TECHNICAL BULLETIN

Gadsby (TR08684)

Spring, 2-rowed, rough-awned, general purpose barley

Field Crop Development Centre, March 2010

Gadsby is a two-rowed, rough awned, general purpose barley, well-adapted to the Brown and Black and Grey Soil Zones of western Canada. Gadsby has excellent disease resistance combined with good grain yields and feed quality.

Gadsby is a relatively late maturing, tall line with excellent scald resistance proposed for use as a forage barley. Gadsby combines higher grain and biomass yields than Seebe with the same excellent scald resistance. Its higher yields and better overall disease package should make is a good replacement cultivar for Seebe for annual forage production.

End Use	• Gadsby is a relatively late maturing, tall line with excellent scald resistance proposed for use as a forage barley
Strengths	• Test weight, kernel weight, and percent plump higher or similar to Xena. • Starch and digestibility energy (pig) higher than for Xena, while total fiber content is lower. • Resistant to the surface-borne smuts, scald and loose smut; and moderately resistant to the spot form of net blotch; MR/MS to fusarium head blight. • Grain yield 113% of Seebe and biomass yields 110% of Seebe (FCDC).
Neutral Traits	• Grain yields 107% (FCDC) to 110% (Co-op) of AC Metcalfe; but 94% (FCDC) or 95% (Coop) of Xena. • Biomass yields for silage 98% (FCDC) of Xena. • Taller than the check cultivars. • Maturity 1 to 2 d later than the checks, 2.5 d earlier than Seebe. • Resistance (MR/MS) to common root rot, stem rust, and stripe rust.
Weaknesses	• Susceptible (MS) to the net form of net blotch and spot blotch; and (S) to barley yellow dwarf. • Lodging similar to the malting checks, slightly higher than the check Xena.

Agronomic summary data for Gadsby averaged over the 2008 and 2009 Western Co-operative Two-Row Barley Registration Trial

Entry	Heading	Maturity	Height	Lodging Score	Test Weight	Kernel Weight	Plump >6/64	NIT Protein	Yield	
									Kg/ha	% AC Metcalfe
	days	days	cm	0-9	Kg/hL	mg	%	%		
CDC Copeland	60.4	97.9	84.4	5.9	65	47.5	92.8	11.1	6343	109
Xena	58.4	98.1	77.8	4.6	66.5	48	91	11.8	6797	116
AC Metcalfe	58.9	98.2	79.8	4.8	66.2	46	90.1	11.4	5838	100
Gadsby	**60.7**	**98.7**	**86.5**	**5.9**	**66.3**	**53.1**	**95.3**	**12.1**	**6424**	**110**
LSD	0.44	0.87	1.91	2.2	0.79	1.47	2.9	1.27	192	
Stn. Yrs.	28	30	31	3	30	30	22	5	32	

Agronomic data for Gadsby from the 2006, 2007, 2008 and 2009 field trials run by the Field Crop Development Centre[a]									
	Grain yield	Kernel weight	Test weight	Plump (>6/64)	Anthesis	Maturity	Height	Lodging	Silage yield[b]
	Kg/ha	mg	Kg/hL		d	d	cm	0-10	Kg/ha
CDC Copeland	6133	46.7	64.4	89.6	57.5	94.3	85.9	2	15643
Xena	6746	48.8	66.1	89.1	55.1	94.6	79.4	1.8	16290
AC Metcalfe	5893	45.8	65.8	89.4	55.7	94.2	81.5	2.1	15388
Gadsby	**6330**	**53.7**	**65.7**	**95.6**	**58**	**96.4**	**87.2**	**2.8**	**15923**
LSD	454	1.4	0.86	3.4	1	1.7	3.4	0.82	1054
Stn. Yrs.[c]	41	36	35	28	27	32	34	5	4

[a] Where trial locations were Beaverlodge (2006, 2007), Brandon (2006, 2007), Calmar (2006, 2007, 2008, 2009), Camrose (2008, 2009), Dawson Creek (2007), Fahler (2009), Ft. Vermillion (2006, 2007), Lacombe (High fertility, late seeding, low fertility) (2006, 2007, 2008, 2009), Lethbridge (dryland, irrigated) (2006, 2007), Morrin (2007, 2009), Olds (2007, 2008, 2009), Saskatoon (2006, 2007), Trochu (2006, 2008, 2009), and Westlock (2008, 2009).
[b] Silage data was collected as dry matter yields at the soft dough stage from Lacombe (high fertility) in 2006, 2007, 2008 and 2009.
[c] Not all traits were measured at all sites.

Feed quality data predicted by NIRS for Gadsby from the 2006, 2007, 2008 and 2009 field trials run by the FCDC[a]						
Entry	Digestible energy	Starch	Protein content	Protein Digestibility	Total Fiber	Soluble Fiber
	Kcal/kg	%	%	%	%	%
CDC Copeland	3052	60.8	12.2	69.9	18.87	4.39
Xena	3009	59.7	12.1	72.2	19.82	4.56
AC Metcalfe	3075	60.9	12.4	72.3	18.67	4.23
Gadsby	**3064**	**61.3**	**12.6**	**72**	**19.24**	**4.23**
LSD	23.4	0.33	0.44	1.8	0.207	0.134
Stn. Yrs.	30	30	30	30	30	30

[a] Where NIRS quality was predicted on samples from Calmar (2006, 2007, 2008, 2009), Camrose (2008, 2009), Falher (2008, 2009), Lacombe (High fertility, low fertility late seeding) (2006, 2007, 2008, 2009), Morrin (2007, 2009), Olds (2007, 2008, 2009), Trochu (2006, 2008, 2009), Westlock (2008, 2009).

Agronomic data for Gadsby from the 2008 and 2009 field trials run by the Field Crop Development Centre[a]									
Entry	Grain yield	Kernel weight	Test weight	Plump (>6/64)	Anthesis	Maturity	Height	Lodging	Silage yield[b]
	Kg/ha	mg	Kg/hL		d	d	cm	Stage%	Kg/ha
Seebe	6647	50.5	66.2	91.9	58.9	107.1	88.8	189	16409
Gadsby	**7512**	**55.3**	**66.8**	**95.4**	**58.7**	**104.6**	**89.2**	**250**	**18051**
LSD	757	2.15	1.59	2.7	1	2.6	6.2	239.8	5335.3
Stn. Yrs.[c]	18	17	16	16	13	13	15	4	2

[a] Where trial locations were Calmar (2008, 2009), Camrose (2008, 2009), Fahler (2009), Lacombe (High fertility, late seeding, low fertility) (2008, 2009), Morrin (2009), Olds (2008, 2009), Trochu (2008, 2009), and Westlock (2008, 2009).
[b] Where silage data was collected as dry matter yields at the soft dough stage from Lacombe (high fertility) in 2008 and 2009.
[c] Not all traits were measured at all sites.

DISEASE RATING FOR GADSBY				
Prairie Recommending Committee for Oat & Barley - Report of the Disease Evaluation Team				
Disease	**Rating**		**Disease**	**Rating**
Common Root Rot	MR/MS		Stem Rust & Stripe Rust	MR/MS
Net-form of Net Blotch	MS		Spot Blotch	MS
Spot form of Net Blotch	MR		Scald	R
Fusarium Head Blight	MR/MS		Barley Yellow Dwarf	S
Surface Borne Smuts	R		Loose Smut	R

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