

PROJECT TITLE: Off-station spring wheat yield trials - 2001

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

COOPERATORS:

County	Producers	CES Agents
Daniels, dryland	Bobbie Roos	Bobbie Roos
McCone, dryland	Victor Wagner	Ken Nelson
Roosevelt, dryland	Mark Swank	Ardis Oelkers
Roosevelt, irrigated	Brad Bender	Chet Hill
Sheridan, dryland	Max Aasheim	Terry Angvick
Sheridan, irrigated	Steve Brekke	Terry Angvick
Valley, dryland	Bill Lauckner	Verlin Koenig
Valley, irrigated	Kelly Donovan	Verlin Koenig
Wibaux, dryland	David Maus	Dave Bertelsen

MATERIALS AND METHODS: Twenty-four spring wheat varieties were planted at six dryland and three irrigated sites. Plots were 20 feet long and three feet wide, with one foot between rows. Entire plots were harvested using a plot combine. Planting and harvest dates were

Location	Planted	Harvested
Scobey, Daniels County – dryland	9 May	30 Aug
Circle, McCone County – dryland	2 May	13 Aug
Poplar, Roosevelt County – dryland	8 May	16 Aug
Poplar, Roosevelt County – irrigated	8 May	27 Aug
Reserve, Sheridan County – dryland	10 May	29 Aug
Dagmar, Sheridan County – irrigated	10 May	29 Aug
Nashua, Valley County – dryland	12 Apr	20 Aug
Larslan, Valley County – irrigated	19 Apr	27 Aug
Wibaux, Wibaux County – dryland	3 May	15 Aug

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 and MT9874 yielded most across dryland sites (Table 1) and irrigated sites (Table 29). Plots at Brockton suffered severe lodging, and plots at Dagmar suffered severe scab infection.

McCone County (dryland, recrop): Relative performance and economic values of spring wheat varieties at **Circle** are shown in Tables 5-8. Alsen and Montana experimental line MT9874 produced the greatest economic return.

Wibaux County (dryland fallow): Relative performance and economic values of spring wheat varieties at **Wibaux** are shown in Tables 9-12. Reeder produced the greatest economic return.

Roosevelt County (dryland fallow): Relative performance and economic values of spring wheat varieties at **Poplar** are shown in Tables 13-16. Scholar and Reeder produced the greatest economic return.

Sheridan County (dryland fallow): Relative performance and economic values of spring wheat varieties at **Reserve** are shown in Tables 17-20. Amidon and Reeder produced the greatest economic return.

Valley County (dryland fallow): Relative performance and economic values of spring wheat varieties at **Nashua** are shown in Tables 21-24. Gunner produced the greatest economic return.

Daniels County (dryland fallow): Relative performance and economic values of spring wheat varieties at **Scobey** are shown in Tables 25-28. Ernest and Amidon produced the greatest economic return.

Valley County (irrigated, pivot): Relative performance and economic values of spring wheat varieties at **Larslan** are shown in Tables 33-36. Reeder and Montana experimental line MT9874 produced the greatest economic return.

Sheridan County (irrigated, pivot): Relative performance and economic values of spring wheat varieties at **Dagmar** are shown in Tables 37-40. This site suffered severe scab infection. McVey yielded most.

Roosevelt County (irrigated, pivot): Performance and economic values of spring wheat varieties at **Poplar** are shown in Table 41. Reeder produced 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 in the Mondak region of experimental lines from Montana and North Dakota, and new varieties from state breeding programs and private companies. Regional spring wheat producers make decisions on which 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, 2001. All sites except McCone (Circle) were planted on fallow.

Variety	Circle	Wibaux	Poplar	Reserve	Nashua	Scobey	average
Reeder	38.5	49.4	59.9	45.4	70.0	25.0	48.0
MT9874	40.5	50.2	64.0	44.2	56.9	26.9	47.1
McNeal	33.0	48.4	58.5	44.5	63.3	28.7	46.1
McVey	28.8	45.3	62.2	47.3	62.1	24.6	45.1
Scholar	33.0	42.0	61.6	42.7	62.2	28.2	45.0
Parshall	29.8	43.0	58.8	45.1	70.0	23.1	45.0
Amidon	35.1	45.2	57.8	45.6	56.1	29.1	44.8
Ernest	34.5	43.6	56.3	39.6	62.4	29.2	44.3
Alsen	27.1	43.7	59.4	44.3	68.7	18.2	43.6
MTHW9420*	31.4	42.4	57.8	42.1	58.1	28.4	43.4
Express	30.2	41.2	57.0	41.0	62.7	21.3	42.2
Gunner	17.6	40.1	57.9	39.3	73.4	17.5	41.0
MT9929	25.2	38.3	54.5	41.8	64.1	20.8	40.8
CDC Bounty	25.0	40.3	54.7	40.0	69.4	15.4	40.8
Pristine*	27.6	41.5	56.6	41.5	51.3	24.0	40.4
Argent*	23.9	42.4	55.1	40.7	60.5	18.5	40.2
NK Bounty	27.2	38.6	54.0	38.7	63.4	18.8	40.1
MTHW9904*	28.2	40.1	54.8	37.5	55.7	21.7	39.7
Conan	31.2	36.7	48.9	33.7	57.8	23.6	38.7
ND722	22.2	38.7	47.5	38.0	67.6	16.7	38.5
Verde	13.7	21.5	55.7	40.9	61.8	23.6	36.2
Explorer*	22.8	35.7	43.2	32.5	42.1	21.9	33.0
Ember					60.1		
Tioga					26.6		
site average	28.5	41.3	56.2	41.2	60.7	23.0	
p value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	13.4	8.2	4.9	5.2	10.2	17.2	
CV(SE/Mean)	7.7	4.7	2.8	3.0	6.5	9.9	
LSD _{0.05}	6.3	5.6	4.5	3.5	11.2	6.5	

