Project Title: Evaluation of spring wheat cultivar performance under continuous-crop and crop-crop-fallow systems in central Montana

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Objective:
Evaluate relative performance spring wheat cultivars and development lines in central Montana crop environments.

Results:
The 2011 growing season conditions were atypical beginning with above average precipitation in September and November. Winter precipitation was near average, while April through mid-June precipitation was much above average. Mid-June through August precipitation was below average. The Moccasin location was seeded in mid-April while the Denton and Geraldine locations were seeded in mid-May due to the wet spring weather. The combination of short lentil stubble and ability to access the site quickly made if feasible to seed the Moccasin much earlier than most spring seedings in the area. Stripe rust infestations were wide spread in winter wheat but were not a problem in much of the spring wheat due to the generally dry sunny conditions in mid-June through August.

The Moccasin location had near average yields and test weights with above average sawfly cutting (Table 1). Denton spring wheat yields were severely reduced, about 50% below average, by the delayed seeding in May (Table 2). The Geraldine location had about a 20% yield reduction with the mid-May seeding date. Geraldine has deeper soils which mitigated some of the drought stress. There were no significant yield differences at Moccasin or Denton due in part to the drought stress during the growing season. Vida was the high yielder at both Geraldine and Denton. Oneal top the nursery for yield at Moccasin. Several varieties exhibited low stem cutting at both Moccasin and Geraldine with Kuntz and Volt having the most cut stems at both locations.

Vida is used as the standard for multi-year comparison of spring wheat cultivars for yield, test weight, protein, and plant height (See Tables 4-12). Vida is consistently the high or near high grain producer at all three locations. Vida is near the mean for test weight and slightly below the mean for grain protein. Several spring wheat entries have either a non-attractive nature or solid stems that reduce sawfly stem cutting. New entries Duclair and Mott both had less stem cutting than Choteau or Vida

Summary:
The 2011 results re-emphasize the importance of getting spring wheat seeded in prior to mid-spring. Yields were severely reduced by the mid- May seeding date. Vida continues to be an outstanding yield standard in central Montana. However, it does have lower protein than most of the spring wheat entries.

Funding Summary:
Expenditure information to be provided by OSP.
No other grant support was provided for this project.

MWBC FY2011 Grant Submission Plans:
It is planned to submit this project for funding consideration in the next fiscal year.

Table 1 2011 Spring wheat variety evaluation on continuous crop near Moccasin.
Exp. 9970 Central Agricultural Research Center. Moccasin, Montana

ID	Cultivar	Entry	Head Date	Plant Height	Grain Yield	Test Weight	Protein 12% H_2O	Sawfly Cutting
		#	Julian	cm	bu/a	lbs\bu	%	# / 10 ft
AGRIPRO8	AP604CL	15	**187**	67	28.0	59.6	15.1	14.2
PI633974	CHOTEAU	5	188	62	28.3	**60.1**	15.8	7.5
IMICHT79	CHOTEAU*3/CHOTEAU/IMI8134-2//C	20	189	59	26.6	**60.0**	16.2	**4.2**
BZ992588	CONAN	7	188	57	31.3	**60.5**	16.0	**2.5**
BZ996434	CORBIN	9	**187**	61	24.8	59.0	14.6	**2.5**
MT 0832	DUCLAIR	17	**187**	69	32.0	57.9	14.8	**4.2**
CI 13596	FORTUNA	1	189	**82**	32.3	**60.2**	15.8	**4.2**
BZ992322	HANK	8	**188**	64	27.1	58.3	15.4	14.2
BZ9M1044	JEDD	11	188	54	29.9	**60.0**	14.2	**5.8**
AGRIPRO6	KELBY	13	**187**	61	30.3	**61.1**	16.2	10.8
AGRIPRO7	KUNTZ	14	189	63	23.8	59.6	14.6	15.0
PI574642	MCNEAL	2	190	62	27.2	58.9	16.2	13.3
NDSW0449	MOTT	16	190	66	28.5	59.2	15.4	**0.8**
BZ999592	ONEAL	12	189	69	**33.5**	**60.2**	15.0	**1.7**
PI632252	OUTLOOK	4	190	66	28.6	59.7	15.2	**6.7**
ND 695	REEDER	3	189	66	32.1	**61.1**	15.5	**6.7**
AGRIPR12	SY TYRA	19	190	59	23.0	**60.1**	15.4	**5.8**
PI642366	VIDA	6	189	61	32.0	59.4	14.8	**5.0**
ACS52610	VOLT	10	190	57	27.2	**60.8**	13.8	21.7
BZ902413	WB GUNNISON	18	188	56	26.1	59.7	15.4	**0.8**
Mean			189	62.93	28.64	59.74	15.27	7.375
P-Value			0.00	0.00	0.39	0.00		0.00
CV 1			0.2	8.3	17.3	1.1		51.4
LSD (0.05)			0.69	8.7	ns	1.33		6.26

