

PROJECT TITLE: Off-station spring wheat variety evaluations in eastern Montana – 2010 (4W2756)

PRINCIPAL INVESTIGATOR: Joyce Eckhoff, Eastern Agricultural Research Center, Sidney, MT
phone: (406)433-2208 e-mail: jeckhoff@sidney.ars.usda.gov

Personnel:

Site/County	Producer	CES Agent
Flaxville, Daniels	Jeff Mohn	Nicole Winkler
Circle, McCone	Victor Wagner	Ken Nelson
Poplar, Roosevelt	Mark Swank	Ann Ronning
Nashua, Valley	Bill Lauckner	Shelley Mills
Wibaux, Wibaux	David Maus	Dave Bertelsen
Outlook, Sheridan	Gordon Stoner	Terry Angvick

OBJECTIVE: To evaluate varieties of spring wheat under dryland conditions at various sites in eastern Montana.

RESULTS: Summaries of yields, test weights, protein contents, and heights across all sites are shown in Tables 1-4. Vida yielded most across sites (Table 1). Ap604CL had greatest test weight across sites (Table 2). Kelby had the highest protein content across sites (Table 3). Granger was tallest across sites and Jedd was shortest across sites (Table 4).

Circle, McCone County: Performances and relative values of yield, test weight and protein of spring wheat varieties at Circle are shown in Tables 5-8. MT0852 had greatest economic return.

Nashua, Valley County: Performances and relative values of yield, test weight and protein of spring wheat varieties at Nashua are shown in Tables 9-12. Kelby had greatest economic return.

Flaxville, Daniels County: Performances of spring wheat varieties at Flaxville are shown in Table 13. Reeder had greatest economic return.

Wibaux, Wibaux County: Performances and relative values of yield, test weight and protein of spring wheat varieties at Wibaux are shown in Tables 14-17. MT0852 had greatest economic return.

Poplar, Roosevelt County: Performance and relative values of yield, test weight and protein of spring wheat varieties at Poplar are shown in Tables 18-21. Kelby had greatest economic return.

Outlook, Sheridan County: Performances of spring wheat varieties at Outlook are shown in Table 22. Kuntz had greatest economic return.

SUMMARY: Off-station yield trials are conducted at several sites in eastern Montana. All experiments reported under this project are of the replicated small plot type. These trials provide important information about performance of experimental lines and varieties from Montana State University, other state universities, and private companies.

FUNDING SUMMARY: Expenditure information to be provided by OSP. No other grants support this project.

MWBC FY2012 GRANT SUBMISSION PLANS: It is planned to submit this project for funding consideration in the next fiscal year.

Table 1. Summary of spring wheat yields in bu/acre at six off-station sites in eastern Montana, 2010.

Variety	Circle, dryland recrop	Nashua, dryland fallow	Flaxville, dryland recrop	Wibaux, dryland fallow	Poplar, dryland fallow	Outlook, dryland recrop	average
Vida	13.9	40.8	41.5	28.8	47.7	38.0	35.1
Reeder	10.1	38.6	45.4	26.4	47.5	36.7	34.1
O'Neal	12.3	31.2	42.3	27.8	43.9	38.0	32.6
Kuntz	7.7	32.9	40.7	27.1	48.3	38.7	32.6
MT 0852	16.8	25.8	37.2	33.2	45.7	34.8	32.2
Kelby	6.3	44.9	34.0	24.4	54.0	28.1	31.9
MT 0832	14.3	25.8	32.7	31.9	52.2	30.3	31.2
MT 0827	12.0	29.6	33.9	31.4	46.1	31.6	30.8
Ap604CL	6.7	44.4	36.4	25.3	52.1	17.1	30.3
Barlow	10.1	32.6	35.0	25.8	43.3	33.2	30.0
Briggs	9.3	38.0	32.8	21.1	43.2	34.7	29.9
Jedd	9.4	29.0	34.1	23.2	52.5	28.7	29.5
Corbin	10.3	38.6	36.4	24.1	41.6	25.7	29.5
McNeal	9.3	38.8	32.0	19.9	38.8	34.6	28.9
Faller	12.0	24.2	37.7	24.0	39.3	34.7	28.7
Choteau	10.9	28.4	42.0	23.5	47.6	16.3	28.1
Outlook	9.9	28.1	37.3	24.1	37.9	26.0	27.2
Granger	9.0	31.5	32.7	23.3	33.2	32.7	27.1
Volt	4.6	35.1	35.4	28.5	34.6	22.1	26.7
Mott	12.6	18.0	31.3	25.2	37.4	35.9	26.7
site average	10.4	32.82	36.54	26.0	44.3	30.9	30.2
probability	<0.001	<0.001	0.012	0.069	<0.001	<0.001	
CV (S/Mean)	13.5	17.4	12.4	17.7	12.2	12.5	
CV(SE/Mean)	7.8	10.0	7.1	10.2	7.0	7.2	
LSD 0.05	2.3	9.4	7.5	7.6	8.9	6.4	

Table 2. Summary of spring wheat test weights in lb/bu at six off-station sites in eastern Montana, 2010.

