

2017 MONTANA WINTER WHEAT INTRASTATE TEST TABLE OF CONTENTS

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2017 Montana Intrastate Winter Wheat Test: List of Varieties and Lines

Variety	Experimental Designation	Origin	Release Year	Pedigree
Public Varieties				
Bearpaw	MTS0721	Montana	2011	selection from a composite of 5 crosses: 99X96, DMS/Rampart//Pronghorn/3/2*Rampart; 99X97, DMS/Rampart//Pronghorn/3/Rampart/4/(MTW9806, Redwin/Rio Blanco//NuWest) ; 99X98, DMS/Rampart//Pronghorn/3/Rampart/4/NuPlains; 99X99, DMS/Rampart//Pronghorn/3/Rampart/4/(MT9513, NuWest/5/(TAM W-103/Froid/4/Yogo//Turkey Red/3/Centurk, MT8030)); and 99X100, DMS/Rampart//Pronghorn/3/Rampart/6/(MT98113, Judith/5/ (MT8764, Crest/(VT1230, French male sterile line)/4/((P1178383/ Cheyenne//3*Tendoy, ID5011)/3/(ID5006, Norin 10/Staring//2*Cheyenne), ID745101)))
Brawl CL Plus	CO06052	Colorado	2011	Teal 11A/Above//(CO99314, TX91V4931/ Halt)
Decade	MT0552	Montana; North Dakota	2010	selection from composite of 3 crosses:((Sumner sib, KS831936-3, (Plainsman V/Odesskaya 51)//(NE86501, Colt/Cody), N95L159, Wesley sib)/3/ CDC Clair, N95L159//(MT9602, NuWest/Tiber) and N95L159/4/ (MT9609, Froid/SD1287// Redwin/3/NuWest)
Denali	CO050303-2	Colorado	2011	(Yuma/T-57/4/(CO850034, NS14/NS603// Newton /3/Probrand 835)/5/ 4*Yuma /6/(NEWS12, KS91H174/RBL// KS91HW29/3/ N87V106), CO980829)/7/ TAM 111
Judee	MTS0713	Montana	2011	(Vanguard/Norstar//Judith dwf, 93X312E14)/3/ NuHorizon
Langin	CO11D446	Colorado	2016	(Hatcher/(NW97S295, Antelope sib), CO050270)//Byrd
Loma	MTS1224	Montana	2016	Yellowstone/5/((Lew/Tiber//Redwin, MTS92045)/3/2*Erhardt, MTS0112)/4/(MTS0125, selection from a composite of 4 crosses)
Northern	MT0978	Montana	2015	selection from a composite of 2 crosses: 00X248, (Yellowstone sib, MT9982)/4/((MT8709, Erhardt sib)/NuWest//Erhardt, MTW0072)/3/ (NW97S151, KSSB0192-3/NE89529) and 00X249, (Judith/(PI262605, Karagach, RWA resis.)/3/(S86-740, Norstar/Plainsman V //Ulianovka) ,MTW0047)/4/MTW0072/NW97S151
Warhorse	MTS0808	Montana	2013	selection from a composite of 3 crosses: 00X182, ((Froid/Winoka/7/ ((Sinvalocho/Wichita// Hope/Cheyenne /3/Wichita/4/Seu Seun 27, TX55-391-56-D8)/5/Westmont, MT6928)/6/ Trader, MT85200)/8/ Redwin, MT9908)/9/ Nuplains/6/(MTS9862, (NuWest/ Lovrin 24 /4/((Rego/Cheyenne, Sel. 39-18-7)// Winalta, MT7431)/3/(MT7115, Yogo/T. polonicum-70-5), MT91366)/5/ (MTS92137, Lew/Tiber//Redwin)); 00X183, Nuplains/MTS9862/4/ (MTW0047, Judith/(PI262605, Karagach, RWA resis.)/3/(S86-740, Norstar/ Plainsman V //Ulianovka)); and 00X184, Nuplains/MTS9862/5/(MTS0028, Vanguard/4/(Lew/Tiber//Redwin, MTSF1570)/3/ Norstar)
Yellowstone	MT00159	Montana	2005	F ₂ composite of Promontory/Judith and Judith-dwarf/Promontory

Private Varieties

Keldin	ACS55017	Peter Franck: Seed-Link Inc.; Ontario, Canada, Westbred LLC	2011	Barenburg 235/Carlisle//TRX-A16-3-2
LCS Chrome	LCH13DH-20-87	Limagrain	2016	na
LCS Jet	NSA10-7208	Limagrain Europe s.a.	2015	Apache/Autan
Long Branch	LCH12-012, HRX1652	Limagrain; Dyna-Gro Wheat	2015	na
SY 517 CL2	07CL039-7	Syngenta	2017	na, Clearfield Plus variety
SY Clearstone 2CL	MTCL1077	Syngenta, Montana	2012	Yellowstone*4/3/MTCL01158/CDC Teal 11A//Jagalene
SY Monument	04BC574-2	Syngenta	2014	(KS89180B-2-1-1/CM75113, F1//X920750-A-11-2, BC991149-11)/3/(00x0090-4, W95091/W98-183

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Variety	Experimental Designation	Origin	Release Year	Pedigree
SY Sunrise	06BC796#68	Syngenta Seeds	2015	((X920709B-5-2/KS90WGRC10//Ogallala, BC98337-10-53)/3/CDC Falcon, <u>06BC308</u>)/4/ (<u>NE03458</u> , (McVey 78015/NE88521, NE95544)// W91-348/3/Millennium)
SY Wolf	BC01007-7	AgriPro, Syngenta	2010	((TAM-108/Veery sib, SWM1524)//TX84V2029, TX91V3308)/3/(W93-359, WI88-052/W96-180), W99-331)/4/(97x0906-8, (Mesa/W89-328, W96-180)//(W95-188, Karl 92/W98-232))
WB4483	BZ9W09-2212	WestBred-Monsanto:	2016	(solid stem)
WB4575	BZ9W09-2075	WestBred-Monsanto:	2016	(hollow stem)
WB4614	BZ9W07-2034	WestBred-Monsanto:	2013	BZ9W96-788-B/Pryor
WB4623CLP	BZ9WM09-1663	WestBred-Monsanto:	2014	(B152/Rampart, DH990356, BZ9W02-2073)// Above/CDC Teal-11A
WB-Quake	BZ9W05-2043	WestBred LLC (Monsanto)	2011	Rampart/Kestrel

Public Elite Lines

	CO13003C			CO06072/4*Byrd (Als1, Als2)
	MTCL1131			Yellowstone*4/4/(Fidel/Tiber (IM), MTCL01158)//CDC Teal 11A/3/Jagalene
	MT1265			Yellowstone*4//(<u>KS96WGRC40</u> , KS93U69*2/TA 2397) (Lr41, wcm)
	MT1348			selection from a composite of 2 crosses: 04X494, (PI572290 = STARS-9303W = (Bobwhite/PI 149898), rwa2)//BigSky and 4X495, (Yellowstone sib, MT9982)/PI572290
	MT1444			selection from a composite of 2 crosses: 06X165, Yellowstone*2/ (MTW0590, selection from a composite of 2 crosses: 00X3, ((MT8709, Erhardt sib)/NuWest/ Erhardt, MTW0072)/3/(NW97S151, KSSB0192-3/NE89529) and 00X4, (MT8713, Erhardt sib)/NuWest, MTW9911)// NW97S151) and 06X166, (NuWest//SD88191, Brule/Dawn), MTW01133/3/Yellowstone/MTW0590
	MT1465			selection from a composite of 5 crosses: 06X272, Yellowstone/ (MT0684, a composite - see pedigree); 06X276, Yellowstone/ (MT06102, , a composite - see pedigree); 06X278, Yellowstone/7/ (MT06110, (Arapahoe/3/Brule//Hiplains/ Newton, SD93528)/6/ (MT9409, Tiber/5/ (TAM W-103/Froid/4/Yogo//Turkey Red/ Oro/3/Centurk, MT8030)); 06X282, Yellowstone/3/(MT06123, '2174'/(MT9440, BigSky sib)/BigSky); and 06X285, Yellowstone/7/ (98X168E1, (Nuwest/4/ (MT88001, Sawmont/Tendoy /3/Yogo// Norin 10/Brevor) /5/(MT7863, Froid/Winoka/ Centurk), MTS9720)/6/(PI 191303, Alba = Belgian variety)/Elkhorn);
	MT1471			selection from a composite of 2 crosses: 06X304, Yellowstone/ NuDakota; 06X306, (Erhardt/Halt, MTR0441)//NuDakota, and 06X308, ((Tiber/5/(MT8030, TAM W-103/ Froid /4/Yogo//Turkey Red /Oro/3/ Centurk), MT9409)/6/(MT9659, SMN82164/ SMN82140// Rocky/ Tiber)/7/Jerry, MT06125)/8/NuDakota
	MT1488			selection from a composite of 2 crosses: 03X316, ((Karagach, RWA resis., PI262605)/4/ (MT7863, Froid/Winoka// Centurk)/3/ Redwin, MTR00118)/10/ (MT0241, (WWP4394/NuWest /4/(Rego/ Cheyenne// Winalta, MT7431)/3/(MT7978, Centurk/Marias), MT91192)/9/(NuWest/ Redwin/Rio Blanco, 88X9D105-6)/8/ (((Carstens V/A. intermedium// Lathrop, Cltr15092)/3/T. speltoides/4/Fletcher/5/ 5*Centurk, Cltr17884)*4/6/Karl, KS93WGRC27) /7/(MT9415, Judith/Yogo)) /11/CDC Falcon and 03X317, (Erhardt// Judith/CDC Kestrel, MT0097) /3/ MTR00118/ MT0241
	MTW1491			(Yellowstone (Low PPO) plant seln, MT08184)//(Yellowstone (Low PPO) plant seln, MT08188/(MT08175, Colter sib)

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Variety	Experimental Designation	Origin	Release Year	Pedigree
	MTF1432			<u>Yellowstone</u> *2/7/(<u>98X168E1</u> , (Nuwest/4/(MT88001, Sawmont/ Tendoy /3/Yogo/Norin 10/Brevor) /5/(MT7863, Froid/Winoka/ Centurk), MTS9720)/6/(PI 191303, Alba = Belgian variety)/Elkhorn)
	MTF1435			(<u>Yellowstone</u> (Low PPO) plant seln, <u>MT08186</u>)/8/ <u>Yellowstone(L)</u> *2 /7/ (<u>98X168E1</u> , (Nuwest/4/(MT88001, Sawmont/ Tendoy /3/Yogo/Norin 10/Brevor) /5/(MT7863, Froid/Winoka/ Centurk), MTS9720)/6/(PI 191303, Alba = Belgian variety)/Elkhorn)
	MT1507			selection from a composite of 2 crosses: 07X19, ((BigSky sib, MT9523)/(NE94653, Wahoo sib), <u>MT0686</u>)/ <u>Yellowstone/Duster</u> ; and 07X20, <u>Yellowstone</u> *2/ <u>Duster</u>
	MT1540			selection from a composite of 2 crosses: 06X165, <u>Yellowstone</u> *2/ (<u>MTW0590</u> , selection from a composite of 2 crosses - see pedigree) and 06X166, (NuWest/(SD88191, Brule/Dawn), <u>MTW01133</u>)/3/ <u>Yellowstone/MTW0590</u>
	MT1542			selection from a composite of 3 crosses: 05X101, (Erhardt/Judith/ CDC Kestrel, <u>MT0097</u>)/10/ <u>Yellowstone</u> /9/(<u>MT03108</u> , (NuWest/Tiber, MT9524)/8/((Carstens V/Ae. intermedium (TA25))/Lathrop, Cltr13092)/3/T. speltoides/4/Fletcher/5/5*Centurk, Cltr17884)*4/ 6/Karl, KS93WGRC27)/7/Judith); 05X103, ((Carstens V/Ae. intermedium (TA25))/Lathrop, Cltr13092)/3/T. speltoides/4/Fletcher/5/ 5*Centurk, Cltr17884)*4/6/Karl, KS93WGRC27)/7/ 2*Judith, <u>MT03177</u>)/8/ <u>Yellowstone/MT03108</u> ; and 05X104, ((Arapahoe/ NE87U121, N92L005) /4/(MT9608, Froid/SD1287// Redwin/3/ (MT7863, Froid/ Winoka/Centurk)), <u>MT0403</u>)/5/ <u>Yellowstone/ MT03108</u>
	MT1547			selection from a composite of 5 crosses: 06X272, <u>Yellowstone/ (MT0684</u> , selection from a composite of 5 crosses - see pedigree); and 06X276, <u>Yellowstone/MT06102</u> , selection from a composite of 2 crosses - see pedigree ; 06X278, <u>Yellowstone/7/ (MT06110</u> , (Arapahoe/3/Brule//Hiplains/Newton, SD93528)/6/ (MT9409, Tiber/5/(TAM W-103/Froid/4/ Yogo/Turkey Red/Oro/3/ Centurk, MT8030)); 06X282, <u>Yellowstone/3/(MT06123</u> , "2174/ (MT9440, BigSky sib)/BigSky); and 06X285, <u>Yellowstone/7/ (98X168E1</u> , (Nuwest/4/ (MT88001, Sawmont/Tendoy /3/Yogo/Norin 10/Brevor) /5/(MT7863, Froid/Winoka/Centurk), MTS9720)/6/(PI 191303, Alba = Belgian variety)/Elkhorn)
	MT1563			selection from a composite of 2 crosses: 07X76, <u>Yellowstone</u> *2/5/ (<u>PI640431</u> , BC4F4 line derived from WA007900*5/4/WA007900// Yr5/6*Avocet/3/ WA007900//Yr15/ 6*Avocet) and 07X77, <u>Yellowstone/PI640431//Yellowstone(340,233)</u>
	MT1564			selection from a composite of 2 crosses: 07X76, <u>Yellowstone</u> *2/5/ (<u>PI640431</u> , BC4F4 line derived from WA007900*5/4/WA007900// Yr5/6*Avocet/3/ WA007900//Yr15/ 6*Avocet) and 07X77, <u>Yellowstone/PI640431//Yellowstone(340,233)</u>
	MTF1559			<u>Yellowstone</u> *2/7/(<u>98X168E1</u> , (Nuwest/4/(MT88001, Sawmont/ Tendoy /3/Yogo/Norin 10/Brevor) /5/(MT7863, Froid/Winoka/ Centurk), MTS9720)/6/(PI 191303, Alba = Belgian variety)/Elkhorn)
	MT1565			selection from a composite of 3 crosses: 09X284, 09X285, and 09X277, all with the same pedigree; <u>Decade</u> *2// <u>Promontory/ 3*Yellowstone</u>
	MTS1573			selection from a composite of 2 crosses: 06X224, <u>Danby/7/ 2*(MTS04114</u> , L'Govskaya 167/Rampart/6/(MT9409, Tiber/5/ (MT8030, TAM W-103/Froid /4/Yogo//Turkey Red /Oro/3/Centurk))) and 06X225, (L'Govskaya 167/Rampart/6/(MT9409, Tiber/5/ (MT8030, TAM W-103/Froid /4/Yogo//Turkey Red /Oro/3/Centurk)), <u>MTS0531</u>)/7/ <u>Danby/MTS04114</u>
	MTS1588			selection from a composite of 2 crosses: 07X291, ((SMN82164/ SMN82140//Rocky/Tiber, MT9659)/3/S87-101/4/Pronghorn, <u>MT0598</u>)/5/(<u>98X366E29-1</u> , Heyne/Rampart/(MT9513, BigSky sib)) and 01X295, (((Lew/Tiber//Redwin ,MTS92021)/3/Judith/Arapahoe, MTS0023)/4/Pryor/ Genou, <u>01X258C1</u>)/5/ <u>MT0598</u>

2017 Montana Intrastate Winter Wheat Test: List of Varieties and Lines

Variety	Experimental Designation	Origin	Release Year	Pedigree
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Private Elite Lines

	BZ9W09-2216	WestBred-Monsanto:		(solid stem)
	BZ9WM09-1620	WestBred-Monsanto:		Clearfield Plus exp. line
	PSB13NEDH-7-45	Limagrain		Smoky Hill/McGill
	PSB13NEDH-7-140	Limagrain		Smoky Hill/McGill

Table 1. 2017 Intrastate Winter Wheat Test : Statewide Summary

Cultivar/Line		Pedigree	Yield bu/ac	Test weight lb/bu	Heading date Julian	Plant height in	Stem solidness (5-25)	Protein %
d = cultivars/lines dropped for 2018 test								
+ = new for 2017, # = paid entry								
		Locations	7	7	6	6	5	7
#+	07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2	63.1	62.0	149.9	28.3		12.6
	Bearpaw	Montana, 2011	54.9	60.2	154.8	29.5	19.4	13.1
#	Brawl CLP	Colorado Wheat Res. Fdn., 2011	63.5	61.6	150.1	30.6		12.8
#+ d	BZ9W09-2216	Westbred exp. solid stem	55.7	60.9	156.8	28.6	15.9	12.3
#+ d	BZ9WM09-1620	Westbred exp. CLP	64.5	60.9	155.7	32.2		12.8
#+	CO13003C	CO06072/4*Byrd (Als1, Als2)	68.7	59.8	152.5	31.3		11.6
	Decade	Montana/North Dakota, 2010	60.2	60.5	154.7	30.1		12.7
#+ d	Denali	Colorado Wheat Res. Fdn., 2011	68.2	61.4	153.6	31.6		11.7
	Judee	Montana, 2011	65.2	61.1	155.7	29.9	17.6	13.5
#	Keldin	WestBred, 2011	75.1	61.2	155.9	30.8		12.4
#+	Langin	Colorado Wheat Res. Fdn., 2016	70.0	60.3	150.2	28.3		11.4
#+	LCS Chrome	Limagrain Cereal Seeds, 2016	71.5	61.2	153.0	31.4		12.8
#+	LCS Jet	Limagrain Cereal Seeds, 2015	<u>78.8</u>	58.9	156.3	27.6		12.4
	Loma	Montana, 2016	68.7	60.5	158.0	28.1	18.3	12.9
#+	Long Branch	Dyna-Gro Wheat, 2015	75.0	61.2	150.8	30.6		11.7
	MT1265	Yellowstone*4/KS96WGRC40 (Lr4	72.6	60.1	157.0	33.1		12.8
d	MT1348	PI572290/BigSky	72.7	61.0	154.2	30.9		12.4
d	MT1444	Yellowstone*2/MTW0590	70.8	60.7	156.1	31.6		12.7
	MT1465	Yellowstone/MT0684	70.8	61.1	155.4	29.5		12.7
d	MT1471	Yellowstone/NuDakota	70.7	60.8	156.4	31.0		13.4
d	MT1488	MTR00118/MT0241//CDC Falcon	62.4	60.2	157.2	29.9		13.0
+ d	MT1507	MT0686//Yellowstone/Duster	72.6	61.1	155.3	31.7		12.4
+ d	MT1540	Yellowstone*2/MTW0590	68.1	61.1	155.3	30.8		12.9
+ d	MT1542	MT0097/Yellowstone/MT03108	71.9	60.4	156.2	30.5		12.3
+ d	MT1547	Yellowstone/MT0684	71.1	60.7	155.3	30.6		13.0
+ d	MT1563	Yellowstone*2/PI640431	70.9	60.1	156.7	32.7		12.6
+ d	MT1564	Yellowstone*2/PI640431	77.6	61.7	151.9	31.8		12.4
+ d	MT1565	Decade*2//Promontory/3*Yellowstc	68.2	60.1	153.7	29.1		13.2
d	MTCL1131	Clearstone sib	71.7	60.5	157.2	33.1		12.6
+ d	MTF1432	Yellowstone*2/98X168E1	69.6	59.2	159.8	35.2		12.6
+ d	MTF1435	MT08186//Yellowstone(L)*2/98X16	65.9	60.3	158.0	38.3		12.5
+ d	MTF1559	Yellowstone*2/98X168E1	67.4	57.7	161.9	35.0		12.9
+ d	MTS1573	Danby/2*MTS04114	70.2	61.8	154.2	30.7	19.0	12.5
+ d	MTS1588	MT0598/98X366E29-1	70.4	61.1	156.8	28.3	<u>22.4</u>	12.9
	MTW1491	MT08189//MT08187/(MTW08166,	75.5	61.0	156.7	32.0		12.5
	Northern	Montana, 2015	67.1	59.8	157.7	29.2		13.0
#+	PSB13NEDH-7-140	Smoky Hill/McGill	70.1	61.8	154.5	32.4		13.1
#+ d	PSB13NEDH-7-45	Smoky Hill/McGill	66.1	59.5	152.7	30.0		12.7
	SY Clearstone 2CL	Montana/Syngenta, 2012	70.8	60.1	156.2	33.0		12.6
#	SY Monument	Syngenta (AgriPro), 2015	74.4	59.5	153.8	30.1		11.7
#	SY Sunrise	Syngenta (AgriPro), 2015	72.1	<u>62.1</u>	152.4	27.3		12.3
	SY Wolf	Syngenta (AgriPro), 2010	67.5	61.0	153.6	29.9		12.6
	Warhorse	Montana, 2013	66.1	60.2	156.7	29.1	20.9	13.2
	Warhorse #2^{1/}	Yellowstone misplanted	63.1	59.6	156.3	29.1	20.3	13.1
#	WB4483	WestBred, 2016 (solid stem, BZ9V	60.7	59.9	157.2	28.2	17.7	13.3
#	WB4575	WestBred, 2016 (BZ9W09-2075)	53.0	60.8	155.2	28.5		13.5
#	WB4614	WestBred, 2014	65.6	60.8	155.1	28.7		12.6
#	WB4623CLP	WestBred, 2015	62.4	61.0	155.5	29.6		13.4
d	WB-Quake	WestBred, 2011	61.4	60.9	157.8	30.5	19.6	13.0
Average			68.1	60.6	155.3	30.6	19.1	12.7
LSD (0.05)			10.9	1.3	1.3	1.6	1.2	0.5
C. V. (%)			15.2	2.0	0.7	4.5	5.1	4.1

