MUSKWA (BT584)

6-rowed, semi-dwarf, smooth-awned, hulled, general purpose barley

Field Crop Development Centre, March 2011

BT584 is six-rowed, smooth-awned, hulled, general purpose barley, well-adapted to all soil zones of western Canada. It is a semi-dwarf barley with strong straw, smut resistance and intermediate maturity traits equal to or better than Vivar.

BT584 combines both desirable traits of stable grain yield across western Canada environments and overall, a better than average combination of disease resistance reactions. These traits could make BT584 a good grain and general purpose barley in western Canada.

Although its yield is slightly lower than the checks, the resistance package, especially in terms of scald compensates for this. It would likely be a good addition to the varieties available for both feed and forage production and where enhanced levels of resistance are needed for scald. Moreover, it may be a good rotational variety in terms of mixing things up in relation to scald management. Other aspects such as lodging resistance and smooth awns also make it a desirable feed/forage variety.

End Use	• BT584 is a desirable general purpose grain barley with good disease and lodging resistance for western Canada
Strengths	• Grain yields stable across western Canada environments • Shorter (semi-dwarf) than both feed and malting checks; good lodging resistance that is better than AC Ranger, CDC Mayfair, and Tradition • Percent plumps are similar to Vivar and better than AC Ranger • Moderate resistant to scald, spot-form of net blotch and spot blotch; and better than Vivar. • Good resistance to covered (*U. hordei*) and false loose smut (*U. nigra*) similar to Vivar. • Test weight and 1000K wt equal to Vivar. • Moderate resistant to stem rust (*Rpg1).*
Neutral Traits	• Yield is 4% lower than feed checks Vivar and AC Ranger • Days to maturity comparable to Vivar. • Crude protein similar to Vivar • Moderate susceptible to common root rot, similar to Vivar
Weaknesses	• FHB and DON reactions are similar to or worse than Vivar • Moderate susceptible to net-form of net blotch; similar to Vivar

Table 1. Western Co-operative Six-Row Barley Test - Mean summary values for 2009-2010

Entry	Heading (days)	Height (cm)	Lodge (1-9)	Maturity (days)	Yield (kg/ha)	% of Ranger	% of Mayfair	1000K Wt (g)	Test Wt (g)	% Plumps	% Thin	% Protein	Visual Score
AC Ranger	58 †	76	5	97	6618	100	108	43	61	79	13	11	6
Tradition	56	79	4	93	5876	89	96	39	63	91	6	12	6
Vivar	59	72	2	96	6587	100	108	43	62	85	10	11	6
Lacey	56	76	2	94	5946	90	97	42	64	92	4	12	6
CDC Mayfair	57	77	4	94	6125	93	100	42	61	92	4	11	7
BT584	**60**	**69**	**3**	**95**	**6372**	**96**	**104**	**40**	**62**	**84**	**10**	**11**	**7**
Mean	57	76	3	94	6188			41	62	89	7	11	7
se	2	6	2	3	630			3	2	6	5	1	1
CV	3	9	71	3	10			6	3	7	---	7	16
sites	31	37	9	27	39			25	22	15	6	6	3

Table 2. Summary of results for 2009 – 2010 Western Co-operative Forage Barley Test

												Forage Quality			
Entry	Hd	Hght	Lodg	Rate	Maturity	Grain Yield (kg/ha)	Kwt	Test Wt	% Plump	CP	Forage DM Yld (kg/ha)	CP	ADF	NDF	TDN
Virden	59[†]	90	2	7	97	5958	45	60	89	12	8726	8	34	53	54
AC Ranger	57	81	3	6	96	6089	42	61	80	11	8172	8	32	52	56
Vivar	58	75	2	6	97	6495	44	63	86	11	8226	8	32	52	57
FB427	**57**	**72**	**1**	**6**	**95**	**5868**	**40**	**63**	**85**	**12**	**8056**	**8**	**32**	**51**	**57**
Means	57	85	2	7	96	5471	44	63	86	12	8436	8	33	52	56
LSD	2	10	2	1	2	599	6	5	8	1	911	1	2	2	1
CV	4	12	94	16	2	11	14	8	9	8	12	7	7	5	2
Stn Yrs	6	10	2	5	7	10	7	7	7	5	10	10	10	10	