Variety	Circle, dryland recrop	Nashua, dryland fallow	Flaxville, dryland recrop	Wibaux, dryland fallow	Poplar, dryland fallow	Outlook, dryland recrop	average
Ap604CL	62.5	58.0	61.0	59.5	59.5	59.5	60.0
Barlow	65.0	56.5	61.0	59.0	58.0	60.0	59.9
Volt	61.0	58.0	61.5	58.5	58.5	60.5	59.7
Reeder	62.5	56.5	60.0	58.5	58.0	60.0	59.3
Kelby	61.5	58.0	60.0	57.5	58.0	59.5	59.1
Vida	62.0	56.0	60.0	58.5	57.5	59.0	58.8
Jedd	59.5	57.0	59.5	59.0	57.5	60.5	58.8
MT 0827	62.5	55.0	60.5	59.0	57.0	59.0	58.8
Mott	62.0	56.5	60.0	58.0	56.5	59.0	58.7
Kuntz	60.0	55.5	60.0	59.0	57.5	59.5	58.6
Briggs	62.0	57.0	60.5	57.0	56.5	58.5	58.6
Corbin	61.5	56.0	60.0	57.0	57.0	59.5	58.5
O'Neal	58.5	56.5	60.5	58.0	57.0	60.0	58.4
Granger	61.5	55.5	60.5	58.0	56.5	58.5	58.4
MT 0852	63.0	54.5	59.0	58.0	55.5	58.0	58.0
Choteau	61.5	55.5	58.0	57.5	55.5	57.0	57.5
Faller	61.5	53.5	60.0	56.0	54.0	58.5	57.3
MT 0832	62.0	54.0	58.0	56.5	55.0	58.0	57.3
McNeal	60.0	56.5	56.5	54.5	56.0	58.5	57.0
Outlook	61.0	55.5	56.5	55.5	55.0	57.5	56.8
site average	61.6	56.1	59.7	57.7	56.8	59.0	58.5

Table 3. Summary of spring wheat protein contents in percent at six dryland off-station sites in eastern Montana, 2010.

Variety	Circle, dryland recrop	Nashua, dryland fallow	Flaxville, dryland recrop	Wibaux, dryland fallow	Poplar, dryland fallow	Outlook, dryland recrop	average
Kelby	15.10	15.24	15.70	11.81	16.18	15.39	14.90
Briggs	14.58	15.85	16.01	12.00	16.32	14.48	14.87
Ap604CL	12.02	14.79	15.44	11.63	15.38	16.90	14.36
Faller	13.01	16.10	14.21	12.51	15.95	14.36	14.36
Reeder	12.77	15.75	14.75	12.50	15.40	14.93	14.35
Corbin	13.86	14.96	13.87	11.64	15.47	16.10	14.32
Choteau	12.34	14.91	14.08	12.44	15.30	16.08	14.19
Jedd	14.73	14.43	14.37	12.34	14.90	14.22	14.17
Mott	13.48	15.22	14.62	12.00	15.55	13.99	14.14
Barlow	12.50	14.37	15.46	12.22	16.00	14.21	14.13
O'Neal	13.51	15.18	13.89	11.97	16.36	13.48	14.07
Vida	11.83	14.70	14.62	12.95	15.65	14.27	14.00
Volt	12.84	14.53	13.50	11.82	16.21	14.79	13.95
Granger	12.58	15.05	14.95	12.10	15.70	13.14	13.92
MT 0827	11.96	15.06	14.89	12.34	15.54	13.61	13.90
Kuntz	13.27	14.48	14.17	12.69	14.77	13.86	13.87
MT 0852	12.12	14.68	14.37	12.50	15.82	13.75	13.87
Outlook	12.31	14.89	13.73	12.26	15.00	14.48	13.78
MT 0832	10.95	14.79	14.11	12.96	16.06	13.36	13.70
McNeal	12.10	14.71	13.04	12.08	14.87	13.56	13.39
site average	12.89	14.98	14.49	12.2	15.62	14.45	14.11

Table 4. Summary of spring wheat heights in cm at six dryland off-station sites in eastern Montana, 2010.

Variety	Circle, dryland recrop	Nashua, dryland fallow	Flaxville, dryland recrop	Wibaux, dryland fallow	Poplar, dryland fallow	Outlook, dryland recrop	average
Granger	54.7	88.3	78.3	81.3	92.3	69.3	77.4
Briggs	55.7	84.7	69.0	75.3	88.3	70.0	73.8
Mott	59.7	81.3	71.7	76.7	86.7	61.0	72.8
Faller	56.0	84.0	78.3	75.3	87.3	53.7	72.4
Outlook	57.0	79.3	77.0	76.3	85.7	57.7	72.2
McNeal	55.3	78.3	71.7	75.7	85.0	65.0	71.8
Barlow	51.3	83.7	73.7	71.3	86.7	61.0	71.3
Reeder	52.0	81.3	76.0	71.7	87.3	54.3	70.4
MT 0827	54.3	76.3	70.3	72.0	85.3	60.7	69.8
O'Neal	49.7	76.7	73.0	75.7	82.3	59.3	69.4
Vida	54.7	76.3	73.3	71.3	82.3	56.0	69.0
MT 0852	54.0	73.7	70.7	74.3	76.0	60.0	68.1
MT 0832	52.0	79.0	68.0	74.3	81.3	53.3	68.0
Ap604CL	49.3	77.3	73.3	69.3	85.0	53.3	67.9
Corbin	51.7	80.0	69.7	70.3	77.3	50.7	66.6
Volt	43.0	74.0	69.3	71.7	77.3	56.3	65.3
Choteau	51.7	72.7	71.7	70.0	79.3	43.3	64.8
Kuntz	50.7	72.0	70.3	65.3	75.7	54.3	64.7
Kelby	46.3	72.3	69.3	67.0	75.7	54.0	64.1
Jedd	42.7	73.7	61.3	62.0	78.7	49.3	61.3
site average	52.1	78.25	71.8	72.4	82.8	57.1	69.1
probability	<0.001	<0.001	0.004	0.003	0.008	<0.001	
CV (S/Mean)	7.3	4.9	5.7	6.3	6.5	10.6	
CV(SE/Mean)	4.2	2.8	3.3	3.6	3.8	6.1	
LSD 0.05	6.3	6.3	6.8	7.5	8.9	10.0	

