'Bobcat' Winter Wheat

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Small Grain QuickFacts: http://plantsciences.montana.edu./FoundationSeed (Updated, June/2019)

Bobcat is a solid stemmed hard red winter wheat with improved yield potential (Tables 1, 2) relative to other solid stemmed varieties. Bobcat was developed by the Montana Agricultural Experiment Station and will be released to certified seed growers in fall 2019. Bobcat is a selection from a composite cross of 2 unreleased MT solid-stemmed experimental lines with an unreleased MT hollow-stemmed line. Bobcat is an awned, white-glumed, semi-dwarf wheat with medium to late maturity. Bobcat is the top performing line in locations where sawfly cutting has occurred (Table 2). Stem solidness is excellent, significantly higher than to Warhorse (Table 3). Bobcat has above average test weight and average protein, and average winter hardiness (Table 4). Bobcat is resistant to prevalent races of stripe and stem rust, but susceptible to leaf rust. Bobcat is a medium high PPO variety with above average mill and bake properties (Table 5). <u>To be sold by variety name only as a class of certified seed. Montana State University Research Fees due on seed sold.</u>

Table 1. Yield of Bobcat vs. a set of varieties, 2015-2018[1]

Variety	Districts							All Locations
	1	**2**	**3**	**4**	**5**	**5**	**6**- Sidney &	
	Kalispell	Bozeman	Huntley[2]	Moccasin[3]	Conrad[4]	Havre[5]	Williston	
location-years	1	6	14	11	12	18	3	65
Bobcat	**94.1**	**100.0**	73.5	56.6	<u>**69.7**</u>	<u>**60.3**</u>	49.7	<u>**67.9**</u>
Loma	87.6	<u>**102.7**</u>	73.3	58.4	**68.6**	54.6	51.7	**66.7**
Warhorse	**92.0**	**93.4**	74.3	57.2	60.2	53.8	49.0	64.0
Judee	<u>**94.5**</u>	**93.2**	70.3	57.6	63.6	53.3	41.4	63.4
Decade	48.4	78.2	73.9	60.5	61.0	53.5	56.1	62.2
LSD (0.05)	**19.2**	**12.1**	**ns**	**ns**	**3.1**	**3.4**	**ns**	**2.4**

bold = indicates highest value within a column   ns = non-significant

bold = indicates varieties with values equal to highest variety within a column based on Fisher's Protected LSD (p =0.05)

1/ = includes 2017-2018 Intrastate and 2017-2018 Off Station, and 2015-2018 Sawfly tests

2/ includes data from Fort Smith, Hardin area, Hysham Molt, Rapelje

3/ includes data from Belt, Denton, Geraldine, Highwood

4/ includes data from Choteau, Cut Bank, The Knees, Shelby

5/ includes data from Big Sandy, Gildford, Loma, Turner

Table 2. Bobcat: Yield Performance under Sawfly Pressure
   (test average cutting ≥10%) and % Sawfly Cutting (2017-2018)

Variety	Yield bu/a	Sawfly Cutting (%)
location-years	8	8
Bobcat	<u>**60.0**</u>	<u>**6**</u>
Loma	**56.9**	32
Brawl CLP	**56.4**	35
SY Monument	**56.4**	53
Northern	55.3	51
Yellowstone	55.0	57
Keldin	54.8	53
SY Clearstone 2CL	54.7	61
FourOsix	53.6	58
Judee	53.2	40
MTW1491	53.0	61
MT1265	52.9	58
SY Wolf	52.8	39
Decade	52.4	45
Ray	52.2	53
Warhorse	51.3	**7**
MTF1435	50.1	49
LSD (0.05)	**4.4**	**15**

bold = indicates highest value within a column

bold = indicates varieties with values equal to highest variety within a column based on Fisher's Protected LSD (p =0.05)

Table 3. Stem solidness ratings of Bobcat compared to other solid-stemmed varieties, (2015-2018)