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 2. 2017 Intrastate Winter Wheat Test (Exp. 3501): Bozeman

Entry	Cultivar/Line	Pedigree	Yield bu/ac	Test weight lb/bu	Heading date Julian	Plant height in	Stripe Rust %		Protein %
							15-Jun RCB	2-Jul RCB	
		lattice efficiency relative to RCB			107%	119%			
25	#+ LCS Jet	Limagrain Cereal Seeds, 2015	124.6	59.1	158.9	34.5	2	3	13.4
45	+ MT1564	Yellowstone*2/PI640431	118.6	63.1	157.8	39.1	1	3	12.7
37	MTW1491	MT08189//MT08187/(MTW08166,	115.6	62.5	162.5	39.7	3	11	12.3
42	d + MT1542	MT0097/Yellowstone/MT03108	113.0	61.1	160.7	38.4	2	2	12.5
35	d MT1471	Yellowstone/NuDakota	111.5	61.3	161.6	37.9	2	3	13.8
26	#+ Long Branch	Dyna-Gro Wheat, 2015	109.8	61.3	154.8	37.2	5	7	12.0
28	MT1265	Yellowstone*4/KS96WGRC40 (Lr4	108.6	60.0	162.4	40.5	5	20	12.6
38	+ MTF1432	Yellowstone*2/98X168E1	107.5	58.9	166.0	43.7	3	14	12.7
22	#+ LCS Chrome	Limagrain Cereal Seeds, 2016	107.2	61.1	158.0	39.9	2	3	13.3
34	MT1465	Yellowstone/MT0684	104.5	61.1	160.6	36.1	3	11	13.3
33	d MT1444	Yellowstone*2/MTW0590	103.8	60.3	161.7	39.2	1	14	13.1
43	+ MT1547	Yellowstone/MT0684	102.9	61.4	160.1	36.3	1	6	13.5
46	d + MTF1559	Yellowstone*2/98X168E1	102.5	56.7	167.4	43.0	3	15	12.7
20	d #+ BZ9WM09-1620	Westbred exp. CLP	102.5	61.2	159.7	40.3	4	11	12.7
17	# WB4623CLP	WestBred, 2015	101.1	63.0	159.0	37.5	1	7	13.2
39	+ MTF1435	MT08186//Yellowstone(L)*2/98X16	100.8	61.6	163.1	45.6	2	24	12.8
41	d + MT1540	Yellowstone*2/MTW0590	99.6	61.1	160.2	38.1	3	11	13.1
32	d MT1348	PI572290/BigSky	99.4	60.1	159.2	39.7	5	20	12.4
14	d MTCL1131	Clearstone sib	99.3	60.3	162.6	39.6	4	21	12.6
11	# SY Monument	Syngenta (AgriPro), 2015	99.2	57.9	158.7	35.3	5	7	12.5
7	SY Clearstone 2CL	Montana/Syngenta, 2012	98.9	58.5	160.9	38.9	3	18	12.3
48	d + MTS1573	Danby/2*MTS04114	98.3	61.9	158.9	40.0	8	12	12.5
15	# Keldin	WestBred, 2011	97.7	60.1	159.6	36.7	5	60	12.7
12	# SY Sunrise	Syngenta (AgriPro), 2015	97.1	61.7	157.2	33.7	19	21	12.7
44	+ MT1563	Yellowstone*2/PI640431	96.5	59.5	162.8	39.9	4	19	12.8
40	d + MT1507	MT0686//Yellowstone/Duster	96.1	61.1	160.4	37.1	4	10	13.2
27	Loma	Montana, 2016	95.9	60.4	162.8	35.7	7	7	12.9
36	d MT1488	MTR00118/MT0241//CDC Falcon	93.9	61.9	161.9	38.5	10	5	13.0
3	Warhorse	Montana, 2013	93.4	60.3	162.6	36.2	2	4	13.6
49	+ MTS1588	MT0598/98X366E29-1	91.2	60.5	161.4	34.3	3	9	13.7
9	Northern	Montana, 2015	90.4	58.6	162.4	37.3	8	14	13.4
23	#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line	90.3	61.6	159.4	39.6	3	24	13.3
2	Judee	Montana, 2011	90.0	60.6	159.8	36.8	6	9	13.5
1	Warhorse #2 ^{1/}	Yellowstone misplanted	88.2	60.2	162.2	37.8	1	3	14.3
47	d + MT1565	Decade*2//Promontory/3*Yellowst	85.0	59.6	158.7	35.5	8	14	13.3
8	d WB-Quake	WestBred, 2011	82.8	60.6	163.0	38.0	12	19	12.9
30	#+ Langin	Colorado Wheat Res. Fdn., 2016	79.0	57.2	155.7	34.9	19	44	12.0
13	#+ 07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2	79.0	59.1	155.1	32.6	15	52	12.8
10	SY Wolf	Syngenta (AgriPro), 2010	77.5	58.4	159.0	35.7	4	35	13.2
29	d #+ Denali	Colorado Wheat Res. Fdn., 2011	65.8	60.4	157.8	38.8	27	94	11.6
24	d #+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line	65.0	55.0	158.3	36.9	15	66	13.9
4	# Brawl CLP	Colorado Wheat Res. Fdn., 2011	62.7	56.3	155.3	36.7	44	79	13.5
31	#+ CO13003C	CO06072/4*Byrd (Als1, Als2)	62.4	56.4	157.8	38.7	42	73	12.5
16	# WB4614	WestBred, 2014	60.5	60.1	159.8	35.0	8	35	13.6
18	# WB4483	WestBred, 2016 (solid stem, BZ9V	53.3	56.0	162.6	34.0	45	66	14.7
6	Bearpaw	Montana, 2011	46.0	58.0	159.5	36.7	21	82	13.7
5	Decade	Montana/North Dakota, 2010	42.7	56.4	159.6	35.5	35	71	13.2
21	d #+ BZ9W09-2216	Westbred exp. solid stem	40.0	57.3	161.8	33.0	70	89	12.5
19	# WB4575	WestBred, 2016 (BZ9W09-2075)	24.2	55.2	160.6	31.9	61	91	15.1
	Average		89.3	59.7	160.2	37.5	11.5	27.2	13.1
	LSD (0.05)		10.2	1.0	1.1	2.1	12.4	13.2	
	C. V. (%)		6.9	0.9	0.4	3.5	65	29	
	P-value (Varieties)		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 3. 2017 Intrastate Winter Wheat Test (Exp. 3502): Havre

Entry	Cultivar/Line	Pedigree	Yield bu/ac	Test weight lb/bu	Heading date Julian	Plant height in	Protein %
	d = cultivars/lines dropped for 2018 test + = new for 2017, # = paid entry		LAT	LAT	LAT	LAT	LAT
		lattice efficiency relative to RCB	122%	126%	124%	101%	155%
37	MTW1491	MT08189//MT08187/(MTW08166,	60.0	62.9	152.8	27.4	13.5
44	+ MT1563	Yellowstone*2/PI640431	59.3	62.8	152.6	27.5	13.6
15	# Keldin	WestBred, 2011	56.7	62.2	151.8	27.1	12.9
49	+ MTS1588	MT0598/98X366E29-1	56.1	62.3	153.3	23.4	14.1
28	MT1265	Yellowstone*4/KS96WGRC40 (Lr4	54.9	62.6	153.3	27.5	14.4
33	d MT1444	Yellowstone*2/MTW0590	54.5	62.7	152.2	26.8	13.7
10	SY Wolf	Syngenta (AgriPro), 2010	53.8	63.1	149.9	25.2	13.7
23	#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line	53.7	62.7	150.0	27.7	14.4
29	d #+ Denali	Colorado Wheat Res. Fdn., 2011	53.0	62.9	149.5	25.7	13.3
11	# SY Monument	Syngenta (AgriPro), 2015	53.0	61.4	149.8	25.8	12.8
32	d MT1348	PI572290/BigSky	52.9	62.3	150.4	26.4	13.3
47	d + MT1565	Decade*2//Promontory/3*Yellowst	52.7	61.1	150.3	23.4	14.6
42	d + MT1542	MT0097/Yellowstone/MT03108	52.6	62.4	152.9	24.6	13.9
12	# SY Sunrise	Syngenta (AgriPro), 2015	52.5	62.2	149.4	22.4	13.5
31	#+ CO13003C	CO06072/4*Byrd (Als1, Als2)	52.4	61.3	149.0	25.1	13.7
40	d + MT1507	MT0686//Yellowstone/Duster	52.4	62.8	151.3	26.5	13.7
38	+ MTF1432	Yellowstone*2/98X168E1	52.3	61.7	155.0	28.1	13.3
9	Northern	Montana, 2015	52.0	62.2	153.8	22.9	14.5
48	d + MTS1573	Danby/2*MTS04114	51.7	62.1	150.3	24.8	13.5
45	+ MT1564	Yellowstone*2/PI640431	51.5	62.4	147.6	28.6	13.7
18	# WB4483	WestBred, 2016 (solid stem, BZ9V	51.3	62.4	152.8	22.5	14.3
16	# WB4614	WestBred, 2014	51.2	62.0	152.0	24.0	13.9
19	# WB4575	WestBred, 2016 (BZ9W09-2075)	51.0	62.8	150.6	24.2	14.9
14	d MTCL1131	Clearstone sib	50.9	62.4	153.5	26.2	14.3
26	#+ Long Branch	Dyna-Gro Wheat, 2015	50.5	60.3	147.1	25.8	13.2
35	d MT1471	Yellowstone/NuDakota	50.4	62.1	152.4	25.3	14.9
34	MT1465	Yellowstone/MT0684	50.4	62.5	150.4	25.0	14.4
36	d MT1488	MTR00118/MT0241//CDC Falcon	50.2	62.4	152.9	23.3	14.6
46	d + MTF1559	Yellowstone*2/98X168E1	50.2	60.7	156.6	25.8	14.2
21	d #+ BZ9W09-2216	Westbred exp. solid stem	50.1	62.5	152.0	22.7	14.0
43	+ MT1547	Yellowstone/MT0684	49.9	62.4	151.3	25.9	14.4
2	Judee	Montana, 2011	49.5	62.9	151.2	26.2	14.3
30	#+ Langin	Colorado Wheat Res. Fdn., 2016	49.2	61.9	146.2	23.0	13.1
27	Loma	Montana, 2016	48.7	62.1	154.3	22.2	14.1
5	Decade	Montana/North Dakota, 2010	48.3	61.8	151.4	25.1	14.4
25	#+ LCS Jet	Limagrain Cereal Seeds, 2015	48.3	60.3	155.2	20.2	13.0
24	d #+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line	48.2	59.8	148.3	25.7	14.4
41	d + MT1540	Yellowstone*2/MTW0590	48.0	62.6	151.8	26.7	14.9
7	SY Clearstone 2CL	Montana/Syngenta, 2012	47.8	62.1	152.3	26.4	14.6
22	#+ LCS Chrome	Limagrain Cereal Seeds, 2016	47.5	61.6	149.0	26.3	14.2
20	d #+ BZ9WM09-1620	Westbred exp. CLP	44.9	63.2	153.4	27.1	13.5
39	+ MTF1435	MT08186//Yellowstone(L)*2/98X16	44.9	62.4	153.8	32.2	13.9
1	Warhorse #2 ^{1/}	<i>Yellowstone misplanted</i>	44.1	62.0	153.3	22.7	15.0
3	Warhorse	Montana, 2013	44.0	62.1	152.9	23.6	15.0
17	# WB4623CLP	WestBred, 2015	43.7	61.9	150.9	23.1	13.7
4	# Brawl CLP	Colorado Wheat Res. Fdn., 2011	43.6	62.7	146.4	27.7	14.1
6	Bearpaw	Montana, 2011	42.9	61.5	150.8	21.3	14.7
8	d WB-Quake	WestBred, 2011	42.8	62.6	153.5	23.1	14.3
13	#+ 07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2	35.7	62.9	146.2	25.0	14.3
	Average		50.1	62.1	151.4	25.2	14.0
	LSD (0.05)		5.2	0.5	1.1	2.8	0.6
	C. V. (%)		6.0	0.5	0.4	6.8	2.4
	P-value (Varieties)		<.0001	<.0001	<.0001	<.0001	<.0001

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 4. 2017 Intrastate Winter Wheat Test (Exp. 3503): Sidney

Entry	Cultivar/Line	Pedigree	Yield bu/ac	Test weight lb/bu	Winter survival % May 8	Heading date Julian	Plant height in	Protein %
			LAT	LAT	LAT	LAT	LAT	LAT
		lattice efficiency relative to RCB	195%	128%	299%	111%	116%	128%
40	d + MT1507	MT0686//Yellowstone/Duster	52.6	64.9	45.0	151.6	24.3	7.9
5	Decade	Montana/North Dakota, 2010	50.7	64.9	62.4	151.4	21.6	8.7
12	# SY Sunrise	Syngenta (AgriPro), 2015	47.6	65.6	63.1	149.8	18.4	9.4
21	d #+ BZ9W09-2216	Westbred exp. solid stem	46.9	65.6	34.5	152.9	20.0	9.1
43	+ MT1547	Yellowstone/MT0684	45.8	64.8	49.8	152.3	21.7	9.2
24	d #+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line	45.7	65.8	54.5	150.8	18.1	8.9
11	# SY Monument	Syngenta (AgriPro), 2015	45.0	63.6	48.6	152.0	21.4	7.7
28	MT1265	Yellowstone*4/KS96WGRC40 (Lr	44.5	64.0	45.3	153.7	23.7	8.2
44	+ MT1563	Yellowstone*2/PI640431	43.6	64.4	54.1	152.6	23.5	9.0
38	+ MTF1432	Yellowstone*2/98X168E1	43.5	63.2	33.6	155.4	24.2	9.1
19	# WB4575	WestBred, 2016 (BZ9W09-2075)	43.4	65.7	49.4	152.9	23.0	10.2
14	d MTCL1131	Clearstone sib	43.3	64.5	36.4	154.8	23.1	9.0
39	+ MTF1435	MT08186//Yellowstone(L)*2/98X168E1	42.4	63.4	44.9	154.8	26.0	8.6
47	d + MT1565	Decade*2//Promontory/3*Yellowstone	42.4	64.8	53.0	151.0	22.9	9.4
32	d MT1348	PI572290/BigSky	42.3	64.5	46.8	152.2	21.8	9.0
31	#+ CO13003C	CO06072/4*Byrd (Als1, Als2)	42.1	64.7	34.7	151.0	20.6	7.1
16	# WB4614	WestBred, 2014	41.7	65.4	33.5	153.1	20.3	9.0
33	d MT1444	Yellowstone*2/MTW0590	41.4	64.4	48.0	153.1	21.6	9.4
29	d #+ Denali	Colorado Wheat Res. Fdn., 2011	41.3	65.1	48.2	152.2	24.8	8.4
7	SY Clearstone 2CL	Montana/Syngenta, 2012	41.3	64.4	46.8	152.6	22.0	8.4
34	MT1465	Yellowstone/MT0684	41.1	64.8	45.8	152.2	20.7	8.3
41	d + MT1540	Yellowstone*2/MTW0590	40.2	64.8	55.4	153.2	21.2	9.7
22	#+ LCS Chrome	Limagrain Cereal Seeds, 2016	40.1	65.3	41.0	151.7	20.6	10.1
45	+ MT1564	Yellowstone*2/PI640431	39.3	66.1	48.5	150.4	22.4	9.6
1	Warhorse #2 ^{1/}	<i>Yellowstone misplanted</i>	38.8	64.5	50.1	152.1	19.2	8.8
42	d + MT1542	MT0097/Yellowstone/MT03108	38.7	64.5	32.8	155.1	19.2	8.5
36	d MT1488	MTR00118/MT0241//CDC Falcon	38.3	63.3	43.6	155.2	19.8	10.3
23	#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line	38.2	65.0	47.7	151.5	24.0	10.2
49	+ MTS1588	MT0598/98X366E29-1	37.8	64.8	19.0	154.9	19.7	9.3
8	d WB-Quake	WestBred, 2011	37.7	64.9	35.8	154.9	21.0	9.4
37	MTW1491	MT08189//MT08187/(MTW08166,	37.1	64.7	44.6	154.6	21.8	9.4
46	d + MTF1559	Yellowstone*2/98X168E1	36.7	61.4	33.8	157.3	23.3	9.3
9	Northern	Montana, 2015	36.7	64.3	36.7	155.3	17.7	9.4
27	Loma	Montana, 2016	36.5	62.9	39.3	155.8	18.1	10.6
6	Bearpaw	Montana, 2011	35.5	64.5	35.5	152.6	20.9	9.6
30	#+ Langin	Colorado Wheat Res. Fdn., 2016	34.8	64.1	36.1	149.1	20.0	8.5
18	# WB4483	WestBred, 2016 (solid stem, BZ9V	34.7	65.7	42.2	154.6	16.7	9.3
26	#+ Long Branch	Dyna-Gro Wheat, 2015	33.7	64.9	50.1	149.8	20.7	8.8
10	SY Wolf	Syngenta (AgriPro), 2010	33.3	65.9	36.8	151.4	19.5	9.4
3	Warhorse	Montana, 2013	32.6	63.4	49.4	154.4	19.3	10.4
25	#+ LCS Jet	Limagrain Cereal Seeds, 2015	32.0	62.2	11.0	154.0	18.7	9.1
48	d + MTS1573	Danby/2*MTS04114	30.6	64.6	39.8	152.4	20.6	9.3
35	d MT1471	Yellowstone/NuDakota	30.0	64.9	35.0	153.5	20.2	9.0
15	# Keldin	WestBred, 2011	29.9	64.6	29.3	153.8	22.3	9.3
4	# Brawl CLP	Colorado Wheat Res. Fdn., 2011	28.6	65.2	27.2	150.2	21.6	10.7
13	#+ 07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2	25.8	66.2	20.6	149.7	19.1	10.3
20	d #+ BZ9WM09-1620	Westbred exp. CLP	20.3	62.7	0.9	155.2	21.7	11.6
2	Judee	Montana, 2011	13.7	64.1	23.7	155.5	17.5	12.2
17	# WB4623CLP	WestBred, 2015	5.3	63.0	0.0	155.9	20.1	12.7
	Average		37.7	64.5	39.6	153.0	21.0	9.4
	LSD (0.05)		13.2	1.3	15.7	1.9	3.0	1.6
	C. V. (%)		19.8	1.1	22.2	0.7	8.2	9.9
	P-value (Varieties)		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 5. 2017 Intrastate Winter Wheat Test (Exp. 3504): Williston, ND