Table 5. Performance of spring wheat grown under dryland recrop conditions at Circle, MT. Previous crop was spring wheat. Planted: April 27, 2010 Harvested: August 27, 2010
Cooperator: Victor Wagner

Variety	height, cm	grain protein, %	test wt, lb/bu	Yield, bu/acre	\$/acre ¹ +/- Vida
MT 0852	54.0	12.12	63.0	16.8	15.34
MT 0832	52.0	10.95	62.0	14.3	2.12
Vida	54.7	11.83	62.0	13.9	0.00
Mott	59.7	13.48	62.0	12.6	-1.58
O'Neal	49.7	13.51	58.5	12.3	-3.30
Faller	56.0	13.01	61.5	12.0	-6.93
MT 0827	54.3	11.96	62.5	12.0	-10.05
Choteau	51.7	12.34	61.5	10.9	-15.11
Corbin	51.7	13.86	61.5	10.3	-13.89
Reeder	52.0	12.77	62.5	10.1	-17.88
Barlow	51.3	12.50	62.0	10.1	-18.59
Outlook	57.0	12.31	61.0	9.9	-20.47
Jedd	42.7	14.73	59.5	9.4	-16.85
McNeal	55.3	12.10	60.0	9.3	-24.33
Briggs	55.7	14.58	62.0	9.3	-17.92
Granger	54.7	12.58	61.5	9.0	-24.57
Kuntz	50.7	13.27	60.0	7.7	-30.18
Ap604CL	49.3	12.02	62.5	6.7	-38.09
Kelby	46.3	15.10	61.5	6.3	-35.16
Volt	43.0	12.84	61.0	4.6	-48.18
average	52.1	12.89	61.6	10.4	
probability	<0.001			<0.001	
CV (S/Mean)	7.3			13.5	
CV(SE/Mean)	4.2			7.8	
LSD 0.05	6.3			2.3	

¹ Wheat prices compiled and summarized by G. Carlson and P. Lamb, NARC, Havre, MT, from 10-yr (2000-2009) average daily market values for PNW, supplied by the Montana Wheat and Barley Committee.

Table 6. Relative yielding abilities of spring wheat varieties as compared to Vida when grown under dryland conditions in McCone County in cooperation with CES.

Cultivar	2005	2006	2008	2009	2010	Ave	as % of Vida
MT0852	--	--	--	--	16.8	16.8	120.9
MT0832	--	--	--	--	14.3	14.3	102.9
Vida	29.0	14.4	12.6	39.5	13.9	21.9	100.0
Reeder	36.2	12.9	11.9	26.9	10.1	19.6	89.6
MT0827	--	--	--	--	12.0	12.0	86.3
O'Neal	--	--	12.2	29.8	12.3	18.1	82.3
Mott	--	--	--	31.2	12.6	21.9	82.0
Outlook	35.2	10.9	11.4	22.0	9.9	17.9	81.7
Jedd	--	--	13.8	28.4	9.4	17.2	78.2
Choteau	25.3	10.8	11.9	25.1	10.9	16.8	76.8
McNeal	30.5	7.3	7.0	28.7	9.3	16.6	75.7
Corbin	--	--	11.7	23.7	10.3	15.2	69.2
Barlow	--	--	--	26.7	10.1	18.4	68.9
Kuntz	--	--	7.0	28.7	7.7	14.5	65.8
Faller	--	--	6.6	24.3	12.0	14.3	65.0
Kelby	--	--	11.3	24.4	6.3	14.0	63.6
AP604CL	--	--	--	26.3	6.7	16.5	61.8
Briggs	--	--	8.9	21.7	9.3	13.3	60.5
Granger	--	--	9.7	19.7	9.0	12.8	58.2
Volt	--	--	5.8	26.2	4.6	12.2	55.5

NOTE: Average yields in this summary should not be compared to each other since they are not grown in the same years. Compare yields only to the check variety.

Table 7. Relative test weights of spring wheat varieties as compared to Vida when grown under dryland conditions in McCone County in cooperation with CES.

Cultivar	2005	2006	2008	2009	2010	Ave	as % of Vida
Barlow	--	--	--	61.3	62.0	61.7	102.6
AP604CL	--	--	--	60.0	62.5	61.3	101.9
MT0852	--	--	--	--	63.0	63.0	101.6
Briggs	--	--	60.2	59.5	62.0	60.6	101.1
MT0827	--	--	--	--	62.5	62.5	100.8
Reeder	61.7	58.3	59.5	59.3	62.5	60.3	100.8
Mott	--	--	--	58.8	62.0	60.4	100.5
Jedd	--	--	60.5	60.3	59.5	60.1	100.3
Corbin	--	--	59.8	59.0	61.5	60.1	100.3
Kelby	--	--	59.7	58.7	61.5	60.0	100.1
Volt	--	--	59.8	59.0	61.0	59.9	100.1
Vida	61.3	58.0	59.5	58.2	62.0	59.8	100.0
MT0832	--	--	--	--	62.0	62.0	100.0
Kuntz	--	--	60.0	59.3	60.0	59.8	99.8
Granger	--	--	58.7	58.7	61.5	59.6	99.6
Choteau	60.5	58.8	59.5	57.3	61.5	59.5	99.5
O'Neal	--	--	59.5	59.8	58.5	59.3	98.9
Faller	--	--	57.3	57.8	61.5	58.9	98.3
Outlook	59.5	56.7	58.2	57.8	61.0	58.6	98.1
McNeal	59.7	55.7	57.0	58.0	60.0	58.1	97.1

NOTE: Average test weights in this summary should not be compared to each other since they are not grown in the same years. Compare test weights only to the check variety.

