

Bunker

Spring Triticale

Field Crop Development Centre - April 2006



Bunker spring triticale was developed by the Field Crop Development Centre in Lacombe and was registered in 2006. Bunker is marketed by FarmPure Seeds Ltd.

Bunker 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 of testing over a three-year period (Table 1, over) Bunker yields equivalent to Pronghorn (99%), higher than AC Certa (3%) and less than AC Ultima (-6%). During the last 2 years of the trial, Bunker was 4% higher yielding than Pronghorn and only 2% lower yielding than AC Ultima.

In 4 years of silage trials, Bunker was higher yielding than Pronghorn by 7% and AC Ultima by 3% (Table 5).

<p>End Use</p>	<p>The high silage yield and reduced awn expression in Bunker will diversify the use of spring triticale as a conserved forage (for silage and greenfeed/hay). Bunker will also be directed to the expanding ethanol market in the eastern prairies.</p>
<p>Agronomics and Disease Resistance</p>	<p>Bunker is similar in maturity to the earliest checks. It has a high test weight, and a large plump kernel (Table 2). It carries the required resistance (Tables 3 and 4) to disease and has a level of resistance to FHB similar the most resistant cultivar (Pronghorn).</p>
<p>Origin and Breeding</p>	<p>Bunker is derived from the cross between a germplasm line from CIMMYT, Mexico and an awnletted triticale line developed at the Field Crop Development Centre. The awnletted characteristic in Bunker comes from the same source as the winter triticale variety Bobcat.</p> <p>Bunker was evaluated as 93L016002 in preliminary yield trials (from 1997-2001) and as T181 in the Western Spring Triticale Cooperative Test from 2002 to 2004.</p>
<p>Strengths</p>	<p>Bunker has resistance to FHB similar to the most resistant check variety (Pronghorn), early maturity similar to check cultivars AC Ultima and Pronghorn, good leaf and stem rust resistance and improved test mass.</p> <p>Bunker also has higher silage yield than both AC Ultima and Pronghorn. The reduction in awn expression will diversify the use of spring triticale as a conserved forage (silage and greenfeed/hay).</p>
<p>Weaknesses</p>	<p>Bunker has a low falling number similar to other currently registered spring triticale varieties excluding AC Ultima.</p>

(over)

Bunker – Spring Triticale

Table 1. Summary of yield (kg ha⁻¹) data from the Western Canadian Spring Triticale Cooperative trial 2002-2004. Values in () are expressed as a percentage of the check Pronghorn.

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)
Tyndal	2472	4762	6553	4595	4384	3187	5180	4250	3620	4539	6076	4745	4459	4963
	(82)	(109)	(116)	(102)	(93)	(102)	(117)	(104)	(90)	(96)	(86)	(91)	(102)	(109)
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 data and Falling Number for the Western Canadian Spring Triticale Cooperative Yield Trial 2002-2004.

Test Line	Hgt (cm)	Mat (days)	Lodge	Kg hL ⁻¹	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
Tyndal	92	106	2.0	72.7	42.2	72	Triticale
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	0/R	0/R	25MSS	3RMR/15S	5RMR	16R4MR	16/10MR	8MR
AC Certa (T128)	0/R/R	1/R	0/R	7RMR	TrR/1R	TrR	48I/12I	48/29MS	9MR
AC Ultima (T150)	-	0/R	0/R	-	TrR/1R	TrR	-	49/34MS	56S
Bunker (T181)	0/R/R	0/R	0/R	5RMR	TrR/1R	TrR	36MR/9MR	25/27I	6R
Tyndal (T182)	0/R/R	0/R	0/R	3R	TrR/1R	TrR	51I/22MS	25/27I	22I

(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. All are resistant to common bunt.)

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
Tyndal (T182)	R	R	R	MS

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 ⁻¹	Mean %
	t ha ⁻¹	%	t ha ⁻¹	%	t ha ⁻¹	%	t ha ⁻¹	%		
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	13.1	103	7.0	107	15.4	109	13.7	107	12.3	107
Tyndal	12.2	96	7.6	117	14.2	103	12.7	100	11.7	104