

# Tyndal

## Spring Triticale

Field Crop Development Centre – April 2006



Tyndal spring triticale was developed by the Field Crop Development Centre in Lacombe and was registered in 2006. Tyndal is marketed by SeCan.

Tyndal is an awnletted (reduced awn expression) standard height spring triticale line intended for use as a feed grain and conserved forage. Based on 27 station-years over a three-year period (Table 1, over) Tyndal yields higher than AC Certa (5%), slightly higher than Pronghorn (2%), and less than AC Ultima (-2%). During the last 2 years of the trial, Tyndal was 9% higher yielding than Pronghorn and 3% higher yielding than AC Ultima.

In 4 years of silage trials, Tyndal was higher yielding than Pronghorn by 4% and similar in silage yield to AC Ultima (Table 5).

<p><b>End Use</b></p>	<p>The high silage yield and reduced awn expression in Tyndal will diversify the use of spring triticale as a conserved forage (for silage and greenfeed/hay). Tyndal will also be directed to the expanding ethanol market in the prairies.</p>
<p><b>Agronomics and Disease Resistance</b></p>	<p>Tyndal is similar in maturity to the earliest checks and has a high test weight (Table 2). It carries the required resistance to disease (Tables 3 and 4) including FHB.</p>
<p><b>Origin and Breeding</b></p>	<p>Tyndal is derived from the cross between a germplasm line from CIMMYT Mexico and an awnletted triticale population developed at the Field Crop Development Centre. The awnletted characteristic in Tyndal comes from the same source as for the registered winter triticale Bobcat.</p> <p>Tyndal was evaluated as 94L043017 in preliminary FCDC yield trials from 1998 to 2001 and as T182 in the Western Spring Triticale Coop Test from 2002 to 2004.</p>
<p><b>Strengths</b></p>	<p>Grain yield is similar to the highest yielding triticale check cultivar AC Ultima. Tyndal has good leaf and stem rust resistance, good test weight, early maturity, good lodging resistance and high forage yields. Tyndal has acceptable levels of disease resistance including FHB minimum requirements.</p> <p>The reduced awn expression and good lodging resistance should diversify the utilization of spring triticale for forage (silage and green feed/hay) especially in high fertility and heavily manured production areas.</p>
<p><b>Weaknesses</b></p>	<p>Tyndal has a low falling number similar to other currently registered spring triticale varieties excluding AC Ultima.</p>

(over)

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**Table 1. Summary of yield (kg ha<sup>-1</sup>) data from the Western Canadian Spring Triticale Cooperative Trial 2002-2004. Values in ( ) are expressed as a percentage of the check Pronghorn/T124.**

Test Lines	Zone 1				Zone 2				Zone 3				3 yr Mean	2003-2004 Mean
	2002	2003	2004	Mean	2002	2003	2004	Mean	2002	2003	2004	Mean		
Pronghorn	2969	4360	5640	4323	4825	3137	4409	4124	4021	4749	7026	5265	4339	4553
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)
AC Certa	3039	4760	5642	4480	4366	2988	4393	3916	3312	3172	5466	3983	4175	4433
	(102)	(109)	(100)	(104)	(90)	(95)	(99)	(95)	(82)	(67)	(78)	(76)	(97)	(98)
AC Ultima	2960	4729	6527	4738	5236	3133	4936	4435	3337	3805	5632	4258	4550	4819
	(107)	(108)	(116)	(110)	(114)	(100)	(111)	(108)	(83)	(80)	(80)	(81)	(106)	(106)
Bunker	2398	4641	6114	4384	4448	2989	4888	4108	3409	4864	5526	4600	4286	4718
	(82)	(107)	(109)	(99)	(95)	(95)	(110)	(100)	(90)	(102)	(79)	(90)	(99)	(104)
<b>Tyndal</b>	<b>2472</b>	<b>4762</b>	<b>6553</b>	<b>4595</b>	<b>4384</b>	<b>3187</b>	<b>5180</b>	<b>4250</b>	<b>3620</b>	<b>4539</b>	<b>6076</b>	<b>4745</b>	<b>4459</b>	<b>4963</b>
	<b>(82)</b>	<b>(109)</b>	<b>(116)</b>	<b>(102)</b>	<b>(93)</b>	<b>(102)</b>	<b>(117)</b>	<b>(104)</b>	<b>(90)</b>	<b>(96)</b>	<b>(86)</b>	<b>(91)</b>	<b>(102)</b>	<b>(109)</b>
Stn Years	4	4	4	-	4	4	4	-	1	1	1	-	27	18
LSD	541	967	803	-	381	514	969	-	415	711	671	-	-	-