Table 8. Relative protein contents of spring wheat varieties as compared to Vida when grown under dryland conditions in McCone County in cooperation with CES.

Cultivar	2005	2006	2008	2009	2010	Ave	as % of Vida
Kelby	--	--	14.2	15.6	15.1	15.0	112.3
Corbin	--	--	14.6	16.1	13.9	14.9	111.5
Briggs	--	--	14.7	14.4	14.6	14.6	109.3
Reeder	13.7	16.0	15.2	14.9	12.8	14.5	108.7
O'Neal	--	--	14.4	15.2	13.5	14.4	107.8
Mott	--	--	--	13.7	13.5	13.6	107.1
Faller	--	--	15.9	13.3	13.0	14.1	105.5
AP604CL	--	--	--	14.7	12.0	13.4	105.1
Barlow	--	--	--	13.8	12.5	13.2	103.5
Choteau	13.2	14.8	14.0	14.8	12.3	13.8	103.4
Jedd	--	--	13.2	13.4	14.7	13.8	103.3
MT0852	--	--	--	--	12.1	12.1	102.5
Outlook	12.4	15.2	13.8	14.5	12.3	13.6	102.1
Granger	--	--	14.3	13.8	12.6	13.6	101.8
Volt	--	--	14.2	13.7	12.8	13.6	101.8
MT0827	--	--	--	--	12.0	12.0	101.7
Kuntz	--	--	13.5	13.5	13.3	13.4	100.8
Vida	11.8	15.0	14.6	13.6	11.8	13.4	100.0
McNeal	11.6	14.5	14.1	13.6	12.1	13.2	98.7
MT0832	--	--	--	--	11.0	11.0	93.2

NOTE: Average protein contents in this summary should not be compared to each other since they are not grown in the same years. Compare protein contents only to the check variety.

Table 9. Performance of spring wheat grown under dryland fallow conditions at Nashua, MT. Planted: Apr 24, 2010 Harvested: August 26, 2010 Cooperator: Bill Lauckner

Variety	height, inches	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- Vida
Kelby	72.3	15.24	58.0	44.9	27.42
Ap604CL	77.3	14.79	58.0	44.4	21.71
Vida	76.3	14.70	56.0	40.8	0.00
Reeder	81.3	15.75	56.5	38.6	-10.95
Corbin	80.0	14.96	56.0	38.6	-10.95
McNeal	78.3	14.71	56.5	38.8	-12.06
Briggs	84.7	15.85	57.0	38.0	-14.60
Volt	74.0	14.53	58.0	35.1	-36.12
Kuntz	72.0	14.48	55.5	32.9	-49.28
Barlow	83.7	14.37	56.5	32.6	-52.70
Granger	88.3	15.05	55.5	31.5	-54.18
O'Neal	76.7	15.18	56.5	31.2	-56.01
MT 0827	76.3	15.06	55.0	29.6	-65.76
Jedd	73.7	14.43	57.0	29.0	-72.60
Choteau	72.7	14.91	55.5	28.4	-73.06
Outlook	79.3	14.89	55.5	28.1	-74.89
MT 0832	79.0	14.79	54.0	25.8	-90.45
MT 0852	73.7	14.68	54.5	25.8	-90.45
Faller	84.0	16.10	53.5	24.2	-98.64
Mott	81.3	15.22	56.5	18.0	-136.40
average	78.25	14.98	56.1	32.82	
probability	<0.001			<0.001	
CV (S/Mean)	4.9			17.4	
CV(SE/Mean)	2.8			10.0	
LSD 0.05	6.3			9.4	

¹ Wheat prices compiled and summarized by G. Carlson and P. Lamb, NARC, Havre, MT, from 10-yr (2000-2009) average daily market values for PNW, supplied by the Montana Wheat and Barley Committee.

Table 10. Relative yielding abilities of spring wheat varieties as compared to Vida when grown under dryland conditions in Valley County in cooperation with CES.

Cultivar	2005	2006	2008	2009	2010	Ave	as % of Vida
AP604CL	--	--	--	30.9	44.4	37.7	114.4
Kelby	--	--	16.0	29.5	44.9	30.1	111.3
Reeder	50.4	33.3	16.1	30.4	38.6	33.8	101.1
Volt	--	--	15.4	30.8	35.1	27.1	100.1
Vida	48.6	37.2	15.4	25.0	40.8	33.4	100.0
O'Neal	--	--	18.4	29.8	31.2	26.5	97.8
Briggs	--	--	13.7	27.3	38.0	26.3	97.3
Barlow	--	--	--	30.8	32.6	31.7	96.4
McNeal	49.0	27.9	17.7	26.9	38.8	32.1	96.0
Outlook	58.0	32.6	15.1	24.5	28.1	31.7	94.8
Granger	--	--	15.4	29.6	31.5	25.5	94.2
Jedd	--	--	15.4	29.3	29.0	24.6	90.8
Corbin	--	--	13.3	20.7	38.6	24.2	89.4
Kuntz	--	--	12.1	25.7	32.9	23.6	87.1
Choteau	47.7	30.2	11.7	22.2	28.4	28.0	84.0
Faller	--	--	10.0	29.3	24.2	21.2	78.2
MT0827	--	--	--	--	29.6	29.6	72.5
Mott	--	--	--	26.2	18.0	22.1	67.2
MT0832	--	--	--	--	25.8	25.8	63.2
MT0825	--	--	--	--	25.8	25.8	63.2

NOTE: Average yields in this summary should not be compared to each other since they are not grown in the same years. Compare yields only to the check variety.