*hard white wheat

Cooperators:

County

Sheridan (Reserve)

Wibaux (Wibaux)

McCone (Circle)

Roosevelt (Poplar)

Valley (Nashua)

Daniels (Scobey)

Producer

Max Aasheim

David Maus

Victor Wagner

Mark Swank

Bill Lauckner

Bobbie Roos

CES Agent

Terry Angvick

Dave Bertelsen

Ken Nelson

Ardis Oelkers

Verlin Koenig

Bobbie Roos

Table 2. Summary of spring wheat test weights in lb/bu at six dryland off-station sites in eastern Montana, 2001. All sites except McCone (Circle) were planted on fallow.

Variety	Circle	Wibaux	Poplar	Reserve	Nashua	Scobey	average
Alsen	64.6	62.0	64.5	64.3	63.7	63.8	63.8
Gunner	63.8	63.0	64.3	64.5	63.5	63.4	63.8
Parshall	63.7	61.2	64.7	64.7	63.8	64.0	63.7
MTHW9904*	63.4	62.2	64.3	64.3	62.7	64.3	63.5
ND722	63.3	61.7	64.2	64.2	63.0	63.8	63.4
Pristine*	63.7	61.8	63.8	64.0	62.2	63.9	63.2
CDC Bounty	62.5	61.5	64.0	63.8	63.0	63.2	63.0
Argent*	63.2	61.0	64.0	63.8	62.7	63.0	63.0
Reeder	63.2	60.7	63.7	63.7	62.7	63.4	62.9
Scholar	63.0	61.7	63.5	63.5	63.2	62.6	62.9
Ernest	63.0	60.8	64.0	63.7	62.2	62.9	62.8
MT9929	62.8	60.5	63.2	63.2	62.8	63.4	62.7
Amidon	62.8	61.2	63.0	63.0	61.8	62.4	62.4
Conan	62.5	61.3	62.5	62.8	61.7	63.1	62.3
Verde	60.6	61.5	63.0	63.2	61.5	63.3	62.2
McNeal	61.5	60.0	62.8	62.7	61.5	61.4	61.7
Express	62.0	59.0	62.7	62.7	59.8	62.8	61.5
MTHW9420*	62.7	57.8	62.5	62.0	60.8	62.4	61.4
MT9874	61.0	59.2	61.8	61.7	61.0	61.8	61.1
McVey	60.8	59.0	63.0	62.3	60.8	60.6	61.1
NK Bounty	62.2	58.5	61.0	61.2	59.8	62.4	60.9
Explorer*	59.9	58.2	60.2	60.2	59.7	61.7	60.0
Ember					62.8		
Tioga					60.2		
site average	62.6	60.6	63.2	63.2	62.0	62.9	
p value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	0.7	1.0	0.4	0.6	0.8	0.5	
CV(SE/Mean)	0.4	0.6	0.2	0.3	0.5	0.3	
LSD _{0.05}	0.8	1.0	0.4	0.6	0.8	0.6	

*hard white wheat

Cooperators:

County

Sheridan (Reserve)
Wibaux (Wibaux)
McCone (Circle)
Roosevelt (Poplar)
Valley (Nashua)
Daniels (Scobey)

Producer

Max Aasheim
David Maus
Victor Wagner
Mark Swank
Bill Lauckner
Bobbie Roos

CES Agent

Terry Angvick
Dave Bertelsen
Ken Nelson
Ardis Oelkers
Verlin Koenig
Bobbie Roos

Table 3. Summary of spring wheat heights in inches at six dryland off-station sites in eastern Montana, 2001. All sites except McCone (Circle) were planted on fallow.

Variety	Circle	Wibaux	Poplar	Reserve	Nashua	Scobey	average
Amidon	28	32	34	32	31	29	31
Ernest	29	30	34	32	30	29	31
CDC Bounty	30	32	33	33	33	27	31
Scholar	30	31	32	31	29	27	30
Parshall	28	32	33	30	33	25	30
ND722	28	30	34	30	33	24	30
Gunner	28	33	32	30	31	25	30
MTHW9904*	30	30	33	30	28	25	29
Argent*	28	31	32	30	28	24	29
Reeder	27	29	29	28	28	24	28
Alsen	25	29	31	28	29	25	28
MT9874	26	27	29	27	26	25	27
McNeal	26	27	28	29	28	25	27
Pristine*	28	28	28	28	26	24	27
McVey	24	28	28	27	27	23	26
NK Bounty	24	27	29	27	27	24	26
Verde	24	26	29	27	25	24	26
MTHW9420*	23	28	25	24	24	23	25
Conan	24	27	26	25	25	22	25
Explorer*	22	26	28	26	24	25	25
Express	21	25	26	25	22	22	24
MT9929	22	24	27	24	26	22	24
site average	26	29	30	28	27	25	
p value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	6.2	4.6	4.8	4.9	5.0	6.0	
CV(SE/Mean)	3.6	2.7	2.8	2.8	2.9	3.5	
LSD _{0.05}	2.7	2.2	2.4	2.3	2.1	2.4	

*hard white wheat

Cooperators:

County

Sheridan (Reserve)
Wibaux (Wibaux)
McCone (Circle)
Roosevelt (Poplar)
Valley (Nashua)
Daniels (Scobey)

Producer

Max Aasheim
David Maus
Victor Wagner
Mark Swank
Bill Lauckner
Bobbie Roos

CES Agent

Terry Angvick
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Ardis Oelkers
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Table 4. Summary of spring wheat protein contents as percent at six dryland off-station sites in eastern Montana, 2001. All sites except McCone (Circle) were planted on fallow.