Entry	Cultivar/Line	Pedigree	*** Test not harvested***					
			Yield bu/ac	Test weight lb/bu	Winter survival % May 8	Heading date Julian RCB	Plant height in LAT	Protein %
			LAT	LAT	LAT	RCB	LAT	LAT
		lattice efficiency relative to RCB				137%		
5	Decade	Montana/North Dakota, 2010				25.0		
11	# SY Monument	Syngenta (AgriPro), 2015				17.9		
44	+ MT1563	Yellowstone*2/PI640431				15.7		
12	# SY Sunrise	Syngenta (AgriPro), 2015				13.9		
19	# WB4575	WestBred, 2016 (BZ9W09-2075)				12.6		
1	Warhorse #2 ^{1/}	<i>Yellowstone misplanted</i>				11.9		
48	d + MTS1573	Danby/2*MTS04114				11.5		
2	Judee	Montana, 2011				11.5		
4	# Brawl CLP	Colorado Wheat Res. Fdn., 2011				11.4		
28	MT1265	Yellowstone*4/KS96WGRC40 (Lr41, wcm)				9.9		
41	d + MT1540	Yellowstone*2/MTW0590				9.1		
14	d MTCL1131	Clearstone sib				8.7		
24	d #+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line				8.5		
3	Warhorse	Montana, 2013				7.7		
32	d MT1348	PI572290/BigSky				7.7		
9	Northern	Montana, 2015				7.5		
47	d + MT1565	Decade*2//Promontory/3*Yellowstone				7.4		
26	#+ Long Branch	Dyna-Gro Wheat, 2015				7.3		
22	#+ LCS Chrome	Limagrain Cereal Seeds, 2016				7.3		
40	d + MT1507	MT0686//Yellowstone/Duster				7.2		
36	d MT1488	MTR00118/MT0241//CDC Falcon				6.9		
29	d #+ Denali	Colorado Wheat Res. Fdn., 2011				6.6		
6	Bearpaw	Montana, 2011				6.5		
15	# Keldin	WestBred, 2011				6.3		
33	d MT1444	Yellowstone*2/MTW0590				6.3		
39	+ MTF1435	MT08186//Yellowstone(L)*2/98X168E1				6.3		
21	d #+ BZ9W09-2216	Westbred exp. solid stem				6.3		
16	# WB4614	WestBred, 2014				5.9		
35	d MT1471	Yellowstone/NuDakota				5.7		
37	MTW1491	MT08189//MT08187/(MTW08166, WB3768 sib)				5.7		
45	+ MT1564	Yellowstone*2/PI640431				5.6		
7	SY Clearstone 2CL	Montana/Syngenta, 2012				5.1		
30	#+ Langin	Colorado Wheat Res. Fdn., 2016				4.9		
18	# WB4483	WestBred, 2016 (solid stem, BZ9W09-2212)				4.9		
42	d + MT1542	MT0097//Yellowstone/MT03108				4.6		
10	SY Wolf	Syngenta (AgriPro), 2010				4.4		
34	MT1465	Yellowstone/MT0684				3.4		
23	#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line				2.8		
27	Loma	Montana, 2016				2.7		
13	#+ 07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2				2.6		
49	+ MTS1588	MT0598/98X366E29-1				2.5		
17	# WB4623CLP	WestBred, 2015				1.9		
43	+ MT1547	Yellowstone/MT0684				1.9		
8	d WB-Quake	WestBred, 2011				1.8		
31	#+ CO13003C	CO06072/4*Byrd (Als1, Als2)				1.6		
20	d #+ BZ9WM09-1620	Westbred exp. CLP				1.2		
38	+ MTF1432	Yellowstone*2/98X168E1				1.0		
46	d + MTF1559	Yellowstone*2/98X168E1				0.9		
25	#+ LCS Jet	Limagrain Cereal Seeds, 2015				0.0		
Average						6.8		
LSD (0.05)						7.0		
C. V. (%)						58.6		
P-value (Varieties)						<.0001		

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 6. 2017 Intrastate Winter Wheat Test (Exp. 3505): Kalispell

		*** Spring flooded - test abandoned ***					
Entry	Cultivar/Line	Pedigree	Yield bu/ac	Test weight lb/bu	Heading date Julian	Plant height in	Protein %
d = cultivars/lines dropped for 2018 test + = new for 2017, # = paid entry			RCB	LAT	LAT	LAT	LAT
		lattice efficiency relative to RCB					
1	Warhorse #2 ^{1/}	<i>Yellowstone misplanted</i>					
2	Judee	Montana, 2011					
3	Warhorse	Montana, 2013					
4	# Brawl CLP	Colorado Wheat Res. Fdn., 2011					
5	Decade	Montana/North Dakota, 2010					
6	Bearpaw	Montana, 2011					
7	SY Clearstone 2CL	Montana/Syngenta, 2012					
8	WB-Quake	WestBred, 2011					
9	Northern	Montana, 2015					
10	SY Wolf	Syngenta (AgriPro), 2010					
11	# SY Monument	Syngenta (AgriPro), 2015					
12	# SY Sunrise	Syngenta (AgriPro), 2015					
13	#+ 07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2					
14	MTCL1131	Clearstone sib					
15	# Keldin	WestBred, 2011					
16	# WB4614	WestBred, 2014					
17	# WB4623CLP	WestBred, 2015					
18	# WB4483	WestBred, 2016 (solid stem, BZ9W09-2212)					
19	# WB4575	WestBred, 2016 (BZ9W09-2075)					
20	#+ BZ9WM09-1620	Westbred exp. CLP					
21	#+ BZ9W09-2216	Westbred exp. solid stem					
22	#+ LCS Chrome	Limagrain Cereal Seeds, 2016					
23	#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line					
24	#+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line					
25	#+ LCS Jet	Limagrain Cereal Seeds, 2015					
26	#+ Long Branch	Dyna-Gro Wheat, 2015					
27	Loma	Montana, 2016					
28	MT1265	Yellowstone*4/KS96WGRC40 (Lr41, wcm)					
29	#+ Denali	Colorado Wheat Res. Fdn., 2011					
30	#+ Langin	Colorado Wheat Res. Fdn., 2016					
31	#+ CO13003C	CO06072/4*Byrd (Als1, Als2)					
32	MT1348	PI572290/BigSky					
33	MT1444	Yellowstone*2/MTW0590					
34	MT1465	Yellowstone/MT0684					
35	MT1471	Yellowstone/NuDakota					
36	MT1488	MTR00118/MT0241//CDC Falcon					
37	MTW1491	MT08189//MT08187/(MTW08166, WB3768 sib)					
38	+ MTF1432	Yellowstone*2/98X168E1					
39	+ MTF1435	MT08186//Yellowstone(L)*2/98X168E1					
40	+ MT1507	MT0686//Yellowstone/Duster					
41	+ MT1540	Yellowstone*2/MTW0590					
42	+ MT1542	MT0097/Yellowstone/MT03108					
43	+ MT1547	Yellowstone/MT0684					
44	+ MT1563	Yellowstone*2/PI640431					
45	+ MT1564	Yellowstone*2/PI640431					
46	+ MTF1559	Yellowstone*2/98X168E1					
47	+ MT1565	Decade*2//Promontory/3*Yellowstone					
48	+ MTS1573	Danby/2*MTS04114					
49	+ MTS1588	MT0598/98X366E29-1					
Average							
LSD (0.05)							
C. V. (%)							
P-value (Varieties)							

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 7. 2017 Intrastate Winter Wheat Test (Exp. 3507): Moccasin

Entry	Cultivar/Line	Pedigree	Yield bu/ac	Test weight lb/bu	Heading date Julian	Plant height in	Protein %
d = cultivars/lines dropped for 2018 test + = new for 2017, # = paid entry			LAT	LAT	LAT	LAT	LAT
		lattice efficiency relative to RCB	150%	101%	111%	132%	118%
35	d MT1471	Yellowstone/NuDakota	72.5	58.5	158.0	28.9	14.0
39	+ MTF1435	MT08186//Yellowstone(L)*2/98X11	70.7	57.9	161.4	37.6	13.3
11	# SY Monument	Syngenta (AgriPro), 2015	70.0	57.6	156.9	26.5	11.9
45	+ MT1564	Yellowstone*2/PI640431	69.3	58.3	154.5	27.4	13.1
15	# Keldin	WestBred, 2011	69.1	58.3	160.9	28.6	13.4
14	d MTCL1131	Clearstone sib	68.8	58.5	159.2	32.3	13.3
24	d #+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line	68.0	56.8	154.1	27.4	13.0
43	+ MT1547	Yellowstone/MT0684	68.0	58.1	158.0	28.4	13.4
23	#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line	67.1	59.0	157.8	28.0	13.6
37	MTW1491	MT08189//MT08187/(MTW08166,	66.9	58.6	158.4	28.7	13.1
44	+ MT1563	Yellowstone*2/PI640431	66.6	59.1	159.6	30.2	13.7
30	#+ Langin	Colorado Wheat Res. Fdn., 2016	66.5	58.1	153.1	23.3	11.4
4	# Brawl CLP	Colorado Wheat Res. Fdn., 2011	65.8	62.0	153.0	25.6	12.6
40	d + MT1507	MT0686//Yellowstone/Duster	65.7	58.9	158.1	28.0	12.9
28	MT1265	Yellowstone*4/KS96WGRC40 (Lr	65.6	56.4	159.4	31.4	13.8
22	#+ LCS Chrome	Limagrain Cereal Seeds, 2016	65.6	58.8	154.2	27.3	13.1
33	d MT1444	Yellowstone*2/MTW0590	65.6	58.4	157.9	28.5	13.9
25	#+ LCS Jet	Limagrain Cereal Seeds, 2015	65.5	54.4	161.9	27.2	13.0
29	d #+ Denali	Colorado Wheat Res. Fdn., 2011	64.7	58.4	157.0	27.7	12.0
32	d MT1348	PI572290/BigSky	64.3	58.4	154.9	26.3	13.1
7	SY Clearstone 2CL	Montana/Syngenta, 2012	63.6	58.1	158.9	30.4	13.3
3	Warhorse	Montana, 2013	63.4	57.2	158.7	27.3	13.6
12	# SY Sunrise	Syngenta (AgriPro), 2015	63.1	60.7	154.4	25.3	13.2
31	#+ CO13003C	CO06072/4*Byrd (Als1, Als2)	62.9	56.0	154.2	28.1	12.0
26	#+ Long Branch	Dyna-Gro Wheat, 2015	62.9	59.0	153.3	25.8	12.6
13	#+ 07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2	62.1	58.5	152.6	24.2	12.7
47	d + MT1565	Decade*2//Promontory/3*Yellowst	61.9	57.4	154.2	25.8	13.7
38	+ MTF1432	Yellowstone*2/98X168E1	61.4	56.4	166.2	31.0	13.7
16	# WB4614	WestBred, 2014	60.8	56.5	156.5	26.1	13.5
49	+ MTS1588	MT0598/98X366E29-1	60.7	59.2	159.7	25.8	13.1
9	Northern	Montana, 2015	60.4	57.3	161.1	25.6	14.4
48	d + MTS1573	Danby/2*MTS04114	60.4	59.5	155.7	27.3	13.1
41	d + MT1540	Yellowstone*2/MTW0590	60.3	58.8	156.3	28.1	13.1
2	Judee	Montana, 2011	60.2	59.1	157.9	27.6	14.0
46	d + MTF1559	Yellowstone*2/98X168E1	59.7	54.4	169.8	35.4	14.2
42	d + MT1542	MT0097//Yellowstone/MT03108	59.5	56.6	156.9	28.3	13.3
34	MT1465	Yellowstone/MT0684	59.4	58.2	158.2	27.0	13.6
10	SY Wolf	Syngenta (AgriPro), 2010	59.2	60.1	155.9	26.6	12.6
5	Decade	Montana/North Dakota, 2010	59.0	58.4	155.6	26.4	13.7
6	Bearpaw	Montana, 2011	58.9	59.0	155.7	27.8	13.4
27	Loma	Montana, 2016	58.5	58.0	160.5	25.0	13.6
1	Warhorse #2 ^{1/}	<i>Yellowstone misplanted</i>	57.8	57.3	158.6	27.0	13.7
18	# WB4483	WestBred, 2016 (solid stem, BZ9v	57.2	55.3	159.1	26.6	13.9
20	d #+ BZ9WM09-1620	Westbred exp. CLP	55.5	57.7	157.0	28.9	13.5
17	# WB4623CLP	WestBred, 2015	54.7	59.5	158.0	25.3	13.9
19	# WB4575	WestBred, 2016 (BZ9W09-2075)	54.7	60.5	157.7	26.0	13.1
36	d MT1488	MTR00118/MT0241//CDC Falcon	53.5	57.4	159.1	27.0	13.6
8	d WB-Quake	WestBred, 2011	53.2	57.4	161.7	29.3	14.0
21	d #+ BZ9W09-2216	Westbred exp. solid stem	52.5	60.2	160.5	27.4	12.5
Average			62.5	58.1	157.8	27.8	13.3
LSD (0.05)			10.2	2.6	3.0	3.0	0.5
C. V. (%)			9.3	2.7	1.1	6.1	2.0
P-value (Varieties)			0.0032	0.0002	<.0001	0.0001	<.0001

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 8. 2017 Intrastate Winter Wheat Test (Exp. 3508): Huntley

Entry	Cultivar/Line	Pedigree	Yield	Test	Heading	Plant	Stripe		Protein
			bu/ac	weight	date	height	rust %	%	
d = cultivars/lines dropped for 2018 test + = new for 2017, # = paid entry			RCB	RCB	RCB	RCB	6-Jun	20-Jun	RCB
							RCB	RCB	RCB
lattice efficiency relative to RCB									
25	#+ LCS Jet	Limagrain Cereal Seeds, 2015	140.3	61.7	150.3	38.9	0	1	13.8
15	# Keldin	WestBred, 2011	135.1	63.8	152.3	40.9	2	21	12.4
45	+ MT1564	Yellowstone*2/PI640431	131.8	63.1	147.0	44.8	1	3	12.8
11	# SY Monument	Syngenta (AgriPro), 2015	129.9	62.8	149.3	42.5	0	0	12.4
30	#+ Langin	Colorado Wheat Res. Fdn., 2016	128.8	62.5	143.7	40.7	10	12	11.3
14	d MTCL1131	Clearstone sib	128.7	62.5	155.0	45.0	2	6	13.2
26	#+ Long Branch	Dyna-Gro Wheat, 2015	127.7	62.6	147.0	44.6	0	5	12.2
32	d MT1348	PI572290/BigSky	126.0	62.9	152.3	42.7	2	3	12.8
37	MTW1491	MT08189//MT08187/(MTW08166,	125.8	62.9	154.3	44.7	3	3	13.3
31	#+ CO13003C	CO06072/4*Byrd (Als1, Als2)	125.3	62.0	148.3	44.2	73	68	11.7
40	d + MT1507	MT0686//Yellowstone/Duster	123.3	62.5	153.0	42.0	0	2	13.1
10	SY Wolf	Syngenta (AgriPro), 2010	122.8	64.0	149.3	42.8	15	7	13.1
22	#+ LCS Chrome	Limagrain Cereal Seeds, 2016	122.3	63.0	149.0	43.0	0	0	13.3
35	d MT1471	Yellowstone/NuDakota	119.8	62.4	154.7	43.0	0	3	14.6
29	d #+ Denali	Colorado Wheat Res. Fdn., 2011	119.4	63.9	149.7	43.7	79	99	11.8
7	SY Clearstone 2CL	Montana/Syngenta, 2012	119.4	61.5	154.7	46.1	13	14	13.8
12	# SY Sunrise	Syngenta (AgriPro), 2015	119.2	64.2	149.0	38.3	0	0	12.4
33	d MT1444	Yellowstone*2/MTW0590	117.4	61.9	153.7	42.3	0	6	13.6
34	MT1465	Yellowstone/MT0684	116.4	62.9	153.7	39.6	5	1	13.3
16	# WB4614	WestBred, 2014	116.4	62.3	152.7	38.8	6	7	12.7
48	d + MTS1573	Danby/2*MTS04114	116.2	62.9	152.0	41.6	7	10	14.1
47	d + MT1565	Decade*2//Promontory/3*Yellowst	116.0	61.7	152.7	38.3	3	2	14.2
4	# Brawl CLP	Colorado Wheat Res. Fdn., 2011	115.8	64.5	143.3	43.1	64	61	13.3
2	Judee	Montana, 2011	115.4	63.1	153.0	42.3	2	0	13.9
23	#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line	115.3	64.0	152.7	43.4	2	6	13.8
17	# WB4623CLP	WestBred, 2015	115.1	63.3	152.0	42.1	2	2	14.8
24	d #+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line	115.0	61.7	150.0	42.9	22	25	13.1
42	d + MT1542	MT0097//Yellowstone/MT03108	114.6	61.9	154.0	40.8	1	1	12.9
43	+ MT1547	Yellowstone/MT0684	113.8	62.5	153.3	40.7	2	2	13.7
28	MT1265	Yellowstone*4/KS96WGRC40 (Lr4	113.5	61.4	154.7	43.5	2	1	13.9
44	+ MT1563	Yellowstone*2/PI640431	113.5	61.8	154.3	43.0	1	5	13.8
38	+ MTF1432	Yellowstone*2/98X168E1	113.2	60.3	156.3	48.2	4	7	13.5
9	Northern	Montana, 2015	113.1	61.4	155.3	40.6	0	1	13.5
27	Loma	Montana, 2016	111.3	61.4	156.7	39.0	3	1	12.9
41	d + MT1540	Yellowstone*2/MTW0590	110.8	62.7	154.0	40.3	2	4	13.2
3	Warhorse	Montana, 2013	110.5	63.0	154.3	40.6	3	6	13.7
20	d #+ BZ9WM09-1620	Westbred exp. CLP	110.1	63.1	152.7	43.2	0	9	13.5
49	+ MTS1588	MT0598/98X366E29-1	109.9	62.3	153.0	37.3	1	1	14.0
36	d MT1488	MTR00118/MT0241//CDC Falcon	106.8	62.0	155.0	41.3	1	2	13.3
46	d + MTF1559	Yellowstone*2/98X168E1	106.4	58.0	159.0	47.3	0	1	13.8
13	#+ 07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2	103.7	64.5	143.3	40.4	11	9	12.8
18	# WB4483	WestBred, 2016 (solid stem, BZ9V	101.5	60.6	155.3	39.8	38	73	13.7
5	Decade	Montana/North Dakota, 2010	100.9	62.1	153.3	42.3	40	77	13.2
8	d WB-Quake	WestBred, 2011	100.2	62.2	154.7	41.1	0	5	13.8
39	+ MTF1435	MT08186//Yellowstone(L)*2/98X16	95.5	62.2	155.3	52.5	5	4	13.4
6	Bearpaw	Montana, 2011	82.3	60.4	153.0	41.2	79	96	14.4
21	d #+ BZ9W09-2216	Westbred exp. solid stem	78.0	59.8	155.0	38.3	97	100	12.4
19	# WB4575	WestBred, 2016 (BZ9W09-2075)	74.5	60.9	153.0	36.8	85	100	14.1
1	Warhorse #2 ^{1/}	Yellowstone misplanted							
Average			114.4	62.3	152.3	42.1	8.1	13.3	13.3
LSD (0.05)			11.9	1.0	1.3	1.7	6.0	4.4	0.7
C. V. (%)			6.4	1.0	0.5	2.4	52.6	35.0	3.4
P-value (Varieties)									

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 9. 2017 Intrastate Winter Wheat Test (Exp. 3518): Conrad

