

'Loma' Winter Wheat

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 Small Grain QuickFacts: <http://plantsciences.montana.edu/FoundationSeed> (Updated, 12/2017)

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 is pending (Certificate# 201700021).

Table 1. Yield of Loma vs. a set of varieties, 2012-2017^{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	9	20	21	15	23	4	95
Yellowstone	125.3	90.6	61.9	59.8	79.9	57.4	59.1	68.4
Loma	137.5	87.5	57.7	56.1	77.0	53.4	47.7	64.9
Warhorse	129.5	79.9	54.5	54.0	66.6	53.1	41.1	60.8
Judee	126.9	76.0	52.0	50.4	72.7	54.2	39.9	60.2
Decade	67.0	67.4	55.7	56.1	73.0	54.1	50.8	60.0
WB-Quake	122.5	78.0	49.9	49.7	66.1	54.7	44.5	58.8
Bearpaw	72.2	65.9	53.0	52.5	68.8	49.7	43.0	56.6
LSD (0.05)	38.7	8	3.0	3.0	4.4	3.7	7.7	2.5

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 2012-17 Saw fly , 2014-16 Intrastate and 2015-17 Off Station tests

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

3/ includes data from Belt, Denton, Geraldine, Highway, 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 (2012-2017)

Variety	Yield bu/a	Sawfly Cutting (%)
location-years	9	9
Judee	55.6	20
Loma	55.1	21
Decade	55.0	41
Yellowstone	54.1	42
WB-Quake	53.4	15
Warhorse	51.7	4
Bearpaw	48.5	15
LSD (0.05)	ns	14

ns = non significant

Table 3. Stem solidness ratings of Loma compared to other solid-stemmed varieties, (2013-2017)

	Stem Solidness Rating (scale 5-25, higher = more solid)						Stem Solidness by location, 2013-2017				
	2017	2016	2015	2014	2013	2013-17	Billings	Bozeman	Conrad	Havre ^{1/}	Moccasin
location-years	11	11	7	8	4	41	2	9	6	17	7
Warhorse	21.1	21.4	22.0	22.1	21.4	21.6	22.6	19.6	21.7	22.1	22.5
Bearpaw	19.8	20.6	19.9	21.5	22.2	20.6	21.8	17.7	20.8	21.5	21.4
WBQuake	20.2	20.3	19.2	21.0	20.5	20.2	21.9	17.2	21.3	20.8	21.5
Judee	18.4	19.8	19.3	20.8	21.1	19.7	22.0	16.9	20.9	20.0	20.6
Loma	19.3	17.7	17.2	21.1	20.1	18.9	22.8	15.7	18.7	20.2	19.1
LSD (0.05)	1.1	0.8	1.8	1.1	ns	0.6	ns	1.4	1.3	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, 2012-2017^{1/}

Variety	Test weight lb/bu	Winter survival %	Heading date		Plant height in	Lodging %	Protein %	Sawfly cutting %	Stripe rust %	Coleoptile length in
			Julian	Calendar						
location-years	93	2	47		93	14	93	14	8	1
Bearpaw	58.9	84	159.4	8-Jun	30.4	35	12.6	11	56	3.0
Decade	59.2	86	159.0	8-Jun	31.4	28	12.5	29	53	2.9
Judee	60.2	40	159.6	9-Jun	31.0	31	12.7	14	10	3.7
Loma	59.2	89	162.1	11-Jun	29.9	31	12.4	15	10	2.8
Warhorse	59.4	79	160.8	10-Jun	31.0	18	12.9	3	8	3.2
WB-Quake	59.5	80	161.6	11-Jun	31.1	28	12.5	12	20	2.8
Yellowstone	59.2	94	160.7	10-Jun	33.1	27	12.2	30	21	2.8
LSD (0.05)	0.4	20	0.4		0.3	ns	0.2	10	12	0.2

1/ = includes 2012-17 Sawfly , 2014-16 Intrastate and 2015-17 Off Station tests

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 5. Mill and bake characteristics of Loma vs. recommended varieties, 2012-2016:

Combined Sawfly Tests (2012-2016) and 2014-2016 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	26	26	26	26	26	26	26	26	26	26	26
Bearpaw	0.266	79.0	70.0	11.9	0.41	2.9	4.4	62.4	8.7	72.4	1013
Decade	0.270	73.3	68.8	11.8	0.41	4.5	8.7	65.5	20.8	75.9	1059
Judee	0.262	78.7	68.8	12.1	0.41	4.0	5.8	63.2	10.7	73.3	1153
Loma	0.163	79.6	70.9	11.7	0.41	4.1	6.8	64.8	17.3	75.7	1127
Warhorse	0.258	88.9	68.8	12.2	0.43	3.1	4.9	63.9	8.6	74.3	1083
Yellowstone	0.222	77.8	69.4	11.6	0.42	4.3	8.3	64.4	16.4	75.2	1068
LSD (0.05)	0.023	2.0	0.6	0.3	0.01	0.4	0.8	1.0	1.8	1.0	28

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1/ low is best for noodles