PROJECT TITLE: Off-station spring yield trials - 2002

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

PROJECT LEADER: Joyce Eckhoff, MSU Eastern Agricultural Research Center, Sidney, MT

PROJECT PERSONNEL:

County	Producers	CES Agents
Daniels, dryland	Bobbie Roos	Bobbie Roos
McCone, dryland	Victor Wagner	Ken Nelson
Roosevelt, dryland	Mark Swank	Gina Snyder
Roosevelt, irrigated	Brad Bender	Gina Snyder
Sheridan, dryland	Max Aasheim	Terry Angvick
Sheridan, irrigated	Steve Brekke	Terry Angvick
Valley, dryland	Bill Lauckner	Verlin Koenig
Valley, irrigated	Alisha (Zeller) & Cole Sibley	Verlin Koenig
Wibaux, dryland	David Maus	Dave Bertelsen

RESULTS: Summaries of yields, test weights, heights and protein contents across **dryland sites** are shown in Tables 1-4, and summaries of yields, test weights, heights and protein contents across **irrigated sites** are shown in Tables 29-32. Reeder, MT9806 and Parshall yielded most across dryland sites (Table 1). Ember and Outlook yielded most across irrigated sites (Table 29).

McCone County: Performance and relative values of durum varieties at **Circle** are shown in Tables 5-8. Gunner, MT9806 and Scholar had the greatest economic return.

Wibaux County (dryland): Performance and relative values of durum varieties at **Wibaux** are shown in Tables 9-12. Parshall had the greatest economic return.

Roosevelt County (dryland): Performance and relative values of durum varieties at **Poplar** are shown in Tables 13-16. Reeder had the greatest economic return.

Sheridan County (dryland): Performance and relative values of durum varieties at **Reserve** are shown in Tables 17-20. Reeder had the greatest economic return.

Valley County (dryland): Performances of durum varieties at **Nashua** are shown in Table 21-24. Reeder had the greatest economic return.

Daniels County (dryland): Performance and relative values of durum varieties at **Scobey** are shown in Tables 25-28. Alsen had the greatest economic return.

Sheridan County (irrigated): Performance and relative values of durum varieties at **Dagmar** are shown in Tables 33-36. Reeder and Outlook had the greatest economic return.

Roosevelt County (irrigated): Performance and relative values of durum varieties at **Brockton** are shown in Tables 37-40. Ember had the greatest economic return.

SUMMARY: The off-station yield trials are conducted at several sites in eastern Montana. These trials provide important information about performance of experimental lines and varieties from Montana, other states, and private companies. Regional spring wheat producers make decisions on varieties to grow based on data from these trials.

FUTURE PLANS: Off-station spring wheat yield trials will continue indefinitely. Expansion to other locations in future years is possible.

Table 1. Summary of spring wheat yields in bu/acre at six dryland off-station sites in eastern Montana, 2002. All sites are on fallow ground except McCone (Circle), which follows wheat.

Variety	Circle	Wibaux	Poplar	Reserve	Nashua	Scobey	average
Reeder	16.4	30.8	**46.4**	38.3	**51.6**	31.3	35.8
MT9806	16.3	31.0	44.4	35.7	49.4	28.9	34.3
Parshall	15.5	**39.6**	40.5	34.8	46.5	28.8	34.3
Outlook	13.9	27.0	41.7	**39.6**	48.7	32.0	33.8
Alsen	15.7	29.2	38.0	33.1	49.2	**34.0**	33.2
Scholar	**17.9**	32.3	37.8	28.2	46.7	30.6	32.3
Hank	12.2	31.4	38.5	33.4	47.7	30.2	32.2
Ember	12.9	28.8	41.1	36.2	47.2	25.1	31.9
McKenzie	14.8	29.8	40.6	33.4	45.3	26.6	31.8
AC Barrie	15.4	26.8	40.7	32.5	43.7	29.7	31.5
Gunner	17.5	23.9	38.2	33.6	40.6	33.7	31.3
Rambo	17.5	24.5	34.1	32.1	47.8	28.1	30.7
Ernest	16.9	26.9	38.0	28.4	43.1	29.1	30.4
Express	14.6	24.3	41.9	28.6	42.7	29.7	30.3
MTHW9420*	13.0	26.1	38.5	27.5	46.7	28.3	30.0
McNeal	13.2	25.4	37.1	28.2	45.6	29.4	29.8
MT9929	9.1	25.0	40.7	35.4	42.3	23.1	29.3
Explorer*	11.6	26.0	38.6	23.1	46.5	27.0	28.8
Amidon	13.6	26.7	34.0	29.1	43.0	25.4	28.6
Conan	11.9	25.9	34.9	26.5	44.8	20.8	27.5
site average	14.5	28.1	39.3	31.9	46.0	28.6	
p value	<0.001	0.036	0.011	<0.001	<0.001	0.002	
CV (S/Mean)	10.3	16.4	8.9	7.4	5.3	11.7	
CV(SE/Mean)	6	9.5	5.2	4.3	3.1	6.7	
LSD 0.05	2.5	7.6	5.8	3.9	4	5.5	

*hard white wheat

Cooperators:

County	Producer	CES Agent
Sheridan (Reserve)	Max Aasheim	Terry Angvick
Wibaux (Wibaux)	David Maus	Dave Bertelsen
McCone (Circle)	Victor Wagner	Ken Nelson
Roosevelt (Poplar)	Mark Swank	Gina Snyder
Valley (Nashua)	Bill Lauckner	Verlin Koenig
Daniels (Scobey)	Bobbie Roos	Bobbie Roos

Table 2. Summary of spring wheat test weights in lb/bu at six dryland off-station sites in eastern Montana, 2002. All sites are on fallow ground except McCone (Circle).

Variety	Circle	Wibaux	Poplar	Reserve	Nashua	Scobey	average
Ember	62.1	59.6	62.0	62.3	61.0	63.8	61.8
Parshall	60.2	59.8	62.3	60.8	61.0	63	61.2
Alsen	61.2	59.5	61.3	60.7	61.5	62.5	61.1
Gunner	60.5	59.0	61.5	60.5	60.8	62.8	60.9
Ernest	61.8	58.8	60.3	59.2	60.0	61.7	60.3
Scholar	61.4	60.2	60.0	59.2	60.5	59.8	60.2
Rambo	60.5	59.6	59.8	59.7	60.3	60.2	60.0
MT9806	59.4	58.7	60.3	59.8	61.0	60.8	60.0
Conan	60.6	59.9	59.8	60.2	59.2	60.2	60.0
Reeder	59.8	57.5	60.5	59.7	60.0	61.3	59.8
McKenzie	59.2	57.3	60.5	58.3	59.0	61.2	59.3
Amidon	60.3	57.8	59.2	59.2	59.5	58.8	59.1
AC Barrie	58.3	57.2	60.0	58.2	60.3	60.7	59.1
MT9929	59.7	57.6	58.5	58.8	59.0	60.8	59.1
Express	58.7	57.9	59.2	58.3	59.3	60.3	59.0
Outlook	58.3	57.0	58.2	58.5	58.8	59.7	58.4
Explorer*	59.0	58.2	57.8	57.2	56.3	59.7	58.0
McNeal	58.7	57.5	54.2	58.3	59.7	59.8	58.0
MTHW9420*	57.6	57.7	57.3	57.7	57.3	59.7	57.9
Hank	56.7	57.0	57.2	56.8	57.0	60.8	57.6
site average	59.7	58.4	59.5	59.2	59.6	60.9	
p value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	1.2	1.5	1.6	1.2	1.6	1.2	
CV(SE/Mean)	0.7	0.8	0.9	0.7	0.9	0.7	
LSD 0.05	1.1	1.4	1.6	1.2	1.6	1.2	

*hard white wheat

Cooperators:

County	Producer	CES Agent
Sheridan (Reserve)	Max Aasheim	Terry Angvick
Wibaux (Wibaux)	David Maus	Dave Bertelsen
McCone (Circle)	Victor Wagner	Ken Nelson
Roosevelt (Poplar)	Mark Swank	Gina Snyder
Valley (Nashua)	Bill Lauckner	Verlin Koenig
Daniels (Scobey)	Bobbie Roos	Bobbie Roos

Table 3. Summary of spring wheat heights in inches at six dryland off-station sites in eastern Montana, 2002. All sites except McCone (Circle) are on fallow ground.