Variety	Circle	Wibaux	Poplar	Reserve	Nashua	Scobey	average
Gunner	14.5	16.5	14.6	16.0	15.0	9.2	14.3
Reeder	10.8	16.3	15.4	15.8	13.8	11.7	14.0
Alsen	12.4	16.9	14.7	15.8	13.9	9.8	13.9
CDC Bounty	11.0	15.7	15.4	16.7	15.9	8.9	13.9
Ernest	10.5	16.1	14.5	15.8	14.2	10.3	13.6
Parshall	10.6	15.5	15.4	15.4	14.1	10.5	13.6
Explorer*	12.5	15.4	14.8	15.4	13.0	10.5	13.6
Verde	16.0	17.1	12.5	13.9	12.1	9.9	13.6
Conan	11.9	16.0	14.0	15.2	12.6	11.0	13.5
Argent*	11.6	16.1	14.5	15.2	13.6	8.8	13.3
Express	11.0	15.3	14.2	15.6	12.9	10.1	13.2
Pristine*	12.6	15.7	13.7	15.2	13.0	9.2	13.2
ND722	11.9	15.2	12.4	15.4	14.7	9.4	13.2
Scholar	9.9	15.0	14.6	15.6	13.4	10.3	13.1
Amidon	10.3	13.9	13.6	15.4	13.0	10.4	12.8
MTHW9904*	10.7	15.2	13.9	14.4	13.1	9.5	12.8
MT9874	10.1	13.6	13.4	14.8	11.6	9.7	12.2
McNeal	8.8	14.4	12.9	14.8	12.6	9.8	12.2
MTHW9420*	9.6	14.4	13.2	14.3	11.7	9.9	12.2
MT9929	10.1	14.8	12.9	14.4	11.9	8.8	12.2
NK Bounty	9.1	14.5	12.9	13.5	12.8	7.3	11.7
McVey	11.5	14.4	11.7	12.7	11.1	7.7	11.5
Ember					14.0		
Tioga					14.4		
site average	11.2	15.4	13.9	15.0	13.3	9.7	
p value	<0.001	<0.001	<0.001	<0.001	<0.001	0.035	
CV (S/Mean)	7.8	3.8	3.0	4.5	4.9	12.9	
CV(SE/Mean)	4.5	2.2	1.7	2.6	2.8	7.5	
LSD _{0.05}	1.4	1.0	0.7	1.1	1.1	2.1	

*hard white wheat

Cooperators:

County

Sheridan (Reserve)
Wibaux (Wibaux)
McCone (Circle)
Roosevelt (Poplar)
Valley (Nashua)
Daniels (Scobey)

Producer

Max Aasheim
David Maus
Victor Wagner
Mark Swank
Bill Lauckner
Bobbie Roos

CES Agent

Terry Angvick
Dave Bertelsen
Ken Nelson
Ardis Oelkers
Verlin Koenig
Bobbie Roos

Table 5. Performance of spring wheat grown under dryland continuous cropping conditions at Circle, MT. Planted: 2 May 2001 Harvested: 13 August 2001 Cooperator: Victor Wagner

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- McNeal
Alsen	25	12.4	64.6	27.1	22.95
MT9874	26	10.1	61.0	40.5	22.50
Reeder	27	10.8	63.2	38.5	16.50
Amidon	28	10.3	62.8	35.1	6.30
Ernest	29	10.5	63.0	34.5	4.50
McNeal	26	8.8	61.5	33.0	0.00
Scholar	30	9.9	63.0	33.0	0.00
Conan	24	11.9	62.5	31.2	-5.40
WestBred Express	21	11.0	62.0	30.2	-8.40
Gunner	28	14.5	63.8	17.6	-9.42
Parshall	28	10.6	63.7	29.8	-9.60
McVey	24	11.5	60.8	28.8	-12.60
NK Bounty	24	9.1	62.2	27.2	-17.40
MT9929	22	10.1	62.8	25.2	-23.40
CDC Bounty	30	11.0	62.5	25.0	-24.00
Verde	24	16.0	60.6	13.7	-29.90
ND722	28	11.9	63.3	22.2	-32.40
MTHW9420	23	9.6	62.7	31.4	*
MTHW9904	30	10.7	63.4	28.2	*
Pristine	28	12.6	63.7	27.6	*
Argent	28	11.6	63.2	23.9	*
Explorer	22	12.5	59.9	22.8	*
average	26	11.2	62.6	28.5	
p value	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	6.2	7.8	0.7	13.4	
CV(SE/Mean)	3.6	4.5	0.4	7.7	
LSD 0.05	2.7	1.4	0.8	6.3	

