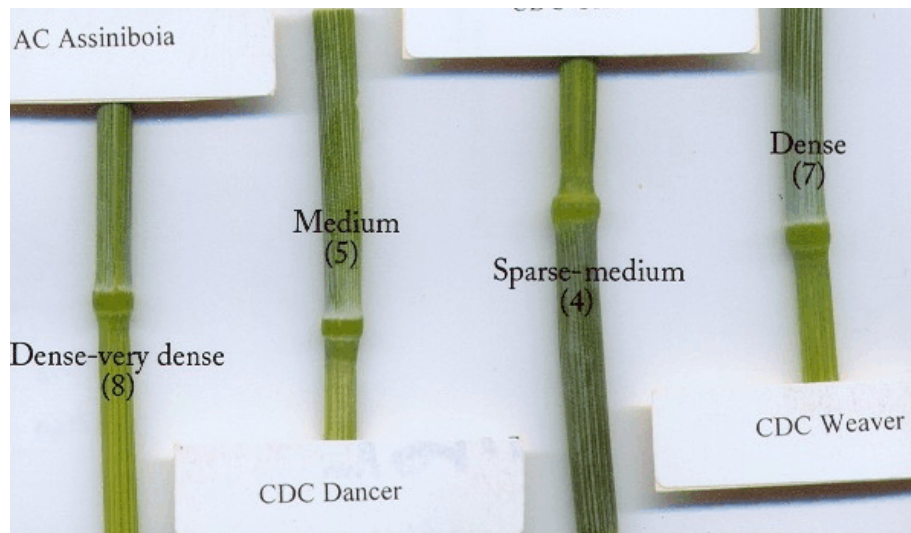
**Tests and Trials:** Test and trials were conducted in Saskatoon, Saskatchewan during the summers of 2004 and 2005. Plots consisted of 3 rows, 3.7 m in length, 2 reps arranged in a RCB design.

**Comparison table for 'CDC Weaver'**

	'CDC Weaver'	'AC Assiniboia'*	'CDC Dancer**	'CDC Orrin**
<i>Flag leaf length (cm)</i>				
mean	27.65	23.94	21.33	24.02
std. deviation	4.12	5.40	3.40	3.02
<i>Panicle length (cm)</i>				
mean	19.92	18.52	17.99	17.39
std. deviation	2.79	2.95	1.97	2.17
<i>Lower glume length (mm)</i>				
mean	20.2	20.38	16.75	18.65
std. deviation	1.51	1.74	1.19	1.44
<i>Lemma length (mm)</i>				
mean	15.63	16.25	13.95	14.58
std. deviation	0.89	1.21	1.06	0.68

Kernel length (mm)				
mean	12.13	11.4	10.23	10.7
std. deviation	1.39	1.01	0.70	0.56

\* reference variety



Oat: 'CDC Weaver' (right) with reference varieties 'AC Assiniboia' (left), 'CDC Dancer' (center left) and 'CDC Orrin' (center right)



Oat: 'CDC Weaver' (left) with reference varieties 'AC Assiniboia' (center left), 'CDC Dancer' (center right) and 'CDC Orrin' (right)

**Proposed denomination:** 'Jordan'

**Previously proposed**

**denomination:** 'OT2027'

**Application number:** 06-5209

**Application date:** 2006-01-04

**Applicant:** Agriculture & Agri-Food Canada, Winnipeg, Manitoba

**Breeder:** Jennifer Mitchell-Fetch, Agriculture & Agri-Food Canada, Winnipeg, Manitoba

**Varieties used for comparison:** 'Ronald' and 'CDC Dancer'

**Summary:** 'Jordan' heads later than the reference varieties. The plant height of 'Jordan' is taller than in 'Ronald'. 'Jordan' has a longer panicle than 'Ronald'. The lower glume of 'Jordan' is longer than in 'CDC Dancer'. 'Jordan' has weaker glaucosity of the lemma than 'CDC Dancer'. The kernel length of 'Jordan' is longer than the reference varieties. 'Jordan' has a heavier thousand kernel weight than the reference varieties. The number of seeds per spikelet of 'Jordan' is higher than the reference varieties. 'Jordan' has better Barley Yellow Dwarf virus resistance than 'CDC Dancer'.

**Description:**

SEEDLING (5-9 tiller stage): erect juvenile growth habit, sparse pubescence of lower leaf sheath, absent to very sparse pubescence of lower leaf blade.