Entry	Cultivar/Line	Pedigree	Yield bu/ac	Test weight lb/bu	Heading date Julian	Plant height in	Protein %
			LAT	LAT	LAT	LAT	LAT
		lattice efficiency relative to RCB	123%	128%	112%	114%	122%
26	#+ Long Branch	Dyna-Gro Wheat, 2015	91.9	62.4	152.5	29.2	11.9
30	#+ Langin	Colorado Wheat Res. Fdn., 2016	86.8	61.6	153.2	28.0	11.3
29	d #+ Denali	Colorado Wheat Res. Fdn., 2011	85.1	62.1	155.2	29.1	12.5
25	#+ LCS Jet	Limagrain Cereal Seeds, 2015	85.0	58.1	157.6	25.9	12.5
31	#+ CO13003C	CO06072/4*Byrd (Als1, Als2)	83.3	60.8	154.4	31.2	12.0
7	SY Clearstone 2CL	Montana/Syngenta, 2012	80.9	60.2	158.0	34.4	13.2
4	# Brawl CLP	Colorado Wheat Res. Fdn., 2011	80.4	63.6	152.4	28.8	12.5
15	# Keldin	WestBred, 2011	80.1	62.3	156.7	29.2	13.1
10	SY Wolf	Syngenta (AgriPro), 2010	79.6	61.7	156.0	29.6	13.1
49	+ MTS1588	MT0598/98X366E29-1	79.5	60.8	158.3	29.0	13.8
11	# SY Monument	Syngenta (AgriPro), 2015	79.0	59.7	156.1	29.3	12.1
32	d MT1348	PI572290/BigSky	78.5	60.5	156.0	28.7	13.0
42	d + MT1542	MT0097/Yellowstone/MT03108	77.6	59.4	157.6	31.6	12.8
28	MT1265	Yellowstone*4/KS96WGRC40 (Lr	77.5	60.3	158.4	32.1	13.1
12	# SY Sunrise	Syngenta (AgriPro), 2015	76.7	62.9	154.5	25.5	12.6
13	#+ 07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2	76.4	63.2	152.4	28.4	12.5
22	#+ LCS Chrome	Limagrain Cereal Seeds, 2016	75.9	61.7	155.9	31.2	13.2
44	+ MT1563	Yellowstone*2/PI640431	75.6	59.8	158.0	31.8	12.9
19	# WB4575	WestBred, 2016 (BZ9W09-2075)	74.6	61.8	156.1	29.0	13.5
24	d #+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line	74.2	60.0	154.7	29.2	12.8
9	Northern	Montana, 2015	74.2	60.1	158.4	31.3	13.0
40	d + MT1507	MT0686//Yellowstone/Duster	74.0	61.0	157.2	32.4	12.9
16	# WB4614	WestBred, 2014	73.7	62.4	156.4	27.7	13.1
2	Judee	Montana, 2011	73.5	61.9	156.8	29.2	13.5
45	+ MT1564	Yellowstone*2/PI640431	72.9	61.5	154.3	28.4	12.4
48	d + MTS1573	Danby/2*MTS04114	72.9	61.5	155.9	29.9	13.2
6	Bearpaw	Montana, 2011	72.8	60.5	156.9	29.0	13.4
27	Loma	Montana, 2016	72.7	60.5	158.0	28.6	13.5
23	#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line	71.9	62.1	155.5	31.5	13.3
41	d + MT1540	Yellowstone*2/MTW0590	71.8	60.7	156.3	30.4	13.3
34	MT1465	Yellowstone/MT0684	71.3	60.8	157.1	28.4	13.0
33	d MT1444	Yellowstone*2/MTW0590	71.0	60.1	157.7	31.1	13.3
37	MTW1491	MT08189//MT08187//MTW08166,	70.8	60.3	157.6	29.9	12.8
35	d MT1471	Yellowstone/NuDakota	69.9	59.4	157.9	30.6	14.4
14	d MTCL1131	Clearstone sib	69.8	60.0	158.3	32.6	13.0
20	d #+ BZ9WM09-1620	Westbred exp. CLP	69.7	61.5	156.4	31.8	12.3
43	+ MT1547	Yellowstone/MT0684	69.4	60.5	157.0	30.7	13.3
38	+ MTF1432	Yellowstone*2/98X168E1	69.3	57.3	159.9	36.1	13.0
47	d + MT1565	Decade*2//Promontory/3*Yellowst	69.0	60.7	155.4	28.5	13.8
21	d #+ BZ9W09-2216	Westbred exp. solid stem	68.5	62.8	158.4	30.2	12.9
17	# WB4623CLP	WestBred, 2015	68.0	60.4	157.2	29.5	13.4
18	# WB4483	WestBred, 2016 (solid stem, BZ9W	67.6	61.3	158.7	29.5	14.5
5	Decade	Montana/North Dakota, 2010	67.3	62.0	156.6	29.8	13.0
39	+ MTF1435	MT08186//Yellowstone(L)*2/98X1	67.2	60.4	159.3	35.9	12.8
46	d + MTF1559	Yellowstone*2/98X168E1	66.7	56.2	161.4	35.4	12.9
3	Warhorse	Montana, 2013	66.0	59.2	157.3	27.7	13.4
1	Warhorse #2 ^{1/}	Yellowstone misplanted	64.2	59.4	157.4	27.7	13.1
8	d WB-Quake	WestBred, 2011	63.5	62.5	158.9	30.4	13.4
36	d MT1488	MTR00118/MT0241//CDC Falcon	54.8	57.5	159.1	29.7	13.4
	Average		73.7	60.8	156.8	30.1	13.0
	LSD (0.05)		10.3	1.5	1.0	2.2	0.6
	C. V. (%)		8.1	1.4	0.4	4.3	2.7
	P-value (Varieties)		<.0001	<.0001	<.0001	<.0001	<.0001

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 10. 2017 Intrastate Winter Wheat Test (Exp. 35FB): Fort Benton/Carter (Northern Seeds)

Entry	Cultivar/Line	Pedigree	Yield bu/ac	Test weight lb/bu	Test weight lb/bu	Sawfly cutting %	Protein %	
d = cultivars/lines dropped for 2018 test + = new for 2017, # = paid entry			RCB	RCB	bulk	RCB	bulk	
					cleaned	18-Jul		
48	d +	MTS1573	Danby/2*MTS04114	61.0	60.0	63.2	3	11.9
45		+ MT1564	Yellowstone*2/PI640431	59.8	57.4	59.8	47	12.7
18		# WB4483	WestBred, 2016 (solid stem, BZ9v	59.4	57.7	59.0	42	13.2
13		#+ 07CL039-7 (SY 517 CL2)	Syngenta, now SY 517CL2	59.2	59.8	60.7	28	12.8
49		+ MTS1588	MT0598/98X366E29-1	57.5	58.1	60.7	2	12.5
15		# Keldin	WestBred, 2011	57.2	56.9	59.9	48	12.8
27		Loma	Montana, 2016	57.0	58.3	59.4	27	12.8
25		#+ LCS Jet	Limagrain Cereal Seeds, 2015	55.8	56.8	58.1	47	12.3
16		# WB4614	WestBred, 2014	55.2	56.8	61.0	53	12.7
2		Judee	Montana, 2011	54.3	55.7	60.1	22	13.0
23		#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line	54.2	58.2	60.8	90	13.0
21	d	#+ BZ9W09-2216	Westbred exp. solid stem	53.9	58.2	60.5	18	12.6
3		Warhorse	Montana, 2013	53.0	55.9	60.8	2	12.8
5		Decade	Montana/North Dakota, 2010	52.8	58.0	60.0	37	13.0
34		MT1465	Yellowstone/MT0684	52.7	57.6	60.0	68	12.8
37		MTW1491	MT08189//MT08187/(MTW08166,	52.5	54.8	58.6	63	13.2
31		#+ CO13003C	CO06072/4*Byrd (Als1, Als2)	52.3	57.1	60.3	72	12.0
47	d	+ MT1565	Decade*2//Promontory/3*Yellowst	50.4	55.4	58.0	73	13.3
46	d	+ MTF1559	Yellowstone*2/98X168E1	49.7	56.5	60.3	50	12.9
8	d	WB-Quake	WestBred, 2011	49.5	56.2	60.2	7	13.4
17		# WB4623CLP	WestBred, 2015	48.8	56.2	61.3	52	12.8
26		#+ Long Branch	Dyna-Gro Wheat, 2015	48.7	57.9	62.5	72	11.5
20	d	#+ BZ9WM09-1620	Westbred exp. CLP	48.6	57.2	62.3	52	12.2
19		# WB4575	WestBred, 2016 (BZ9W09-2075)	48.3	58.7	59.3	50	12.9
12		# SY Sunrise	Syngenta (AgriPro), 2015	48.2	57.3	61.6	77	12.1
43		+ MT1547	Yellowstone/MT0684	48.0	55.1	60.3	83	13.2
4		# Brawl CLP	Colorado Wheat Res. Fdn., 2011	47.9	57.2	60.4	62	13.0
29	d	#+ Denali	Colorado Wheat Res. Fdn., 2011	47.8	56.8	62.0	70	12.0
42	d	+ MT1542	MT0097//Yellowstone/MT03108	47.1	57.0	59.7	60	12.4
24	d	#+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line	46.8	57.4	57.6	88	12.7
10		SY Wolf	Syngenta (AgriPro), 2010	46.5	53.6	60.3	43	12.9
6		Bearpaw	Montana, 2011	46.2	57.2	59.9	18	12.3
41	d	+ MT1540	Yellowstone*2/MTW0590	46.1	57.0	58.5	88	12.8
1		Warhorse #2 ^{1/}	Yellowstone misplanted	45.9	51.2	61.6	1	12.3
32	d	MT1348	PI572290/BigSky	45.3	58.1	59.5	85	13.0
30		#+ Langin	Colorado Wheat Res. Fdn., 2016	44.8	57.0	59.5	92	12.2
11		# SY Monument	Syngenta (AgriPro), 2015	44.4	53.8	57.5	72	12.4
40	d	+ MT1507	MT0686//Yellowstone/Duster	44.2	56.5	58.2	68	12.8
28		MT1265	Yellowstone*4/KS96WGRC40 (Lr	43.6	55.7	58.4	67	13.7
7		SY Clearstone 2CL	Montana/Syngenta, 2012	43.5	56.1	59.9	78	12.8
9		Northern	Montana, 2015	42.7	54.5	58.1	62	12.5
33	d	MT1444	Yellowstone*2/MTW0590	41.9	57.0	57.7	67	12.1
22		#+ LCS Chrome	Limagrain Cereal Seeds, 2016	41.6	56.6	59.6	92	12.7
44		+ MT1563	Yellowstone*2/PI640431	41.4	53.5	60.1	72	12.6
14	d	MTCL1131	Clearstone sib	41.0	55.4	59.1	75	12.7
35	d	MT1471	Yellowstone/NuDakota	40.8	56.8	57.7	50	13.4
39		+ MTF1435	MT08186//Yellowstone(L)*2/98X11	40.1	54.5	59.9	57	12.5
38		+ MTF1432	Yellowstone*2/98X168E1	39.9	56.7	57.4	60	12.8
36	d	MT1488	MTR00118/MT0241//CDC Falcon	39.2	56.8	58.3	43	12.6
Average				48.9	56.6	59.8	54.2	12.7
LSD (0.05)				ns	2.6		21.1	
C. V. (%)				19.0	2.9		24.1	
P-value (Varieties)				0.2099	<.0001		<.0001	

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 11. 2017 Intrastate Winter Wheat Test (Exp. 35): Multi-Location Yield (bu/a)

Cultivar/Line	Bozeman LAT	Havre LAT	Sidney LAT	Williston winter- kill	Kalispell flooded out	Moccasin LAT	Huntley RCB	Conrad LAT	Ft. Benton RCB	7 Loc Avg.
lattice efficiency	100%	122%	195%			150%		123%		
#+ LCS Jet	124.6	48.3	32.0			65.5	140.3	85.0	55.8	78.8
+ MT1564	118.6	51.5	39.3			69.3	131.8	72.9	59.8	77.6
MTW1491	115.6	60.0	37.1			66.9	125.8	70.8	52.5	75.5
# Keldin	97.7	56.7	29.9			69.1	135.1	80.1	57.2	75.1
#+ Long Branch	109.8	50.5	33.7			62.9	127.7	91.9	48.7	75.0
# SY Monument	99.2	53.0	45.0			70.0	129.9	79.0	44.4	74.4
d MT1348	99.4	52.9	42.3			64.3	126.0	78.5	45.3	72.7
MT1265	108.6	54.9	44.5			65.6	113.5	77.5	43.6	72.6
+ d MT1507	96.1	52.4	52.6			65.7	123.3	74.0	44.2	72.6
# SY Sunrise	97.1	52.5	47.6			63.1	119.2	76.7	48.2	72.1
+ d MT1542	113.0	52.6	38.7			59.5	114.6	77.6	47.1	71.9
d MTCL1131	99.3	50.9	43.3			68.8	128.7	69.8	41.0	71.7
#+ LCS Chrome	107.2	47.5	40.1			65.6	122.3	75.9	41.6	71.5
+ MT1547	102.9	49.9	45.8			68.0	113.8	69.4	48.0	71.1
+ MT1563	96.5	59.3	43.6			66.6	113.5	75.6	41.4	70.9
d MT1444	103.8	54.5	41.4			65.6	117.4	71.0	41.9	70.8
MT1465	104.5	50.4	41.1			59.4	116.4	71.3	52.7	70.8
SY Clearstone 2CL	98.9	47.8	41.3			63.6	119.4	80.9	43.5	70.8
d MT1471	111.5	50.4	30.0			72.5	119.8	69.9	40.8	70.7
+ MTS1588	91.2	56.1	37.8			60.7	109.9	79.5	57.5	70.4
+ d MTS1573	98.3	51.7	30.6			60.4	116.2	72.9	61.0	70.2
#+ PSB13NEDH-7-140	90.3	53.7	38.2			67.1	115.3	71.9	54.2	70.1
#+ Langin	79.0	49.2	34.8			66.5	128.8	86.8	44.8	70.0
+ MTF1432	107.5	52.3	43.5			61.4	113.2	69.3	39.9	69.6
#+ CO13003C	62.4	52.4	42.1			62.9	125.3	83.3	52.3	68.7
Loma	95.9	48.7	36.5			58.5	111.3	72.7	57.0	68.7
#+ d Denali	65.8	53.0	41.3			64.7	119.4	85.1	47.8	68.2
+ d MT1565	85.0	52.7	42.4			61.9	116.0	69.0	50.4	68.2
+ d MT1540	99.6	48.0	40.2			60.3	110.8	71.8	46.1	68.1
SY Wolf	77.5	53.8	33.3			59.2	122.8	79.6	46.5	67.5
+ d MTF1559	102.5	50.2	36.7			59.7	106.4	66.7	49.7	67.4
Northern	90.4	52.0	36.7			60.4	113.1	74.2	42.7	67.1
#+ d PSB13NEDH-7-45	65.0	48.2	45.7			68.0	115.0	74.2	46.8	66.1
Warhorse	93.4	44.0	32.6			63.4	110.5	66.0	53.0	66.1
+ MTF1435	100.8	44.9	42.4			70.7	95.5	67.2	40.1	65.9
# WB4614	60.5	51.2	41.7			60.8	116.4	73.7	55.2	65.6
Judee	90.0	49.5	13.7			60.2	115.4	73.5	54.3	65.2
#+ d BZ9WM09-1620	102.5	44.9	20.3			55.5	110.1	69.7	48.6	64.5
# Brawl CLP	62.7	43.6	28.6			65.8	115.8	80.4	47.9	63.5
#+ 07CL039-7 (SY 517 CL2)	79.0	35.7	25.8			62.1	103.7	76.4	59.2	63.1
Warhorse #2 ^{1/}	88.2	44.1	38.8			57.8		64.2	45.9	63.1
d MT1488	93.9	50.2	38.3			53.5	106.8	54.8	39.2	62.4
# WB4623CLP	101.1	43.7	5.3			54.7	115.1	68.0	48.8	62.4
d WB-Quake	82.8	42.8	37.7			53.2	100.2	63.5	49.5	61.4
# WB4483	53.3	51.3	34.7			57.2	101.5	67.6	59.4	60.7
Decade	42.7	48.3	50.7			59.0	100.9	67.3	52.8	60.2
#+ d BZ9W09-2216	40.0	50.1	46.9			52.5	78.0	68.5	53.9	55.7
Bearpaw	46.0	42.9	35.5			58.9	82.3	72.8	46.2	54.9
# WB4575	24.2	51.0	43.4			54.7	74.5	74.6	48.3	53.0
Average	89.3	50.1	37.7			62.5	114.4	73.7	48.9	68.1
LSD (0.05)	10.2	5.2	13.2			10.2	11.9	10.3	ns	10.9
C. V. (%)	6.9	6.0	19.8			9.3	6.4	8.1	19.0	15.2
P-value (Varieties)	<.0001	<.0001	<.0001			0.0032		<.0001	0.2099	0.0002

+ = new for 2017, # = paid entry

d = cultivars/lines dropped for 2018 test

bold = indicates highest value within a column

1/ Yellowstone misplanted as Warhorse

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

Table 12. 2017 Intrastate Winter Wheat Test (Exp. 35): Multi-Location Test Weight (lb/bu)

Cultivar/Line	Bozeman LAT	Havre LAT	Sidney LAT	Williston winter- kill	Kalispell flooded out	Moccasin LAT	Huntley RCB	Conrad LAT	Ft. Benton RCB	7 Loc Avg.
lattice efficiency	107%	126%	128%			101%		128%		
# SY Sunrise	61.7	62.2	65.6			60.7	64.2	62.9	57.3	62.1
## 07CL039-7 (SY 517 CL2)	59.1	62.9	66.2			58.5	64.5	63.2	59.8	62.0
+ d MTS1573	61.9	62.1	64.6			59.5	62.9	61.5	60.0	61.8
## PSB13NEDH-7-140	61.6	62.7	65.0			59.0	64.0	62.1	58.2	61.8
+ MT1564	63.1	62.4	66.1			58.3	63.1	61.5	57.4	61.7
# Brawl CLP	56.3	62.7	65.2			62.0	64.5	63.6	57.2	61.6
## d Denali	60.4	62.9	65.1			58.4	63.9	62.1	56.8	61.4
# Keldin	60.1	62.2	64.6			58.3	63.8	62.3	56.9	61.2
## LCS Chrome	61.1	61.6	65.3			58.8	63.0	61.7	56.6	61.2
## Long Branch	61.3	60.3	64.9			59.0	62.6	62.4	57.9	61.2
Judee	60.6	62.9	64.1			59.1	63.1	61.9	55.7	61.1
MT1465	61.1	62.5	64.8			58.2	62.9	60.8	57.6	61.1
+ d MT1507	61.1	62.8	64.9			58.9	62.5	61.0	56.5	61.1
+ d MT1540	61.1	62.6	64.8			58.8	62.7	60.7	57.0	61.1
+ MTS1588	60.5	62.3	64.8			59.2	62.3	60.8	58.1	61.1
d MT1348	60.1	62.3	64.5			58.4	62.9	60.5	58.1	61.0
MTW1491	62.5	62.9	64.7			58.6	62.9	60.3	54.8	61.0
SY Wolf	58.4	63.1	65.9			60.1	64.0	61.7	53.6	61.0
# WB4623CLP	63.0	61.9	63.0			59.5	63.3	60.4	56.2	61.0
## d BZ9W09-2216	57.3	62.5	65.6			60.2	59.8	62.8	58.2	60.9
## d BZ9WM09-1620	61.2	63.2	62.7			57.7	63.1	61.5	57.2	60.9
d WB-Quake	60.6	62.6	64.9			57.4	62.2	62.5	56.2	60.9
d MT1471	61.3	62.1	64.9			58.5	62.4	59.4	56.8	60.8
# WB4575	55.2	62.8	65.7			60.5	60.9	61.8	58.7	60.8
# WB4614	60.1	62.0	65.4			56.5	62.3	62.4	56.8	60.8
d MT1444	60.3	62.7	64.4			58.4	61.9	60.1	57.0	60.7
+ MT1547	61.4	62.4	64.8			58.1	62.5	60.5	55.1	60.7
Decade	56.4	61.8	64.9			58.4	62.1	62.0	58.0	60.5
Loma	60.4	62.1	62.9			58.0	61.4	60.5	58.3	60.5
d MTCL1131	60.3	62.4	64.5			58.5	62.5	60.0	55.4	60.5
+ d MT1542	61.1	62.4	64.5			56.6	61.9	59.4	57.0	60.4
## Langin	57.2	61.9	64.1			58.1	62.5	61.6	57.0	60.3
+ MTF1435	61.6	62.4	63.4			57.9	62.2	60.4	54.5	60.3
Bearpaw	58.0	61.5	64.5			59.0	60.4	60.5	57.2	60.2
d MT1488	61.9	62.4	63.3			57.4	62.0	57.5	56.8	60.2
Warhorse	60.3	62.1	63.4			57.2	63.0	59.2	55.9	60.2
MT1265	60.0	62.6	64.0			56.4	61.4	60.3	55.7	60.1
+ MT1563	59.5	62.8	64.4			59.1	61.8	59.8	53.5	60.1
+ d MT1565	59.6	61.1	64.8			57.4	61.7	60.7	55.4	60.1
SY Clearstone 2CL	58.5	62.1	64.4			58.1	61.5	60.2	56.1	60.1
# WB4483	56.0	62.4	65.7			55.3	60.6	61.3	57.7	59.9
## CO13003C	56.4	61.3	64.7			56.0	62.0	60.8	57.1	59.8
Northern	58.6	62.2	64.3			57.3	61.4	60.1	54.5	59.8
Warhorse #2 ^{1/}	60.2	62.0	64.5			57.3		59.4	51.2	59.6
## d PSB13NEDH-7-45	55.0	59.8	65.8			56.8	61.7	60.0	57.4	59.5
# SY Monument	57.9	61.4	63.6			57.6	62.8	59.7	53.8	59.5
+ MTF1432	58.9	61.7	63.2			56.4	60.3	57.3	56.7	59.2
## LCS Jet	59.1	60.3	62.2			54.4	61.7	58.1	56.8	58.9
+ d MTF1559	56.7	60.7	61.4			54.4	58.0	56.2	56.5	57.7
Average	59.7	62.1	64.5			58.1	62.3	60.8	56.6	60.6
LSD (0.05)	1.0	0.5	1.3			2.6	1.0	1.5	2.6	1.3
C. V. (%)	0.9	0.5	1.1			2.7	1.0	1.4	2.9	2.0
P-value (Varieties)	<.0001	<.0001	<.0001			0.0002		<.0001	<.0001	<.0001

+ = new for 2017, # = paid entry

d = cultivars/lines dropped for 2018 test

bold = indicates highest value within a column

1/ Yellowstone misplanted as Warhorse

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

Table 13. 2016 Intrastate Winter Wheat Test (Exp. 35): Multi-Location Winter Survival (%)