	Stem Solidness Rating (scale 5-25, higher = more solid)					Stem Solidness by location, 2015-2018				
	2018	2017	2016	2015	2015-18	Billings	Bozeman	Conrad	Havre[1]	Moccasin
location-years	9	11	6	3	29	2	6	4	14	3
Bobcat	23.8	**22.8**	**22.3**	22.0	**22.9**	23.0	**22.6**	23.0	**23.1**	22.5
Judee	22.3	18.4	20.0	19.4	20.1	22.0	17.4	21.5	20.2	21.7
Loma	22.5	19.3	17.9	17.3	19.8	22.8	16.7	20.1	20.7	19.8
Warhorse	22.5	21.1	**21.4**	21.9	21.7	22.6	**20.5**	21.8	22.0	22.2
LSD (0.05)	ns	1.3	2.0	ns	0.8	ns	2.3	ns	1.1	ns

bold = indicates highest value within a column

bold = indicates varieties with values equal to highest variety within a column based on Fisher's Protected LSD (p =0.05)

1/ includes Carter, Gildford, and Loma

Table 4. Agronomic characteristics of Bobcat vs. a set of varieties, 2015-2018[1]

Variety	Test weight lb/bu	Winter survival %	Heading date Julian	Heading date Calendar	Plant height in	Lodging %	Protein %	Stem solidness 5-25	Saw fly cutting %	Stripe rust %	Coleoptile length in
location-years	63	1	26		62	6	65	29	17	5	1
Bobcat	**61.1**	52	159.5	9-Jun	27.6	**4**	12.6	**22.9**	**6**	**6**	2.9
Decade	60.4	**69**	157.7	7-Jun	29.8	27	12.8	7.5	37	52	2.9
Judee	**61.3**	49	158.2	7-Jun	29.8	29	13.0	20.1	29	**6**	**3.7**
Loma	60.1	46	161.0	10-Jun	28.1	20	12.6	19.8	25	**6**	2.8
Warhorse	60.4	52	159.7	9-Jun	29.2	**15**	**13.2**	21.7	**6**	**4**	3.2
LSD (0.05)	0.3	12	0.5		0.4	13	0.2	0.8	9	15	0.2

1/ = includes 2017-2018 Intrastate and 2017-2018 Off Station, and 2015-2018 Saw fly tests

bold = indicates highest (or most desirable) value within a column

bold = indicates varieties with values equal to highest variety within a column based on Fisher's Protected LSD (p =0.05)

Table 5. Mill and bake characteristics of Bobcat vs. a set of varieties, 2015-2018

Variety	PPO[1]	Kernel hardness	Flour yield %	Flour protein %	Ash %	Mixograph tolerance (1-6)	Mixograph mix time min	Mixograph absorption %	Baking mix time min	Baking absorption %	volume cc
location-years	16	12	16	16	16	16	16	16	16	16	16
Bobcat	0.290	69.2	**71.7**	**12.5**	**0.39**	**3.3**	6.6	**68.1**	15.5	**78.4**	1071
Decade	0.277	75.2	70.0	12.2	0.41	**3.1**	8.8	**69.0**	19.4	**79.0**	1070
Judee	0.259	78.4	70.3	**12.7**	**0.40**	**3.3**	5.9	66.0	9.5	75.9	**1153**
Loma	**0.160**	79.1	**71.7**	12.2	**0.40**	**3.2**	7.1	**67.6**	15.4	**78.2**	1129
Warhorse	0.264	87.5	69.6	**12.8**	0.42	2.4	4.9	67.1	8.1	77.1	1112
LSD (0.05)	0.031	3.1	0.6	0.4	0.01	0.5	1.3	1.6	2.5	1.6	37

bold = indicates highest value within a column

bold = indicates varieties with values equal to highest variety within a column based on Fisher's Protected LSD (p =0.05)

1/ low is best for noodles

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