**Table 2. Summary of agronomic and Falling Number data for the Western Canadian Spring Triticale Cooperative Trial, 2002-2004.**

Test Line	Hgt (cm)	Mat (days)	Lodge	Kg hL <sup>-1</sup>	Kwt (gm)	FaNo (sec)	Kernel KvD
Pronghorn	96	109	2.7	69.9	42.3	94	Triticale
AC Certa	97	109	2.2	74.3	42.0	88	Triticale
AC Ultima	92	106	2.4	71.4	44.6	145	Triticale
Bunker	101	107	2.4	72.5	45.7	74	Triticale
<b>Tyndal</b>	<b>92</b>	<b>106</b>	<b>2.0</b>	<b>72.7</b>	<b>42.2</b>	<b>72</b>	<b>Triticale</b>
Stn Years	25	20	7	27	27	26	

**Table 3. Summary of disease reaction for the Western Canadian Spring Triticale Cooperative Trial 2002-2004.**

Test Lines	Leaf Rust			Stem Rust			Fusarium Head Blight		
	2002	2003	2004	2002	2003	2004	2002	2003	2004
Pronghorn (T124)	0/R/R	0R	0R	25MSS	3RMR/15S	5RMR	16R4MR	16/10MR	8MR
AC Certa (T128)	0/R/R	1/R	0R	7RMR	TrR/1R	TrR	48I/12I	48/29MS	9MR
AC Ultima (T150)	-	0R	0R	-	TrR/1R	TrR	-	49/34MS	56S
Bunker (T181)	0/R/R	0R	0R	5RMR	TrR/1R	TrR	36MR/9MR	25/27I	6R
<b>Tyndal (T182)</b>	<b>0/R/R</b>	<b>0R</b>	<b>0R</b>	<b>3R</b>	<b>TrR/1R</b>	<b>TrR</b>	<b>51I/22MS</b>	<b>25/27I</b>	<b>22I</b>

(Leaf rust in 2002 is severity/rating/pustule reaction. Stem rust data collected at Nolette/Winnipeg in 2003 and at Winnipeg in 2004. Fusarium head blight index data collected at Glenlea/Carman in 2002 and 2003 and at Carman in 2004.)

**Table 4. Overall disease reaction for the Western Canadian Spring Triticale Cooperative Trial (2002-2004).**

Test Lines	Bunt	Leaf Rust	Stem Rust	FHB
Pronghorn (T124)	R	R	I	MR
AC Certa (T128)	R	R	R	I
AC Ultima (T150)	R	R	R	S
Bunker (T181)	R	R	R	MR
<b>Tyndal (T182)</b>	<b>R</b>	<b>R</b>	<b>R</b>	<b>MS</b>

**Table 5. Silage yield potential in FCDC tests at Lacombe AB (2001-2004). Harvest stage was early dough.**

Test Lines	2001		2002		2003		2004		Mean t ha <sup>-1</sup>	Mean %
	t ha <sup>-1</sup>	%	t ha <sup>-1</sup>	%	t ha <sup>-1</sup>	%	t ha <sup>-1</sup>	%		
Pronghorn	12.7	100	6.5	100	13.8	100	12.7	100	11.4	100
AC Ultima	12.5	98	7.6	117	14.2	103	12.2	96	11.6	104
Bunker (T181)	13.1	103	7.0	107	15.4	109	13.7	107	12.3	107
<b>Tyndal (T182)</b>	<b>12.2</b>	<b>96</b>	<b>7.6</b>	<b>117</b>	<b>14.2</b>	<b>103</b>	<b>12.7</b>	<b>100</b>	<b>11.7</b>	<b>104</b>