Seeded April 15, 2011 NPKS 10+10+10+05 w/ seed Top dress N 90 lbs as urea

Soils: Temp. 2" depth 7.5°C / 46°F Moisture Probe depth: 15 to 17 inches

Table 2 2011 Spring wheat variety evaluation on continuous crop near Denton
Exp. 9971 Central Agricultural Research Center. Moccasin, Montana

ID	Cultivar	Entry	Plant Height	Grain Yield	Test Weight	Protein 12% moist.	Sawfly Cutting
		#	cm	bu/a	lbs\bu	%	
AGRIPRO8	AP604CL	15	55	16.2	62.3	14.1	Sawfly
PI633974	CHOTEAU	5	48	15.5	61.5	14.6	Cutting
IMICHT79	CHOTEAU*3/CHO	20	47	15.7	62.0	13.4	minimal
BZ992588	CONAN	7	51	16.9	61.6	14.4	
BZ996434	CORBIN	9	56	15.9	61.5	13.9	no
MT 0832	DUCLAIR	17	53	15.4	61.3	13.6	rating
CI 13596	FORTUNA	1	58	15.6	61.2	14.6	recorded
BZ992322	HANK	8	55	16.6	60.3	13.2	
BZ9M1044	JEDD	11	51	16.8	**63.2**	13.8	
AGRIPRO6	KELBY	13	53	15.5	**62.8**	14.9	
AGRIPRO7	KUNTZ	14	57	15.9	63.2	12.2	
PI574642	MCNEAL	2	54	15.8	58.7	14.2	
NDSW0449	MOTT	16	54	16.3	62.6	14.0	
BZ999592	ONEAL	12	57	16.3	61.0	13.8	
PI632252	OUTLOOK	4	53	17.5	59.1	13.4	
ND 695	REEDER	3	51	17.1	61.0	14.3	
AGRIPR12	SY TYRA	19	49	16.4	**64.6**	12.4	
PI642366	VIDA	6	49	17.7	60.9	12.6	
ACS52610	VOLT	10	53	16.2	**62.9**	12.7	
BZ902413	WB GUNNISON	18	48	16.9	61.7	13.2	
Mean			52.6	16.31	61.65	13.7	
P-Value				0.9995	0.00		
CV 1				14.7	1.4		
LSD (0.05)				ns	1.81		

Seeded May 16, 2011 NPKS 10+10+10+05 w/ seed. Top dress N 60 lbs as urea
Into Lentil stubble Soil Temp. 2" : 13^{o}C/55 Moisture Probe: 17 - 20 "
Embolden numbers within a column are statistically similar (0.05%) to the high entry.