Cultivar/Line	Sidney 8-May	Williston 8-May	2 Loc Avg.
lattice efficiency	299%	137%	
Decade	62.4	25.0	43.7
# SY Sunrise	<u>63.1</u>	13.9	38.5
+ MT1563	54.1	15.7	34.9
# SY Monument	48.6	17.9	33.3
+ d MT1540	55.4	9.1	32.2
#+ d PSB13NEDH-7-45	54.5	8.5	31.5
Warhorse #2 ^{1/}	50.1	11.9	31.0
# WB4575	49.4	12.6	31.0
+ d MT1565	53.0	7.4	30.2
#+ Long Branch	50.1	7.3	28.7
Warhorse	49.4	7.7	28.5
MT1265	45.3	9.9	27.6
#+ d Denali	48.2	6.6	27.4
d MT1348	46.8	7.7	27.2
d MT1444	48.0	6.3	27.2
+ MT1564	48.5	5.6	27.0
+ d MT1507	45.0	7.2	26.1
SY Clearstone 2CL	46.8	5.1	26.0
+ MT1547	49.8	1.9	25.8
+ d MTS1573	39.8	11.5	25.7
+ MTF1435	44.9	6.3	25.6
d MT1488	43.6	6.9	25.3
#+ PSB13NEDH-7-140	47.7	2.8	25.3
MTW1491	44.6	5.7	25.1
MT1465	45.8	3.4	24.6
#+ LCS Chrome	41.0	7.3	24.1
# WB4483	42.2	4.9	23.5
d MTCL1131	36.4	8.7	22.6
Northern	36.7	7.5	22.1
Bearpaw	35.5	6.5	21.0
Loma	39.3	2.7	21.0
SY Wolf	36.8	4.4	20.6
#+ Langin	36.1	4.9	20.5
d MT1471	35.0	5.7	20.4
#+ d BZ9W09-2216	34.5	6.3	20.4
# WB4614	33.5	5.9	19.7
# Brawl CLP	27.2	11.4	19.3
d WB-Quake	35.8	1.8	18.8
+ d MT1542	32.8	4.6	18.7
#+ CO13003C	34.7	1.6	18.2
# Keldin	29.3	6.3	17.8
Judee	23.7	11.5	17.6
+ d MTF1559	33.8	0.9	17.3
+ MTF1432	33.6	1.0	17.3
#+ 07CL039-7 (SY 517 CL2)	20.6	2.6	11.6
+ MTS1588	19.0	2.5	10.8
#+ LCS Jet	11.0	0.0	5.5
#+ d BZ9WM09-1620	0.9	1.2	1.1
# WB4623CLP	0.0	1.9	0.9
Average	39.6	6.8	23.3
LSD (0.05)	15.7	7.0	16.3
C. V. (%)	22.2	58.6	34.8
P-value (Varieties)	<.0001	<.0001	0.0066

+ = new for 2017, # = paid entry d = cultivars/lines dropped for 2018 test

bold = indicates highest value within a column

1/ Yellowstone misplanted as Warhorse

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

Table 14. 2016 Intrastate Winter Wheat Test (Exp. 35): Multi-Location Heading Date (days from Jan. 1)

Cultivar/Line	Bozeman LAT	Havre LAT	Sidney LAT	Williston winter- kill	Kalispell flooded out	Moccasin LAT	Huntley RCB	Conrad LAT	Ft. Benton no	6 Loc Avg.
lattice efficiency	119%	124%	111%			111%		112%	data	
#+ 07CL039-7 (SY 517 CL2)	155.1	146.2	149.7			152.6	143.3	152.4		149.9
# Brawl CLP	155.3	146.4	150.2			153.0	143.3	152.4		150.1
#+ Langin	155.7	146.2	149.1			153.1	143.7	153.2		150.2
#+ Long Branch	154.8	147.1	149.8			153.3	147.0	152.5		150.8
+ MT1564	157.8	147.6	150.4			154.5	147.0	154.3		151.9
# SY Sunrise	157.2	149.4	149.8			154.4	149.0	154.5		152.4
#+ CO13003C	157.8	149.0	151.0			154.2	148.3	154.4		152.5
#+ d PSB13NEDH-7-45	158.3	148.3	150.8			154.1	150.0	154.7		152.7
#+ LCS Chrome	158.0	149.0	151.7			154.2	149.0	155.9		153.0
#+ d Denali	157.8	149.5	152.2			157.0	149.7	155.2		153.6
SY Wolf	159.0	149.9	151.4			155.9	149.3	156.0		153.6
+ d MT1565	158.7	150.3	151.0			154.2	152.7	155.4		153.7
# SY Monument	158.7	149.8	152.0			156.9	149.3	156.1		153.8
d MT1348	159.2	150.4	152.2			154.9	152.3	156.0		154.2
+ d MTS1573	158.9	150.3	152.4			155.7	152.0	155.9		154.2
#+ PSB13NEDH-7-140	159.4	150.0	151.5			157.8	152.7	155.5		154.5
Decade	159.6	151.4	151.4			155.6	153.3	156.6		154.7
Bearpaw	159.5	150.8	152.6			155.7	153.0	156.9		154.8
# WB4614	159.8	152.0	153.1			156.5	152.7	157.2		155.1
# WB4575	160.6	150.6	152.9			157.7	153.0	156.4		155.2
+ d MT1507	160.4	151.3	151.6			158.1	153.0	157.2		155.3
+ d MT1540	160.2	151.8	153.2			156.3	154.0	156.3		155.3
+ MT1547	160.1	151.3	152.3			158.0	153.3	157.0		155.3
MT1465	160.6	150.4	152.2			158.2	153.7	157.1		155.4
# WB4623CLP	159.0	150.9	155.9			158.0	152.0	158.9		155.5
#+ d BZ9WM09-1620	159.7	153.4	155.2			157.0	152.7	156.4		155.7
Judee	159.8	151.2	155.5			157.9	153.0	156.8		155.7
# Keldin	159.6	151.8	153.8			160.9	152.3	156.7		155.9
d MT1444	161.7	152.2	153.1			157.9	153.7	157.7		156.1
+ d MT1542	160.7	152.9	155.1			156.9	154.0	157.6		156.2
SY Clearstone 2CL	160.9	152.3	152.6			158.9	154.7	158.0		156.2
#+ LCS Jet	158.9	155.2	154.0			161.9	150.3	157.6		156.3
Warhorse #2 ^{1/}	162.2	153.3	152.1			158.6		158.7		156.3
d MT1471	161.6	152.4	153.5			158.0	154.7	157.9		156.4
+ MT1563	162.8	152.6	152.6			159.6	154.3	158.0		156.7
MTW1491	162.5	152.8	154.6			158.4	154.3	157.6		156.7
Warhorse	162.6	152.9	154.4			158.7	154.3	157.3		156.7
#+ d BZ9W09-2216	161.8	152.0	152.9			160.5	155.0	158.4		156.8
+ MTS1588	161.4	153.3	154.9			159.7	153.0	158.3		156.8
MT1265	162.4	153.3	153.7			159.4	154.7	158.4		157.0
d MT1488	161.9	152.9	155.2			159.1	155.0	159.1		157.2
d MTCL1131	162.6	153.5	154.8			159.2	155.0	158.3		157.2
# WB4483	162.6	152.8	154.6			159.1	155.3	156.1		157.2
Northern	162.4	153.8	155.3			161.1	155.3	158.4		157.7
d WB-Quake	163.0	153.5	154.9			161.7	154.7	157.4		157.8
Loma	162.8	154.3	155.8			160.5	156.7	158.0		158.0
+ MTF1435	163.1	153.8	154.8			161.4	155.3	159.3		158.0
+ MTF1432	166.0	155.0	155.4			166.2	156.3	159.9		159.8
+ d MTF1559	167.4	156.6	157.3			169.8	159.0	161.4		161.9
Average	160.2	151.4	153.0			157.8	152.3	156.8		155.3
LSD (0.05)	1.1	1.1	1.9			3.0	1.3	1.0		1.3
C. V. (%)	0.4	0.4	0.7			1.1	0.5	0.4		0.7
P-value (Varieties)	<.0001	<.0001	<.0001			<.0001		<.0001		<.0001

+ = new for 2017, # = paid entry

d = cultivars/lines dropped for 2018 test

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 15. 2016 Intrastate Winter Wheat Test (Exp. 35): Multi-Location Plant Height (in)

Cultivar/Line	Bozeman LAT	Havre LAT	Sidney LAT	Williston winter- kill	Kalispell flooded out	Moccasin LAT	Huntley RCB	Conrad LAT	Ft. Benton RCB	6 Loc Avg.
lattice efficiency	101%	101%	116%			132%		114%	no data	
# SY Sunrise	33.7	22.4	18.4			25.3	38.3	25.5		27.3
#+ LCS Jet	34.5	20.2	18.7			27.2	38.9	25.9		27.6
Loma	35.7	22.2	18.1			25.0	39.0	28.6		28.1
# WB4483	34.0	22.5	16.7			26.6	39.8	29.0		28.2
#+ 07CL039-7 (SY 517 CL2)	32.6	25.0	19.1			24.2	40.4	28.4		28.3
#+ Langin	34.9	23.0	20.0			23.3	40.7	28.0		28.3
+ MTS1588	34.3	23.4	19.7			25.8	37.3	29.0		28.3
# WB4575	31.9	24.2	23.0			26.0	36.8	27.7		28.5
#+ d BZ9W09-2216	33.0	22.7	20.0			27.4	38.3	30.2		28.6
# WB4614	35.0	24.0	20.3			26.1	38.8	29.5		28.7
+ d MT1565	35.5	23.4	22.9			25.8	38.3	28.5		29.1
Warhorse	36.2	23.6	19.3			27.3	40.6	27.7		29.1
Warhorse #2^{1/}	37.8	22.7	19.2			27.0		29.5		29.1
Northern	37.3	22.9	17.7			25.6	40.6	31.3		29.2
Bearpaw	36.7	21.3	20.9			27.8	41.2	29.0		29.5
MT1465	36.1	25.0	20.7			27.0	39.6	28.4		29.5
# WB4623CLP	37.5	23.1	20.1			25.3	42.1	30.4		29.6
Judee	36.8	26.2	17.5			27.6	42.3	29.2		29.9
d MT1488	38.5	23.3	19.8			27.0	41.3	29.7		29.9
SY Wolf	35.7	25.2	19.5			26.6	42.8	29.6		29.9
#+ d PSB13NEDH-7-45	36.9	25.7	18.1			27.4	42.9	29.2		30.0
Decade	35.5	25.1	21.6			26.4	42.3	29.8		30.1
# SY Monument	35.3	25.8	21.4			26.5	42.5	29.3		30.1
+ d MT1542	38.4	24.6	19.2			28.3	40.8	31.6		30.5
d WB-Quake	38.0	23.1	21.0			29.3	41.1	27.7		30.5
# Brawl CLP	36.7	27.7	21.6			25.6	43.1	28.8		30.6
#+ Long Branch	37.2	25.8	20.7			25.8	44.6	29.2		30.6
+ MT1547	36.3	25.9	21.7			28.4	40.7	30.7		30.6
+ d MTS1573	40.0	24.8	20.6			27.3	41.6	29.9		30.7
# Keldin	36.7	27.1	22.3			28.6	40.9	29.2		30.8
+ d MT1540	38.1	26.7	21.2			28.1	40.3	30.4		30.8
d MT1348	39.7	26.4	21.8			26.3	42.7	28.7		30.9
d MT1471	37.9	25.3	20.2			28.9	43.0	30.6		31.0
#+ CO13003C	38.7	25.1	20.6			28.1	44.2	31.2		31.3
#+ LCS Chrome	39.9	26.3	20.6			27.3	43.0	31.2		31.4
#+ d Denali	38.8	25.7	24.8			27.7	43.7	29.1		31.6
d MT1444	39.2	26.8	21.6			28.5	42.3	31.1		31.6
+ d MT1507	37.1	26.5	24.3			28.0	42.0	32.4		31.7
+ MT1564	39.1	28.6	22.4			27.4	44.8	28.4		31.8
MTW1491	39.7	27.4	21.8			28.7	44.7	29.9		32.0
#+ d BZ9WM09-1620	40.3	27.1	21.7			28.9	43.2	31.8		32.2
#+ PSB13NEDH-7-140	39.6	27.7	24.0			28.0	43.4	31.5		32.4
+ MT1563	39.9	27.5	23.5			30.2	43.0	31.8		32.7
SY Clearstone 2CL	38.9	26.4	22.0			30.4	46.1	34.4		33.0
MT1265	40.5	27.5	23.7			31.4	43.5	32.1		33.1
d MTCL1131	39.6	26.2	23.1			32.3	45.0	32.6		33.1
+ d MTF1559	43.0	25.8	23.3			35.4	47.3	35.4		35.0
+ MTF1432	43.7	28.1	24.2			31.0	48.2	36.1		35.2
+ MTF1435	45.6	32.2	26.0			37.6	52.5	35.9		38.3
Average	37.5	25.2	21.0			27.8	42.1	30.1		30.6
LSD (0.05)	2.1	2.8	3.0			3.0	1.7	2.2		1.6
C. V. (%)	3.5	6.8	8.2			6.1	2.4	4.3		4.5
P-value (Varieties)	<.0001	<.0001	<.0001			0.0001		<.0001		<.0001

+ = new for 2017, # = paid entry

d = cultivars/lines dropped for 2018 test

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 16. 2015 Intrastate Winter Wheat Test (Exp. 35): Multi-Location Grain Protein (%)

Cultivar/Line	Bozeman bulk	Havre LAT	Sidney LAT	Williston winter-kill	Kalispell flooded-out	Moccasin LAT	Huntley RCB	Conrad LAT	Ft. Benton bulk	7 Loc Avg.
lattice efficiency		155%	128%	kill	out	118%		122%		
# WB4575	15.1	14.9	10.2			13.1	14.1	13.5	12.9	13.5
Judee	13.5	14.3	12.2			14.0	13.9	13.5	13.0	13.5
d MT1471	13.8	14.9	9.0			14.0	14.6	14.4	13.4	13.4
# WB4623CLP	13.2	13.7	12.7			13.9	14.8	13.4	12.8	13.4
# WB4483	14.7	14.3	9.3			13.9	13.7	14.5	13.2	13.3
+ d MT1565	13.3	14.6	9.4			13.7	14.2	13.8	13.3	13.2
Warhorse	13.6	15.0	10.4			13.6	13.7	13.4	12.8	13.2
Bearpaw	13.7	14.7	9.6			13.4	14.4	13.4	12.3	13.1
## PSB13NEDH-7-140	13.3	14.4	10.2			13.6	13.8	13.3	13.0	13.1
Warhorse #2 ^{1/}	14.3	15.0	8.8			13.7		13.1	12.3	13.1
d MT1488	13.0	14.6	10.3			13.6	13.3	13.4	12.6	13.0
+ MT1547	13.5	14.4	9.2			13.4	13.7	13.3	13.2	13.0
Northern	13.4	14.5	9.4			14.4	13.5	13.0	12.5	13.0
d WB-Quake	12.9	14.3	9.4			14.0	13.8	13.4	13.4	13.0
Loma	12.9	14.1	10.6			13.6	12.9	13.5	12.8	12.9
+ d MT1540	13.1	14.9	9.7			13.1	13.2	13.3	12.8	12.9
+ d MTF1559	12.7	14.2	9.3			14.2	13.8	12.9	12.9	12.9
+ MTS1588	13.7	14.1	9.3			13.1	14.0	13.8	12.5	12.9
# Brawl CLP	13.5	14.1	10.7			12.6	13.3	12.5	13.0	12.8
## d BZ9WM09-1620	12.7	13.5	11.6			13.5	13.5	12.3	12.2	12.8
## LCS Chrome	13.3	14.2	10.1			13.1	13.3	13.2	12.7	12.8
MT1265	12.6	14.4	8.2			13.8	13.9	13.1	13.7	12.8
Decade	13.2	14.4	8.7			13.7	13.2	13.0	13.0	12.7
d MT1444	13.1	13.7	9.4			13.9	13.6	13.3	12.1	12.7
MT1465	13.3	14.4	8.3			13.6	13.3	13.0	12.8	12.7
## d PSB13NEDH-7-45	13.9	14.4	8.9			13.0	13.1	12.8	12.7	12.7
## 07CL039-7 (SY 517 CL2)	12.8	14.3	10.3			12.7	12.8	12.5	12.8	12.6
+ MT1563	12.8	13.6	9.0			13.7	13.8	12.9	12.6	12.6
d MTCL1131	12.6	14.3	9.0			13.3	13.2	13.0	12.7	12.6
+ MTF1432	12.7	13.3	9.1			13.7	13.5	13.0	12.8	12.6
SY Clearstone 2CL	12.3	14.6	8.4			13.3	13.8	13.2	12.8	12.6
SY Wolf	13.2	13.7	9.4			12.6	13.1	13.1	12.9	12.6
# WB4614	13.6	13.9	9.0			13.5	12.7	13.1	12.7	12.6
+ MTF1435	12.8	13.9	8.6			13.3	13.4	12.8	12.5	12.5
+ d MTS1573	12.5	13.5	9.3			13.1	14.1	13.2	11.9	12.5
MTW1491	12.3	13.5	9.4			13.1	13.3	12.8	13.2	12.5
# Keldin	12.7	12.9	9.3			13.4	12.4	13.1	12.8	12.4
## LCS Jet	13.4	13.0	9.1			13.0	13.8	12.5	12.3	12.4
d MT1348	12.4	13.3	9.0			13.1	12.8	13.0	13.0	12.4
+ d MT1507	13.2	13.7	7.9			12.9	13.1	12.9	12.8	12.4
+ MT1564	12.7	13.7	9.6			13.1	12.8	12.4	12.7	12.4
## d BZ9W09-2216	12.5	14.0	9.1			12.5	12.4	12.9	12.6	12.3
+ d MT1542	12.5	13.9	8.5			13.3	12.9	12.8	12.4	12.3
# SY Sunrise	12.7	13.5	9.4			13.2	12.4	12.6	12.1	12.3
## d Denali	11.6	13.3	8.4			12.0	11.8	12.5	12.0	11.7
## Long Branch	12.0	13.2	8.8			12.6	12.2	11.9	11.5	11.7
# SY Monument	12.5	12.8	7.7			11.9	12.4	12.1	12.4	11.7
## CO13003C	12.5	13.7	7.1			12.0	11.7	12.0	12.0	11.6
## Langin	12.0	13.1	8.5			11.4	11.3	11.3	12.2	11.4
Average	13.1	14.0	9.4			13.3	13.3	13.0	12.7	12.7
LSD (0.05)		0.6	1.6			0.5	0.7	0.6		0.5
C. V. (%)		2.4	9.9			2.0	3.4	2.7		4.1
P-value (Varieties)		<.0001	<.0001			<.0001		<.0001		<.0001

+ = new for 2017, # = paid entry

d = cultivars/lines dropped for 2018 test

bold = indicates highest value within a column

^{1/} Yellowstone misplanted as Warhorse

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

Table 17. 2017 Intrastate Winter Wheat Test (Exp. 35): Multi-Location Stem Solidness (5-25)

Cultivar/Line		Bozeman	Conrad	Havre	Moccasin	Northern Seeds - Carter	5 Loc Average
	stem clipping date	6-Jul	4-Jul	3-Jul	12-Jul	3-Jul	
	% sawfly Infestation	0%	63%	3%	<1%	67%	
+ MTS1588	MT0598/98X366E29-1	21.2	22.1	23.7	22.8	22.2	22.4
Warhorse	Montana, 2013	19.2	20.4	23.2	22.1	19.8	20.9
Warhorse #2	intended to be Yellowstone	17.5	21.0	22.3	21.7	18.9	20.3
WB-Quake	WestBred, 2011	17.0	20.0	19.7	22.0	19.3	19.6
Bearpaw	Montana, 2011	16.7	19.7	21.6	20.3	18.6	19.4
+ MTS1573	Danby/2*MTS04114	15.1	20.1	21.8	20.4	17.5	19.0
Loma	Montana, 2016	13.5	18.8	20.6	20.5	18.0	18.3
# WB4483	WestBred, 2016 (solid stem)	15.2	18.1	19.6	18.2	17.5	17.7
Judee	Montana, 2011	15.1	18.5	17.8	19.7	17.0	17.6
#+ BZ9W09-2216	WestBred exp. solid stem	12.5	16.5	15.4	17.9	17.2	15.9
Average		16.3	19.5	20.6	20.6	18.6	19.1
LSD (0.05)		1.2	1.7	2.8	2.4	1.5	1.2
C. V. (%)		4.2	5.1	8.0	6.8	4.7	5.1
P-value (Varieties)		<.0001	0.0001	0.0002	0.0046	<.0001	<.0001

+ = new for 2017, # = paid entry

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 18. 2015 Intrastate Winter Wheat Test (Exp. 35): Multi-Location Stripe Rust Evaluation, including data from Pullman and Mt. Vernon, WA