[†]Mean values rounded to whole numbers

Table 3. 2010 Average quality parameters from three six-row coop sites (Calmar, Lacombe and Trochu) as measured by FCDC Lacombe using NIRS: Average derived from 3 sites Lacombe, Calmar and Trochu

Entry	CP	DEC	PD	Lysine	Starch	β-Glucan	Ash	Pentosan	Lipid	TotFiber	SolFiber
AC Ranger	12	2861	75	0.4	56	4.3	2.5	4.9	2.0	22.4	5.9
Tradition	13	3066	68	0.5	58	4.4	2.0	5.1	2.5	19.9	5.0
Vivar	12	2987	65	0.4	57	4.0	2.4	5.2	2.0	21.6	4.7
Lacey	13	3100	72	0.5	58	4.2	2.1	5.2	2.5	19.5	4.9
CDC Mayfair	12	2992	72	0.4	57	3.7	2.2	5.4	2.5	20.5	4.8
BT584	**12**	**2956**	**68**	**0.4**	**57**	**3.9**	**2.5**	**5.2**	**2.1**	**21.6**	**5.0**
Mean	12.3	2994	70.0	0.4	57.2	4.1	2.3	5.2	2.3	20.9	5.1
sd	0.5	84.4	3.6	0.1	0.8	0.3	0.2	0.2	0.3	1.1	0.4
CV	4.9	2.8	5.4	6.9	1.4	7.5	8.6	4	7.5	4.9	9

CP = Crude protein; DEC = digestible energy content (Kcal/kg) as fed; PD = Protein digestibility (%);All other parameters: Lysine to SolFiber reported as % of DM

Table 4. 2006-2010 summary of Grain, Agronomic and Dry matter Yield Data from FCDC Lacombe Trials

Variety/Line	Grain Yield Class											
	0 LE Yield LT 4000		4000 LE Yield LT 6000		6000 LE Yield LT 8000		8000 LE Yield		All		Dry Silage	
	Yield (kg/ha)	% Check	Yield (kg/ha)	% Check	Yield (kg/ha)	% Check	Yield (kg/ha)	% Check	Yield (kg/ha)	% Check	DM Yield (kg/ha)	% Check
VIVAR	3486	100	5608	100	7794	100	9809	100	7134	100	15359	100
H97090012	3278	94	5519	98	7514	96	9482	97	6892	97	14331	93
Mean	3382		5563		7654		9646		7013		14845	
Sd+	147		63		198		231		171		727	
Stn Yrs	8		8		10		13		39		3	

Variety/Line	Grain Yield (kg/ha)	% Check YLD.	Maturity (days)	% Check Maturity	1000 kwt (KWT)	% Check KWT	Test Wt. (kg/hl)	% Check Testwt	Anthesis (days)	% Check Anthesis	Height (cm)	% Check ht.	Plump (%)	% Check Plump
VIVAR	7134	100	96	100	43	100	63	100	56	100	77	100	79.7	100
H97090012	6892	97	95	99	41	94	63	101	56	99	75	97	79	99
Mean	7013		96		42		63		56		76		79.4	
Sd+	171		0		2		1		0		1		0.5	
Stn Yrs	39		30		35		35		30		33		28	

Table 5. Disease Rating for BT584 – Prairie Recommending Committee for Oat & Barley

Disease	Rating
Surface Borne Smuts	R
N-net Blotch	MS
Stem Rust	MR

Disease	Rating
Spot Blotch, S-net Blotch, Scald	MR
Loose Smut, Common Root Rot	MS
Speckled Leaf Blotch, Septoria, FHB, BYDV	S

Alberta