Table 3 2011 Spring wheat variety evaluation on continuous crop near Geraldine.
Exp. 9971 Central Agricultural Research Center. Moccasin, Montana

ID	Cultivar	Entry	Plant Height	Grain Yield	Test Weight	Protein 12%	Sawfly Cutting
		#	cm	bu/a	lbs\bu	%	# / 10 ft
AGRIPRO8	AP604CL	15	57	23.4	60.0	15.6	5.0
PI633974	CHOTEAU	5	62	**27.2**	58.8	16.5	**0.0**
IMICHT79	CHOTEAU*3/CHOT	20	57	**27.6**	60.0	14.9	**0.0**
BZ992588	CONAN	7	61	**27.5**	60.3	14.7	**0.8**
BZ996434	CORBIN	9	63	**30.1**	60.2	14.5	**0.0**
MT 0832	DUCLAIR	17	59	26.6	58.7	14.8	**0.0**
CI 13596	FORTUNA	1	81	24.6	**61.1**	14.2	**0.8**
BZ992322	HANK	8	61	**27.1**	59.1	14.3	5.0
BZ9M1044	JEDD	11	51	24.1	60.0	14.6	**0.8**
AGRIPRO6	KELBY	13	56	24.0	**62.0**	15.6	9.2
AGRIPRO7	KUNTZ	14	52	24.1	60.0	13.6	10.0
PI574642	MCNEAL	2	67	26.2	58.5	14.6	5.0
NDSW0449	MOTT	16	63	24.2	**61.3**	14.2	**0.0**
BZ999592	ONEAL	12	57	**27.9**	60.2	14.9	2.5
PI632252	OUTLOOK	4	59	**27.9**	57.7	15.3	**1.7**
ND 695	REEDER	3	62	26.7	59.3	14.4	3.3
AGRIPR12	SY TYRA	19	51	23.1	**60.5**	13.9	**1.7**
PI642366	VIDA	6	60	**30.8**	58.5	15.5	2.5
ACS52610	VOLT	10	58	**27.8**	**62.2**	13.8	7.5
BZ902413	WB GUNNISON	18	58	**28.6**	59.9	14.6	**0.8**
Mean			59.8	26.47	59.88	14.7	2.83
P-Value				0.00	0.00		0.00
CV 1				8.671	1.355		47.9
LSD (0.05)				3.79	1.699		2.24

Seed Date: 16May11 ww stbble NPKS 10+10+10+05 w/ seed Top dress N 60 lbs as urea
NTRC ww stubble Soil: Temp. 2" depth 14^{o}C/57^{o}F Moist Probe depth: 24"
Embolden numbers within a column are statistically similar (0.05%) to the top performing entry.

Table 4 Moccasin multi-year spring wheat variety yields under no-till CC.
Exp 9970 Central Agricultural ResearchCenter. Moccasin, Montana.

	2006	2007	2008	2009	2010	2011	Ave.	Vida Same Yrs
				bu/a				
AP604 CL				16	26	28	23.3	29.6
Choteau	25	32	17	26	27	28	25.7	27.2
Conan	24	31	15	25	32	31	26.4	27.2
Corbin		33	14	23	31	25	25.2	27.0
Duclair					30	32	30.9	31.2
Fortuna	24	30	24	26	34	32	28.2	27.2
Hank	25	32	25	20	27	27	26.0	27.2
Jedd			16	24	29	30	24.6	26.1
Kelby			16	18	25	30	22.2	26.1
Kuntz			19	21	22	24	21.5	26.1
McNeal	25	33	18	28	30	27	26.9	27.2
Mott					33	29	30.7	31.2
ONeal			16	28	33	34	**27.8**	26.1
Outlook	22	32	16	29	33	29	26.5	27.2
Reeder	24	31	15	24	28	32	25.8	27.2
Vida	**28**	**31**	**16**	**27**	**30**	**32**	**27.2**	**27.2**
Volt			23	21	24	27	23.7	26.1
Means	24.6	31.2	18.1	23.4	29.25	28.64		

Varieties with multi-year mean yield > than **Vida** for the same years are in **bold.**

Table 5 Denton multi-year no-till CC spring wheat yield performance.
Exp 9971 Central Agricultural Research Center. Moccasin, Montana.