¹Wheat 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	1997	1998	1999	2000	2001	Ave	as % of McNeal
MT9874	--	--	--	--	40.5	40.5	122.7
Reeder	--	47.6	45.6	27.0	38.5	39.7	110.8
Amidon	21.3	44.6	49.5	26.7	35.1	35.4	109.7
McVey	--	--	--	30.1	28.8	29.5	101.0
McNeal	18.4	41.2	43.7	25.3	33.0	32.3	100.0
Scholar	23.6	35.3	40.6	28.4	33.0	32.2	99.6
Ernest	19.9	36.5	37.2	26.7	34.5	31.0	95.8
Parshall	--	37.7	42.3	26.1	29.8	34.0	94.9
Conan	--	--	36.2	27.5	31.2	31.6	93.0
Alsen	--	--	--	27.1	27.1	27.1	93.0
WB Express	--	--	--	--	30.2	30.2	91.5
MTHW9420	17.5	31.3	40.2	24.5	31.4	29.0	89.7
NK Bounty	--	--	--	24.8	27.2	26.0	89.2
Argent	--	36.8	39.8	22.3	23.9	30.7	85.8
MTHW9904	--	--	--	--	28.2	28.2	85.5
Pristine	--	--	--	--	27.6	27.6	83.6
Verde	20.1	35.1	--	26.0	13.7	23.7	80.5
MT9929	--	--	--	--	25.2	25.2	76.4
CDC Bounty	--	--	--	--	25.0	25.0	75.8
Explorer	--	--	--	20.1	22.8	21.5	73.6
ND722	--	--	--	--	22.2	22.2	67.3
Gunner	--	--	--	--	17.6	17.6	53.3

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 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	1997	1998	1999	2000	2001	Ave	as % of McNeal
Alsen	--	--	--	64.0	64.6	64.3	105.8
Gunner	--	--	--	--	63.8	63.8	103.7
Pristine	--	--	--	--	63.7	63.7	103.6
Argent	--	62.8	63.3	62.0	63.2	62.8	103.3
Parshall	--	62.1	63.0	62.5	63.7	62.8	103.3
MTHW9904	--	--	--	--	63.4	63.4	103.1
Scholar	63.6	61.2	63.3	62.7	63.0	62.8	103.1
Ernest	64.4	61.8	62.3	62.2	63.0	62.7	103.1
ND722	--	--	--	--	63.3	63.3	102.9
Reeder	--	61.7	63.0	62.3	63.2	62.6	102.9
MTHW9420	64.4	60.5	63.2	62.2	62.7	62.6	102.8
Conan	--	--	62.8	62.3	62.5	62.5	102.8
MT9929	--	--	--	--	62.8	62.8	102.1
Verde	64.6	61.3	--	62.0	60.6	62.1	102.1
Amidon	63.2	61.5	61.7	61.5	62.8	62.1	102.1
CDC Bounty	--	--	--	--	62.5	62.5	101.6
NK Bounty	--	--	--	61.2	62.2	61.7	101.6
WB Express	--	--	--	--	62.0	62.0	100.8
McNeal	61.2	60.7	61.0	60.0	61.5	60.9	100.0
McVey	--	--	--	60.0	60.8	60.4	99.4
MT9874	--	--	--	--	61.0	61.0	99.2
Explorer	--	--	--	60.0	59.9	60.0	98.7

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 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	1997	1998	1999	2000	2001	Ave	as % of McNeal
Gunner	--	--	--	--	14.5	14.5	164.8
Pristine	--	--	--	--	12.6	12.6	143.2
ND722	--	--	--	--	11.9	11.9	135.2
Explorer	--	--	--	11.8	12.5	12.2	130.6
Verde	13.8	13.7	--	11.4	16.0	13.7	125.6
WB Express	--	--	--	--	11.0	11.0	125.0
CDC Bounty	--	--	--	--	11.0	11.0	125.0
Alsen	--	--	--	10.7	12.4	11.6	124.2
MTHW9904	--	--	--	--	10.7	10.7	121.6
Reeder	--	13.6	15.3	11.2	10.8	12.7	119.5
Argent	--	14.0	13.4	10.8	11.6	12.5	116.9
Parshall	--	13.6	14.9	10.6	10.6	12.4	116.7
MT9874	--	--	--	--	10.1	10.1	114.8
MT9929	--	--	--	--	10.1	10.1	114.8
Conan	--	--	12.9	10.6	11.9	11.8	114.2
Ernest	14.0	13.8	13.8	11.0	10.5	12.6	112.5
Scholar	13.7	14.0	13.8	9.4	9.9	12.2	108.4
McVey	--	--	--	8.6	11.5	10.1	108.1
Amidon	13.5	12.5	13.4	10.1	10.3	12.0	106.6
MTHW9420	13.8	12.3	11.0	9.9	9.6	11.3	100.9
NK Bounty	--	--	--	9.6	9.1	9.4	100.5
McNeal	13.5	11.6	12.4	9.8	8.8	11.2	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: 3 May 2001 Harvested: 15 August 2001 Cooperator: David Maus