Variety	Circle	Wibaux	Poplar	Reserve	Nashua	Scobey	average
Ernest	24	26	36	32	29	26	28.8
Amidon	23	24	36	32	30	25	28.3
Scholar	24	24	34	31	31	26	28.3
AC Barrie	23	23	32	30	30	26	27.3
Gunner	21	24	32	30	30	27	27.3
McKenzie	21	21	34	31	31	26	27.3
Parshall	21	24	34	31	30	24	27.3
MT9806	23	23	33	30	27	26	27.0
Outlook	21	22	32	29	28	25	26.2
McNeal	21	23	33	27	28	24	26.0
Alsen	21	22	31	28	28	24	25.7
Ember	21	21	30	27	30	24	25.5
Rambo	20	21	32	28	25	24	25.0
Reeder	18	20	33	27	28	23	24.8
Explorer*	19	20	30	28	25	24	24.3
Hank	20	20	29	27	27	23	24.3
MT9929	19	20	32	27	24	21	23.8
Conan	20	20	29	25	26	21	23.5
MTHW9420*	20	18	29	26	25	22	23.3
Express	17	21	28	25	21	21	22.2
site average	20.9	21.8	32.0	28.6	27.6	24.2	
p value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	5.7	7.9	6.1	3.7	5	6.8	
CV(SE/Mean)	3.3	4.6	3.5	2.1	2.9	3.9	
LSD 0.05	2.0	2.9	3.2	1.8	2.3	2.7	

*hard white wheat

Cooperators:

County	Producer	CES Agent
Sheridan (Reserve)	Max Aasheim	Terry Angvick
Wibaux (Wibaux)	David Maus	Dave Bertelsen
McCone (Circle)	Victor Wagner	Ken Nelson
Roosevelt (Poplar)	Mark Swank	Gina Snyder
Valley (Nashua)	Bill Lauckner	Verlin Koenig
Daniels (Scobey)	Bobbie Roos	Bobbie Roos

Table 4. Summary of spring wheat protein contents in percent at six dryland off-station sites in eastern Montana, 2002. All sites except McCone (Circle) are on fallow ground.

Variety	Circle	Wibaux	Poplar	Reserve	Nashua	Scobey	average
MT9806	13.6	16.9	15.6	15.5	12.7	13.8	14.7
Reeder	12.7	17.1	15.6	14.1	14.1	12.4	14.3
AC Barrie	12.9	16.6	15.5	14.9	13.2	12.5	14.3
Conan	12.6	16.5	14.2	14.5	13.9	13.4	14.2
Gunner	12.4	17.1	15.2	14.6	13.6	11.1	14.0
Explorer*	12.4	15.9	14.5	14.2	14.6	12.2	14.0
Parshall	12.1	15.5	15.5	15.4	12.9	12.1	13.9
Alsen	11.9	16.7	15.6	14.9	12.0	12.2	13.9
Express	11.9	16.2	14.2	14.2	13.2	12.4	13.7
Ernest	11.7	16.4	14.9	14.2	12.5	11.9	13.6
Scholar	11.8	16.2	14.7	14.5	12.6	11.6	13.6
McKenzie	11.9	16.0	14.7	14.0	12.9	11.8	13.6
MT9929	12.2	15.6	14.5	13.9	12.4	12.3	13.5
Hank	12.0	15.8	14.6	14.1	12.8	11.2	13.4
MTHW9420*	12.4	15.4	13.7	13.6	12.5	12.3	13.3
Amidon	11.2	15.8	13.9	13.7	11.8	12.3	13.1
Ember	11.5	15.9	14.5	12.8	12.6	10.6	13.0
Outlook	11.5	15.8	13.6	13.2	12.3	11.4	13.0
Rambo	11.3	16.1	13.5	12.8	11.6	11.0	12.7
McNeal	11.2	16.3	13.9	13.1	11.0	10.7	12.7
site average	12.0	16.2	14.6	14.1	12.8	12.0	
p value	0.364	0.402	<0.001	<0.001	0.11	<0.001	
CV (S/Mean)	8.1	5.3	2.5	2.1	9.4	5.8	
CV(SE/Mean)	4.7	3.1	1.4	1.2	5.4	3.4	
LSD 0.05	ns	ns	0.6	0.5	ns	1.2	

*hard white wheat

Cooperators:

County	Producer	CES Agent
Sheridan (Reserve)	Max Aasheim	Terry Angvick
Wibaux (Wibaux)	David Maus	Dave Bertelsen
McCone (Circle)	Victor Wagner	Ken Nelson
Roosevelt (Poplar)	Mark Swank	Gina Snyder
Valley (Nashua)	Bill Lauckner	Verlin Koenig
Daniels (Scobey)	Bobbie Roos	Bobbie Roos

Table 5. Performance of spring wheat grown under dryland continuous cropping conditions at Circle, MT. Planted: 13 May 2002 Harvested: 20 August 2002 Cooperator: Victor Wagner

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	$/acre[1] +/- McNeal
Gunner	21	12.4	60.5	17.5	20.24
MT9806	23	13.6	59.4	16.3	19.64
Scholar	24	11.8	61.4	17.9	19.64
Rambo	20	11.3	60.5	17.5	17.97
Reeder	18	12.7	59.8	16.4	16.65
Ernest	24	11.7	61.8	16.9	15.46
AC Barrie	23	12.9	58.3	15.4	12.73
Alsen	21	11.9	61.2	15.7	10.45
Parshall	21	12.1	60.2	15.5	9.61
McKenzie	21	11.9	59.2	14.8	6.68
Express	17	11.9	58.7	14.6	5.85
Outlook	21	11.5	58.3	13.9	2.92
Amidon	23	11.2	60.3	13.6	1.67
McNeal	21	11.2	58.7	13.2	0.00
Ember	21	11.5	62.1	12.9	-1.26
Conan	20	12.6	60.6	11.9	-3.89
Hank	20	12.0	56.7	12.2	-4.18
MT9929	19	12.2	59.7	9.1	-16.50
MTHW9420*	20	12.4	57.6	13.0	**
Explorer*	19	12.4	59.0	11.6	**
average	20.9	12.0	59.7	14.5	
p value	<0.001	0.364	<0.001	<0.001	
CV (S/Mean)	5.7	8.1	1.2	10.3	
CV(SE/Mean)	3.3	4.7	0.7	6.0	
LSD 0.05	2.0	ns	1.1	2.5	

[1]Wheat prices summarized by Gregg Carlson, NARC, Havre, MT, from 6-year average of daily market values for PNW, supplied by the Montana Wheat and Barley Committee

** No average price for hard white wheat available at this time.

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

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Rambo	--	--	--	--	17.5	17.5	132.6
MT9806	--	--	--	--	16.3	16.3	123.5
Outlook	--	--	--	40.5	13.9	27.2	117.7
AC Barrie	--	--	--	--	15.4	15.4	116.7
McKenzie	--	--	--	--	14.8	14.8	112.1
Reeder	47.6	45.6	27.0	38.5	16.4	35.0	112.0
Amidon	44.6	49.5	26.7	35.1	13.6	33.9	108.4
McNeal	41.2	43.7	25.3	33.0	13.2	31.3	100.0
Scholar	35.3	40.6	28.4	33.0	17.9	31.0	99.2
Alsen	--	--	27.1	27.1	15.7	23.3	97.8
Ember	--	--	--	--	12.9	12.9	97.7
Ernest	36.5	37.2	26.7	34.5	16.9	30.4	97.1
Express	--	--	--	30.2	14.6	22.4	97.0
Parshall	37.7	42.3	26.1	29.8	15.5	30.3	96.8
Conan	--	36.2	27.5	31.2	11.9	26.7	92.7
Hank	--	--	--	--	12.2	12.2	92.4
MTHW9420	31.3	40.2	24.5	31.4	13.0	28.1	89.8
Explorer	--	--	20.1	22.8	11.6	18.2	76.2
Gunner	--	--	--	17.6	17.5	17.6	76.0
MT9929	--	--	--	25.2	9.1	17.2	74.2

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 7. Relative test weights of spring wheat varieties as compared to McNeal when grown under dryland conditions in McCone County in cooperation with CES.
Cooperator: Victor Wagner

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Ember	--	--	--	--	62.1	62.1	105.8
Alsen	--	--	64.0	64.6	61.2	63.3	105.3
Gunner	--	--	--	63.8	60.5	62.2	103.4
Scholar	61.2	63.3	62.7	63.0	61.4	62.3	103.2
Parshall	62.1	63.0	62.5	63.7	60.2	62.3	103.2
Rambo	--	--	--	--	60.5	60.5	103.1
Ernest	61.8	62.3	62.2	63.0	61.8	62.2	103.0
Conan	--	62.8	62.3	62.5	60.6	62.1	102.9
Reeder	61.7	63.0	62.3	63.2	59.8	62.0	102.7
Amidon	61.5	61.7	61.5	62.8	60.3	61.6	102.0
MT9929	--	--	--	62.8	59.7	61.3	101.9
MTHW9420	60.5	63.2	62.2	62.7	57.6	61.2	101.4
MT9806	--	--	--	--	59.4	59.4	101.2
McKenzie	--	--	--	--	59.2	59.2	100.9
WB Express	--	--	--	62.0	58.7	60.4	100.4
McNeal	60.7	61.0	60.0	61.5	58.7	60.4	100.0
AC Barrie	--	--	--	--	58.3	58.3	99.3
Explorer	--	--	60.0	59.9	59.0	59.6	99.3
Outlook	--	--	--	61.0	58.3	59.7	99.3
Hank	--	--	--	--	56.7	56.7	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 8. Relative protein contents of spring wheat varieties as compared to McNeal when grown under dryland conditions in McCone County in cooperation with CES.
Cooperator: Victor Wagner

