‘Bobcat’ Winter Wheat

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Small Grain QuickFacts: plantsciences.montana.edu/foundationseed (Updated, Jan/2020)

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). **To be sold by variety name only as a class of certified seed. Montana State University Research Fees due on seed sold.**

Table 1. Yield of Bobcat vs. a set of varieties, 2015-2019[1/]

Variety	District 1 Kalispell	District 2 Bozeman	District 3 Huntley[2/]	District 4 Moccasin[3/]	District 5 Conrad[4/]	District 6 Havre[5/]	District 7 Williston / Sydney	All Locaitons
location-years	2	8	19	16	16	25	5	91
Bobcat	105.9	**104.5**	74.0	59.1	**70.6**	**62.1**	54.4	**69.8**
Loma	109.0	**108.4**	74.1	**61.4**	**68.8**	55.9	57.0	**68.8**
Judee	114.8	**100.4**	71.3	59.5	62.1	55.0	50.9	65.5
Decade	81.7	90.2	75.9	**63.1**	61.1	54.2	57.0	65.4
Warhorse	105.2	**99.5**	75.5	58.7	60.2	53.5	50.2	65.2
LSD (0.05)	**ns**	**10.3**	**ns**	**2.8**	**2.9**	**2.9**	**ns**	**1.9**

- **bold-underline** indicates highest value within a column
- ns = non-significant
- **bold** indicates values equal to highest variety within a column based on Fisher's Protected LSD (p=0.05)
- 1/ includes 2017-2019 Intrastate and 2017-2019 Off Station, and 2015-2019 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, Fort Benton, Gildford, Loma, Turner

Table 2. Bobcat Yield Performance under Sawfly Pressure (test average cutting >10%) and % Sawfly Cutting (2017-2019)

Variety	Yield bu/a	Sawfly Cutting (%)
location-years	16	16
Bobcat	**64.5**	**8**
Loma	60.2	31
SY Monument	59.2	53
Northern	58.7	50
Keldin	58.3	53
Brawl CLP	57.9	39
Yellowstone	57.0	59
FourOsix	56.8	60
Decade	56.0	42
SY Clearstone 2CL	56.0	63
Judee	55.8	39
Ray	54.4	53
Warhorse	53.4	**10**
LSD (0.05)	**3.6**	**9.3**

- **bold-underline** indicates highest value within a column
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Table 3. Stem solidness ratings of Bobcat compared to other solid-stemmed varieties, (2015-2019)

Variety	Stem Solidness Rating (scale 5-25, higher = more solid)						Stem Solidness by location, 2015-2019				
	2019	2018	2017	2016	2015	2015-18	Billings	Bozeman	Conrad	Havre[1/]	Moccasin
location-years	9	9	11	6	3	38	2	8	6	19	3
Bobcat	**23.9**	23.8	**22.8**	**22.3**	22.0	**23.2**	23.0	**22.8**	**23.3**	**23.4**	22.5
Judee	20.7	22.3	18.4	20.0	19.4	20.2	22.0	17.8	21.4	20.5	21.7
Loma	21.0	22.5	19.3	17.9	17.3	20.1	22.8	17.2	20.4	21.0	19.8
Warhorse	22.3	22.5	21.1	**21.4**	21.9	21.8	22.6	20.5	**22.2**	22.2	22.2
LSD (0.05)	**0.9**	**ns**	**1.3**	**2.0**	**ns**	**0.7**	**ns**	**1.7**	**1.4**	**0.9**	**ns**

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- **bold** indicates 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, 2015-2019[1/]

Variety	Test weight lb/bu	Winter survival %	Heading date		Plant height in	Lodging %	Protein %	Stem solidness 5-25	Sawfly cutting %	Stripe rust %	Coleoptile length in
			Julian	Calendar							
location-years	89	2	36		86	9	91	38	27	5	1
Bobcat	61.2	43	162.4	11-Jun	27.9	**4**	12.6	23.2	**8**	**6**	2.9
Decade	60.5	52	160.4	9-Jun	30.3	21	12.8	7.9	38	52	2.9
Judee	**61.5**	53	161.1	10-Jun	30.0	21	13.0	20.2	33	**6**	**3.7**
Loma	60.3	49	163.9	13-Jun	28.4	17	12.6	20.1	28	**6**	2.8
Warhorse	60.6	46	162.4	11-Jun	29.3	**11**	**13.2**	21.8	**9**	**4**	3.2
LSD (0.05)	**0.2**	**ns**	**0.4**		**0.4**	**9**	**0.1**	**0.7**	**6**	**15**	**0.2**

- 1/ includes 2017-2019 Intrastate and 2017-2019 Off Station, and 2015-2019 Sawfly tests
- **bold-underline** indicates highest value within a column
- **bold** indicates 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			Mixograph			Baking		
			yield %	protein %	Ash %	tolerance (1-6)	mix time (min)	absorption %	mix time (min)	absorption %	volume cc
location-years	19	12	19	19	19	19	19	19	19	19	19
Bobcat	0.285	69.2	**72.0**	**12.5**	**0.39**	**3.2**	6.5	**68.1**	14.9	**78.3**	1080
Decade	0.273	75.2	70.3	12.2	**0.40**	**3.1**	8.3	**69.2**	18.6	**79.3**	1077
Judee	0.250	78.4	70.4	**12.6**	**0.40**	**3.4**	5.7	66.0	9.0	75.9	**1162**
Loma	0.153	79.1	**72.0**	12.2	**0.40**	**3.1**	7.1	**68.0**	15.2	**78.5**	**1131**
Warhorse	0.258	87.5	69.7	**12.8**	0.42	2.3	4.9	67.2	7.9	77.2	1119
LSD (0.05)	**0.027**	**3.1**	**0.5**	**0.31**	**0.01**	**0.4**	**1.1**	**1.4**	**2.2**	**1.4**	**32**

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- 1/ indicates low is best for noodles