Pedigree	2006	2007	2008	2009	2010	2011	mean	Vida Same Yrs.
				bu/a				
AP604CL				26	28	16	23.3	29.8
Choteau	23	22	14	26	**37**	16	22.8	26.4
Conan	24	22	15	26	32	17	22.5	26.4
Corbin		23	16	28	**35**	16	23.7	26.8
Duclair					**37**	16	26.1	27.0
Fortuna	26	19	17	26	32	15	22.4	26.4
Hank	25	24	16	32	24	17	22.8	26.4
Jedd			18	31	31	17	24.2	26.8
Kelby			15	22	24	16	19.3	26.8
Kuntz			17	30	21	16	20.9	26.8
McNeal	24	24	17	22	30	16	22.3	26.4
Mott					32	16	24.4	27.0
ONeal			19	33	**37**	16	26.3	26.8
Outlook	25	23	14	28	32	18	23.3	26.4
Reeder	25	21	16	27	28	17	22.5	26.4
Vida	**27**	**25**	**18**	**35**	**36**	**18**	**26.4**	**26.4**
Volt			16	29	22	16	20.9	26.8
Mean	24.9	22.68	16.56	27.8	31.0	16.31		

Varieties with multi-year mean > than **Vida** for the same years are in **bold.**

Table 6 Geraldine multi-year spring wheat variety yield performance.
Exp 9972 Central Agriucultural Research Center. Moccasin, Montana.

Variety	2007	2008	2009	2010	2011	Mean	Vida same Yrs
				bu/a			
AP604CL			24	24	23	23.7	32.5
Choteau	40	28	26	32	27	30.7	35.0
Conan	42	23	24	32	28	29.5	35.0
Corbin	39	25	25	36	30	31.0	35.0
Duclair				34	27	30.1	32.9
Fortuna	34	25	23	35	25	28.4	35.0
Hank	37	25	24	25	27	27.5	35.0
Jedd		21	24	28	24	24.1	31.3
Kelby		15	19	30	24	22.2	31.3
Kuntz		19	22	20	24	21.2	31.3
McNeal	31	22	26	26	26	26.1	35.0
Mott				33	24	28.7	32.9
ONeal		29	29	35	28	30.3	31.3
Outlook	40	24	24	31	28	29.3	35.0
Reeder	40	27	27	28	27	29.6	35.0
Vida	**50**	**28**	**32**	**35**	31	35.0	35.0
Volt		22	30	23	28	25.9	31.3
Mean	39.8	23.1	25.4	30.2	26.5		

Varieties multi-year mean yields > than **Vida** for the same years are in **bold.**

Table 7 Moccasin multi-Year spring wheat variety test weights under no-till CC. Exp 9970 Central Agricultural Research Center. Moccasin, Montana.

	2006	2007	2008	2009	2010	2011	Mean	Vida Same Yrs
				lbs/bu				
AP604 CL				59.8	58.8	59.6	59.4	59.5
Choteau	60.4	53.7	58.6	58.7	59.8	60.1	58.5	58.4
Conan	59.5	53.9	59.6	60.8	59.4	60.5	58.9	58.4
Corbin		52.4	58.6	60.5	59.0	59.0	57.9	58.1
Duclair					58.1	57.9	57.9	59.5
Fortuna	60.8	53.9	58.1	59.2	59.8	60.2	58.6	58.4
Hank	59.0	50.7	56.9	59.4	56.2	58.3	56.7	58.4
Jedd			58.8	60.7	58.9	60.0	59.6	59.3
Kelby			58.6	59.8	60.1	61.1	59.9	59.3
Kuntz			58.4	59.7	59.5	59.6	59.3	59.3
McNeal	57.3	52.3	57.5	59.8	59.1	58.9	57.5	58.4
Mott					59.0	59.2	59.2	59.5
ONeal			59.4	61.2	60.4	60.2	60.3	59.3
Outlook	58.4	51.4	57.3	58.9	58.7	59.7	57.4	58.4
Reeder	60.3	54.0	58.7	60.7	**60.6**	61.1	59.2	58.4
Vida	59.7	**53.5**	**58.8**	**59.3**	59.7	59.4	58.4	58.4
Volt			59.8	60.9	**60.6**	60.8	60.5	59.3
Means	60.27	53.21	58.51	59.98	59.41	59.74		