Table 11. Relative test weights of spring wheat varieties as compared to Vida when grown under dryland conditions in Valley County in cooperation with CES.

Cultivar	2005	2006	2008	2009	2010	Ave	as % of Vida
Volt	--	--	55.0	60.3	58.0	57.8	103.0
O'Neal	--	--	55.2	61.2	56.5	57.6	102.8
Barlow	--	--	--	61.5	56.5	59.0	102.6
Jedd	--	--	54.7	60.8	57.0	57.5	102.6
AP604CL	--	--	--	59.5	58.0	58.8	102.2
Briggs	--	--	55.0	59.3	57.0	57.1	101.8
Kelby	--	--	53.8	59.3	58.0	57.0	101.7
Reeder	61.5	58.3	54.1	59.8	56.5	58.0	100.8
Corbin	--	--	53.5	59.5	56.0	56.3	100.5
Mott	--	--	--	58.8	56.5	57.7	100.3
Kuntz	--	--	53.3	59.7	55.5	56.2	100.2
McNeal	61.0	56.5	54.7	59.3	56.5	57.6	100.0
Vida	60.7	59.0	53.2	59.0	56.0	57.6	100.0
Choteau	60.7	60.0	53.5	58.2	55.5	57.6	100.0
Granger	--	--	53.0	59.5	55.5	56.0	99.9
Outlook	60.5	57.7	53.0	58.8	55.5	57.1	99.2
MT0827	--	--	--	--	55.0	55.0	98.2
MT0825	--	--	--	--	54.5	54.5	97.3
Faller	--	--	51.0	57.8	53.5	54.1	96.5
MT0832	--	--	--	--	54.0	54.0	96.4

NOTE: Average test weights in this summary should not be compared to each other since they are not grown in the same years. Compare test weights only to the check variety.

Table 12. Relative protein contents of spring wheat varieties as compared to Vida when grown under dryland conditions in Valley County in cooperation with CES.

Cultivar	2005	2006	2008	2009	2010	Ave	as % of Vida
MT0827	--	--	--	--	15.1	15.1	102.7
Reeder	12.0	14.8	17.5	16.2	15.8	15.3	101.5
MT0832	--	--	--	--	14.8	14.8	100.7
Vida	12.4	13.8	17.4	16.9	14.7	15.0	100.0
MT0825	--	--	--	--	14.7	14.7	100.0
Faller	--	--	17.0	15.8	16.1	16.3	99.8
Briggs	--	--	17.2	15.7	15.8	16.2	99.4
O'Neal	--	--	17.4	15.8	15.2	16.1	98.8
Corbin	--	--	17.6	15.3	15.0	16.0	97.8
Kelby	--	--	17.2	15.5	15.2	16.0	97.8
Mott	--	--	--	15.5	15.2	15.4	97.2
Choteau	12.0	13.1	16.0	16.1	14.9	14.4	95.9
Granger	--	--	16.6	15.3	15.0	15.6	95.7
Jedd	--	--	17.0	15.2	14.4	15.5	95.1
McNeal	12.1	12.8	16.5	15.4	14.7	14.3	95.1
Barlow	--	--	--	15.5	14.4	15.0	94.6
AP604CL	--	--	--	15.1	14.8	15.0	94.6
Volt	--	--	17.2	14.2	14.5	15.3	93.7
Outlook	11.3	12.2	16.6	15.2	14.9	14.0	93.4
Kuntz	--	--	16.1	14.8	14.5	15.1	92.7

NOTE: Average protein contents in this summary should not be compared to each other since they are not grown in the same years. Compare protein contents only to the check variety.

Table 13. Performance of spring wheat grown under dryland recrop conditions at Flaxville, MT. Previous crop was spring wheat. Planted: May 24, 2010 Harvested: October 12, 2010
Cooperator: Jeff Mohn

Variety	Height, cm	Grain protein	Test Weight	Yield Bu/acre	\$/acre ¹ +/- Vida
Reeder	76.0	14.75	60.0	45.4	25.59
O'Neal	73.0	13.89	60.5	42.3	0.13
Vida	73.3	14.62	60.0	41.5	0.00
Choteau	71.7	14.08	58.0	42.0	-1.63
Kuntz	70.3	14.17	60.0	40.7	-6.82
Faller	78.3	14.21	60.0	37.7	-24.61
Ap604CL	73.3	15.44	61.0	36.4	-26.49
MT 0852	70.7	14.37	59.0	37.2	-27.57
Outlook	77.0	13.73	56.5	37.3	-32.20
Barlow	73.7	15.46	61.0	35.0	-35.02
Corbin	69.7	13.87	60.0	36.4	-37.41
Kelby	69.3	15.70	60.0	34.0	-41.11
MT 0827	70.3	14.89	60.5	33.9	-41.72
Jedd	61.3	14.37	59.5	34.1	-45.96
Volt	69.3	13.50	61.5	35.4	-46.04
Briggs	69.0	16.01	60.5	32.8	-48.42
Granger	78.3	14.95	60.5	32.7	-49.03
MT 0832	68.0	14.11	58.0	32.7	-56.22
Mott	71.7	14.62	60.0	31.3	-61.00
McNeal	71.7	13.04	56.5	32.0	-70.27
average	71.8	14.49	59.7	36.54	
probability	0.004			0.012	
CV (S/Mean)	5.7			12.4	
CV(SE/Mean)	3.3			7.1	
LSD 0.05	6.8			7.5	

¹ Wheat prices compiled and summarized by G. Carlson and P. Lamb, NARC, Havre, MT, from 10-yr (2000-2009) average daily market values for PNW, supplied by the Montana Wheat and Barley Committee.

