

LUOMA (WT004)

Winter Triticale

Field Crop Development Centre, May 2008



Luoma is a reduced awned winter triticale adapted to the dark brown and black soils of the Canadian prairie provinces.

Luoma was tested as WT004 in the winter rye and triticale Co-op trial and in the Field Crop Development Centre (FCDC) trials as 94D024001 and is derived from the cross 92A003/2/81DE01012/87A076 /3/Pika /4/88DL01 produced at the FCDC in 1994. 92A003 and 87A076 were winter triticale germplasm introductions from Oregon. 81DE01012 is a sister line to the winter triticale Pika and 88DL01 is the original reduced awn (awnletted) winter triticale population from which the winter triticale Bobcat was selected. The awnletted characteristic in 88DL01 came from a triticale x spring wheat cross (RL4137) back-crossed several times to spring and winter triticale.

Luoma is an awnletted (reduced awn expression) standard height winter triticale line intended for use as a feed grain, conserved forage, grazing and potentially for industrial utilization for biomass (ethanol) and fibre production. This line is 10% higher yielding, 15% higher winter survival, 1.1 kg higher for test weight, 3 mg higher for kernel weight than the check variety Bobcat and is intermediate to the checks for lodging resistance. Luoma is intermediate between the two check cultivars for falling Number. Disease data indicates that Luoma is similar to the check cultivars for ergot as well as leaf and stem rust resistance.

End Use	<ul style="list-style-type: none"> Luoma is an awnletted (reduced awn expression) standard height winter triticale line intended for use as a feed grain, conserved forage, grazing and potentially for industrial utilization for biomass (ethanol) and fibre production.
Strengths	<ul style="list-style-type: none"> Luoma yields equivalent to Pika with reduced awn expression similar to Bob cat and superior winter hardiness to Bobcat. Luoma has higher biomass yields than Bobcat with improved test weight and Kernel weight. Luoma is intermediate between the two checks (Bobcat and Pika)for lodging resistance and falling number.
Neutral Traits	<ul style="list-style-type: none"> Luoma is similar to current varieties for ergot infestation as well as leaf and stem rust resistance.
Weaknesses	<ul style="list-style-type: none"> Luoma has a slightly lower winter hardiness than Pika and a slightly lower Falling Number than Bobcat.

Summary of Agronomic data for WT004 (94D024001) 2004-2006

Line	Yield (kg/ha ⁻¹)	Surv. (%)	Heading (days)	Maturity (days)	Test Wt (kg/hl ⁻¹)	Kernel Wt (mg)	Height (cm)	Lodge
Pika	3885 (100)	93.7	179	222	67.1	35	122	4.2
Bobcat	3603 (93)	70.1	175	223	65.8	32.1	96	2.1
93D009011	3420 (87)	84	174	219	65.7	29.6	108	3.3
94D024001	3925 (101)	85.6	179	226	66.9	35.3	123	3.3
94D036011	3863 (99)	84.1	177	221	66.6	31.5	107	2.7
Station Years	20	7	14	7	16	16	18	9

Summary for Falling Number of WT004 (94D024001) 2004-2006

Line	2004	2005	2006	Mean
Pika	75	142	200	164
Bobcat	139	171	255	202
93D009011	101	218	226	200
94D024001	84	186	219	181
94D036011	178	222	294	245
Station Years	3	6	7	16

Summary of disease data for WT004 (94D024001), 2004-2006

Line	Ergot				Leaf Rust		Stem Rust	
	2004	2005	2006	Mean	2004	2005	2004	2005
Pika	0	0	0	0	-	5R-MR	-	1R
Bobcat	0	0.2	0.1	0.12	1R	1R	5R	1R
93D009011	0.03	0.1	0.1	0.08	1R	1R	5R	5R-MR
94D024001	0	0.1	0.1	0.08	0	1R	5R	1R
94D036011	0.04	0	0	0.01	1R	1R-MR	5R	1R
Stations	3	5	5	13	1	1	1	1

Rust evaluations were conducted at the University of Manitoba.

Summary of biomass yields (kg/ha⁻¹) for WT004 (94D024001), 2005-2006 at two harvest dates at Lacombe AB.

Line	2005	2006	STYRS	Kg/ha	% PIKA	% BOBCAT
Cut 10 days post anthesis						
93D009011	6553	10936	2	8745	91	122
94D024001	6791	12578	2	9685	100	135
94D036011	6092	12153	2	9123	95	128
PIKA	6869	12405	2	9637	100	135
BOBCAT	4218	10091	2	7155	75	100
Cut mid-dough						
93D009011	8495	17219	2	12857	82	115
94D024001	9718	20090	2	14904	95	133
94D036011	10877	20712	2	15795	101	142
PIKA	9814	21491	2	15653	100	140
BOBCAT	6131	16199	2	11165	71	100

Quality data from CRC Winnipeg for WT004 (94D024001) during 2003 and 2004

	Year	Protein %	Flour Yield%	MDT	PKH	FNO
93D009011	2003	12.4	55	0.9	40.2	200
	2004	9.4	57.8	0.8	24.4	163
94D024001	2003	11.9	54.7	0.7	39.5	183
	2004	9.4	59	0.7	25.7	130
94D036011	2003	11.5	55	0.7	35.5	213
	2004	8.5	59.2	0.7	25.4	182
PIKA	2003	12.4	55.3	0.7	43.2	169
	2004	8.9	63.5	1	23.2	127
BOBCAT	2003	13.9	54.3	1	41.7	210
	2004	10.9	58.6	0.9	25.6	170

Samples for 2003 were collected at Lacombe and samples for 2004 were collected at Olds and Trochu, AB