

'Loma' Winter Wheat

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 Small Grain QuickFacts: <http://plantsciences.montana.edu/FoundationSeed> (Updated, 12/2018)

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 (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, 2012-2018^{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	4	11	26	25	20	30	6	122
Yellowstone	114.9	99.3	71.3	60.1	75.7	57.9	59.3	69.8
Loma	125.0	97.0	68.0	57.7	74.7	55.1	51.6	67.5
Warhorse	120.1	87.3	66.4	55.4	64.3	53.8	46.5	63.3
Decade	62.3	79.6	67.7	57.5	69.1	54.7	53.5	62.8
Judee	118.8	86.0	62.3	52.7	70.0	54.6	45.0	62.8
LSD (0.05)	26.0	7.0	3.0	2.9	3.7	2.8	6.6	2.0

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 2012-18 Saw fly; 2014-16, 2018 Intrastate and 2015-18 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 Big Sandy, Carter, Gildford, Loma, Turner

**Table 2. Loma: Yield Performance under Sawfly Pressure
 (test average cutting ≥10% and % Sawfly Cutting (2012-2018))**

Variety	Yield bu/a	Sawfly Cutting (%)
location-years	17	17
Loma	59.3	28
Judee	57.3	33
Yellowstone	56.6	54
Decade	56.3	44
Warhorse	54.5	6
LSD (0.05)	ns	11

ns = non significant

Table 3. Stem solidness ratings of Loma 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
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
MTS1588	23.8	22.8	22.3	22.0	22.9	23.0	22.6	23.0	23.1	22.5
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 w within a column

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

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

Table 4. Agronomic characteristics of Loma vs. a set of recommended varieties, 2012-2018^{1/}

Variety	Test weight lb/bu	Winter survival %	Heading date		Plant height in	Lodging %	Protein %	Saw fly cutting %	Stripe rust %	Coleoptile length in
			Julian	Calendar						
location-years	120	3	58		120	16	120	24	8	1
Decade	59.6	81	159.2	8-Jun	31.2	25	12.7	33	53	2.9
Judee	60.6	43	159.8	9-Jun	30.8	29	12.9	24	9	3.7
Loma	59.5	75	162.4	11-Jun	29.5	28	12.6	21	10	2.8
Warhorse	59.8	70	161.1	10-Jun	30.7	16	13.0	5	8	3.2
Yellowstone	59.5	84	161.2	10-Jun	32.8	27	12.4	41	21	2.8
LSD (0.05)	0.3	24	0.4		0.3	ns	0.1	9	12	0.2

^{1/} = includes 2012-18 Saw fly; 2014-16, 2018 Intrastate and 2015-18 Off Station tests

bold = indicates highest value w within a column

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

**Table 5. Mill and bake characteristics of Loma vs. recommended varieties, 2012-2017:
Combined Sawfly Tests (2012-2017) 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	29	29	29	29	29	29	29	29	29	29	
Decade	0.271	74.1	68.9	11.9	0.41	4.2	8.9	66.2	20.9	76.6	1066
Judee	0.262	78.8	69.0	12.3	0.40	3.9	5.9	63.7	10.5	73.7	1161
Loma	0.163	79.9	71.0	11.8	0.41	3.9	6.9	65.5	17.2	76.3	1126
Warhorse	0.258	88.9	68.8	12.4	0.43	2.9	5.0	64.5	8.6	74.9	1091
Yellowstone	0.227	78.0	69.5	11.7	0.42	4.3	8.4	64.8	16.3	75.5	1073
LSD (0.05)	0.020	1.8	0.5	0.3	0.01	0.4	0.8	1.0	1.7	1.0	28

bold = indicates highest value w within a column

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

^{1/} low is best for noodles