Table 14. Performance of spring wheat grown under dryland fallow conditions at Wibaux, MT.
 Planted: April 28, 2010 Harvested: October 11, 2010 Cooperator: David Maus

Variety	Height, cm	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- Vida
MT 0852	74.3	12.50	58.0	33.2	20.77
MT 0832	74.3	12.96	56.5	31.9	17.20
MT 0827	72.0	12.34	59.0	31.4	8.46
Vida	71.3	12.95	58.5	28.8	0.00
Volt	71.7	11.82	58.5	28.5	-9.07
Kuntz	65.3	12.69	59.0	27.1	-10.52
O'Neal	75.7	11.97	58.0	27.8	-12.78
Reeder	71.7	12.50	58.5	26.4	-16.22
Barlow	71.3	12.22	59.0	25.8	-21.55
Ap604CL	69.3	11.63	59.5	25.3	-26.00
Mott	76.7	12.00	58.0	25.2	-26.53
Faller	75.3	12.51	56.0	24.0	-29.28
Outlook	76.3	12.26	55.5	24.1	-30.66
Kelby	67.0	11.81	57.5	24.4	-30.76
Choteau	70.0	12.44	57.5	23.5	-32.00
Corbin	70.3	11.64	57.0	24.1	-32.35
Jedd	62.0	12.34	59.0	23.2	-35.49
Granger	81.3	12.10	58.0	23.3	-36.58
Briggs	75.3	12.00	57.0	21.1	-48.22
McNeal	75.7	12.08	54.5	19.9	-54.57
average	72.4	12.2	57.7	26.0	
probability	0.003			0.069	
CV (S/Mean)	6.3			17.7	
CV(SE/Mean)	3.6			10.2	
LSD 0.05	7.5			7.6	

¹ Wheat prices compiled and summarized by G. Carlson and P. Lamb, NARC, Havre, MT, from 10-yr (2000-2009) average daily market values for PNW, supplied by the Montana Wheat and Barley Committee.

Table 15. Relative yielding abilities of spring wheat varieties as compared to Vida when grown under dryland conditions in Wibaux County in cooperation with CES.

Cultivar	2004	2005	2009	2010	Ave	as % of Vida
MT0852	--	--	--	38.3	38.3	115.7
MT0832	--	--	--	37.2	37.2	112.4
MT0827	--	--	--	35.6	35.6	107.6
Volt	--	--	33.4	35.4	34.4	100.3
Vida	31.7	44.4	35.5	33.1	36.2	100.0
Reeder	32.2	43.2	34.0	30.8	35.1	97.0
O'Neal	--	--	32.8	33.3	33.1	96.5
Mott	--	--	30.0	31.1	30.6	89.2
Kuntz	--	--	28.1	32.4	30.3	88.3
Outlook	28.5	38.9	32.5	26.0	31.5	87.0
McNeal	28.9	40.8	32.1	20.5	30.6	84.5
Jedd	--	--	28.6	28.4	28.5	83.1
Choteau	25.8	38.8	27.8	27.4	30.0	82.9
Corbin	--	--	27.4	28.8	28.1	81.9
AP604CL	--	--	27.1	28.9	28.0	81.6
Faller	--	--	31.0	24.7	27.9	81.3
Barlow	--	--	26.8	28.0	27.4	79.9
Granger	--	--	29.6	24.3	27.0	78.7
Kelby	--	--	24.9	28.2	26.6	77.6
Briggs	--	--	21.8	23.0	22.4	65.3

NOTE: Average yields in this summary should not be compared to each other since they are not grown in the same years. Compare yields only to the check variety.

Table 16. Relative test weights of spring wheat varieties as compared to Vida when grown under dryland conditions in Wibaux County in cooperation with CES.

Cultivar	2004	2005	2009	2010	Ave	as % of Vida
Barlow	--	--	63.5	59.0	61.3	102.2
AP604CL	--	--	62.3	59.5	60.9	101.5
Volt	--	--	63.0	58.5	60.8	101.3
Reeder	59.7	58.5	62.2	58.5	59.7	101.0
Jedd	--	--	62.2	59.0	60.6	101.0
MT0827	--	--	--	59.0	59.0	100.9
O'Neal	--	--	62.7	58.0	60.4	100.7
Kuntz	--	--	61.5	59.0	60.3	100.5
Vida	58.5	58.0	61.5	58.5	59.1	100.0
Granger	--	--	61.5	58.0	59.8	99.7
Choteau	59.4	57.7	60.7	57.5	58.8	99.5
Mott	--	--	61.3	58.0	59.7	99.5
Briggs	--	--	62.0	57.0	59.5	99.2
Kelby	--	--	61.5	57.5	59.5	99.2
MT0852	--	--	--	58.0	58.0	99.1
Corbin	--	--	61.5	57.0	59.3	98.8
Outlook	58.7	57.8	61.0	55.5	58.3	98.6
Faller	--	--	61.2	56.0	58.6	97.7
McNeal	58.5	56.8	61.0	54.5	57.7	97.6
MT0832	--	--	--	56.5	56.5	96.6

NOTE: Average test weights in this summary should not be compared to each other since they are not grown in the same years. Compare test weights only to the check variety.