Varieties with multi-year mean > than **Vida** for the same years are in **bold.**

Table 8 Denton multi-year spring wheat variety test weight in no-till CC. Exp 9971 Central Agricultural Research Center. Moccasin, Montana.

Pedigree	2006	2007	2008	2009	2010	2011	Mean	Vida Same Yrs
				lbs/bu				
AP604CL				62.9	**61.1**	62.3	**62.1**	60.8
Choteau	60.4	55.9	59.6	61.7	60.4	61.5	**59.9**	59.8
Conan	59.5	56.5	60.3	62.5	60.7	61.6	**60.2**	59.8
Corbin		55.7	58.8	61.9	60.1	61.5	59.6	59.8
Fortuna	60.8	56.0	59.6	62.4	59.5	61.3	**59.9**	59.8
DUCLAIR					60.1	61.2	**60.7**	60.3
Hank	59.0	53.7	58.1	62.2	58.2	60.3	58.6	59.8
Jedd			61.2	63.0	60.7	63.2	**62.0**	60.6
Kelby			61.2	63.0	60.8	62.8	**61.9**	60.6
Kuntz			60.9	62.7	58.9	63.2	**61.4**	60.6
McNeal	57.3	56.1	58.7	61.9	59.0	58.7	58.6	59.8
MOTT					59.9	62.6	**61.2**	60.3
ONeal			60.5	62.3	**61.3**	61.0	**61.2**	60.6
Outlook	58.4	54.9	59.0	62.7	58.6	59.1	58.7	59.8
Reeder	60.3	56.5	60.7	63.4	60.3	61.0	**60.3**	59.8
Vida	59.7	**56.9**	**60.0**	**61.8**	59.7	60.9	**59.8**	**59.8**
Volt			61.5	63.0	**61.7**	62.9	**62.2**	60.6
Mean	60.27	56.43	60.01	62.54	60.2	61.65		

Varieties with multi-year mean > than **Vida** for the same years are in **bold.**

Table 9 Geraldine multi-year spring wheat variety test weights.
Exp 9972 Central Agriucultural Research Center. Moccasin, Montana.

Variety	2007	2008	2009	2010	2011	Mean	Vida same Yrs
				lbs/bu			
AP604CL			61.3	58.5	60.0	**59.9**	58.7
Choteau	59.3	61.4	59.9	57.1	58.8	59.3	59.3
Conan	59.5	61.6	61.0	59.3	60.3	**60.3**	59.3
Corbin	59.7	61.4	60.3	58.2	60.2	**59.9**	59.3
Duclair				57.2	58.7	57.9	57.9
Fortuna	58.4	60.8	59.1	59.3	61.1	**59.7**	59.3
Hank	56.2	60.5	60.0	56.9	59.1	58.5	59.3
Jedd		62.5	61.3	58.9	60.0	**60.7**	59.6
Kelby		61.8	60.6	59.3	62.0	**60.9**	59.6
Kuntz		60.5	60.6	57.4	60.0	59.6	59.6
McNeal	57.6	60.6	60.1	57.6	58.5	**58.8**	57.8
Mott				58.6	61.3	**59.9**	57.9
ONeal		62.0	61.7	**59.6**	60.2	**60.8**	59.6
Outlook	57.9	60.8	59.0	56.9	57.7	58.4	59.3
Reeder	59.8	62.2	60.7	**59.1**	59.3	**60.2**	59.3
Vida	**58.5**	**62.1**	**60.4**	**57.3**	**58.5**	**59.3**	**59.3**
Volt		62.3	62.7	**60.2**	62.2	**61.8**	59.6
Mean	59.05	61.31	60.62	58.48	59.88		

Varieties with multi-year mean > than **Vida** for the same years are in **bold.**

Table 10 Moccasin multi-year spring wheat cultvar protein content under CC no-till.
Exp 9970 Central Agricultural Research Center. Moccasin, Montana.