Cultivar/Line	Stripe Rust											
	Montana (%)						Pullman, WA		MT. Vernon, WA			
	Huntley		Bozeman		2 loc	Ft Ellis	Milk		Stem elong.		Heading/flowering	
d = cultivars/lines dropped + = new for 2017, # = paid entry	6-Jun	20-Jun	15-Jun	2-Jul	'late'	2-Jul	IT ^{1/}	%	IT ^{1/}	%	IT ^{1/}	%
+ d MT1542	1	1	2	<u>2</u>	<u>2</u>	3	2	30	3	5	2	5
#+ LCS Chrome	<u>0</u>	<u>0</u>	2	3	2	2	3	2	8	10	7	70
#+ LCS Jet	<u>0</u>	1	2	3	2	1	5	10	2	5	2	5
d MT1471	<u>0</u>	3	2	3	3	2	2	20	2	5	2	5
+ MT1564	1	3	1	3	3	2	5	20	2	5	3	5
d MT1488	1	2	10	5	3	5	5	50	2	5	2	10
# SY Monument	<u>0</u>	<u>0</u>	5	7	4	1	8	30	2	5	2	10
Loma	3	1	7	7	4	3	5	40	5	10	2	5
+ MT1547	2	2	1	6	4	3	2	30	2	5	2	10
Judee	2	<u>0</u>	6	9	5	5	5	40	3	10	2	10
# WB4623CLP	2	2	1	7	5	3	5	40	3	10	2	10
+ MTS1588	1	1	3	9	5	5	5	40	2	5	2	20
Warhorse	3	6	2	4	5	5	5	30	2	5	2	10
+ d MT1507	<u>0</u>	2	4	10	6	5	5	30	5	10	2	10
#+ Long Branch	<u>0</u>	5	5	7	6	2	5	30	5	10	2	5
MT1465	5	1	3	11	6	3	3	5	2	5	2	5
MTW1491	3	3	3	11	7	5	5	30	2	5	2	10
+ d MT1540	2	4	3	11	8	10	5	20	5	10	2	10
Northern	<u>0</u>	1	8	14	8	5	3	20	5	10	2	20
+ d MTF1559	<u>0</u>	1	3	15	8	10	2	60	8	10	2	5
+ d MT1565	3	2	8	14	8	15	5	20	2	5	2	10
d MT1444	<u>0</u>	6	1	14	10	5	8	30	5	10	3	20
#+ d BZ9WM09-1620	<u>0</u>	9	4	11	10	5	8	40	5	10	2	5
MT1265	2	1	5	20	10	5	5	30	2	5	2	5
+ d MTS1573	7	10	8	12	11	10	5	60	2	5	2	20
# SY Sunrise	<u>0</u>	<u>0</u>	19	21	11	5	3	10	2	5	2	20
+ MTF1432	4	7	3	14	11	10	5	20	2	5	2	5
d MT1348	2	3	5	20	11	5	5	20	2	5	2	10
+ MT1563	1	5	4	19	12	10	5	40	5	10	2	10
d WB-Quake	<u>0</u>	5	12	19	12	10	5	70	5	10	2	20
d MTCL1131	2	6	4	21	13	10	8	30	2	5	2	5
+ MTF1435	5	4	2	24	14	20	8	40	2	5	2	5
#+ PSB13NEDH-7-14	2	6	3	24	15	5	5	40	2	5	3	10
SY Clearstone 2C	13	14	3	18	16	15	5	60	2	5	3	10
# WB4614	6	7	8	35	21	25	8	30	8	20	2	10
SY Wolf	15	7	4	35	21	15	8	40	8	10	3	10
#+ Langin	10	12	19	44	28	10	8	70	8	10	4	30
07CL039-7 (SY 517 CL	11	9	15	52	31	10	8	80	2	5	4	30
# Keldin	2	21	5	60	41	20	8	70	8	20	2	5
#+ d PSB13NEDH-7-45	22	25	15	66	45	25	8	60	2	5	8	80
# WB4483	38	73	45	66	69	70	5	30	8	10	2	10
# Brawl CLP	64	61	44	79	70	90	8	70	5	10	4	20
#+ CO13003C	73	68	42	73	71	60	8	90	8	20	6	60
Decade	40	77	35	71	74	70	8	90	5	10	6	70
Bearpaw	79	96	21	82	89	80	8	80	2	5	8	50
#+ d BZ9W09-2216	97	100	70	89	95	80	8	90	5	10	4	50
# WB4575	85	100	61	91	96	90	8	80	8	20	3	30
#+ d Denali	79	99	27	94	97	80	8	90	8	10	7	80
Warhorse #2 ^{1/}			1	3		5	3	20	2	5	2	5
Average	8.1	13.3	11.5	27.2	22.6	19.2		42		8		19
LSD (0.05)	6.0	4.4	12.4	13.2	18.2							

1/ Infection Type (IT) was recorded based on the 0-9 scale with ITs 8 and 9 combined as 8 (the most susceptible reaction) in field data. Generally IT 0-3 are considered resistant, 4-6 intermediate, and 7-9 susceptible. Heterogenous reactions of an entry were indicated by two or more ITs separated by "," for most plants with the first IT and few plants with the second IT or connected with "-" for entries containing plants with continuous ITs.

bold = indicates highest value within a column

1/ Yellowstone misplanted as Warhorse

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

Table 19. 2017 Intrastate Winter Wheat Test (Exp. 35): Greenhouse Coleoptile Test

Entry	Cultivar/Line	Pedigree	Coleoptile Length		
			2017		2013
+ = new for 2017, # = paid entry			cm	in	in
2	Judee	Montana, 2011	94.6	3.7	4.1
25	#+ LCS Jet	Limagrain Cereal Seeds, 2015	91.0	3.6	
4	# Brawl CLP	Colorado Wheat Res. Fdn., 2011	88.6	3.5	
20	#+ BZ9WM09-1620	Westbred exp. CLP	86.9	3.4	
39	+ MTF1435	MT08186//Yellowstone(L)*2/98X168E1	85.6	3.4	
13	#+ 07CL039-7 (SY 517 CL2)	Syngenta (AgriPro) CLP exp. line	83.5	3.3	
22	#+ LCS Chrome	Limagrain Cereal Seeds, 2016	83.3	3.3	
3	Warhorse	Montana, 2013	80.6	3.2	3.4
19	# WB4575	WestBred, 2016 (BZ9W09-2075)	80.6	3.2	
29	#+ Denali	Colorado Wheat Res. Fdn., 2011	79.3	3.1	
30	#+ Langin	Colorado Wheat Res. Fdn., 2016	79.1	3.1	
11	# SY Monument	Syngenta (AgriPro), 2015	78.4	3.1	
26	#+ Long Branch	Limagrain/Dyna-Gro Wheat, 2015	78.2	3.1	
10	SY Wolf	Syngenta (AgriPro), 2010	78.2	3.1	3.1
24	#+ PSB13NEDH-7-45	Limagrain Cereal Seeds exp. line	77.7	3.1	
16	# WB4614	WestBred, 2014	76.9	3.0	
43	+ MT1547	Yellowstone/MT0684	76.3	3.0	
31	#+ CO13003C	Colorado Wheat Res. Fdn., exp. line	75.9	3.0	
6	Bearpaw	Montana, 2011	75.1	3.0	3.1
12	# SY Sunrise	Syngenta (AgriPro), 2015	74.5	2.9	
7	SY Clearstone 2CL	Montana/Syngenta, 2012	74.4	2.9	3.1
1	Warhorse #2 ^{1/}	<i>Yellowstone misplanted</i>	74.3	2.9	
5	Decade	Montana/North Dakota, 2010	74.2	2.9	3.4
48	+ MTS1573	Danby/2*MTS04114	74.2	2.9	
17	# WB4623CLP	WestBred, 2015	73.8	2.9	
47	+ MT1565	Decade*2//Promontory/3*Yellowstone	73.4	2.9	
36	+ MT1488	MTR00118/MT0241//CDC Falcon	73.1	2.9	
49	+ MTS1588	MT0598/98X366E29-1	72.7	2.9	
38	+ MTF1432	Yellowstone*2/98X168E1	72.4	2.9	
23	#+ PSB13NEDH-7-140	Limagrain Cereal Seeds exp. line	71.9	2.8	
27	Loma	Montana, 2016	71.5	2.8	
34	+ MT1465	Yellowstone/MT0684	71.4	2.8	
46	+ MTF1559	Yellowstone*2/98X168E1	71.3	2.8	
21	#+ BZ9W09-2216	Westbred exp. solid stem	70.9	2.8	
15	# Keldin	WestBred, 2011	70.9	2.8	
42	+ MT1542	MT0097//Yellowstone/MT03108	70.5	2.8	
18	# WB4483	WestBred, 2016 (solid stem, BZ9W09-2212)	70.5	2.8	
40	+ MT1507	MT0686//Yellowstone/Duster	69.8	2.7	
28	MT1265	Yellowstone*4/KS96WGRC40 (Lr41, wcm)	69.1	2.7	
37	+ MTW1491	MT08189//MT08187/(MTW08166, WB3768 sib)	68.6	2.7	
33	+ MT1444	Yellowstone*2/MTW0590	68.4	2.7	
	MT1332	Yellowstone/00X52E99//Yellowstone(340,233)	68.0	2.7	
35	+ MT1471	Yellowstone/NuDakota	67.2	2.6	
8	WB-Quake	WestBred, 2011	67.2	2.6	2.8
41	+ MT1540	Yellowstone*2/MTW0590	67.0	2.6	
45	+ MT1564	Yellowstone*2/PI640431	66.9	2.6	
9	Northern	Montana, 2015	66.7	2.6	2.7
44	+ MT1563	Yellowstone*2/PI640431	65.7	2.6	
32	MT1348	PI572290/BigSky	65.0	2.6	
14	MTCL1131	Clearstone sib	61.1	2.4	
Average			74.5	2.93	
LSD (0.05)			4.7	0.2	
C.V. (%)			3.9	3.6	
P-value (Varieties)			<.0001	<.0001	

bold = indicates highest value within a column

1/ Yellowstone misplanted as Warhorse

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

Table 20. 2017 Winter Wheat Quality Drill Strips, Northern Agricultural Research Center

Entry	ID	Yield*	Test Weight	Moisture	Protein	Head Date	Plant Ht	Sawfly
		bu/ac	lb/bu	%	%	day	in	% cut
1	Yellowstone	49.3	61.7	9.7	14.8	6/1/17	25.9	0.5
2	Jagalene	41.5	62.6	9.8	15.5	6/1/17	24.6	0.0
3	MT1465	46.9	62.5	9.8	13.7	5/31/17	24.3	0.3
4	MT1471	49.0	61.3	9.5	15.3	5/31/17	26.1	0.0
5	MT1488	46.1	61.5	9.7	15.1	6/2/17	24.0	0.7
6	MTW1491	54.5	61.9	9.6	14.2	6/1/17	27.2	0.7

*Yield adjusted to 12% moisture. Plot size = 18' x 132' = ~1/20 acre

Seeded September 19, 2016

Harvested July 14, 2017

Precipitation:

Seeding to Harvest: 7.92"

April 1 to June 30: 2.27"

Table 21. 2014-2017 Intrastate Winter Wheat Test (Exp. 3501): Bozeman Yield, Test Weight and Protein

Cultivar/Line	Grain Yield (bushels/acre)				Test Weight (lb/bu)				Protein (%)			
	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17
	1y	2y	3y	4y	1y	2y	3y	4y	1y	2y	3y	4y
#+ 07CL039-7 (SY517 CL2)	79.0				59.1				12.8			
Bearpaw	46.0	46.5	45.0	57.0	58.0	59.1	57.4	58.8	13.7	14.1	15.5	15.0
# Brawl CLP	62.7	72.0	71.8		56.3	60.7	57.9		13.5	13.6	14.9	
#+ BZ9W09-2216	40.0				57.3				12.5			
#+ BZ9WM09-1620	102.5				61.2				12.7			
#+ CO13003C	62.4				56.4				12.5			
Decade	42.7	46.9	46.8	58.8	56.4	59.3	56.1	57.7	13.2	13.4	15.0	14.6
#+ Denali	65.8				60.4				11.6			
Judee	90.0	79.2	74.3	80.4	60.6	61.3	58.8	60.1	13.5	14.1	14.1	14.0
# Keldin	97.7	91.6	89.4	95.3	60.1	60.7	58.1	59.4	12.7	12.9	14.6	14.3
#+ Langin	79.0				57.2				12.0			
#+ LCS Chrome	107.2				61.1				13.3			
#+ LCS Jet	124.6				59.1				13.4			
Loma	95.9	94.0	92.6	95.4	60.4	60.2	59.9	60.6	12.9	12.2	13.3	13.2
#+ Long Branch	109.8				61.3				12.0			
MT1265	108.6	107.2	98.8	101.6	60.0	60.4	59.2	59.7	12.6	12.6	13.7	13.6
MT1348	99.4	98.4	95.2		60.1	60.8	58.6		12.4	12.5	13.7	
MT1444	103.8	96.6			60.3	60.6			13.1	13.8		
MT1465	104.5	96.4			61.1	60.8			13.3	13.7		
MT1471	111.5	103.1			61.3	60.8			13.8	15.1		
MT1488	93.9	94.0			61.9	60.6			13.0	13.0		
+ MT1507	96.1				61.1				13.2			
+ MT1540	99.6				61.1				13.1			
+ MT1542	113.0				61.1				12.5			
+ MT1547	102.9				61.4				13.5			
+ MT1563	96.5				59.5				12.8			
+ MT1564	118.6				63.1				12.7			
+ MT1565	85.0				59.6				13.3			
MTCL1131	99.3	95.1	91.8	95.6	60.3	60.4	59.7	60.4	12.6	13.1	14.0	13.9
+ MTF1432	107.5				58.9				12.7			
+ MTF1435	100.8				61.6				12.8			
+ MTF1559	102.5				56.7				12.7			
+ MTS1573	98.3				61.9				12.5			
+ MTS1588	91.2				60.5				13.7			
MTW1491	115.6	111.9			62.5	60.8			12.3	12.5		
Northern	90.4	87.3	85.9	88.8	58.6	59.9	58.5	59.5	13.4	14.0	14.9	14.5
#+ PSB13NEDH-7-140	90.3				61.6				13.3			
#+ PSB13NEDH-7-45	65.0				55.0				13.9			
SY Clearstone 2CL	98.9	94.5	90.5	94.5	58.5	59.9	57.4	58.4	12.3	12.6	14.0	13.8
# SY Monument	99.2	96.1	92.7		57.9	59.5	56.2		12.5	13.1	14.3	
# SY Sunrise	97.1	94.7	95.3		61.7	61.6	59.6		12.7	13.1	14.1	
SY Wolf	77.5	79.2	80.5	86.0	58.4	61.0	58.8	60.0	13.2	13.8	14.8	14.5
Warhorse	93.4	85.5	80.2	83.1	60.3	60.3	58.3	59.3	13.6	13.9	15.4	15.0
# WB4483	53.3	52.4			56.0	59.9			14.7	14.2		
# WB4575	24.2	33.6			55.2	60.6			15.1	14.2		
# WB4614	60.5	63.9	63.2	71.9	60.1	60.6	59.4	60.3	13.6	13.5	14.7	14.3
# WB4623CLP	101.1	99.8	90.7		63.0	61.2	61.6		13.2	13.1	14.7	
WB-Quake	82.8	80.1	75.0	79.4	60.6	60.5	59.5	60.2	12.9	13.6	14.5	14.3
Yellowstone ^{1/}	-	-	-	-	-	-	-	-	-	-	-	-
Average	89.3	84.0	81.1	83.7	59.7	60.0	58.6	59.6	13.1	13.4	14.5	14.2
LSD (0.05)	10.2	14.6	11.2	11.9	1.0	2.8	1.8	1.5		1.4	1.2	1.1
C.V.	6.9	8.4	8.4	9.9	0.9	2.2	1.8	2		4.9	5.1	5.2

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 22. 2014-2017 Intrastate Winter Wheat Test (Exp. 3502): Havre Yield, Test Weight and Protein

Cultivar/Line	Grain Yield (bushels/acre)				Test Weight (lb/bu)				Protein (%)			
	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17
	1y	2y	3y	4y	1y	2y	3y	4y	1y	2y	3y	4y
#+ 07CL039-7 (SY517 CL2)	35.7				62.9				14.3			
Bearpaw	42.9	53.5	55.7	55.1	61.5	59.4	59.8	60.0	14.7	12.6	12.6	12.8
# Brawl CLP	43.6	66.7	61.9		62.7	61.9	61.9		14.1	12.6	12.9	
#+ BZ9W09-2216	50.1				62.5				14.0			
#+ BZ9WM09-1620	44.9				63.2				13.5			
#+ CO13003C	52.4				61.3				13.7			
Decade	48.3	64.5	62.8	61.1	61.8	59.8	60.3	60.4	14.4	12.2	12.5	12.5
#+ Denali	53.0				62.9				13.3			
Judee	49.5	67.4	65.1	64.1	62.9	62.1	62.0	62.0	14.3	12.1	12.3	12.4
# Keldin	56.7	82.3	75.3	<u>70.9</u>	62.2	61.7	61.6	61.4	12.9	11.8	11.9	12.1
#+ Langin	49.2				61.9				13.1			
#+ LCS Chrome	47.5				61.6				14.2			
#+ LCS Jet	48.3				60.3				13.0			
Loma	48.7	64.8	61.7	59.0	62.1	60.4	60.5	60.5	14.1	12.2	12.5	12.8
#+ Long Branch	50.5				60.3				13.2			
MT1265	54.9	81.0	73.4	69.8	62.6	61.4	61.1	61.1	14.4	12.3	12.4	12.5
MT1348	52.9	81.6	<u>76.8</u>		62.3	61.5	61.5		13.3	12.5	12.5	
MT1444	54.5	77.4			62.7	61.3			13.7	12.1		
MT1465	50.4	74.6			62.5	61.2			14.4	12.8		
MT1471	50.4	73.2			62.1	61.3			14.9	13.1		
MT1488	50.2	74.0			62.4	61.2			14.6	12.7		
+ MT1507	52.4				62.8				13.7			
+ MT1540	48.0				62.6				14.9			
+ MT1542	52.6				62.4				13.9			
+ MT1547	49.9				62.4				14.4			
+ MT1563	59.3				62.8				13.6			
+ MT1564	51.5				62.4				13.7			
+ MT1565	52.7				61.1				14.6			
MTCL1131	50.9	74.1	68.6	65.8	62.4	61.1	61.3	61.4	14.3	12.5	12.5	12.6
+ MTF1432	52.3				61.7				13.3			
+ MTF1435	44.9				62.4				13.9			
+ MTF1559	50.2				60.7				14.2			
+ MTS1573	51.7				62.1				13.5			
+ MTS1588	56.1				62.3				14.1			
MTW1491	<u>60.0</u>	<u>85.2</u>			62.9	61.5			13.5	11.8		
Northern	52.0	77.9	72.3	69.8	62.2	60.7	60.7	60.8	14.5	12.7	12.8	12.9
#+ PSB13NEDH-7-140	53.7				62.7				14.4			
#+ PSB13NEDH-7-45	48.2				59.8				14.4			
SY Clearstone 2CL	47.8	73.1	68.1	65.7	62.1	60.8	60.8	60.8	14.6	12.5	12.5	12.5
# SY Monument	53.0	78.2	74.1		61.4	60.5	60.7		12.8	11.6	11.4	
# SY Sunrise	52.5	72.7	69.8		62.2	61.6	61.7		13.5	12.0	12.3	
SY Wolf	53.8	75.8	70.5	70.6	63.1	62.3	<u>62.3</u>	<u>62.3</u>	13.7	12.1	12.1	12.3
Warhorse	44.0	66.9	64.7	60.5	62.1	61.3	61.1	61.1	<u>15.0</u>	12.9	12.8	13.0
# WB4483	51.3	69.5			62.4	60.8			14.3	12.3		
# WB4575	51.0	63.4			62.8	61.1			14.9	12.5		
# WB4614	51.2	74.4	69.5	66.9	62.0	61.6	61.5	61.7	13.9	11.8	12.0	12.1
# WB4623CLP	43.7	64.3	61.2		61.9	61.8	61.4		13.7	12.0	12.5	
WB-Quake	42.8	65.1	62.4	58.5	62.6	61.3	61.1	61.1	14.3	12.6	12.6	12.7
Yellowstone ^{1/}	-	-	-	-	-	-	-	-	-	-	-	-
Average	50.1	72.0	67.4	64.4	62.1	61.2	61.2	61.1	14.0	12.3	12.4	12.5
LSD (0.05)	5.2	12.8	9.8	8.6	0.5	ns	1.1	0.8	0.6	ns	ns	0.5
C.V.	6.0	8.6	8.7	9.4	0.5	1.2	1.1	0.9	2.4	4.3	4.0	2.8

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 23. 2016-2017 Intrastate Winter Wheat Test (Exp. 3503): Sidney Yield, Test Weight and Protein