Table 17. Relative protein contents of spring wheat varieties as compared to Vida when grown under dryland conditions in Wibaux County in cooperation with CES.

Cultivar	2004	2005	2009	2010	Ave	as % of Vida
Kelby	--	--	14.7	11.8	13.3	101.5
Vida	19.1	16.7	13.2	13.0	15.5	100.0
MT0832	--	--	--	13.0	13.0	100.0
Reeder	19.1	16.8	13.0	12.5	15.4	99.4
Kuntz	--	--	12.8	12.7	12.8	97.7
Choteau	18.4	16.2	13.1	12.4	15.0	96.8
MT0852	--	--	--	12.5	12.5	96.2
Briggs	--	--	12.7	12.0	12.4	94.7
MT0827	--	--	--	12.3	12.3	94.6
Barlow	--	--	12.4	12.2	12.3	93.9
Jedd	--	--	12.3	12.3	12.3	93.9
Faller	--	--	12.1	12.5	12.3	93.9
Corbin	--	--	12.8	11.6	12.2	93.1
Mott	--	--	12.4	12.0	12.2	93.1
McNeal	18.0	15.1	12.3	12.1	14.4	92.9
AP604CL	--	--	12.6	11.6	12.1	92.4
Volt	--	--	12.4	11.8	12.1	92.4
O'Neal	--	--	12.1	12.0	12.1	92.4
Granger	--	--	12.0	12.1	12.1	92.4
Outlook	17.4	14.6	12.6	12.3	14.2	91.6

NOTE: Average proteins in this summary should not be compared to each other since they are not grown in the same years. Compare protein contents only to the check variety.

Table 18. Performance of spring wheat grown under dryland fallow conditions at Poplar, MT.
 Planted: May 24, 2010 Harvested: October 8, 2010 Cooperator: Mark Swank

Variety	Height, cm	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- Vida
Kelby	75.7	16.18	58.0	54.0	38.37
Jedd	78.7	14.90	57.5	52.5	29.23
MT 0832	81.3	16.06	55.0	52.2	27.41
Ap604CL	85.0	15.38	59.5	52.1	26.80
Kuntz	75.7	14.77	57.5	48.3	0.76
Vida	82.3	15.65	57.5	47.7	0.00
Choteau	79.3	15.30	55.5	47.6	-0.61
Reeder	87.3	15.40	58.0	47.5	-1.21
MT 0827	85.3	15.54	57.0	46.1	-9.74
MT 0852	76.0	15.82	55.5	45.7	-12.18
O'Neal	82.3	16.36	57.0	43.9	-23.14
Barlow	86.7	16.00	58.0	43.3	-26.79
Briggs	88.3	16.32	56.5	43.2	-27.40
Corbin	77.3	15.47	57.0	41.6	-37.15
Faller	87.3	15.95	54.0	39.3	-51.15
McNeal	85.0	14.87	56.0	38.8	-56.53
Outlook	85.7	15.00	55.0	37.9	-59.68
Mott	86.7	15.55	56.5	37.4	-62.72
Volt	77.3	16.21	58.5	34.6	-79.78
Granger	92.3	15.70	56.5	33.2	-88.30
average	82.8	15.6	56.8	44.3	
probability	0.008			<0.001	
CV (S/MEAN)	6.5			12.2	
CV (SE/MEAN)	3.8			7.0	
LSD (0.05)	8.9			8.9	

¹ Wheat prices compiled and summarized by G. Carlson and P. Lamb, NARC, Havre, MT, from 10-yr (2000-2009) average daily market values for PNW, supplied by the Montana Wheat and Barley Committee.

Table 19. Relative yields of spring wheat varieties as compared to Vida when grown under dryland conditions in Roosevelt County in cooperation with CES.

Cultivar	2004	2005	2006	2009	2010	Ave	as % of Vida
MT0832	--	--	--	--	52.2	52.2	109.4
AP604CL	--	--	--	58.6	52.1	55.4	103.1
Kelby	--	--	--	55.1	54.0	54.6	101.6
Vida	48.3	45.2	30.1	59.7	47.7	46.2	100.0
Kuntz	--	--	--	56.6	48.3	52.5	97.7
Reeder	45.0	44.9	28.2	59.3	47.5	45.0	97.4
MT0827	--	--	--	--	46.1	46.1	96.6
MT0852	--	--	--	--	45.7	45.7	95.8
Faller	--	--	--	63.4	39.3	51.4	95.6
O'Neal	--	--	--	58.0	43.9	51.0	94.9
Barlow	--	--	--	57.8	43.3	50.6	94.1
Jedd	--	--	--	48.1	52.5	50.3	93.7
Outlook	47.2	42.9	29.9	53.0	37.9	42.2	91.3
Choteau	38.7	42.7	22.9	58.0	47.6	42.0	90.9
Mott	--	--	--	59.5	37.4	48.5	90.2
Briggs	--	--	--	53.2	43.2	48.2	89.8
McNeal	44.2	41.9	27.5	50.7	38.8	40.6	87.9
Corbin	--	--	--	52.4	41.6	47.0	87.5
Granger	--	--	--	58.8	33.2	46.0	85.7
Volt	--	--	--	55.8	34.6	45.2	84.2

NOTE: Average yields in this summary should not be compared to each other since they are not grown in the same years. Compare yields only to the check variety.