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Gunner	--	--	--	14.5	12.4	13.5	134.5
Explorer	--	--	11.8	12.5	12.4	12.2	123.2
MT9806	--	--	--	--	13.6	13.6	121.4
Reeder	13.6	15.3	11.2	10.8	12.7	12.7	118.2
Alsen	--	--	10.7	12.4	11.9	11.7	117.4
AC Barrie	--	--	--	--	12.9	12.9	115.2
Parshall	13.6	14.9	10.6	10.6	12.1	12.4	114.9
Express	--	--	--	11.0	11.9	11.5	114.5
Conan	--	12.9	10.6	11.9	12.6	12.0	113.7
Ernest	13.8	13.8	11.0	10.5	11.7	12.2	113.0
MT9929	--	--	--	10.1	12.2	11.2	111.5
Scholar	14.0	13.8	9.4	9.9	11.8	11.8	109.5
Outlook	--	--	--	10.1	11.5	10.8	108.0
Hank	--	--	--	--	12.0	12.0	107.1
Amidon	12.5	13.4	10.1	10.3	11.2	11.5	106.9
McKenzie	--	--	--	--	11.9	11.9	106.3
Ember	--	--	--	--	11.5	11.5	102.7
MTHW9420	12.3	11.0	9.9	9.6	12.4	11.0	102.6
Rambo	--	--	--	--	11.3	11.3	100.9
McNeal	11.6	12.4	9.8	8.8	11.2	10.8	100.0

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 9. Performance of spring wheat grown under dryland conditions at Wibaux, MT.
Planted: 16 May 2002 Harvested: 23 August 2002 Cooperator: David Maus

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	$/acre[1] +/- McNeal
Parshall	24	15.5	59.8	39.6	70.85
Scholar	24	16.2	60.2	32.3	34.43
Hank	20	15.8	57.0	31.4	29.94
MT9806	23	16.9	58.7	31.0	27.94
Reeder	20	17.1	57.5	30.8	26.94
McKenzie	21	16.0	57.3	29.8	21.95
Alsen	22	16.7	59.5	29.2	18.96
Ember	21	15.9	59.6	28.8	16.96
Outlook	22	15.8	57.0	27.0	7.98
Ernest	26	16.4	58.8	26.9	7.48
AC Barrie	23	16.6	57.2	26.8	6.98
Amidon	24	15.8	57.8	26.7	6.48
Conan	20	16.5	59.9	25.9	2.49
McNeal	23	16.3	57.5	25.4	0.00
MT9929	20	15.6	57.6	25.0	-2.00
Rambo	21	16.1	59.6	24.5	-4.49
Express	21	16.2	57.9	24.3	-5.49
Gunner	24	17.1	59.0	23.9	-7.49
Explorer*	20	15.9	58.2	26.0	**
MTHW9420*	18	15.4	57.7	26.1	**
average	21.8	16.2	58.4	28.1	
p value	<0.001	0.402	<0.001	0.036	
CV (S/Mean)	7.9	5.3	1.5	16.4	
CV(SE/Mean)	4.6	3.1	0.8	9.5	
LSD 0.05	2.9	ns	1.4	7.6	

[1]Wheat prices summarized by Gregg Carlson, NARC, Havre, MT, from 6-year average of daily market values for PNW, supplied by the Montana Wheat and Barley Committee

* hard white wheat

** no average price for hard white wheat available at this time.

Table 10. Relative yielding abilities of spring wheat varieties as compared to McNeal when grown under dryland conditions in Wibaux County in cooperation with CES.
Cooperator: David Maus

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Hank	--	--	--	--	31.4	31.4	123.6
MT9806	--	--	--	--	31.0	31.0	122.0
McKenzie	--	--	--	--	29.8	29.8	117.3
Ember	--	--	--	--	28.8	28.8	113.4
Reeder	59.8	37.6	45.1	49.4	30.8	44.5	108.7
Parshall	55.3	40.3	42.4	43.0	39.6	44.1	107.7
Ac Barrie	--	--	--	--	26.8	26.8	105.5
Outlook	--	--	--	50.2	27.0	38.6	104.6
Amidon	51.4	38.6	46.7	45.2	26.7	41.7	101.8
Scholar	51.0	34.8	46.9	42.0	32.3	41.4	101.0
McNeal	56.4	29.5	45.2	48.4	25.4	41.0	100.0
Alsen	--	--	42.0	43.7	29.2	38.3	96.6
Rambo	--	--	--	--	24.5	24.5	96.5
MTHW9420	52.6	32.0	42.7	42.4	26.1	39.2	95.6
Ernest	49.5	35.2	40.1	43.6	26.9	39.1	95.3
Express	--	--	--	41.2	24.3	32.8	88.8
Gunner	--	--	--	40.1	23.9	32.0	86.7
MT9929	--	--	--	38.3	25.0	31.7	85.8
Conan	--	30.8	33.6	36.7	25.9	31.8	85.5
Explorer	--	--	36.5	35.7	26.0	32.7	82.5

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 11. Relative test weights of spring wheat varieties as compared to McNeal when grown under dryland conditions in Wibaux County in cooperation with CES.
Cooperator: David Maus

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Gunner	--	--	--	63.0	59.0	61.0	103.8
Ember	--	--	--	--	59.6	59.6	103.7
Rambo	--	--	--	--	59.6	59.6	103.7
Alsen	--	--	63.7	62.0	59.5	61.7	103.2
Parshall	61.0	61.1	63.5	61.2	59.8	61.3	103.0
Conan	--	59.9	63.0	61.3	59.9	61.0	102.6
MT9806	--	--	--	--	58.7	58.7	102.1
Scholar	59.8	59.7	62.3	61.7	60.2	60.7	102.0
Reeder	60.5	59.7	63.3	60.7	57.5	60.3	101.3
Ernest	60.3	58.5	63.0	60.8	58.8	60.3	101.2
MT9929	--	--	--	60.5	57.6	59.1	100.5
Amidon	59.7	58.0	62.0	61.2	57.8	59.7	100.3
McNeal	59.8	58.4	62.0	60.0	57.5	59.5	100.0
Explorer	--	--	62.7	58.2	58.2	59.7	99.8
McKenzie	--	--	--	--	57.3	57.3	99.7
Express	--	--	--	59.0	57.9	58.5	99.5
Ac Barrie	--	--	--	--	57.2	57.2	99.5
Hank	--	--	--	--	57.0	57.0	99.1
Outlook	--	--	--	59.2	57.0	58.1	98.9
MTHW9420	57.3	57.5	62.8	57.8	57.7	58.6	98.5

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 McNeal when grown under dryland conditions in Wibaux County in cooperation with CES.
Cooperator: David Maus

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Alsen	--	--	18.9	16.9	16.7	17.5	112.9
Reeder	16.6	13.0	18.1	16.3	17.1	16.2	111.1
Gunner	--	--	--	16.5	17.1	16.8	109.4
Parshall	16.8	12.7	18.6	15.5	15.5	15.8	108.4
Ernest	15.5	13.7	17.3	16.1	16.4	15.8	108.2
Conan	--	13.4	16.2	16.0	16.5	15.5	106.5
Scholar	16.1	13.1	16.6	15.0	16.2	15.4	105.5
MT9806	--	--	--	--	16.9	16.9	103.7
Explorer	--	--	16.9	15.4	15.9	16.1	103.7
Amidon	15.3	13.6	17.0	13.9	15.8	15.1	103.6
Express	--	--	--	15.3	16.2	15.8	102.6
Ac Barrie	--	--	--	--	16.6	16.6	101.8
McNeal	14.7	11.8	15.8	14.4	16.3	14.6	100.0
MTHW9420	14.5	12.1	16.1	14.4	15.4	14.5	99.3
MT9929	--	--	--	14.8	15.6	15.2	99.0
Rambo	--	--	--	--	16.1	16.1	98.8
McKenzie	--	--	--	--	16.0	16.0	98.2
Ember	--	--	--	--	15.9	15.9	97.5
Hank	--	--	--	--	15.8	15.8	96.9
Outlook	--	--	--	13.6	15.8	14.7	95.8

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 13. Performance of spring wheat grown under dryland conditions at Poplar, MT.
Planted: 14 May 2002 Harvested: 21 August 2002 Cooperator: Mark Swank

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	$/acre[1] +/- McNeal
Reeder	33	15.6	60.5	46.4	54.57
MT9806	33	15.6	60.3	44.4	44.59
MT9929	32	14.5	58.5	40.7	26.12
Express	28	14.2	59.2	41.9	25.41
Parshall	34	15.5	62.3	40.5	25.13
Ember	30	14.5	62.0	41.1	23.60
McKenzie	34	14.7	60.5	40.6	23.19
AC Barrie	32	15.5	60.0	40.7	21.65
Outlook	32	13.6	58.2	41.7	14.43
Gunner	32	15.2	61.5	38.2	13.65
Alsen	31	15.6	61.3	38.0	12.65
Ernest	36	14.9	60.3	38.0	12.65
Hank	29	14.6	57.2	38.5	10.91
Scholar	34	14.7	60.0	37.8	8.38
McNeal	33	13.9	54.2	37.1	0.00
Conan	29	14.2	59.8	34.9	-8.40
Amidon	36	13.9	59.2	34.0	-14.79
Rambo	32	13.5	59.8	34.1	-20.45
Explorer*	30	14.5	57.8	38.6	**
MTHW9420*	29	13.7	57.3	38.5	**
average	32.0	14.6	59.5	39.3	
p value	<0.001	<0.001	<0.001	0.011	
CV (S/Mean)	6.1	2.5	1.6	8.9	
CV(SE/Mean)	3.5	1.4	0.9	5.2	
LSD 0.05	3.2	0.6	1.6	5.8	

[1]Wheat prices summarized by Gregg Carlson, NARC, Havre, MT, from 5-year average of daily market values for PNW, supplied by the Montana Wheat and Barley Committee

* No average price for hard white wheat available at this time.