Variety	2006	2007	2008	2009	2010	2011	Mean	Vida Same Year
	%	%	%	%	%	%	%	%
AP604 CL				17.8	12.9	15.1	**15.3**	14.6
Choteau	14.2	14.6	14.8	17.6	12.6	15.8	**14.9**	14.1
Conan	14.9	15.2	14.5	16.3	13.2	16.0	**15.0**	14.1
Corbin		15.9	14.6	18.1	12.8	14.6	**15.2**	14.3
Duclair					13.2	14.8	**14.0**	13.3
Fortuna	14.3	14.9	14.5	16.2	12.7	15.8	**14.7**	14.1
Hank	13.2	15.8	13.5	18.5	12.6	15.4	**14.8**	14.1
Jedd			13.5	17	13.4	14.2	**14.5**	14.2
Kelby			14.7	15.2	13.7	16.2	**15.0**	14.2
Kuntz			13.7	15.7	12.8	14.6	14.2	14.2
McNeal	14.3	15.1	14.6	17.5	12.9	16.2	**15.1**	14.1
Mott					13.7	15.4	**14.6**	13.3
ONeal			13.7	17.3	12.9	15.0	**14.7**	14.2
Outlook	13.2	14.5	13.2	16.3	12.0	15.2	14.1	14.1
Reeder	13.8	14.9	14.2	16.3	12.4	15.5	**14.5**	14.1
Vida	**12.9**	**14.9**	**12.8**	**17.4**	**11.7**	**14.8**	**14.1**	**14.1**
Volt			13.9	16	13.7	13.8	**14.4**	14.2
Means	13.7	15.26	14.06	16.94	12.88	15.27		

Varieties with multi-year mean > than **Vida** for the same years are in **bold.**

Table 12 Multi-Year spring wheat cultivar protein content near Geraldine.
Exp 997210 Central Agricultural Research Center. Moccasin, Montana.

Variety	2007	2008	2009	2010	2011	Mean	Vida Same Yrs
				%			
AP604CL			14.1	15.2	15.6	**15.0**	14.2
Choteau	15.4	11.8	14.3	15.1	16.5	**14.6**	14.0
Conan	15.2	12.6	15.3	14.9	14.7	**14.5**	14.0
Corbin	14.7	11.5	14.3	14.9	14.5	14.0	14.0
Duclair				14.3	14.8	14.6	14.7
Fortuna	16.5	11.4	14.5	14.7	14.2	**14.3**	14.0
Hank	15.7	11.1	13.6	15.1	14.3	14.0	14.0
Jedd		10.5	13.6	14.6	14.6	13.3	13.6
Kelby		13.0	16.0	15.8	15.6	**15.1**	13.6
Kuntz		11.3	13.4	14.0	13.6	13.1	13.6
McNeal	16.2	12.0	14.7	14.8	14.6	**14.5**	14.0
Mott				15.4	14.2	**14.8**	14.7
ONeal		10.8	13.6	14.5	14.9	13.5	13.6
Outlook	15.0	11.8	14.8	14.1	15.3	**14.2**	14.0
Reeder	15.3	11.7	14.0	15.2	14.4	**14.1**	14.0
Vida	15.4	11.7	13.4	13.8	15.5	**14.0**	**14.0**
Volt		11.9	13.5	13.5	13.8	13.2	13.6
Mean	15.42	11.6	14.3	14.67	14.8		

Varieties with multi-year means > than **Vida** for the same years are in **bold.**

Table 13 Moccasin multi-year sawfly spring wheat stem cutting in NTRC.
Exp 9970 Central Agricultural Research Center. Moccasin, Montana.