LEAF (at booting stage): medium green colour, absent to very sparse pubescence, medium intensity of glaucosity, absent or very low frequency of plants with recurved/drooping flag leaves

STEM: dense pubescence/hairiness above and below upper culm node

PANICLE (just after heading): equilateral orientation, medium density, horizontal to drooping attitude of branches, 30-45 degrees between rachis and dominant side branch, absent or very few hairs or spines on the lowest panicle node

SPIKELET: fracture separation, semi-nodding

RACHILLA (at maturity): medium to long length between primary and secondary floret, medium length of grooves, very sparse to medium pubescence

GLUME: medium glaucosity

LEMMA: white to yellow colour at maturity, absent to very sparse pubescence on the lateral and dorsal surface, absent of glaucosity at the green stage, medium to large overlap of lemma on the palea at the green stage, very weak to weak tendency to be awned

KERNEL (primary kernels from upper spikelets): short basal hairs present, white to yellow colour, 3 per spikelet, pointed to rounded tip of the scutellum, medium sized scutellum, medium to dense groat pubescence,

DISEASE RESISTANCE: moderately susceptible to Crown Rust (*Puccinia coronata*, races CR13, 200, 223, 225, 241, 249, 254), moderately resistant to Stem Rust (*Puccinia graminis* f. sp. *avenae*, races NA8, 16, 25, 27, 28, 55), susceptible to Stem Rust (*Puccinia graminis* f. sp. *avenae* race NA67), resistant to Black Loose Smut (*Ustilago avenae* races A13, 60, 617) and Covered Smut (*Ustilago kollerii*) and resistant to moderately resistant to Barley Yellow Dwarf Virus (BYDV)

AGRONOMY: good lodging resistance, sensitive to daylength

**Origin and Breeding:** 'Jordan' was developed at the Cereal Research Centre, Agriculture & Agri-Food Canada, Winnipeg, Manitoba. The parentage is OT377/Ronald, for which the cross occurred in the fall of 1997 using a modified pedigree method. OT377 = 97RAT31=OT338/AC Preakness. 'Jordan' is a white-hulled F<sub>5</sub> derived line. F<sub>1</sub> plants were produced in the growth cabinet during the winter of 1998. A bulk F<sub>2</sub> was grown in the 1998 Rust/Smut Nursery at Glenlea, Manitoba. The seed was harvested from these plants, bulked and sized with the most uniform seeds being sent to the 1998-1999 winter nursery in New Zealand. In the winter nursery, F<sub>3</sub> panicles were selected from space-planted long rows. Selection for Oat Crown Rust resistance and BYDV tolerance was possible. The F<sub>4</sub> panicles from this nursery were screened in the 1999 Glenlea Rust/Smut Nursery. Fifty six disease resistant agronomically desirable rows were selected and grown as F<sub>5</sub> hill plots in the 1999-2000 winter nursery in New Zealand. Concurrently, F<sub>5</sub> lines were screened using know tester races, in the greenhouse at Winnipeg to verify the New Zealand rust readings. Whole oat subsamples from these lines were tested for quality attributes using NIR technology. Panicles from desirable, disease resistant plants were selected in New Zealand, and 277 rows from these panicles were planted in the 2000 Glenlea F<sub>6</sub> Rust/Smut Nursery. Thirty three lines were selected from this nursery for superior disease resistance, agronomic performance and quality characteristics. The F<sub>7</sub> lines were concurrently screened for crown and stem rust resistance in 2000-2001 winter greenhouse and for BYDV tolerance in 2000-2001 New Zealand winter nursery. Bulk-harvested seed from the three meter rows in the New Zealand nursery provided the planting seed for the 2001 Preliminary Yield Trial grown at Glenlea

and Brandon Manitoba. 'Jordan' was tested for one year as W01332. It was tested for one year in the 2002 Rust Area Test, and two years in the Western Cooperative Oat Test (2003-2004).

**Tests and Trials:** Tests and trials were conducted in Glenlea, Manitoba during the summers of 2004, 2005. Plots consisted of 5 rows, 3.25m in length with a row spacing of 15.24cm. There were 4 reps arranged in an RCB design.

**Comparison table for 'Jordan'**

	'Jordan'	'Ronald'*	'CDC Dancer'*
<i>Days to heading (# of days from planting to 50% of panicles fully emerged from boot)</i>			
mean	67.9	59.1	57.4
<i>Plant height after heading (cm)</i>			
mean	89.33	77.85	86.45
std. deviation	15.83	19.00	24.63
<i>Panicle length (cm)</i>			
mean	17.07	14.19	14.77
std. deviation	2.59	2.30	3.00
<i>Lower glume length (mm)</i>			
mean	20.64	19.89	17.69
std. deviation	1.43	2.28	1.67
<i>Primary kernel length (mm)</i>			
mean	18.69	14.56	15.08
std. deviation	0.85	1.14	0.79
<i>Thousand kernel weight (gm) (2003-2004 WCORT Data)</i>			
mean	41.5	32.7	33.7

\* reference variety



Oat: 'Jordan' (OT2027) (center) with reference varieties 'Ronald' (left) and 'CDC Dancer' (right)