Table 14. Relative yields of spring wheat varieties as compared to McNeal when grown under dryland conditions in Roosevelt County in cooperation with CES.
Cooperator: Mark Swank

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
MT9806	--	--	--	--	44.4	44.4	119.7
Ember	--	--	--	--	41.1	41.1	110.8
Outlook	--	--	--	64.0	41.7	52.9	110.6
AC Barrie	--	--	--	--	40.7	40.7	109.7
McKenzie	--	--	--	--	40.6	40.6	109.4
Reeder	50.7	49.8	66.4	59.9	46.4	54.6	109.1
Hank	--	--	--	--	38.5	38.5	103.8
Express	--	--	--	57.0	41.9	49.5	103.5
Scholar	48.1	45.3	58.9	61.6	37.8	50.3	100.6
Gunner	--	--	--	57.9	38.2	48.1	100.5
Alsen	--	--	57.4	59.4	38.0	51.6	100.5
McNeal	49.6	46.7	58.4	58.5	37.1	50.1	100.0
MT9929	--	--	--	54.5	40.7	47.6	99.6
Parshall	40.0	47.4	61.3	58.8	40.5	49.6	99.1
Amidon	49.7	43.8	62.4	57.8	34.0	49.5	99.0
Ernest	46.8	41.6	62.9	56.3	38.0	49.1	98.1
MTHW9420	39.3	44.6	55.5	57.8	38.6	47.2	94.2
Rambo	--	--	--	--	34.1	34.1	91.9
Explorer	--	--	52.8	43.2	38.6	44.9	87.4
Conan	--	35.4	51.7	48.9	34.9	42.7	85.2

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 15. Relative test weights of spring wheat varieties as compared to McNeal when grown under dryland conditions in Roosevelt County in cooperation with CES.
Cooperator: Mark Swank

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Ember	--	--	--	--	62.0	62.0	114.4
McKenzie	--	--	--	--	60.5	60.5	111.6
MT9806	--	--	--	--	60.3	60.3	111.3
AC Barrie	--	--	--	--	60.0	60.0	110.7
Rambo	--	--	--	--	59.8	59.8	110.3
Gunner	--	--	--	64.3	61.5	62.9	107.5
Alsen	--	--	63.7	64.5	61.3	63.2	106.2
Hank	--	--	--	--	57.2	57.2	105.5
Parshall	62.8	61.0	62.8	64.7	62.3	62.7	104.8
Express	--	--	--	62.7	59.2	61.0	104.2
Reeder	63.0	61.0	63.0	63.7	60.5	62.2	104.0
MT9929	--	--	--	63.2	58.5	60.9	104.0
Ernest	63.0	60.7	63.0	64.0	60.3	62.2	104.0
Scholar	62.3	60.5	61.8	63.5	60.0	61.6	103.0
Outlook	--	--	--	61.8	58.2	60.0	102.6
Conan	--	60.0	61.3	62.5	59.8	60.9	102.4
Amidon	61.7	60.0	62.2	63.0	59.2	61.2	102.3
MTHW9420*	61.0	59.8	60.3	62.5	57.3	60.2	100.6
McNeal	61.3	59.3	61.5	62.8	54.2	59.8	100.0
Explorer*	--	--	60.5	60.2	57.8	59.5	100.0

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 16. Relative protein contents of spring wheat varieties as compared to McNeal when grown under dryland conditions in Roosevelt County in cooperation with CES.
Cooperator: Mark Swank

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Parshall	16.8	15.6	15.8	15.4	15.5	15.8	117.5
Alsen	--	--	15.6	14.7	15.6	15.3	115.6
Reeder	15.4	15.0	16.1	15.4	15.6	15.5	115.2
MT9806	--	--	--	--	15.6	15.6	112.2
AC Barrie	--	--	--	--	15.5	15.5	111.5
Gunner	--	--	--	14.6	15.2	14.9	111.2
Explorer*	--	--	14.5	14.8	14.5	14.6	110.3
Ernest	15.0	14.8	14.3	14.5	14.9	14.7	109.2
Scholar	15.2	14.8	14.2	14.6	14.7	14.7	109.2
Conan	--	14.7	14.9	14.0	14.2	14.5	108.6
Express	--	--	--	14.2	14.2	14.2	106.0
McKenzie	--	--	--	--	14.7	14.7	105.8
Hank	--	--	--	--	14.6	14.6	105.0
Ember	--	--	--	--	14.5	14.5	104.3
MT9929	--	--	--	12.9	14.5	13.7	102.2
Amidon	13.4	14.1	13.5	13.6	13.9	13.7	101.8
Outlook	--	--	--	13.4	13.6	13.5	100.7
MTHW9420*	13.9	13.9	12.8	13.2	13.7	13.5	100.3
McNeal	14.1	13.5	12.9	12.9	13.9	13.5	100.0
Rambo	--	--	--	--	13.5	13.5	97.1

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 17. Performance of spring wheat grown under dryland conditions at Reserve, MT.
Planted: 15 May 2002 Harvested: 3 September 2002 Cooperator: Max Aasheim

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	$/acre[1] +/- McNeal
Reeder	27	14.1	59.7	38.3	58.33
MT9806	30	15.5	59.8	35.7	53.78
Outlook	29	13.2	58.5	39.6	50.28
Parshall	31	15.4	60.8	34.8	49.29
MT9929	27	13.9	58.8	35.4	41.31
Gunner	30	14.6	60.5	33.6	39.61
Alsen	28	14.9	60.7	33.1	38.82
AC Barrie	30	14.9	58.2	32.5	35.86
McKenzie	31	14.0	58.3	33.4	34.96
Hank	27	14.1	56.8	33.4	34.96
Ember	27	12.8	62.3	36.2	34.20
Rambo	28	12.8	59.7	32.1	16.24
Scholar	31	14.5	59.2	28.2	13.26
Express	25	14.2	58.3	28.6	12.06
Ernest	32	14.2	59.2	28.4	11.11
Amidon	32	13.7	59.2	29.1	9.21
Conan	25	14.5	60.2	26.5	4.96
McNeal	27	13.1	58.3	28.2	0.00
MTHW9420*	26	13.6	57.7	27.5	**
Explorer*	28	14.2	57.2	23.1	**
average	28.6	14.1	59.2	31.9	
p value	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	3.7	2.1	1.2	7.4	
CV(SE/Mean)	2.1	1.2	0.7	4.3	
$LSD_{0.05}$	1.8	0.5	1.2	3.9	

[1]Wheat prices summarized by Gregg Carlson, NARC, Havre, MT, from 8-year average of daily market values for PNW, supplied by the Montana Wheat and Barley Committee

* Hard white wheat - no average price available at this time.