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- McNeal
Reeder	29	16.3	60.7	49.4	10.03
McNeal	27	14.4	60.0	48.4	0.00
MT9874	27	13.6	59.2	50.2	-4.90
McVey	28	14.4	59.0	45.3	-15.78
Alsen	29	16.9	62.0	43.7	-19.56
Ernest	30	16.1	60.8	43.6	-20.08
Amidon	32	13.9	61.2	45.2	-20.81
Parshall	32	15.5	61.2	43.0	-23.19
Scholar	31	15.0	61.7	42.0	-28.38
WestBred Express	25	15.3	59.0	41.2	-32.53
CDC Bounty	32	15.7	61.5	40.3	-37.20
Gunner	33	16.5	63.0	40.1	-38.24
ND722	30	15.2	61.7	38.7	-45.51
MT9929	24	14.8	60.5	38.3	-49.50
NK Bounty	27	14.5	58.5	38.6	-49.89
Conan	27	16.0	61.3	36.7	-55.89
Verde	26	17.1	61.5	21.5	-134.78
MTHW9420	28	14.4	57.8	42.4	*
Argent	31	16.1	61.0	42.4	*
Pristine	28	15.7	61.8	41.5	*
MTHW9904	30	15.2	62.2	40.1	*
Explorer	26	15.4	58.2	35.7	*
average	29	15.4	60.6	41.3	
p value	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	4.6	3.8	1.0	8.2	
CV(SE/Mean)	2.7	2.2	0.6	4.7	
LSD 0.05	2.2	1.0	1.0	5.6	

¹Wheat 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 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	1997	1998	1999	2000	2001	Ave	as % of McNeal
Reeder	--	59.8	37.6	45.1	49.4	48.0	106.9
MT9874	--	--	--	--	50.2	50.2	103.7
Amidon	44.4	51.4	38.6	46.7	45.2	45.3	102.4
Parshall	--	55.3	40.3	42.4	43.0	45.3	100.8
McNeal	41.4	56.4	29.5	45.2	48.4	44.2	100.0
Scholar	43.5	51.0	34.8	46.9	42.0	43.6	98.8
Argent	--	54.1	33.7	41.2	42.4	42.9	95.5
McVey	--	--	--	43.7	45.3	44.5	95.1
MTHW9420	37.1	52.6	32.0	42.7	42.4	41.4	93.6
Ernest	34.5	49.5	35.2	40.1	43.6	40.6	91.9
Alsen	--	--	--	42.0	43.7	42.9	91.6
NK Bounty	--	--	--	44.8	38.6	41.7	89.1
Verde	46.2	58.3	--	41.9	21.5	42.0	87.7
Pristine	--	--	--	--	41.5	41.5	85.7
Westbred Express	--	--	--	--	41.2	41.2	85.1
CDC Bounty	--	--	--	--	40.3	40.3	83.3
MYHW9904	--	--	--	--	40.1	40.1	82.9
Gunner	--	--	--	--	40.1	40.1	82.9
Conan	--	--	30.8	33.6	36.7	33.7	82.1
ND 722	--	--	--	--	38.7	38.7	80.0
MT9929	--	--	--	--	38.3	38.3	79.1
Explorer	--	--	--	36.5	35.7	36.1	77.1

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 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	1997	1998	1999	2000	2001	Ave	as % of McNeal
Gunner	--	--	--	--	63.0	63.0	105.0
MYHW9904	--	--	--	--	62.2	62.2	103.7
Alsen	--	--	--	63.7	62.0	62.9	103.0
Pristine	--	--	--	--	61.8	61.8	103.0
ND 722	--	--	--	--	61.7	61.7	102.8
Parshall	--	61.0	61.1	63.5	61.2	61.7	102.7
CDC Bounty	--	--	--	--	61.5	61.5	102.5
Conan	--	--	59.9	63.0	61.3	61.4	102.1
Argent	--	61.2	59.6	63.3	61.0	61.3	102.0
Verde	60.2	60.8	--	62.7	61.5	61.3	102.0
Scholar	60.8	59.8	59.7	62.3	61.7	60.9	101.8
Reeder	--	60.5	59.7	63.3	60.7	61.1	101.7
Ernest	59.8	60.3	58.5	63.0	60.8	60.5	101.2
MT9929	--	--	--	--	60.5	60.5	100.8
Amidon	60.0	59.7	58.0	62.0	61.2	60.2	100.7
McNeal	58.7	59.8	58.4	62.0	60.0	59.8	100.0
Explorer	--	--	--	62.7	58.2	60.5	99.1
McVey	--	--	--	61.8	59.0	60.4	99.0
NK Bounty	--	--	--	62.2	58.5	60.4	98.9
MT9874	--	--	--	--	59.2	59.2	98.7
MTHW9420	58.8	57.3	57.5	62.8	57.8	58.8	98.4
Westbred Express	--	--	--	--	59.0	59.0	98.3

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	1997	1998	1999	2000	2001	Ave	as % of McNeal
Alsen	--	--	--	18.9	16.9	17.9	118.5
Argent	--	16.6	14.3	18.8	16.1	16.5	116.0
Gunner	--	--	--	--	16.5	16.5	114.6
Reeder	--	16.6	13.0	18.1	16.3	16.0	112.9
Parshall	--	16.8	12.7	18.6	15.5	15.9	112.2
Ernest	14.6	15.5	13.7	17.3	16.1	15.4	109.0
Pristine	--	--	--	--	15.7	15.7	109.0
CDC Bounty	--	--	--	--	15.7	15.7	109.0
Conan	--	--	13.4	16.2	16.0	15.2	108.6
Explorer	--	--	--	16.9	15.4	16.2	107.0
Westbred Express	--	--	--	--	15.3	15.3	106.3
Scholar	14.4	16.1	13.1	16.6	15.0	15.0	106.2
MYHW9904	--	--	--	--	15.2	15.2	105.6
ND 722	--	--	--	--	15.2	15.2	105.6
Amidon	14.2	15.3	13.6	17.0	13.9	14.8	104.5
Verde	12.4	14.5	--	16.9	17.1	15.2	103.2
MT9929	--	--	--	--	14.8	14.8	102.8
McNeal	14.1	14.7	11.8	15.8	14.4	14.2	100.0
MTHW9420	13.6	14.5	12.1	16.1	14.4	14.1	99.9
NK Bounty	--	--	--	15.6	14.5	15.1	99.7
McVey	--	--	--	14.5	14.4	14.5	95.7
MT9874	--	--	--	--	13.6	13.6	94.4