No harvest in 2014 and 2015 due to severe winter-kill

Cultivar/Line	Grain Yield (bushels/acre)		Test Weight (lb/bu)		Protein (%)	
	2017	2016-17	2017	2016-17	2017	2016-17
	1y	2y	1y	2y	1y	2y
#+ 07CL039-7 (SY517 CL2)	25.8		66.2		10.3	
Bearpaw	35.5	39.4	64.5	61.8	9.6	9.6
# Brawl CLP	28.6	51.6	65.2	63.8	10.7	11.1
#+ BZ9W09-2216	46.9		65.6		9.1	
#+ BZ9WM09-1620	20.3		62.7		11.6	
#+ CO13003C	42.1		64.7		7.1	
Decade	50.7	54.1	64.9	62.5	8.7	10.0
#+ Denali	41.3		65.1		8.4	
Judee	13.7	33.7	64.1	63.1	12.2	11.3
# Keldin	29.9	54.4	64.6	63.5	9.3	10.0
#+ Langin	34.8		64.1		8.5	
#+ LCS Chrome	40.1		65.3		10.1	
#+ LCS Jet	32.0		62.2		9.1	
Loma	36.5	41.7	62.9	60.8	10.6	12.3
#+ Long Branch	33.7		64.9		8.8	
MT1265	44.5	60.9	64.0	63.1	8.2	8.5
MT1348	42.3	55.8	64.5	63.0	9.0	8.7
MT1444	41.4	57.2	64.4	62.5	9.4	9.8
MT1465	41.1	50.6	64.8	62.5	8.3	8.9
MT1471	30.0	52.0	64.9	63.2	9.0	10.6
MT1488	38.3	42.7	63.3	61.6	10.3	10.6
+ MT1507	52.6		64.9		7.9	
+ MT1540	40.2		64.8		9.7	
+ MT1542	38.7		64.5		8.5	
+ MT1547	45.8		64.8		9.2	
+ MT1563	43.6		64.4		9.0	
+ MT1564	39.3		66.1		9.6	
+ MT1565	42.4		64.8		9.4	
MTCL1131	43.3	52.2	64.5	62.4	9.0	9.8
+ MTF1432	43.5		63.2		9.1	
+ MTF1435	42.4		63.4		8.6	
+ MTF1559	36.7		61.4		9.3	
+ MTS1573	30.6		64.6		9.3	
+ MTS1588	37.8		64.8		9.3	
MTW1491	37.1	51.7	64.7	62.5	9.4	9.5
Northern	36.7	47.7	64.3	62.0	9.4	10.1
#+ PSB13NEDH-7-140	38.2		65.0		10.2	
#+ PSB13NEDH-7-45	45.7		65.8		8.9	
SY Clearstone 2CL	41.3	51.7	64.4	62.3	8.4	8.8
# SY Monument	45.0	57.6	63.6	62.2	7.7	9.0
# SY Sunrise	47.6	61.7	65.6	64.3	9.4	10.1
SY Wolf	33.3	54.8	65.9	64.7	9.4	10.1
Warhorse	32.6	39.5	63.4	62.2	10.4	10.9
# WB4483	34.7	46.0	65.7	62.7	9.3	10.7
# WB4575	43.4	54.1	65.7	64.5	10.2	10.6
# WB4614	41.7	58.2	65.4	63.8	9.0	8.9
# WB4623CLP	5.3	32.4	63.0	62.6	12.7	12.2
WB-Quake	37.7	40.0	64.9	62.3	9.4	10.7
Yellowstone ^{1/}	-	-	-	-	-	-
Average	37.7	49.7	64.5	62.8	9.4	10.1
LSD (0.05)	13.2	ns	1.3	1.9	1.6	1.9
C.V.	19.8	19.7	1.1	1.4	9.9	9.2

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 24. 2015-2016 Intrastate Winter Wheat Test (Exp. 3504): Williston Yield, Test Weight and Protein

No harvest in 2014 and 2017 due to extreme winter-kill

Cultivar/Line	Grain Yield (bushels/acre)		Test Weight (lb/bu)		Protein (%)	
	2016	2015-16	2016	2015-16	2016	2015-16
	1y	2y	1y	2y	1y	2y
#+ 07CL039-7 (SY517 CL2)					data not used, high CV	
Bearpaw	45.4	44.2	57.3	59.0		13.5
# Brawl CLP	50.0	37.8	59.8	60.9		14.3
#+ BZ9W09-2216						
#+ BZ9WM09-1620						
#+ CO13003C						
Decade	49.8	48.8	58.3	59.9		14.7
#+ Denali						
Judee	46.7	37.3	59.4	60.0		15.7
# Keldin	54.9	41.5	59.5	60.4		15.0
#+ Langin						
#+ LCS Chrome						
#+ LCS Jet						
Loma	47.8	50.0	58.6	59.9		12.8
#+ Long Branch						
MT1265	60.4	54.4	58.9	59.6		12.3
MT1348	57.5	48.0	59.2	59.7		12.5
MT1444	56.8		58.8			
MT1465	49.3		58.6			
MT1471	56.1		58.9			
MT1488	48.9		59.8			
+ MT1507						
+ MT1540						
+ MT1542						
+ MT1547						
+ MT1563						
+ MT1564						
+ MT1565						
MTCL1131	60.1	57.8	58.7	59.7		11.3
+ MTF1432						
+ MTF1435						
+ MTF1559						
+ MTS1573						
+ MTS1588						
MTW1491	62.5		58.3			
Northern	50.3	50.4	59.2	60.1		11.7
#+ PSB13NEDH-7-140						
#+ PSB13NEDH-7-45						
SY Clearstone 2CL	53.1	49.4	59.0	60.1		12.1
# SY Monument	55.7	48.3	57.4	58.7		13.2
# SY Sunrise	52.7	38.5	58.5	60.3		14.9
SY Wolf	58.7	47.3	59.6	60.5		13.4
Warhorse	51.5		59.9			
# WB4483	41.0	40.9	58.9	59.4		12.0
# WB4575	50.9		58.5			
# WB4614	51.9	47.9	58.6	60.1		12.4
# WB4623CLP	55.5	35.0	58.7	58.2		15.4
WB-Quake	49.8	48.6	58.3	59.7		13.5
Yellowstone	58.6	61.4	58.4	59.6		12.5
Average	51.8	48.0	57.4	59.6		13.0
LSD (0.05)	9.4	ns	0.5	1.3		
C.V.	10.7	18.4	0.5	1.1		

+ = new for 2017, # = paid entry

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 25. 2014-2016 Intrastate Winter Wheat Test (Exp. 3505): Kalispell Yield, Test Weight and Protein

*** No harvest in 2017; Spring flooded - test abandoned ***

Cultivar/Line	Grain Yield (bushels/acre)			Test Weight (lb/bu)			Protein (%)		
	2016	2015-16	2014-16	2016	2015-16	2014-16	2016	2015-16	2014-16
	1y	2y	3y	1y	2y	3y	1y	2y	3y
#+ 07CL039-7 (SY517 CL2)									
Bearpaw	16.4	48.9	72.2	39.4	49.3	53.5	15.4	12.9	12.7
# Brawl CLP	54.4	72.5		43.3	52.3		13.9	12.7	
#+ BZ9W09-2216									
#+ BZ9WM09-1620									
#+ CO13003C									
Decade	18.5	43.9	67.0	42.9	51.0	54.0	14.2	11.9	12.0
#+ Denali									
Judee	118.8	122.1	126.9	58.3	61.0	61.5	12.2	11.1	11.5
# Keldin	101.1	111.7	122.5	55.6	59.7	60.4	11.3	10.6	11.2
#+ Langin									
#+ LCS Chrome									
#+ LCS Jet									
Loma	128.0	136.4	137.5	57.4	60.2	60.8	11.8	10.7	11.3
#+ Long Branch									
MT1265	130.0	134.9	139.6	57.3	59.6	60.2	10.9	10.1	10.7
MT1348	132.2	132.6		57.7	60.8		11.6	10.7	
MT1444	136.1			57.9			11.1		
MT1465	135.0			58.5			11.8		
MT1471	148.9			59.5			12.6		
MT1488	135.1			60.0			12.3		
+ MT1507									
+ MT1540									
+ MT1542									
+ MT1547									
+ MT1563									
+ MT1564									
+ MT1565									
MTCL1131	121.6	131.1	138.7	55.8	59.4	60.5	11.0	10.6	11.0
+ MTF1432									
+ MTF1435									
+ MTF1559									
+ MTS1573									
+ MTS1588									
MTW1491	138.8			59.6			10.9		
Northern	133.7	132.3	138.4	56.8	59.8	60.8	11.7	11.1	11.5
#+ PSB13NEDH-7-140									
#+ PSB13NEDH-7-45									
SY Clearstone 2CL	117.2	124.6	131.8	54.9	58.8	59.9	11.4	10.9	11.2
# SY Monument	127.0	124.3		54.9	58.6		12.3	10.7	
# SY Sunrise	130.6	121.0		57.7	60.9		12.0	10.9	
SY Wolf	98.6	102.2	113.9	52.2	57.7	59.0	12.6	11.1	11.6
Warhorse	21.8			46.1			13.9		
# WB4483	126.7	129.6	129.5	59.7	61.3	61.4	13.0	12.0	12.4
# WB4575	88.9			56.8			12.3		
# WB4614	64.2	85.6	103.3	51.2	57.3	59.0	13.6	11.7	11.9
# WB4623CLP	145.1	130.5		59.2	61.5		13.8	12.4	
WB-Quake	117.5	122.5	122.5	58.7	61.2	61.6	11.5	10.6	11.2
Yellowstone	94.9	117.7	125.3	55.9	59.2	60.1	11.1	10.4	10.9
Average	97.3	106.0	113.3	53.7	57.7	59.0	12.3	11.2	11.6
LSD (0.05)	10.2	31.4	29.0	1.9	7.0	4.7	0.6	1.7	1.2
C.V.	6.5	14.6	15.6	2.0	6.0	4.9	2.7	7.3	6.6

+ = new for 2017, # = paid entry

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 26. 2014-2017 Intrastate Winter Wheat Test (Exp. 3507): Moccasin Yield, Test Weight and Protein

Cultivar/Line	Grain Yield (bushels/acre)				Test Weight (lb/bu)				Protein (%)			
	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17
	1y	2y	3y	4y	1y	2y	3y	4y	1y	2y	3y	4y
#+ 07CL039-7 (SY517 CL2)	62.1				58.5				12.7			
Bearpaw	58.9	57.0	57.3	55.4	59.0	60.7	59.6	60.2	13.4	10.7	10.7	11.3
# Brawl CLP	65.8	62.4	58.3		62.0	63.3	62.8		12.6	10.2	9.8	
#+ BZ9W09-2216	52.5				60.2				12.5			
#+ BZ9WM09-1620	55.5				57.7				13.5			
#+ CO13003C	62.9				56.0				12.0			
Decade	59.0	57.0	56.4	56.7	58.4	60.4	59.9	60.4	13.7	10.9	10.5	11.2
#+ Denali	64.7				58.4				12.0			
Judee	60.2	54.5	50.3	50.3	59.1	61.5	60.9	60.7	14.0	10.8	10.7	11.5
# Keldin	69.1	68.8	66.4	63.9	58.3	60.4	60.6	60.6	13.4	10.3	9.6	10.4
#+ Langin	66.5				58.1				11.4			
#+ LCS Chrome	65.6				58.8				13.1			
#+ LCS Jet	65.5				54.4				13.0			
Loma	58.5	58.4	57.0	57.2	58.0	60.1	59.4	60.0	13.6	10.7	10.3	10.9
#+ Long Branch	62.9				59.0				12.6			
MT1265	65.6	65.8	62.8	62.4	56.4	59.0	58.5	58.9	13.8	10.8	10.6	11.4
MT1348	64.3	65.1	63.2		58.4	60.6	60.8		13.1	10.2	9.8	
MT1444	65.6	66.2			58.4	60.1			13.9	10.7		
MT1465	59.4	65.6			58.2	60.3			13.6	10.9		
MT1471	72.5	65.7			58.5	60.8			14.0	11.0		
MT1488	53.5	57.4			57.4	60.0			13.6	10.8		
+ MT1507	65.7				58.9				12.9			
+ MT1540	60.3				58.8				13.1			
+ MT1542	59.5				56.6				13.3			
+ MT1547	68.0				58.1				13.4			
+ MT1563	66.6				59.1				13.7			
+ MT1564	69.3				58.3				13.1			
+ MT1565	61.9				57.4				13.7			
MTCL1131	68.8	66.1	64.9	64.9	58.5	60.2	60.3	60.4	13.3	10.4	10.0	10.9
+ MTF1432	61.4				56.4				13.7			
+ MTF1435	70.7				57.9				13.3			
+ MTF1559	59.7				54.4				14.2			
+ MTS1573	60.4				59.5				13.1			
+ MTS1588	60.7				59.2				13.1			
MTW1491	66.9	66.0			58.6	60.2			13.1	10.1		
Northern	60.4	58.9	60.7	60.0	57.3	59.9	59.9	60.0	14.4	11.2	11.1	11.8
#+ PSB13NEDH-7-140	67.1				59.0				13.6			
#+ PSB13NEDH-7-45	68.0				56.8				13.0			
SY Clearstone 2CL	63.6	64.6	62.0	61.9	58.1	59.8	59.5	59.6	13.3	10.6	10.2	10.8
# SY Monument	70.0	66.5	64.2		57.6	59.2	58.8		11.9	9.5	9.3	
# SY Sunrise	63.1	62.2	60.0		60.7	62.0	61.4		13.2	10.6	10.4	
SY Wolf	59.2	61.3	58.3	58.6	60.1	61.7	61.1	61.2	12.6	10.1	10.0	10.7
Warhorse	63.4	63.5	59.6	57.7	57.2	59.5	59.4	59.8	13.6	11.0	10.6	11.3
# WB4483	57.2	55.8			55.3	58.5			13.9	11.1		
# WB4575	54.7	58.1			60.5	62.3			13.1	11.0		
# WB4614	60.8	57.3	57.3	57.2	56.5	59.6	59.4	59.8	13.5	10.3	9.8	10.7
# WB4623CLP	54.7	54.7	52.4		59.5	61.7	61.1		13.9	10.9	10.3	
WB-Quake	53.2	53.9	51.4	50.8	57.4	60.5	59.6	59.8	14.0	10.9	10.6	11.3
Yellowstone ^{1/}	-	-	-	-	-	-	-	-	-	-	-	-
Average	62.5	61.3	59.0	58.2	58.1	60.5	60.2	60.1	13.3	10.6	10.2	11.1
LSD (0.05)	10.2	8.4	5.6	5.0	2.6	1.6	1.4	ns	0.5	0.7	0.7	0.6
C.V.	9.3	6.6	5.7	6.0	2.7	1.2	1.4	1.4	2.0	3.2	4.0	3.5

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 27. 2014//2017 Intrastate Winter Wheat Test (Exp. 3508): Huntley Yield, Test Weight and Protein

2014 = Late Harvest, Sept. 8; 2015 = Not Planted; 2016 = 'sub-irrigated'

Cultivar/Line	Grain Yield (bushels/acre)			Test Weight (lb/bu)			Protein (%)		
	2017	2016-17	2014//17	2017	2016-17	2014//17	2017	2016-17	2014//17
	1y	2y	3y	1y	2y	3y	1y	2y	3y
#+ 07CL039-7 (SY517 CL2)	103.7			64.5			12.8		
Bearpaw	82.3	88.7	87.9	60.4	61.0	59.0	14.4	13.0	13.1
# Brawl CLP	115.8	112.3		64.5	64.1		13.3	12.4	
#+ BZ9W09-2216	78.0			59.8			12.4		
#+ BZ9WM09-1620	110.1			63.1			13.5		
#+ CO13003C	125.3			62.0			11.7		
Decade	100.9	99.3	94.7	62.1	61.8	58.9	13.2	12.2	12.7
#+ Denali	119.4			63.9			11.8		
Judee	115.4	108.6	98.8	63.1	62.9	59.9	13.9	12.6	13.1
# Keldin	135.1	124.4	116.5	63.8	62.7	60.4	12.4	12.0	12.1
#+ Langin	128.8			62.5			11.3		
#+ LCS Chrome	122.3			63.0			13.3		
#+ LCS Jet	140.3			61.7			13.8		
Loma	111.3	110.9	105.4	61.4	61.8	59.3	12.9	11.9	12.5
#+ Long Branch	127.7			62.6			12.2		
MT1265	113.5	113.2	108.0	61.4	61.4	58.7	13.9	12.8	13.0
MT1348	126.0	117.2		62.9	62.0		12.8	12.6	
MT1444	117.4	115.7		61.9	61.8		13.6	12.1	
MT1465	116.4	114.2		62.9	62.6		13.3	12.2	
MT1471	119.8	109.9		62.4	62.2		14.6	13.3	
MT1488	106.8	106.9		62.0	62.2		13.3	12.2	
+ MT1507	123.3			62.5			13.1		
+ MT1540	110.8			62.7			13.2		
+ MT1542	114.6			61.9			12.9		
+ MT1547	113.8			62.5			13.7		
+ MT1563	113.5			61.8			13.8		
+ MT1564	131.8			63.1			12.8		
+ MT1565	116.0			61.7			14.2		
MTCL1131	128.7	120.9	112.4	62.5	62.1	59.4	13.2	12.4	12.5
+ MTF1432	113.2			60.3			13.5		
+ MTF1435	95.5			62.2			13.4		
+ MTF1559	106.4			58.0			13.8		
+ MTS1573	116.2			62.9			14.1		
+ MTS1588	109.9			62.3			14.0		
MTW1491	125.8	120.3		62.9	62.6		13.3	12.2	
Northern	113.1	115.3	109.9	61.4	61.6	59.0	13.5	12.6	13.0
#+ PSB13NEDH-7-140	115.3			64.0			13.8		
#+ PSB13NEDH-7-45	115.0			61.7			13.1		
SY Clearstone 2CL	119.4	116.0	110.9	61.5	61.4	58.5	13.8	12.5	12.9
# SY Monument	129.9	121.7		62.8	62.0		12.4	11.8	
# SY Sunrise	119.2	112.8		64.2	63.3		12.4	11.8	
SY Wolf	122.8	120.4	113.3	64.0	63.5	59.5	13.1	12.4	12.8
Warhorse	110.5	106.2	102.3	63.0	62.5	60.3	13.7	12.7	13.2
# WB4483	101.5	104.5		60.6	61.2		13.7	12.2	
# WB4575	74.5	86.1		60.9	61.8		14.1	12.9	
# WB4614	116.4	112.4	98.2	62.3	62.2	59.9	12.7	11.6	12.5
# WB4623CLP	115.1	108.8		63.3	63.2		14.8	13.5	
WB-Quake	100.2	97.8	93.5	62.2	62.1	60.5	13.8	12.6	12.8
Yellowstone ^{1/}	-	-	-	-	-	-	-	-	-
Average	114.4	110.6	104.0	62.3	62.2	59.5	13.3	12.4	12.8
LSD (0.05)	11.9	14.9	12.1	1.0	1.4	ns	0.7	ns	ns
C.V.	6.4	6.5	6.9	1.0	1.1	1.8	3.4	3.8	3.9

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 28. 2014-2017 Intrastate Winter Wheat Test (Exp. 3518): Conrad Yield, Test Weight and Protein