Table 18. Relative yielding abilities of spring wheat varieties as compared to McNeal when grown under dryland conditions in Sheridan County in cooperation with CES.
Cooperator: Max Aasheim

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Ember	--	--	--	--	36.2	36.2	128.4
MT9806	--	--	--	--	35.7	35.7	126.6
McKenzie	--	--	--	--	33.4	33.4	118.4
Hank	--	--	--	--	33.4	33.4	118.4
Reeder	50.6	49.8	38.2	45.4	38.3	44.5	117.0
Outlook	--	--	--	44.2	39.6	41.9	115.3
AC Barrie	--	--	--	--	32.5	32.5	115.2
Rambo	--	--	--	--	32.1	32.1	113.8
MT9929	--	--	--	41.8	35.4	38.6	106.2
Parshall	36.9	42.3	38.3	45.1	34.8	39.5	103.9
Amidon	40.4	37.5	39.6	45.6	29.1	38.4	101.2
Alsen	--	--	32.6	44.3	33.1	36.7	100.5
McNeal	43.2	37.3	36.8	44.5	28.2	38.0	100.0
Gunner	--	--	34.4	39.3	33.6	35.8	98.0
Scholar	46.2	36.2	32.8	42.7	28.2	37.2	97.9
Westbred Express	--	--	--	41.0	28.6	34.8	95.7
Ernest	37.0	37.4	35.0	38.6	28.4	35.3	92.8
MTHW9420	39.4	31.5	32.9	42.1	27.5	34.7	91.3
Conan	--	32.1	28.4	33.7	26.5	30.2	82.2
Explorer	--	--	26.6	32.5	23.1	27.4	75.1

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 19. Relative test weights of spring wheat varieties as compared to McNeal when grown under dryland conditions in Sheridan County in cooperation with CES.
Cooperator: Max Aasheim

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Ember	--	--	--	--	62.3	62.3	106.9
Parshall	62.3	63.7	62.5	64.7	60.8	62.8	103.2
Alsen	--	--	62.5	64.3	60.7	62.5	103.0
Gunner	--	--	62.0	64.5	60.5	62.3	102.7
MT9806	--	--	--	--	59.8	59.8	102.6
Rambo	--	--	--	--	59.7	59.7	102.4
Reeder	60.7	63.2	61.7	63.7	59.7	61.8	101.6
Conan	--	62.8	61.0	62.8	60.2	61.7	101.6
Scholar	61.5	62.7	61.2	63.5	59.2	61.6	101.3
Ernest	61.2	62.3	61.0	63.7	59.2	61.5	101.1
MT9929	--	--	--	63.2	58.8	61.0	100.8
Amidon	60.2	62.0	60.8	63.0	59.2	61.0	100.3
McNeal	61.2	61.0	61.0	62.7	58.3	60.8	100.0
Westbred Express	--	--	--	62.7	58.3	60.5	100.0
McKenzie	--	--	--	--	58.3	58.3	100.0
AC Barrie	--	--	--	--	58.2	58.2	99.8
Outlook	--	--	--	61.7	58.5	60.1	99.3
MTHW9420	58.7	61.8	59.0	62.0	57.7	59.8	98.4
Hank	--	--	--	--	56.8	56.8	97.4
Explorer	--	--	56.3	60.2	57.2	57.9	95.4

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 20. Relative protein contents of spring wheat varieties as compared to McNeal when grown under dryland conditions in Sheridan County in cooperation with CES.
Cooperator: Max Aasheim

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
MT9806	--	--	--	--	15.5	15.5	118.3
Parshall	15.8	15.0	13.1	15.4	15.4	14.9	115.5
AC Barrie	--	--	--	--	14.9	14.9	113.7
Gunner	--	--	13.2	16.0	14.6	14.6	112.0
Alsen	--	--	12.8	15.8	14.9	14.5	111.3
Reeder	14.6	13.8	13.6	15.8	14.1	14.4	111.1
Conan	--	13.6	12.5	15.2	14.5	14.0	110.1
Ernest	14.8	13.6	12.1	15.8	14.2	14.1	109.0
Explorer	--	--	12.6	15.4	14.2	14.1	107.9
Hank	--	--	--	--	14.1	14.1	107.6
Scholar	14.6	13.0	11.9	15.6	14.5	13.9	107.6
McKenzie	--	--	--	--	14.0	14.0	106.9
Westbred Express	--	--	--	15.6	14.2	14.9	106.8
Amidon	13.3	13.1	11.9	15.4	13.7	13.5	104.2
MT9929	--	--	--	14.4	13.9	14.2	101.4
MTHW9420	13.8	12.1	11.6	14.3	13.6	13.1	101.1
Outlook	--	--	--	14.8	13.2	14.0	100.4
McNeal	14.0	11.6	11.2	14.8	13.1	12.9	100.0
Ember	--	--	--	--	12.8	12.8	97.7
Rambo	--	--	--	--	12.8	12.8	97.7

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 21. Performance of spring wheat grown under dryland conditions at Nashua, MT. Planted: 12 April 2002, Harvested: 19 August 2002 Cooperator: Bill Lauckner

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	$/acre[1] +/- McNeal
Reeder	28	14.1	60.0	51.6	55.52
MT9806	27	12.7	61.0	49.4	25.76
Conan	26	13.9	59.2	44.8	23.09
Hank	27	12.8	57.0	47.7	18.32
Outlook	28	12.3	58.8	48.7	16.36
Alsen	28	12.0	61.5	49.2	15.05
Parshall	30	12.9	61.0	46.5	14.46
Ember	30	12.6	61.0	47.2	12.82
Scholar	31	12.6	60.5	46.7	10.67
Rambo	25	11.6	60.3	47.8	9.19
McKenzie	31	12.9	59.0	45.3	9.16
AC Barrie	30	13.2	60.3	43.7	6.04
Express	21	13.2	59.3	42.7	1.54
McNeal	28	11.0	59.7	45.6	0.00
Gunner	30	13.6	60.8	40.6	-4.26
Ernest	29	12.5	60.0	43.1	-5.85
MT9929	24	12.4	59.0	42.3	-8.30
Amidon	30	11.8	59.5	43.0	-10.87
MTHW9420*	25	12.5	57.3	46.7	**
Explorer*	25	14.6	56.3	46.5	**
average	27.6	12.8	59.6	46.0	
p value	<0.001	0.110	<0.001	<0.001	
CV (S/Mean)	5.0	9.4	1.6	5.3	
CV(SE/Mean)	2.9	5.4	0.9	3.1	
LSD 0.05	2.3	ns	1.6	4.0	

[1]Wheat prices summarized by Gregg Carlson, NARC, Havre, MT, from 10-year average of daily market values for PNW, supplied by the Montana Wheat and Barley Committee

* No average price for hard white wheat available at this time.

Table 22. Relative yielding abilities of spring wheat varieties as compared to McNeal when grown under dryland conditions in Valley County in cooperation with CES.
Cooperator: Bill Lauckner

Cultivar	1997	1998	2000	2001	2002	Ave	as % of McNeal
MT9806	--	--	--	--	49.4	49.4	108.3
Rambo	--	--	--	--	47.8	47.8	104.8
Gunner	--	--	--	73.4	40.6	57.0	104.7
Hank	--	--	--	--	47.7	47.7	104.6
Alsen	--	--	59.4	68.7	49.2	59.1	101.5
Reeder	--	49.5	61.9	70.0	51.6	58.3	101.1
McNeal	38.5	55.8	65.7	63.3	45.6	53.8	100.0
McKenzie	--	--	--	--	45.3	45.3	99.3
Ember	--	--	--	60.1	47.2	53.7	98.5
MT9929	--	--	--	64.1	42.3	53.2	97.7
Outlook	--	--	--	56.9	48.7	52.8	97.0
Express	--	--	--	62.7	42.7	52.7	96.8
MTHW9420	30.9	54.2	70.0	58.1	46.7	52.0	96.7
Scholar	36.8	52.1	61.3	62.2	46.7	51.8	96.4
AC Barrie	--	--	--	--	43.7	43.7	95.8
Parshall	--	44.7	59.5	70.0	46.5	55.2	95.8
Amidon	38.7	48.4	64.8	56.1	43.0	50.2	93.3
Conan	--	--	60.0	57.8	44.8	54.2	93.1
Ernest	28.3	39.4	59.8	62.4	43.1	46.6	86.6
Explorer	--	--	53.0	42.1	46.5	47.2	81.1

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. Site hailed out in 1999.

Table 23. Relative test weights of spring wheat varieties as compared to McNeal when grown under dryland conditions in Valley County in cooperation with CES.
Cooperator: Bill Lauckner

Cultivar	1997	1998	2000	2001	2002	Ave	as % of McNeal
Alsen	--	--	64.8	63.7	61.5	63.3	103.4
Parshall	--	64.2	63.7	63.8	61.0	63.2	102.6
Gunner	--	--	--	63.5	60.8	62.2	102.6
MT9806	--	--	--	--	61.0	61.0	102.2
Ember	--	--	--	62.8	61.0	61.9	102.1
Reeder	--	64.3	63.5	62.7	60.0	62.6	101.7
Scholar	59.0	63.3	63.0	63.2	60.5	61.8	101.5
Ernest	58.3	64.0	63.0	62.2	60.0	61.5	101.0
Rambo	--	--	--	--	60.3	60.3	101.0
AC Barrie	--	--	--	--	60.3	60.3	101.0
MT9929	--	--	--	62.8	59.0	60.9	100.5
Amidon	58.3	63.0	62.7	61.8	59.5	61.1	100.3
Conan	--	--	63.0	61.7	59.2	61.3	100.1
McNeal	58.2	62.5	62.5	61.5	59.7	60.9	100.0
MTHW9420	58.5	63.5	63.0	60.8	57.3	60.6	99.6
Outlook	--	--	--	61.0	58.8	59.9	98.8
McKenzie	--	--	--	--	59.0	59.0	98.8
Express	--	--	--	59.8	59.3	59.6	98.3
Explorer	--	--	--	59.7	56.3	58.0	95.7
Hank	--	--	--	--	57.0	57.0	95.5

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. Site hailed out in 1999.