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: 8 May 2001 Harvested: 16 August 2001 Cooperator: Mark Swank

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- McNeal
Scholar	32	14.6	63.5	61.6	42.68
Reeder	29	15.4	63.7	59.9	40.02
MT9874	29	13.4	61.8	64.0	36.98
Alsen	31	14.7	64.5	59.4	34.46
Parshall	33	15.4	64.7	58.8	34.31
Gunner	32	14.6	64.3	57.9	23.85
Westbred Express	26	14.2	62.7	57.0	16.42
Ernest	34	14.5	64.0	56.3	15.71
CDC Bounty	33	15.4	64.0	54.7	13.03
Amidon	34	13.6	63.0	57.8	7.16
McNeal	28	12.9	62.8	58.5	0.00
MT9929	27	12.9	63.2	54.5	-18.52
Verde	29	12.5	63.0	55.7	-20.21
NK Bounty	29	12.9	61.0	54.0	-20.84
McVey	28	11.7	63.0	62.2	-22.06
Conan	26	14.0	62.5	48.9	-26.85
ND722	34	12.4	64.2	47.5	-57.11
MTHW9420	25	13.2	62.5	57.8	*
Pristine	28	13.7	63.8	56.6	*
Argent	32	14.5	64.0	55.1	*
MTHW9904	33	13.9	64.3	54.8	*
Explorer	28	14.8	60.2	43.2	*
average	30	13.9	63.2	56.2	
p value	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	4.8	3.0	0.4	4.9	
CV(SE/Mean)	2.8	1.7	0.2	2.8	
LSD 0.05	2.4	0.7	0.4	4.5	

¹Wheat 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	1997	1998	1999	2000	2001	Ave	as % of McNeal
MT9874	--	--	--	--	64.0	64.0	109.4
McVey	--	--	46.0	67.5	62.2	58.6	107.4
Reeder	--	50.7	49.8	66.4	59.9	56.7	106.4
Amidon	26.5	49.7	43.8	62.4	57.8	48.0	100.5
Scholar	25.5	48.1	45.3	58.9	61.6	47.9	100.2
McNeal	25.8	49.6	46.7	58.4	58.5	47.8	100.0
Alsen	--	--	--	57.4	59.4	58.4	99.9
Gunner	--	--	--	--	57.9	57.9	99.0
Westbred Express	--	--	--	--	57.0	57.0	97.4
Parshall	--	40.0	47.4	61.3	58.8	51.9	97.3
Pristine	--	--	--	--	56.6	56.6	96.8
Ernest	21.2	46.8	41.6	62.9	56.3	45.8	95.7
Verde	23.0	44.4	--	58.4	55.7	45.4	94.4
MTHW9904	--	--	--	--	54.8	54.8	93.7
CDC Bounty	--	--	--	--	54.7	54.7	93.5
MT9929	--	--	--	--	54.5	54.5	93.2
NK Bounty	--	--	--	54.6	54.0	54.3	92.9
Argent	--	46.0	41.5	54.8	55.1	49.4	92.6
MTHW9420	18.3	39.3	44.6	55.5	57.8	43.1	90.2
Conan	--	--	35.4	51.7	48.9	45.3	83.1
Explorer	--	--	--	52.8	43.2	48.0	82.1
ND722	--	--	--	--	47.5	47.5	81.2

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	1997	1998	1999	2000	2001	Ave	as % of McNeal
Alsen	--	--	--	63.7	64.5	64.1	103.1
Ernest	63.3	63.0	60.7	63.0	64.0	62.8	102.7
Argent	--	62.8	61.7	63.0	64.0	62.9	102.7
Parshall	--	62.8	61.0	62.8	64.7	62.8	102.6
Gunner	--	--	--	--	64.3	64.3	102.4
MTHW9904	--	--	--	--	64.3	64.3	102.4
Reeder	--	63.0	61.0	63.0	63.7	62.7	102.4
ND722	--	--	--	--	64.2	64.2	102.2
CDC Bounty	--	--	--	--	64.0	64.0	101.9
Scholar	62.8	62.3	60.5	61.8	63.5	62.2	101.7
Pristine	--	--	--	--	63.8	63.8	101.6
Amidon	62.0	61.7	60.0	62.2	63.0	61.8	101.0
Verde	62.3	61.3	--	61.8	63.0	62.1	100.8
MTHW9420	64.2	61.0	59.8	60.3	62.5	61.6	100.7
MT9929	--	--	--	--	63.2	63.2	100.6
Conan	--	--	60.0	61.3	62.5	61.3	100.1
McNeal	60.8	61.3	59.3	61.5	62.8	61.1	100.0
Westbred Express	--	--	--	--	62.7	62.7	99.8
McVey	--	--	58.2	61.0	63.0	60.7	99.2
MT9874	--	--	--	--	61.8	61.8	98.4
Explorer	--	--	--	60.5	60.2	60.4	97.1
NK Bounty	--	--	--	59.3	61.0	60.2	96.8

