

'Loma' Winter Wheat

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 Small Grain QuickFacts: <http://plantsciences.montana.edu/FoundationSeed> (New, 12/2016)

Loma is a semi-solid stemmed hard red winter wheat with improved yield potential (Tables 1, 2) relative to other solid stemmed varieties. Loma was developed by the Montana Agricultural Experiment Station and released to seed growers in 2016. Loma (Yellowstone//MTS0112/MTS0125) was a cross between Yellowstone and 2 unreleased solid-stemmed experimental lines. Loma is an awned, white-glumed, medium short wheat with medium to late maturity. Loma performs well in locations where sawfly cutting has occurred (Table 2). Stem solidness is less than to Judee and WB Quake (Table 3). Loma has average test weight and protein, and average winter hardiness (Table 4). Loma is resistant to prevalent races of stripe and stem rust, but susceptible to leaf rust. Loma is a medium low 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. PVP, Title V will be applied for.

Table 1. Yield of Loma vs. a set of recommended varieties, 2012-2016^{1/}

Variety	Districts							All Locations
	1 Kalispell	2 Bozeman	3 Huntley ^{2/}	4 Moccasin ^{3/}	5 Conrad ^{4/}	5 Havre ^{5/}	6- Sidney & Williston	
location-years	3	8	14	16	10	18	4	73
Yellowstone	125.3	89.1	66.6	60.2	84.4	62.3	59.1	71.2
Loma	137.5	86.9	62.9	57.2	81.0	56.9	47.7	67.6
Warhorse	129.5	78.4	59.0	54.5	67.7	57.1	41.1	62.8
Judee	126.9	75.0	55.8	49.6	76.6	58.1	39.9	62.0
Decade	67.0	68.2	61.1	55.3	77.2	57.6	50.8	61.6
WB-Quake	122.5	76.8	53.5	50.3	69.4	59.9	44.5	61.3
Bearpaw	72.2	66.7	56.9	52.7	70.5	53.8	43.0	58.0
Rampart	99.1	70.5	49.4	44.5	67.7	55.2	42.9	56.1
LSD (0.05)	35.7	7.9	4.0	3.5	5.9	4.3	8.0	2.9

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 2012-16 Sawfly , 2014-16 Intrastate and 2015-16 Off Station tests

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

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

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

5/ includes data from Carter, Gildford, Loma, Turner

Table 2. Loma: Yield Performance under Sawfly Pressure
 (test average cutting ≥10%) and % Sawfly Cutting (2012-2016)

Variety	Yield bu/a	Sawfly Cutting (%)
location-years	5	5
Judee	65.6	19
Loma	64.6	19
Yellowstone	64.4	43
Decade	63.8	36
WB-Quake	61.5	15
Warhorse	58.8	2
Bearpaw	56.9	16
Rampart	52.3	13
LSD (0.05)	ns	22

ns = non significant

Table 3. Stem solidness ratings of Loma compared to other solid-stemmed varieties, (2012-2016)

	Stem Solidness Rating (scale 5-25, higher = more solid)						Stem Solidness by location, 2012-2016				
	2016	2015	2014	2013	2012	2012-16	Billings	Bozeman	Conrad	Havre ^{1/}	Moccasin
location-years	11	7	8	4	4	34	1	8	4	14	7
Warhorse	21.4	22.0	22.1	21.4	19.3	21.4	24.6	20.0	21.9	21.7	21.9
Bearpaw	20.6	19.9	21.5	22.2	20.4	20.8	23.9	18.6	20.8	21.7	21.2
Rampart	20.6	18.7	21.4	22.0	20.4	20.5	24.4	17.1	21.4	21.5	21.6
Judee	19.8	19.3	20.8	21.1	17.9	19.9	23.4	17.4	21.0	20.5	20.2
WBQuake	20.3	19.2	21.0	20.5	17.5	19.9	24.7	17.1	20.9	20.6	20.5
Loma	17.7	17.2	21.1	20.1	17.3	18.6	23.0	16.4	17.9	19.9	18.5
LSD (0.05)	0.8	1.8	1.1	ns	1.6	0.6	ns	1.7	1.4	0.9	0.9

bold = indicates highest value w ithin a column

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

^{1/} includes Carter, Gildford, and Loma

Table 4. Agronomic characteristics of Loma vs. a set of recommended varieties, 2012-2016^{1/}

Variety	Test weight lb/bu	Winter survival %	Heading date		Plant height in	Lodging %	Protein %	Saw fly cutting %	Stripe rust %
			Julian	Calendar					
location-years	72	2	43		73	10	71	10	7
Bearpaw	58.4	84	159.7	9-Jun	31.5	35	12.6	9	56
Decade	58.9	86	159.3	8-Jun	32.4	24	12.5	22	55
Judee	59.9	40	160.0	9-Jun	31.9	29	12.7	11	10
Loma	59.0	89	162.4	11-Jun	30.9	32	12.5	12	11
Rampart	59.3	69	160.7	10-Jun	35.4	27	13.2	8	29
Warhorse	59.2	79	161.2	10-Jun	32.1	16	12.8	2	8
WB-Quake	59.2	80	161.9	11-Jun	32.2	25	12.6	11	20
Yellowstone	59.0	94	161.0	10-Jun	34.3	23	12.2	26	21
LSD (0.05)	0.4	19	0.4		0.4	ns	0.2	11	14

^{1/} = includes 2012-16 Saw fly , 2014-16 Intrastate and 2015-16 Off Station tests

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

Table 5. Mill and bake characteristics of Loma vs. recommended varieties, 2012-2015:

Combined Sawfly Tests (2012-2015) and 2014-2015 Intrastate Test

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	19	19	19	19	19	19	19	19	19	19
Bearpaw	0.255	81.9	69.6	12.2	0.42	3.2	4.4	61.8	7.4	71.9	1038
Decade	0.276	75.1	68.5	12.3	0.41	4.7	9.1	65.5	20.9	76.4	1096
Judee	0.264	80.2	68.5	12.5	0.41	4.1	5.8	62.8	10.1	72.9	1180
Loma	0.173	81.2	70.8	11.9	0.41	4.3	6.5	64.2	16.6	75.2	1149
Warhorse	0.261	91.3	68.5	12.4	0.43	3.3	5.0	62.9	8.1	73.5	1091
Yellowstone	0.213	81.1	69.3	11.8	0.42	4.6	8.2	63.9	15.6	74.7	1089
LSD (0.05)	0.026	2.1	0.6	0.4	0.01	0.5	0.9	1.0	2.2	1.1	31

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

^{1/} low is best for noodles