Table 24. Relative protein contents of spring wheat varieties as compared to McNeal when grown under dryland conditions in Valley County in cooperation with CES.
Cooperator: Bill Lauckner

Cultivar	1997	1998	2000	2001	2002	Ave	as % of McNeal
Gunner	--	--	--	15.0	13.6	14.3	121.2
AC Barrie	--	--	--	--	13.2	13.2	120.0
McKenzie	--	--	--	--	12.9	12.9	117.3
Hank	--	--	--	--	12.8	12.8	116.4
MT9806	--	--	--	--	12.7	12.7	115.5
Parshall	--	15.4	10.6	14.1	12.9	13.3	113.5
Explorer	--	--	11.0	13.0	14.6	12.9	113.2
Reeder	--	13.5	11.3	13.8	14.1	13.2	112.8
Ember	--	--	--	14.0	12.6	13.3	112.7
Express	--	--	--	12.9	13.2	13.1	110.6
Ernest	15.5	15.7	10.5	14.2	12.5	13.7	108.4
Alsen	--	--	10.6	13.9	12.0	12.2	107.0
Conan	--	--	10.0	12.6	13.9	12.2	107.0
Scholar	16.4	13.8	10.7	13.4	12.6	13.4	106.0
Rambo	--	--	--	--	11.6	11.6	105.5
MT9929	--	--	--	11.9	12.4	12.2	103.0
Amidon	14.6	14.7	10.1	13.0	11.8	12.8	101.7
MTHW9420	15.5	14.6	9.7	11.7	12.5	12.8	101.4
Outlook	--	--	--	11.6	12.3	12.0	101.3
McNeal	16.4	12.6	10.5	12.6	11.0	12.6	100.0

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. Site hailed out in 1999.

Table 25. Performance of spring wheat grown under dryland conditions at Scobey, MT.
Planted: 15 May 2002 Harvested: 22 August 2002 Cooperator: Bobbie Roos

Variety	Height, inches	Grain protein	Test Weight	Yield Bu/acre	$/acre[1] +/- McNeal
Alsen	24	12.2	62.5	34.0	21.61
Gunner	27	11.1	62.8	33.7	17.98
MT9806	26	13.8	60.8	28.9	12.36
Outlook	25	11.4	59.7	32.0	10.87
Reeder	23	12.4	61.3	31.3	10.14
AC Barrie	26	12.5	60.7	29.7	5.12
Scholar	26	11.6	59.8	30.6	5.02
Hank	23	11.2	60.8	30.2	3.35
Express	21	12.4	60.3	29.7	3.33
McNeal	24	10.7	59.8	29.4	0.00
Ernest	26	11.9	61.7	29.1	-1.25
Parshall	24	12.1	63.0	28.8	-2.51
Rambo	24	11.0	60.2	28.1	-5.43
McKenzie	26	11.8	61.2	26.6	-11.94
Amidon	25	12.3	58.8	25.4	-14.94
Ember	24	10.6	63.8	25.1	-17.97
MT9929	21	12.3	60.8	23.1	-24.71
Conan	21	13.4	60.2	20.8	-29.29
MTHW9420*	22	12.3	59.7	28.3	**
Explorer*	24	12.2	59.7	27.0	**
average	24.2	12.0	60.9	28.6	
p value	<0.001	<0.001	<0.001	0.002	
CV (S/Mean)	6.8	5.8	1.2	11.7	
CV(SE/Mean)	3.9	3.4	0.7	6.7	
LSD 0.05	2.7	1.2	1.2	5.5	

[1]Wheat prices summarized by Gregg Carlson, NARC, Havre, MT, from 10-year average of daily market values for PNW, supplied by the Montana Wheat and Barley Committee.

** No average price for hard white wheat available at this time.

Table 26. Relative yields of spring wheat varieties as compared to McNeal when grown under dryland conditions in Daniels County in cooperation with CES. Cooperator: Bobbie Roos

Variety	1999	2001	2002	average	As % of McNeal
Amidon	59.5	29.1	25.4	38.0	105.3
Scholar	53.9	28.2	30.6	37.6	104.2
Ernest	53.3	29.2	29.1	37.2	103.0
Hank	--	--	30.2	30.2	102.7
AC Barrie	--	--	29.7	29.7	101.0
McNeal	50.1	28.7	29.4	36.1	100.0
Reeder	51.3	25.0	31.3	35.9	99.4
MT9806	--	--	28.9	28.9	98.3
MTHW9420	48.6	28.4	28.3	35.1	97.2
Rambo	--	--	28.1	28.1	95.6
Outlook	--	26.9	32.0	29.5	92.8
Parshall	48.3	23.1	28.8	33.4	92.5
McKenzie	--	--	26.6	26.6	90.5
Alsen	--	18.2	34.0	26.1	90.0
Gunner	--	17.5	33.7	25.6	88.3
Express	--	21.3	29.7	25.5	87.9
Conan	50.7	23.6	20.8	31.7	87.8
Ember	--	--	25.1	25.1	85.4
Explorer	--	21.9	27.0	24.5	84.5
MT9929	--	20.8	23.1	22.0	75.9

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

Table 27. Relative test weights of spring wheat varieties as compared to McNeal when grown under dryland conditions in Daniels County in cooperation with CES. Cooperator: Bobbie Roos

Variety	1999	2001	2002	average	As % of McNeal
Ember	--	--	63.8	63.8	106.7
Alsen	--	63.8	62.5	63.2	104.3
Gunner	--	63.4	62.8	63.1	104.1
Parshall	62.9	64.0	63.0	63.3	103.8
Reeder	62.9	63.4	61.3	62.5	102.5
MT9929	--	63.4	60.8	62.1	102.5
McKenzie	--	--	61.2	61.2	102.3
Ernest	62.3	62.9	61.7	62.3	102.1
Hank	--	--	60.8	60.8	101.7
MT9806	--	--	60.8	60.8	101.7
Express	--	62.8	60.3	61.6	101.6
AC Barrie	--	--	60.7	60.7	101.5
Conan	62.2	63.1	60.2	61.8	101.3
Scholar	62.7	62.6	59.8	61.7	101.1
MTHW9420	63.0	62.4	59.7	61.7	101.1
Rambo	--	--	60.2	60.2	100.7
Outlook	--	61.8	59.7	60.8	100.3
Amidon	62.0	62.4	58.8	61.1	100.2
Explorer	--	61.7	59.7	60.7	100.2
McNeal	61.7	61.4	59.8	61.0	100.0

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

Table 28. Relative protein contents of spring wheat varieties as compared to McNeal when grown under dryland conditions in Daniels County in cooperation with CES. Cooperator: Bobbie Roos

Variety	1999	2001	2002	average	As % of McNeal
MT9806	--	--	13.8	13.8	129.0
Conan	11.0	11.0	13.4	11.8	118.0
AC Barrie	--	--	12.5	12.5	116.8
Reeder	10.4	11.7	12.4	11.5	115.0
Parshall	11.1	10.5	12.1	11.2	112.0
Explorer	--	10.5	12.2	11.4	111.8
Express	--	10.1	12.4	11.3	110.8
McKenzie	--	--	11.8	11.8	110.3
Amidon	10.0	10.4	12.3	10.9	109.0
MTHW9420	10.3	9.9	12.3	10.8	108.0
Alsen	--	9.8	12.2	11.0	107.8
Scholar	10.2	10.3	11.6	10.7	107.0
Ernest	10.0	10.3	11.9	10.7	107.0
Hank	--	--	11.2	11.2	104.7
Outlook	--	9.7	11.4	10.6	103.9
MT9929	--	8.8	12.3	10.6	103.9
Rambo	--	--	11.0	11.0	102.8
McNeal	9.6	9.8	10.7	10.0	100.0
Gunner	--	9.2	11.1	10.2	100.0
Ember	--	--	10.6	10.6	99.1

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

Table 29. Summary of spring wheat yields in bu/acre at two irrigated off-station sites in eastern Montana, 2002. Both sites are sprinkle irrigated.