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	1997	1998	1999	2000	2001	Ave	as % of McNeal
CDC Bounty	--	--	--	--	15.4	15.4	119.4
Parshall	--	16.8	15.6	15.8	15.4	15.9	119.1
Alsen	--	--	--	15.6	14.7	15.2	117.4
Reeder	--	15.4	15.0	16.1	15.4	15.5	115.9
Argent	--	16.1	15.6	15.5	14.5	15.4	115.5
Explorer	--	--	--	14.5	14.8	14.7	113.6
Gunner	--	--	--	--	14.6	14.6	113.2
Conan	--	--	14.7	14.9	14.0	14.5	110.9
Westbred Express	--	--	--	--	14.2	14.2	110.1
MTHW9904	--	--	--	--	13.9	13.9	107.8
Ernest	15.6	15.0	14.8	14.3	14.5	14.8	107.4
Scholar	15.2	15.2	14.8	14.2	14.6	14.8	107.1
Pristine	--	--	--	--	13.7	13.7	106.2
MT9874	--	--	--	--	13.4	13.4	103.9
NK Bounty	--	--	--	13.1	12.9	13.0	100.8
Amidon	14.6	13.4	14.1	13.5	13.6	13.8	100.1
McNeal	15.7	14.1	13.5	12.9	12.9	13.8	100.0
MT9929	--	--	--	--	12.9	12.9	100.0
MTHW9420	15.0	13.9	13.9	12.8	13.2	13.8	99.6
Verde	14.8	14.5	--	13.4	12.5	13.8	99.3
ND722	--	--	--	--	12.4	12.4	96.1
McVey	--	--	13.6	12.3	11.7	12.5	95.7

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 17. Performance of spring wheat grown under dryland conditions at Reserve, MT.
 Planted: 10 May 2001 Harvested: 29 August 2001 Cooperator: Max Aasheim

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- McNeal
Amidon	32	15.4	63.0	45.6	7.93
Reeder	28	15.8	63.7	45.4	6.90
Parshall	30	15.4	64.7	45.1	5.34
Alsen	28	15.8	64.3	44.3	1.19
McNeal	29	14.8	62.7	44.5	0.00
MT9874	27	14.8	61.7	44.2	-1.54
Scholar	31	15.6	63.5	42.7	-7.12
McVey	27	12.7	62.3	47.3	-12.57
WestBred Express	25	15.6	62.7	41.0	-15.94
MT9929	24	14.4	63.2	41.8	-15.97
CDC Bounty	33	16.7	63.8	40.0	-21.13
Ernest	32	15.8	63.7	39.6	-23.21
Verde	27	13.9	63.2	40.9	-24.64
Gunner	30	16.0	64.5	39.3	-24.76
ND722	30	15.4	64.2	38.0	-31.51
NK Bounty	27	13.5	61.2	38.7	-42.58
Conan	25	15.2	62.8	33.7	-53.83
MTHW9420	24	14.3	62.0	42.1	*
Pristine	28	15.2	64.0	41.5	*
Argent	30	15.2	63.8	40.7	*
MTHW9904	30	14.4	64.3	37.5	*
Explorer	26	15.4	60.2	32.5	*
average	28	15.0	63.2	41.2	
p value	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	4.9	4.5	0.6	5.2	
CV(SE/Mean)	2.8	2.6	0.3	3.0	
LSD _{0.05}	2.3	1.1	0.6	3.5	

¹Wheat 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 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	1997	1998	1999	2000	2001	Ave	as % of McNeal
McVey	--	--	49.7	42.0	47.3	46.3	117.2
Reeder	--	50.6	49.8	38.2	45.4	46.0	113.7
Parshall	--	36.9	42.3	38.3	45.1	40.7	100.5
McNeal	33.2	43.2	37.3	36.8	44.5	39.0	100.0
Amidon	31.4	40.4	37.5	39.6	45.6	38.9	99.7
MT9874	--	--	--	--	44.2	44.2	99.3
Scholar	33.6	46.2	36.2	32.8	42.7	38.3	98.2
Verde	33.0	47.0	--	30.9	40.9	38.0	96.3
Alsen	--	--	--	32.6	44.3	38.5	94.6
MT9929	--	--	--	--	41.8	41.8	93.9
Pristine	--	--	--	--	41.5	41.5	93.3
Westbred Express	--	--	--	--	41.0	41.0	92.1
Argent	--	37.2	37.3	32.8	40.7	37.0	91.5
Gunner	--	--	--	34.4	39.3	36.9	90.7
CDC Bounty	--	--	--	--	40.0	40.0	89.9
Ernest	26.4	37.0	37.4	35.0	38.6	34.9	89.4
NK Bounty	--	--	--	31.8	38.7	35.3	86.7
ND722	--	--	--	--	38.0	38.0	85.4
MTHW9420	19.2	39.4	31.5	32.9	42.1	33.0	84.7
MTHW9904	--	--	--	--	37.5	37.5	84.3
Conan	--	--	32.1	28.4	33.7	31.4	79.4
Explorer	--	--	--	26.6	32.5	29.6	72.7