Table 20. Relative test weights of spring wheat varieties as compared to Vida when grown under dryland conditions in Roosevelt County in cooperation with CES.

Cultivar	2004	2005	2006	2009	2010	Ave	as % of Vida
AP604CL	--	--	--	62.7	59.5	61.1	103.1
Volt	--	--	--	63.0	58.5	60.8	102.5
Barlow	--	--	--	63.0	58.0	60.5	102.1
Kelby	--	--	--	62.5	58.0	60.3	101.7
O'Neal	--	--	--	62.7	57.0	59.9	101.0
Reeder	62.7	57.7	51.3	62.2	58.0	58.4	100.9
Jedd	--	--	--	62.0	57.5	59.8	100.8
Kuntz	--	--	--	61.8	57.5	59.7	100.7
Briggs	--	--	--	62.2	56.5	59.4	100.2
Vida	62.2	57.0	51.7	61.0	57.5	57.9	100.0
Corbin	--	--	--	61.3	57.0	59.2	99.8
Granger	--	--	--	61.7	56.5	59.1	99.7
Mott	--	--	--	61.5	56.5	59.0	99.6
Choteau	62.3	56.5	51.5	61.7	55.5	57.5	99.3
MT0827	--	--	--	--	57.0	57.0	99.1
Outlook	61.0	57.7	51.0	60.8	55.0	57.1	98.7
McNeal	61.2	56.7	50.5	61.0	56.0	57.1	98.6
Faller	--	--	--	61.5	54.0	57.8	97.5
MT0852	--	--	--	--	55.5	55.5	96.5
MT0832	--	--	--	--	55.0	55.0	95.7

NOTE: Average test weights in this summary should not be compared to each other since they are not grown in the same years. Compare test weights only to the check variety.

Table 21. Relative protein contents of spring wheat varieties as compared to Vida when grown under dryland conditions in Roosevelt County in cooperation with CES.

Cultivar	2004	2005	2006	2009	2010	Ave	as % of Vida
Kelby	--	--	--	13.4	16.2	14.8	105.7
Briggs	--	--	--	12.7	16.3	14.5	103.6
MT0832	--	--	--	--	16.1	16.1	103.2
Reeder	12.0	18.2	17.9	12.4	15.4	15.2	101.7
MT0852	--	--	--	--	15.8	15.8	101.3
Barlow	--	--	--	12.3	16.0	14.2	101.1
Vida	11.5	17.5	17.6	12.4	15.6	14.9	100.0
O'Neal	--	--	--	11.6	16.4	14.0	100.0
MT0827	--	--	--	--	15.5	15.5	99.4
Corbin	--	--	--	12.2	15.5	13.9	98.9
Mott	--	--	--	12.0	15.6	13.8	98.6
Volt	--	--	--	11.3	16.2	13.8	98.2
Choteau	11.2	17.4	16.9	12.2	15.3	14.6	97.9
AP604CL	--	--	--	11.9	15.4	13.7	97.5
Faller	--	--	--	11.3	16.0	13.7	97.5
Granger	--	--	--	11.6	15.7	13.7	97.5
McNeal	11.0	17.2	17.3	11.3	14.9	14.3	96.1
Kuntz	--	--	--	12.1	14.8	13.5	96.1
Outlook	10.4	17.0	17.1	11.5	15.0	14.2	95.2
Jedd	--	--	--	11.7	14.9	13.3	95.0

NOTE: Average protein contents in this summary should not be compared to each other since they are not grown in the same years. Compare protein contents only to the check variety.

Table 22. Performance of spring wheat grown under dryland recrop conditions at Outlook, MT. Previous crop was lentils. Planted: May 24, 2010 Harvested: October 12, 2010
Cooperator: Gordon Stoner

Variety	Height, cm	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- Vida
Kuntz	54.3	13.86	59.5	38.7	0.59
Vida	56.0	14.27	59.0	38.0	0.00
O'Neal	59.3	13.48	60.0	38.0	-6.50
Mott	61.0	13.99	59.0	35.9	-12.75
Briggs	70.0	14.48	58.5	34.7	-15.97
Faller	53.7	14.36	58.5	34.7	-17.71
MT 0852	60.0	13.75	58.0	34.8	-21.99
Reeder	54.3	14.93	60.0	36.7	-25.91
Barlow	61.0	14.21	60.0	33.2	-26.60
McNeal	65.0	13.56	58.5	34.6	-27.77
Granger	69.3	13.14	58.5	32.7	-39.38
MT 0827	60.7	13.61	59.0	31.6	-43.04
Kelby	54.0	15.39	59.5	28.1	-52.35
MT 0832	53.3	13.36	58.0	30.3	-52.89
Jedd	49.3	14.22	60.5	28.7	-53.29
Corbin	50.7	16.10	59.5	25.7	-66.97
Outlook	57.7	14.48	57.5	26.0	-68.00
Volt	56.3	14.79	60.5	22.1	-90.22
Ap604CL	53.3	16.90	59.5	17.1	-119.34
Choteau	43.3	16.08	57.0	16.3	-124.21
average	57.1	14.45	59.0	30.9	
probability	<0.001			<0.001	
CV (S/Mean)	10.6			12.5	
CV(SE/Mean)	6.1			7.2	
LSD 0.05	10.0			6.4	

¹ Wheat prices compiled and summarized by G. Carlson and P. Lamb, NARC, Havre, MT, from 10-yr (2000-2009) average daily market values for PNW, supplied by the Montana Wheat and Barley Committee.