Variety	Dagmar	Brockton	average
Ember	46.1	**83.9**	65.0
Outlook	**57.4**	70.5	64.0
Reeder	54.3	72.3	63.3
McKenzie	48.5	75.0	61.8
Amidon	48.9	74.1	61.5
MT9806	51.9	70.6	61.3
Ernest	46.0	73.0	59.5
AC Barrie	45.1	71.0	58.1
Parshall	45.7	67.1	56.4
Gunner	46.4	65.5	56.0
MTHW9420*	40.0	65.8	52.9
MT9929	40.0	64.4	52.2
McNeal	44.0	59.5	51.8
Alsen	41.3	60.1	50.7
Rambo	38.5	57.4	48.0
Express	33.6	62.1	47.9
Hank	36.5	57.3	46.9
Conan	36.0	57.1	46.6
Scholar	34.2	58.9	46.6
Explorer*	34.1	53.3	43.7
site average	43.4	66.0	
p value	<0.001	<0.001	
CV (S/Mean)	10.1	8.4	
CV(SE/Mean)	5.8	4.8	
LSD 0.05	7.2	9.2	

*hard white wheat

Cooperators:

County	Producer	CES agent
Sheridan (Dagmar)	Steve Brekke	Terry Angvick
Roosevelt (Brockton)	Brad Bender	Gina Snyder
Valley (Nashua)	Alisha (Zeller) & Cole Sibley	Verlin Koenig

Table 30. Summary of spring wheat test weights in lb/bu at two irrigated off-station sites in eastern Montana, 2002. Both sites are sprinkle irrigated.

Variety	Dagmar	Brockton	average
Parshall	61.3	63.0	62.2
Ember	60.0	63.2	61.6
Gunner	60.0	61.5	60.8
Reeder	60.3	61.2	60.8
McKenzie	59.7	61.5	60.6
Alsen	59.7	61.2	60.5
Amidon	60.0	60.7	60.4
MT9806	59.8	60.8	60.3
Ernest	59.0	61.5	60.3
AC Barrie	58.7	61.2	60.0
Conan	58.5	60.5	59.5
Outlook	58.3	59.3	58.8
McNeal	57.7	59.5	58.6
Rambo	57.5	59.5	58.5
MT9929	56.8	59.8	58.3
Scholar	56.7	59.7	58.2
Hank	55.7	59.2	57.5
MTHW9420*	55.0	59.0	57.0
Explorer*	53.5	57.7	55.6
Express	52.8	57.8	55.3
site average	58.0	60.4	
p value	<0.001	<0.001	
CV (S/Mean)	2.0	1.2	
CV(SE/Mean)	1.2	0.7	
LSD 0.05	1.9	1.2	

*hard white wheat

Cooperators:

County	Producer	CES agent
Sheridan (Dagmar)	Steve Brekke	Terry Angvick
Roosevelt (Brockton)	Brad Bender	Gina Snyder
Valley (Nashua)	Alisha (Zeller) & Cole Sibley	Verlin Koenig

Table 31. Summary of spring wheat heights in inches at two irrigated off-station sites in eastern Montana, 2002. Both sites are sprinkle irrigated.

Variety	Dagmar	Brockton	average
Amidon	34	39	36.5
Ernest	34	38	36.0
Parshall	32	37	34.5
AC Barrie	32	36	34.0
McKenzie	33	35	34.0
Gunner	32	35	33.5
Scholar	31	36	33.5
McNeal	30	34	32.0
MT9806	31	33	32.0
Outlook	30	34	32.0
Reeder	29	33	31.0
Alsen	29	31	30.0
Ember	28	32	30.0
Rambo	29	30	29.5
Explorer*	27	31	29.0
Hank	27	31	29.0
MT9929	26	32	29.0
Conan	27	29	28.0
MTHW9420*	26	28	27.0
Express	24	27	25.5
site average	29.6	33	
p value	<0.001	<0.001	
CV (S/Mean)	4.7	5.1	
CV(SE/Mean)	2.7	2.9	
LSD 0.05	2.3	2.8	

*hard white wheat

Cooperators:

County	Producer	CES agent
Sheridan (Dagmar)	Steve Brekke	Terry Angvick
Roosevelt (Brockton)	Brad Bender	Gina Snyder
Valley (Nashua)	Alisha (Zeller) & Cole Sibley	Verlin Koenig

Table 32. Summary of spring wheat protein contents in percent at two irrigated off-station sites in eastern Montana, 2002. Both sites are sprinkle irrigated.

Variety	Dagmar	Brockton	average
Alsen	15.5	15.6	15.6
Reeder	14.4	16.1	15.3
AC Barrie	14.6	15.8	15.2
Parshall	14.4	16.0	15.2
Ernest	14.9	15.3	15.1
Gunner	14.9	15.2	15.1
Scholar	14.5	15.4	15.0
Express	14.7	14.9	14.8
MT9806	14.8	14.8	14.8
McKenzie	14.1	15.0	14.6
Conan	14.3	14.7	14.5
Explorer*	13.9	14.4	14.2
MT9929	13.7	14.6	14.2
Hank	13.5	14.7	14.1
Outlook	13.6	14.5	14.1
Amidon	13.8	14.0	13.9
Ember	13.4	14.4	13.9
MTHW9420*	13.4	14.2	13.8
McNeal	13	14.5	13.8
Rambo	13.1	13.7	13.4
site average	14.1	14.9	
p value	<0.001	<0.001	
CV (S/Mean)	3.2	2.3	
CV(SE/Mean)	1.8	1.3	
LSD 0.05	0.7	0.6	

*hard white wheat

Cooperators:

County	Producer	CES agent
Sheridan (Dagmar)	Steve Brekke	Terry Angvick
Roosevelt (Brockton)	Brad Bender	Gina Snyder
Valley (Nashua)	Alisha (Zeller) & Cole Sibley	Verlin Koenig

Table 33. Performance of spring wheat grown under irrigated conditions at Dagmar, MT.
Planted: 15 May 2002 Harvested: 30 August 2002 Cooperator: Steve Brekke

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	$/acre[1] +/- McNeal
Reeder	29	14.4	60.3	54.3	70.84
Outlook	30	13.6	58.3	57.4	69.43
MT9806	31	14.8	59.8	51.9	61.83
Gunner	32	14.9	60.0	46.4	37.50
McKenzie	33	14.1	59.7	48.5	37.30
Ernest	34	14.9	59.0	46.0	35.50
Amidon	34	13.8	60.0	48.9	34.81
Parshall	32	14.4	61.3	45.7	29.46
AC Barrie	32	14.6	58.7	45.1	26.05
Ember	28	13.4	60.0	46.1	17.56
Alsen	29	15.5	59.7	41.3	12.05
McNeal	30	13.0	57.7	44.0	0.00
MT9929	26	13.7	56.8	40.0	-6.84
Conan	27	14.3	58.5	36.0	-20.16
Rambo	29	13.1	57.5	38.5	-24.26
Hank	27	13.5	55.7	36.5	-26.50
Scholar	31	14.5	56.7	34.2	-27.14
Express	24	14.7	52.8	33.6	-31.38
MTHW9420*	26	13.4	55.0	40.0	**
Explorer*	27	13.9	53.5	34.1	**
average	29.6	14.1	58.0	43.4	
p value	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	4.7	3.2	2.0	10.1	
CV(SE/Mean)	2.7	1.8	1.2	5.8	
LSD 0.05	2.3	0.7	1.9	7.2	

[1]Wheat prices summarized by Gregg Carlson, NARC, Havre, MT, from 6-year average of daily market values for PNW, supplied by the Montana Wheat and Barley Committee

** No average price for hard white wheat available at this time.

Table 34. Relative yields of spring wheat varieties as compared to McNeal when grown under irrigated conditions in Sheridan County in cooperation with CES.
Cooperator: Steve Brekke

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Outlook	--	--	--	16.1	57.4	36.8	134.1
Reeder	78.4	63.6	54.0	17.7	54.3	53.6	120.2
MT 9806	--	--	--	--	51.9	51.9	118.0
Gunner	--	--	48.6	16.3	46.4	37.1	112.7
McKenzie	--	--	--	--	48.5	48.5	110.2
Alsen	--	--	49.5	17.5	41.3	36.1	109.6
Parshall	69.9	59.9	51.4	11.4	45.7	47.7	106.9
Ernest	67.2	56.8	51.1	13.0	46.0	46.8	105.0
Ember	--	--	--	--	46.1	46.1	104.8
AC Barrie	--	--	--	--	45.1	45.1	102.5
MT9929	--	--	--	15.7	40.0	27.9	101.6
Amidon	63.7	53.6	44.7	13.3	48.9	44.8	100.5
McNeal	70.3	53.9	44.0	10.8	44.0	44.6	100.0
Explorer	--	--	42.7	16.7	34.1	31.2	94.6
Express	--	--	--	17.9	33.6	25.8	94.0
MTHW9420	64.0	47.4	40.8	15.1	40.0	41.5	93.0
Scholar	66.1	38.3	49.4	11.0	34.2	39.8	89.2
Rambo	--	--	--	--	38.5	38.5	87.5
Conan	--	45.3	35.3	15.1	36.0	32.9	86.2
Hank	--	--	--	--	36.5	36.5	83.0

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.