	2007	2008	2009	2010	2011	mean	Vida Same Yrs
				# cut per ten feet of one row			
AP604 Cl	sawfly	sawfly	1.7	8.7	14.2	8.2	2.3
Choteau	cutting	cutting	0.0	1.3	7.5	2.9	2.3
Conan	minimal	minimal	0.0	1.7	2.5	**1.4**	2.3
Corbin	not	not	0.0	1.7	2.5	**1.4**	2.3
Duclair	rated	rated		**1.0**	4.2	**2.6**	3.5
Fortuna			0.0	1.7	4.2	**1.9**	2.3
Hank			2.0	7.7	14.2	8.0	2.3
Jedd			1.0	4.0	5.8	3.6	2.3
Kelby			1.3	5.3	10.8	5.8	2.3
Kuntz			2.7	6.0	15.0	7.9	2.3
McNeal			0.3	4.0	13.3	5.9	2.3
Mott				1.0	0.8	**0.9**	3.5
ONeal			0.0	1.7	1.7	**1.1**	2.3
Outlook			0.0	5.7	6.7	4.1	2.3
Reeder			1.3	5.3	6.7	4.4	2.3
Vida			**0.0**	**2.0**	**5.0**	**2.3**	**2.3**
Volt			2.3	15.0	21.7	13.0	2.3
Means			0.85	4.43	8.0		

Table 14 Denton multi-year spring wheat variety stem cutting.
Exp 997110 Central Agricultural Research Center. Moccasin, Montana.

Pedigree	2006	2007	2008	2009	2010	2011
			# cut per ten feet of one row			
AP604CL	sawfly	sawfly		sawfly	9.0	sawfly
Choteau	cutting	cutting	0.3	cutting	4.0	cutting
Conan	minimal	minimal	0.3	minimal	1.5	minimal
Corbin	not	not	0.7	not	1.5	not
Duclair	rated	rated		rated	1.0	rated
Fortuna			0.7		2.0	
Hank			10.7		13.5	
Jedd			9.7		7.0	
Kelby			19.7		12.5	
Kuntz			23.3		29.0	
McNeal			10.7		3.5	
Mott					1.0	
ONeal			0.3		2.5	
Outlook			2.3		7.5	
Reeder			11.3		10.5	
Vida			4.3		2.0	
Volt			22.3		32.5	
Mean			8.2		7.95	

Table 15 Geraldine multi-year sawfly spring wheat stem cutting.
Exp 9972 Central Agricultural Research Center. Moccasin, Montana.

Variety	2005	2007	2008	2009	2010	2011	Mean
			# cut per ten feet of one row				
AP604CL				2.0	7.3	5.0	4.8
Choteau	0.17	1.7	15	0.0	2.3	0.0	**3.2**
Conan	1.33	1.7	10	0.0	3.0	0.8	**2.8**
Corbin		1.7	11	0.3	2.3	0.0	**3.1**
Duclair					1.7	0.0	**0.9**
Fortuna	1.00	1.7	15	0.7	1.3	0.8	3.4
Hank	2.67	1.7	53	1.3	12.7	5.0	12.8
Jedd			38	1.3	9.3	0.8	12.5
Kelby			52	2.0	4.0	9.2	16.7
Kuntz			60	4.3	22.0	10.0	24.1
McNeal	3.33	2.0	36	1.3	7.7	5.0	9.2
Mott					2.7	0.0	**1.4**
ONeal			15	0.7	3.0	2.5	5.2
Outlook	1.67	2.7	30	1.0	8.7	1.7	7.6
Reeder	2.67	2.3	30	2.7	6.3	3.3	7.9
Vida	**0.67**	**2.0**	**11**	**0.0**	**3.3**	**2.5**	**3.3**
Volt			51	4.0	27.7	7.5	22.5
Mean	2.18	1.345	33.32	1.50	7.37	2.8	