Cultivar/Line	Grain Yield (bushels/acre)				Test Weight (lb/bu)				Protein (%)			
	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17
	1y	2y	3y	4y	1y	2y	3y	4y	1y	2y	3y	4y
#+ 07CL039-7 (SY517 CL2)	76.4				63.2				12.5			
Bearpaw	72.8	84.1	78.4	83.4	60.5	61.5	60.6	60.5	13.4	12.8	13.1	13.0
# Brawl CLP	80.4	86.8	86.4		63.6	63.8	63.5		12.5	12.9	13.1	
#+ BZ9W09-2216	68.5				62.8				12.9			
#+ BZ9WM09-1620	69.7				61.5				12.3			
#+ CO13003C	83.3				60.8				12.0			
Decade	67.3	81.5	78.6	86.4	62.0	62.2	61.4	61.2	13.0	12.3	12.7	12.6
#+ Denali	85.1				62.1				12.5			
Judee	73.5	81.5	75.4	80.9	61.9	62.7	61.3	61.5	13.5	13.1	13.5	13.3
# Keldin	80.1	94.8	93.1	98.7	62.3	62.8	62.0	61.9	13.1	12.0	12.5	12.4
#+ Langin	86.8				61.6				11.3			
#+ LCS Chrome	75.9				61.7				13.2			
#+ LCS Jet	85.0				58.1				12.5			
Loma	72.7	84.4	83.2	89.3	60.5	60.4	59.4	59.6	13.5	12.7	12.9	12.8
#+ Long Branch	91.9				62.4				11.9			
MT1265	77.5	88.6	85.9	94.3	60.3	61.5	60.6	60.7	13.1	12.4	12.7	12.5
MT1348	78.5	89.9	89.9		60.5	61.9	61.1		13.0	12.2	12.4	
MT1444	71.0	88.2			60.1	61.6			13.3	12.3		
MT1465	71.3	87.8			60.8	61.7			13.0	12.4		
MT1471	69.9	86.6			59.4	61.2			14.4	13.3		
MT1488	54.8	77.5			57.5	59.2			13.4	12.3		
+ MT1507	74.0				61.0				12.9			
+ MT1540	71.8				60.7				13.3			
+ MT1542	77.6				59.4				12.8			
+ MT1547	69.4				60.5				13.3			
+ MT1563	75.6				59.8				12.9			
+ MT1564	72.9				61.5				12.4			
+ MT1565	69.0				60.7				13.8			
MTCL1131	69.8	86.6	87.4	94.0	60.0	61.2	60.3	60.6	13.0	12.4	12.4	12.3
+ MTF1432	69.3				57.3				13.0			
+ MTF1435	67.2				60.4				12.8			
+ MTF1559	66.7				56.2				12.9			
+ MTS1573	72.9				61.5				13.2			
+ MTS1588	79.5				60.8				13.8			
MTW1491	70.8	86.1			60.3	61.7			12.8	12.3		
Northern	74.2	88.9	88.5	95.1	60.1	60.9	60.3	60.3	13.0	12.4	12.5	12.5
#+ PSB13NEDH-7-140	71.9				62.1				13.3			
#+ PSB13NEDH-7-45	74.2				60.0				12.8			
SY Clearstone 2CL	80.9	89.3	87.2	92.6	60.2	61.5	60.0	60.2	13.2	12.5	12.5	12.4
# SY Monument	79.0	95.1	91.4		59.7	60.8	60.0		12.1	11.5	11.9	
# SY Sunrise	76.7	83.7	83.2		62.9	63.2	63.0		12.6	12.2	12.6	
SY Wolf	79.6	94.6	93.3	97.9	61.7	63.1	62.7	62.4	13.1	12.3	12.5	12.5
Warhorse	66.0	75.3	69.6	75.2	59.2	60.7	59.6	59.7	13.4	12.8	13.2	13.1
# WB4483	67.6	85.0			61.3	61.3			14.5	13.1		
# WB4575	74.6	85.8			61.8	63.1			13.5	12.8		
# WB4614	73.7	90.6	85.5	89.2	62.4	63.0	62.2	61.9	13.1	12.4	12.8	12.6
# WB4623CLP	68.0	82.3	77.2		60.4	61.4	60.9		13.4	13.0	13.3	
WB-Quake	63.5	75.7	68.6	75.7	62.5	62.9	61.4	61.1	13.4	12.9	13.2	13.1
Yellowstone ^{1/}	-	-	-	-	-	-	-	-	-	-	-	-
Average	73.7	86.0	83.5	88.7	60.8	61.8	61.1	60.9	13.0	12.5	12.8	12.7
LSD (0.05)	10.3	ns	9.0	7.2	1.5	1.6	1.3	1.0	0.6	ns	0.7	0.4
C.V.	8.1	6.4	6.5	5.7	1.4	1.2	1.3	1.2	2.7	3.8	3.1	2.3

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 29. 2016-2017 Intrastate Winter Wheat Test (Exp. 3503): Ft. Benton Yield, Test Weight and Protein

Cultivar/Line	Plots not planted in 2014 and 2015					
	Grain Yield (bushels/acre)		Test Weight (lb/bu)		Protein (%)	
	2017	2016-17	2017	2016-17	2017	2016-17
	1y	2y	1y	2y	1y	2y
#+ 07CL039-7 (SY517 CL2)	59.2		59.8		12.8	
Bearpaw	46.2	55.3	57.2	58.4	12.3	12.2
# Brawl CLP	47.9	61.1	57.2	59.8	13.0	12.3
#+ BZ9W09-2216	53.9		58.2		12.6	
#+ BZ9WM09-1620	48.6		57.2		12.2	
#+ CO13003C	52.3		57.1		12.0	
Decade	52.8	62.8	58.0	59.2	13.0	12.0
#+ Denali	47.8		56.8		12.0	
Judee	54.3	58.5	55.7	58.7	13.0	12.2
# Keldin	57.2	65.0	56.9	58.5	12.8	11.6
#+ Langin	44.8		57.0		12.2	
#+ LCS Chrome	41.6		56.6		12.7	
#+ LCS Jet	55.8		56.8		12.3	
Loma	57.0	67.4	58.3	59.4	12.8	12.0
#+ Long Branch	48.7		57.9		11.5	
MT1265	43.6	57.1	55.7	57.9	13.7	11.6
MT1348	45.3	56.3	58.1	59.5	13.0	11.6
MT1444	41.9	55.1	57.0	58.7	12.1	11.7
MT1465	52.7	61.3	57.6	59.5	12.8	11.9
MT1471	40.8	54.0	56.8	58.4	13.4	12.6
MT1488	39.2	53.1	56.8	58.5	12.6	11.9
+ MT1507	44.2		56.5		12.8	
+ MT1540	46.1		57.0		12.8	
+ MT1542	47.1		57.0		12.4	
+ MT1547	48.0		55.1		13.2	
+ MT1563	41.4		53.5		12.6	
+ MT1564	59.8		57.4		12.7	
+ MT1565	50.4		55.4		13.3	
MTCL1131	41.0	59.8	55.4	58.4	12.7	11.7
+ MTF1432	39.9		56.7		12.8	
+ MTF1435	40.1		54.5		12.5	
+ MTF1559	49.7		56.5		12.9	
+ MTS1573	61.0		60.0		11.9	
+ MTS1588	57.5		58.1		12.5	
MTW1491	52.5	62.2	54.8	57.3	13.2	11.5
Northern	42.7	56.6	54.5	57.4	12.5	12.1
#+ PSB13NEDH-7-140	54.2		58.2		13.0	
#+ PSB13NEDH-7-45	46.8		57.4		12.7	
SY Clearstone 2CL	43.5	57.8	56.1	57.5	12.8	11.5
# SY Monument	44.4	61.6	53.8	57.3	12.4	11.2
# SY Sunrise	48.2	55.6	57.3	59.2	12.1	11.7
SY Wolf	46.5	58.2	53.6	57.9	12.9	11.9
Warhorse	53.0	57.8	55.9	58.3	12.8	12.3
# WB4483	59.4	64.9	57.7	59.2	13.2	12.2
# WB4575	48.3	61.3	58.7	60.7	12.9	12.4
# WB4614	55.2	55.4	56.8	58.7	12.7	11.7
# WB4623CLP	48.8	53.0	56.2	58.0	12.8	12.4
WB-Quake	49.5	56.8	56.2	58.1	13.4	12.0
Yellowstone ^{1/}	-	-	-	-	-	-
Average	48.9	58.7	56.6	58.6	12.7	12.0
LSD (0.05)	ns	ns	2.6	ns	ns	ns
C.V.	19.0	10.6	2.9	1.9	3.6	3.6

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 30. 2014-2017 Intrastate Winter Wheat Test (Exp. 3501): Combined Locations Yield, Test Weight and Protein

Cultivar/Line	Grain Yield (bushels/acre)				Test Weight (lb/bu)				Protein (%)			
	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17
location-years	7	16	22	28	7	16	22	28	7	15	21	27
#+ 07CL039-7 (SY517 CL2)	63.1				62.0				12.6			
Bearpaw	54.9	56.9	57.3	62.9	60.2	58.8	58.7	59.0	13.1	12.3	12.6	12.7
# Brawl CLP	63.5	70.6	68.4		61.6	60.8	60.9		12.8	12.3	12.5	
#+ BZ9W09-2216	55.7				60.9				12.3			
#+ BZ9WM09-1620	64.5				60.9				12.8			
#+ CO13003C	68.7				59.8				11.6			
Decade	60.2	62.5	61.4	66.7	60.5	59.3	59.2	59.3	12.7	12.0	12.3	12.4
#+ Denali	68.2				61.4				11.7			
Judee	65.2	70.7	68.9	72.8	61.1	61.2	60.9	60.9	13.5	12.3	12.5	12.7
# Keldin	75.1	82.4	80.3	84.1	61.2	60.9	60.7	60.7	12.4	11.5	11.9	12.1
#+ Langin	70.0				60.3				11.4			
#+ LCS Chrome	71.5				61.2				12.8			
#+ LCS Jet	78.8				58.9				12.4			
Loma	68.7	76.2	77.1	80.4	60.5	60.2	60.1	60.1	12.9	11.9	12.0	12.2
#+ Long Branch	75.0				61.2				11.7			
MT1265	72.6	83.6	82.0	85.7	60.1	60.3	60.0	60.0	12.8	11.6	11.8	12.1
MT1348	72.7	82.4	81.6		61.0	60.9	60.7		12.4	11.6	11.7	
MT1444	70.8	81.6			60.7	60.5			12.7	11.7		
MT1465	70.8	80.3			61.1	60.9			12.7	11.8		
MT1471	70.7	80.9			60.8	60.8			13.4	12.6		
MT1488	62.4	74.7			60.2	60.6			13.0	11.9		
+ MT1507	72.6				61.1				12.4			
+ MT1540	68.1				61.1				12.9			
+ MT1542	71.9				60.4				12.3			
+ MT1547	71.1				60.7				13.0			
+ MT1563	70.9				60.1				12.6			
+ MT1564	77.6				61.7				12.4			
+ MT1565	68.2				60.1				13.2			
MTCL1131	71.7	80.7	81.0	84.8	60.5	60.4	60.4	60.4	12.6	11.7	11.8	12.0
+ MTF1432	69.6				59.2				12.6			
+ MTF1435	65.9				60.3				12.5			
+ MTF1559	67.4				57.7				12.9			
+ MTS1573	70.2				61.8				12.5			
+ MTS1588	70.4				61.1				12.9			
MTW1491	75.5	85.5			61.0	60.9			12.5	11.4		
Northern	67.1	78.1	78.5	82.5	59.8	59.9	60.0	60.0	13.0	12.1	12.2	12.4
#+ PSB13NEDH-7-140	70.1				61.8				13.1			
#+ PSB13NEDH-7-45	66.1				59.5				12.7			
SY Clearstone 2CL	70.8	79.0	78.3	82.3	60.1	59.8	59.7	59.7	12.6	11.6	11.8	12.0
# SY Monument	74.4	83.5	81.5		59.5	59.5	59.3		11.7	11.2	11.4	
# SY Sunrise	72.1	79.4	77.5		62.1	61.6	61.5		12.3	11.7	12.0	
SY Wolf	67.5	77.8	76.1	80.5	61.0	61.1	61.1	60.9	12.6	11.8	12.0	12.2
Warhorse	66.1	72.3	71.4	74.2	60.2	60.4	60.1	60.1	13.2	12.3	12.5	12.7
# WB4483	60.7	68.5			59.9	59.9			13.3	12.2		
# WB4575	53.0	59.9			60.8	60.6			13.5	12.4		
# WB4614	65.6	71.3	70.3	73.9	60.8	60.5	60.5	60.6	12.6	11.6	11.8	12.0
# WB4623CLP	62.4	74.4	71.1		61.0	61.3	61.0		13.4	12.5	12.8	
WB-Quake	61.4	69.1	68.3	71.3	60.9	60.8	60.5	60.5	13.0	12.2	12.3	12.5
Yellowstone ^{1/}	-	-	-	-	-	-	-	-	-	-	-	-
Average	68.1	75.3	73.9	77.1	60.6	60.5	60.3	60.2	12.7	11.9	12.1	12.3
LSD (0.05)	10.9	8.9	7.0	5.8	1.3	1.2	1.0	0.8	0.5	0.5	0.4	0.4
C.V.	15.2	17.0	15.9	14.3	2.0	2.9	2.7	2.4	4.1	5.6	5.9	5.4

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 31. 2012//2017 Intrastate Winter Wheat Test (Exp. 35): Combined Locations Winter Survival and associated Yield (Locations: Williston (2012, 2013, 2015), Sidney (2017) = 4 locations

*** No recordable Winterkill, with a harvest, in 2014 and 2016 ***

location-years	Winter Survival (%)				Yield under Winterkill conditions			
	2017	2015//17	2013//17	2012//17	2017	2015//17	2013//17	2012//17
	1	2	3	4	1	2	3	4
#+ 07CL039-7 (SY517 CL2)	21				25.8			
Bearpaw	36	54	43	39	35.5	39.2	43.2	43.4
# Brawl CLP	27	40			28.6	27.1		
#+ BZ9W09-2216	34				46.9			
#+ BZ9WM09-1620	1				20.3			
#+ CO13003C	35				42.1			
Decade	62	70	56	54	50.7	49.2	56.1	49.7
#+ Denali	48				41.3			
Judee	24	32	26	21	13.7	20.8	25.7	25.1
# Keldin	29	29			29.9	29.0		
#+ Langin	36				34.8			
#+ LCS Chrome	41				40.1			
#+ LCS Jet	11				32.0			
Loma	39	67			36.5	44.3		
#+ Long Branch	50				33.7			
MT1265	45	66			44.5	46.5		
MT1348	47	50			42.3	40.4		
MT1444	48				41.4			
MT1465	46				41.1			
MT1471	35				30.0			
MT1488	44				38.3			
+ MT1507	45				52.6			
+ MT1540	55				40.2			
+ MT1542	33				38.7			
+ MT1547	50				45.8			
+ MT1563	54				43.6			
+ MT1564	48				39.3			
+ MT1565	53				42.4			
MTCL1131	36	58	55		43.3	49.4	54.9	
+ MTF1432	34				43.5			
+ MTF1435	45				42.4			
+ MTF1559	34				36.7			
+ MTS1573	40				30.6			
+ MTS1588	19				37.8			
MTW1491	45				37.1			
Northern	37	61	50	41	36.7	43.6	50.0	47.5
#+ PSB13NEDH-7-140	48				38.2			
#+ PSB13NEDH-7-45	54				45.7			
SY Clearstone 2CL	47	60	47	38	41.3	43.5	47.0	44.0
SY Monument	49	62			45.0	42.9		
SY Sunrise	63	50			47.6	35.9		
SY Wolf	37	46	38	31	33.3	34.6	38.4	37.5
Warhorse	49	64	53	46	32.6	36.7	53.4	43.6
# WB4483	42				34.7			
# WB4575	49				43.4			
# WB4614	33	56			41.7	42.8		
# WB4623CLP	0	8			5.3	9.9		
WB-Quake	36	55	46	40	37.7	42.5	46.4	48.0
Yellowstone ^{1/}	-	-	-	-	-	-	-	-
Average	39.6	51.4	46.1	38.5	37.7	37.7	44.8	42.3
LSD (0.05)	15.7	30.1	14.5	11.4	13.2	14.0	7.1	6.8
C.V.	22.2	27.7	18.2	20.2	19.8	17.6	9.2	10.9

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 32. 2014-2017 Intrastate Winter Wheat Test (Exp. 35): Combined Locations Heading Date, Height, and Lodging

Cultivar/Line	Heading Date (Julian)				Plant Height (in)				Lodging %	
	2017	2016-17	2015-17	2014-17	2017	2016-17	2015-17	2014-17	2016	2014//16
location-years	6	13	19	25	6	15	21	27	1	2
#+ 07CL039-7 (SY517 CL2)	149.9				28.3					
Bearpaw	154.8	155.2	155.7	157.2	29.5	32.1	32.1	32.1	1	1
# Brawl CLP	150.1	150.5	150.9		30.6	33.5	33.1		0	
#+ BZ9W09-2216	156.8				28.6					
#+ BZ9WM09-1620	155.7				32.2					
#+ CO13003C	152.5				31.3					
Decade	154.7	155.1	155.5	156.7	30.1	32.6	32.4	32.5	20	10
#+ Denali	153.6				31.6					
Judee	155.7	155.9	156.2	157.5	29.9	32.6	32.7	32.7	12	7
# Keldin	155.9	155.6	156.3	157.9	30.8	33.0	32.9	32.6	0	0
#+ Langin	150.2				28.3					
#+ LCS Chrome	153.0				31.4					
#+ LCS Jet	156.3				27.6					
Loma	158.0	157.9	158.1	159.9	28.1	31.6	31.5	31.5	43	26
#+ Long Branch	150.8				30.6					
MT1265	157.0	157.0	157.5	159.3	33.1	35.9	35.8	35.7	13	9
MT1348	154.2	154.7	155.3		30.9	34.1	33.9		70	
MT1444	156.1	156.2			31.6	34.8			0	
MT1465	155.4	155.6			29.5	32.1			0	
MT1471	156.4	156.4			31.0	33.9			0	
MT1488	157.2	157.4			29.9	32.9			0	
+ MT1507	155.3				31.7					
+ MT1540	155.3				30.8					
+ MT1542	156.2				30.5					
+ MT1547	155.3				30.6					
+ MT1563	156.7				32.7					
+ MT1564	151.9				31.8					
+ MT1565	153.7				29.1					
MTCL1131	157.2	157.3	157.7	159.4	33.1	36.4	36.1	36.2	0	0
+ MTF1432	159.8				35.2					
+ MTF1435	158.0				38.3					
+ MTF1559	161.9				35.0					
+ MTS1573	154.2				30.7					
+ MTS1588	156.8				28.3					
MTW1491	156.7	156.8			32.0	34.7			22	
Northern	157.7	157.8	158.1	159.6	29.2	32.8	33.2	33.2	14	11
#+ PSB13NEDH-7-140	154.5				32.4					
#+ PSB13NEDH-7-45	152.7				30.0					
SY Clearstone 2CL	156.2	156.2	156.7	158.3	33.0	35.8	35.7	35.6	0	0
# SY Monument	153.8	154.5	154.9		30.1	33.0	32.9		0	
# SY Sunrise	152.4	152.8	153.3		27.3	30.1	29.8		0	
SY Wolf	153.6	153.9	154.6	156.0	29.9	32.8	32.4	32.2	0	0
Warhorse	156.7	156.8	157.4	158.8	29.1	32.1	32.2	32.2	15	9
# WB4483	157.2	157.7			28.2	31.7			7	
# WB4575	155.2	155.4			28.5	31.2			2	
# WB4614	155.1	155.1	155.8	157.5	28.7	31.6	31.7	31.7	1	1
# WB4623CLP	155.5	155.8	156.6		29.6	32.4	31.9		14	
WB-Quake	157.8	157.8	157.9	159.6	30.5	33.0	33.0	33.1	6	4
Yellowstone ^{1/}	-	-	-	-	-	-	-	-	1	1
Average	155.3	155.8	156.0	158.3	30.6	33.1	33.0	33.2	8.0	5.0
LSD (0.05)	1.3	0.7	0.6	0.5	1.6	0.9	0.7	0.6	16.6	ns
C.V.	0.7	0.6	0.6	0.6	4.5	3.7	3.7	3.5	125	138

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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 33. 2013-2017 Intrastate Winter Wheat Test (Exp. 35): Combined Locations Sawfly Cutting and Stripe Rust

Cultivar/Line	Test Average above 10%				Stripe Rust (%) Bozeman, Huntley and Kalispell			
	Sawfly Cutting (%) Havre and Ft. Benton							
	2017	2016-17	2015-2017	2013//17	2017	2016-17	2015-17	2014-17
location-years	1	2	3	4	2	4	6	7
#+ 07CL039-7 (SY517 CL2)	28				31			
Bearpaw	18	13	10	9	89	86	78	70
# Brawl CLP	62	52	35		70	75	70	
#+ BZ9W09-2216	18				95			
#+ BZ9WM09-1620	52				10			
#+ CO13003C	72				71			
Decade	37	24	21	18	74	75	72	66
#+ Denali	70				97			
Judee	22	14	10	8	5	13	11	9
# Keldin	48	37	29		41	45	37	31
#+ Langin	92				28			
#+ LCS Chrome	92				2			
#+ LCS Jet	47				2			
Loma	27	17	12		4	13	11	9
#+ Long Branch	72				6			
MT1265	67	42	31		10	23	19	16
MT1348	85	59	39		11	22	18	
MT1444	67	42			10	24		
MT1465	68	40			6	14		
MT1471	50	36			3	11		
MT1488	43	41			3	10		
+ MT1507	68				6			
+ MT1540	88				8			
+ MT1542	60				2			
+ MT1547	83				4			
+ MT1563	72				12			
+ MT1564	47				3			
+ MT1565	73				8			
MTCL1131	75	46	34	30	13	31	26	22
+ MTF1432	60				11			
+ MTF1435	57				14			
+ MTF1559	50				8			
+ MTS1573	3				11			
+ MTS1588	2				5			
MTW1491	63	53			7	19		
Northern	62	35	24	20	8	20	15	13
#+ PSB13NEDH-7-140	90				15			
#+ PSB13NEDH-7-45	88				45			
SY Clearstone 2CL	78	51	38	32	16	32	25	22
# SY Monument	72	50	35		4	11	11	
# SY Sunrise	77	65	45		11	18	17	
SY Wolf	43	30	23	19	21	27	22	19
Warhorse	2	2	2	2	5	13	10	9
# WB4483	42	26			69	62		
# WB4575	50	29			96	91		
# WB4614	53	39	27		21	37	33	29
# WB4623CLP	52	44	33		5	11	10	
WB-Quake	7	6	5	5	12	27	22	19
Yellowstone ^{1/}	-	-	-		-	-	-	-
Average	54.2	35.7	25.0	15.7	22.6	32.3	28.1	25.7
LSD (0.05)	21.1	26.4	23.2	18.0	18.2	16.9	12.6	12.7
C.V.	24	36	56	79	38	37	39	46

+ = new for 2017, # = paid entry

1/ = Yellowstone misplanted as Warhorse in 2017

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)