Note: Severe scab infection in 2001

Table 35. Relative test weights of spring wheat varieties as compared to McNeal when grown under irrigated conditions in Sheridan County in cooperation with CES.
Cooperator: Steve Brekke

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
Gunner	--	--	63.0	59.6	60.0	60.9	105.3
Parshall	63.3	61.2	62.8	59.4	61.3	61.6	105.2
Alsen	--	--	62.8	59.3	59.7	60.6	104.8
Ember	--	--	--	--	60.0	60.0	104.0
MT 9806	--	--	--	--	59.8	59.8	103.6
McKenzie	--	--	--	--	59.7	59.7	103.5
Reeder	62.0	60.0	61.8	55.6	60.3	59.9	102.3
Amidon	60.7	59.0	62.0	56.6	60.0	59.7	101.8
Ernest	62.3	58.8	62.5	55.6	59.0	59.6	101.8
AC Barrie	--	--	--	--	58.7	58.7	101.7
Conan	--	58.3	59.3	56.6	58.5	58.2	100.6
Scholar	61.8	56.8	62.5	56.1	56.7	58.8	100.3
McNeal	61.5	58.0	60.7	55.0	57.7	58.6	100.0
Rambo	--	--	--	--	57.5	57.5	99.7
Outlook	--	--	--	53.3	58.3	55.8	99.0
MT9929	--	--	--	52.6	56.8	54.7	97.1
Hank	--	--	--	--	55.7	55.7	96.5
Explorer	--	--	59.3	54.5	53.5	55.8	96.5
Express	--	--	--	54.8	52.8	53.8	95.5
MTHW9420	59.2	53.7	58.5	52.0	55.0	55.7	95.0

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.

NOTE: Severe scab infection in 2001

Table 36. Relative protein contents of spring wheat varieties as compared to McNeal when grown under irrigated conditions in Sheridan County in cooperation with CES.
Cooperator: Steve Brekke

Cultivar	1998	1999	2000	2001	2002	Ave	as % of McNeal
MT 9806	--	--	--	--	14.8	14.8	113.8
Gunner	--	--	14.9	14.8	14.9	14.9	112.3
AC Barrie	--	--	--	--	14.6	14.6	112.3
Reeder	15.6	16.1	14.2	14.2	14.4	14.9	111.0
Parshall	14.7	16.5	14.4	14.2	14.4	14.8	110.6
Alsen	--	--	14.4	13.9	15.5	14.6	110.3
Ernest	15.2	15.7	12.7	14.7	14.9	14.6	109.1
McKenzie	--	--	--	--	14.1	14.1	108.5
Express	--	--	--	14.7	14.7	14.7	108.1
Explorer	--	--	14.0	14.9	13.9	14.3	107.8
Scholar	15.0	14.6	12.8	14.4	14.5	14.3	106.3
Conan	--	14.3	14.2	14.2	14.3	14.3	105.9
Hank	--	--	--	--	13.5	13.5	103.8
Ember	--	--	--	--	13.4	13.4	103.1
Amidon	14.1	14.8	12.5	13.1	13.8	13.7	101.8
Rambo	--	--	--	--	13.1	13.1	100.8
Outlook	--	--	--	13.8	13.6	13.7	100.7
McNeal	13.3	14.1	12.5	14.2	13.0	13.4	100.0
MT9929	--	--	--	13.4	13.7	13.6	99.6
MTHW9420	13.0	13.5	12.3	13.2	13.4	13.1	97.5

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.

NOTE: Severe scab infection in 2001

Table 37. Performance of spring wheat grown under irrigated conditions at Brockton, MT.
Planted: 22 May 2002 Harvested: 29 August 2002 Cooperator: Brad Bender

Variety	Height, inches	Lodging index	Grain protein	Test weight	Yield, bu/acre	$/acre[1] +/- McNeal
Ember	32	0.3	14.4	63.2	83.9	114.88
McKenzie	35	1.0	15.0	61.5	75.0	83.89
Ernest	38	0.7	15.3	61.5	73.0	73.91
Reeder	33	0.0	16.1	61.2	72.3	70.42
AC Barrie	36	0.0	15.8	61.2	71.0	63.93
Amidon	39	1.0	14.0	60.7	74.1	63.10
MT9806	33	1.3	14.8	60.8	70.6	57.70
Outlook	34	0.7	14.5	59.3	70.5	53.68
Parshall	37	0.7	16.0	63.0	67.1	44.47
Gunner	35	0.0	15.2	61.5	65.5	36.48
MT9929	32	0.7	14.6	59.8	64.4	23.91
WB Express	27	0.0	14.9	57.8	62.1	15.79
Alsen	31	0.7	15.6	61.2	60.1	9.54
Scholar	36	2.3	15.4	59.7	58.9	3.55
McNeal	34	0.7	14.5	59.5	59.5	0.00
Hank	31	2.7	14.7	59.2	57.3	-7.87
Conan	29	0.0	14.7	60.5	57.1	-8.86
Rambo	30	0.7	13.7	59.5	57.4	-21.73
MTHW9420	28	2.0	14.2	59.0	65.8	*
Explorer	31	4.0	14.4	57.7	53.3	*
average	33	1.0	14.9	60.4	66.0	
p value	<0.001	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	5.1	69.4	2.3	1.2	8.4	
CV(SE/Mean)	2.9	40.1	1.3	0.7	4.8	
LSD 0.05	2.8	1.1	0.6	1.2	9.2	

[1]Wheat prices summarized by Gregg Carlson, NARC, Havre, MT, from 5-year average of daily market values for PNW, supplied by the Montana Wheat and Barley Committee

* No average price for hard white wheat available at this time.

Table 38. Relative yields of spring wheat varieties as compared to McNeal when grown under irrigated conditions in Roosevelt County in cooperation with CES. Cooperator: Brad Bender

Variety	2001	2002	average	As % of McNeal
Ember	--	83.9	83.9	141.0
McKenzie	--	75.0	75.0	125.0
Reeder	59.2	72.3	65.8	123.7
AC Barrie	--	71.0	71.0	119.3
MT9806	--	70.6	70.6	118.7
Outlook	53.4	70.5	62.0	116.5
Parshall	56.0	67.1	61.6	115.8
Ernest	43.6	73.0	58.3	109.6
Gunner	50.9	65.5	58.2	109.4
Amidon	42.1	74.1	58.1	109.2
MT9929	47.2	64.4	55.8	104.9
MTHW9420*	44.9	65.8	55.4	104.1
Scholar	47.6	58.9	53.3	100.2
McNeal	46.8	59.5	53.2	100.0
Rambo	--	57.4	57.4	96.5
Hank	--	57.3	57.3	96.3
Alsen	42.2	60.1	51.2	96.2
Express	39.1	62.1	50.6	95.0
Conan	33.2	57.1	45.2	85.0
Explorer*	35.8	53.3	44.6	83.8

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

Table 39. Relative test weights of spring wheat varieties as compared to McNeal when grown under irrigated conditions in Roosevelt County in cooperation with CES. Cooperator: Brad Bender

Variety	2001	2002	average	As % of McNeal
Ember	--	63.2	63.2	106.2
Parshall	60.5	63.0	61.8	104.4
McKenzie	--	61.5	61.5	103.4
Gunner	60.2	61.5	60.9	102.9
AC Barrie	--	61.2	61.2	102.9
Ernest	60.0	61.5	60.8	102.7
Reeder	60.2	61.2	60.7	102.5
MY9806	--	60.8	60.8	102.2
Amidon	59.8	60.7	60.3	101.9
Alsen	59.2	61.2	60.2	101.7
Scholar	60.5	59.7	60.1	101.5
McNeal	58.8	59.5	59.2	100.0
Rambo	--	59.5	59.5	100.0
MT9929	58.2	59.8	59.0	99.7
Hank	--	59.2	59.2	99.5
Outlook	58.0	59.3	58.7	99.2
Conan	56.5	60.5	58.5	98.8
MTHW9420*	56.8	59.0	57.9	97.8
Express	56.8	57.8	57.3	96.8
Explorer*	54.2	57.7	56.0	94.6

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

Table 40. Relative protein contents of spring wheat varieties as compared to McNeal when grown under irrigated conditions in Roosevelt County in cooperation with CES. Cooperator: Brad Bender

Variety	2001	2002	average	As % of McNeal
Reeder	14.6	16.1	15.4	113.2
Parshall	14.2	16.0	15.1	111.0
Gunner	14.7	15.2	15.0	110.3
Alsen	14.1	15.6	14.9	109.6
AC Barrie	--	15.8	15.8	109.0
Explorer*	14.8	14.4	14.6	107.4
Scholar	13.6	15.4	14.5	106.6
Ernest	13.4	15.3	14.4	105.9
Conan	13.9	14.7	14.3	105.1
Express	13.3	14.9	14.1	103.7
McKenzie	--	15.0	15.0	103.4
MT9929	13.0	14.6	13.8	101.5
Hank	--	14.7	14.7	101.4
Outlook	12.9	14.5	13.7	100.7
MTHW9420*	13.1	14.2	13.7	100.7
McNeal	12.6	14.5	13.6	100.0
MY9806	--	14.8	14.8	100.0
Ember	--	14.4	14.4	99.3
Amidon	12.5	14.0	13.3	97.8
Rambo	--	13.7	13.7	94.5

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