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	1997	1998	1999	2000	2001	Ave	as % of McNeal
Parshall	--	62.3	63.7	62.5	64.7	63.3	103.0
MTHW9904	--	--	--	--	64.3	64.3	102.6
Alsen	--	--	--	62.5	64.3	63.4	102.5
ND722	--	--	--	--	64.2	64.2	102.4
Gunner	--	--	--	62.0	64.5	63.3	102.3
Pristine	--	--	--	--	64.0	64.0	102.1
CDC Bounty	--	--	--	--	63.8	63.8	101.8
Argent	--	61.5	63.0	61.5	63.8	62.5	101.6
Reeder	--	60.7	63.2	61.7	63.7	62.3	101.4
Scholar	61.0	61.5	62.7	61.2	63.5	62.0	101.3
Ernest	61.4	61.2	62.3	61.0	63.7	61.9	101.2
Conan	--	--	62.8	61.0	62.8	62.2	101.0
MT9929	--	--	--	--	63.2	63.2	100.8
Verde	60.7	61.2	--	61.0	63.2	61.5	100.5
Amidon	60.0	60.2	62.0	60.8	63.0	61.2	100.0
McNeal	60.0	61.2	61.0	61.0	62.7	61.2	100.0
Westbred Express	--	--	--	--	62.7	62.7	100.0
McVey	--	--	60.7	60.5	62.3	61.2	99.4
MTHW9420	60.6	58.7	61.8	59.0	62.0	60.4	98.8
MT9874	--	--	--	--	61.7	61.7	98.4
NK Bounty	--	--	--	59.5	61.2	60.4	97.6
Explorer	--	--	--	56.3	60.2	58.3	94.2

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	1997	1998	1999	2000	2001	Ave	as % of McNeal
Parshall	--	15.8	15.0	13.1	15.4	14.8	114.9
CDC Bounty	--	--	--	--	16.7	16.7	112.8
Gunner	--	--	--	13.2	16.0	14.6	112.3
Argent	--	14.7	14.9	13.0	15.2	14.5	112.0
Reeder	--	14.6	13.8	13.6	15.8	14.5	112.0
Alsen	--	--	--	12.8	15.8	14.3	110.0
Conan	--	--	13.6	12.5	15.2	13.8	109.8
Ernest	14.2	14.8	13.6	12.1	15.8	14.1	107.8
Explorer	--	--	--	12.6	15.4	14.0	107.7
Scholar	14.6	14.6	13.0	11.9	15.6	13.9	106.6
Westbred Express	--	--	--	--	15.6	15.6	105.4
ND722	--	--	--	--	15.4	15.4	104.1
Amidon	13.6	13.3	13.1	11.9	15.4	13.5	102.9
Pristine	--	--	--	--	15.2	15.2	102.7
MTHW9420	13.9	13.8	12.1	11.6	14.3	13.1	100.5
McNeal	13.8	14.0	11.6	11.2	14.8	13.1	100.0
MT9874	--	--	--	--	14.8	14.8	100.0
Verde	13.6	13.2	--	12.8	13.9	13.4	99.4
MT9929	--	--	--	--	14.4	14.4	97.3
MTHW9904	--	--	--	--	14.4	14.4	97.3
NK Bounty	--	--	--	10.8	13.5	12.2	93.5
McVey	--	--	11.2	10.8	12.7	11.6	92.3

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 2001, Harvested: 20 August 2001 Cooperator: Bill Lauckner

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- McNeal
Gunner	31	15.0	63.5	73.4	96.10
CDC Bounty	33	15.9	63.0	69.4	75.34
Parshall	33	14.1	63.8	70.0	64.45
ND722	33	14.7	63.0	67.6	62.61
Reeder	28	13.8	62.7	70.0	58.15
Alsen	29	13.9	63.7	68.7	57.96
Ernest	30	14.2	62.2	62.4	29.65
Ember	--	14.0	62.8	60.1	15.05
Scholar	29	13.4	63.2	62.2	14.33
WestBred Express	22	12.9	59.8	62.7	5.45
NK Bounty	27	12.8	59.8	63.4	4.89
McNeal	28	12.6	61.5	63.3	0.00
MT9929	26	11.9	62.8	64.1	-4.73
Verde	25	12.1	61.5	61.8	-14.78
Conan	25	12.6	61.7	57.8	-24.75
Amidon	31	13.0	61.8	56.1	-25.11
McVey	27	11.1	60.8	62.1	-36.45
MT9874	26	11.6	61.0	56.9	-43.02
Tioga	--	14.4	60.2	36.6	-98.56
Argent	28	13.6	62.7	60.5	*
MTHW9420	24	11.7	60.8	58.1	*
MTHW9904	28	13.1	62.7	55.7	*
Pristine	26	13.0	62.2	51.3	*
Explorer	24	13.0	59.7	42.1	*
average	27	13.3	62.0	60.7	
p value	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	5.0	4.9	0.8	11.2	
CV(SE/Mean)	2.9	2.8	0.5	6.5	
LSD 0.05	2.1	1.1	0.8	11.2	

¹Wheat 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	1996	1997	1998	2000	2001	Ave	as % of McNeal
Gunner	--	--	--	--	73.4	73.4	116.0
CDC Bounty	--	--	--	--	69.4	69.4	109.6
ND722	--	--	--	--	67.6	67.6	106.8
McVey	--	--	--	72.6	62.1	67.4	104.4
MT9929	--	--	--	--	64.1	64.1	101.3
McNeal	34.4	38.5	55.8	65.7	63.3	51.5	100.0
Alsen	--	--	--	59.4	68.7	64.1	99.3
WestBred Express	--	--	--	--	62.7	62.7	99.1
Reeder	--	--	49.5	61.9	70.0	60.5	98.2
NK Bounty	--	--	--	61.4	63.4	62.4	96.7
MTHW9420	--	30.9	54.2	70.0	58.1	53.3	95.5
Scholar	--	36.8	52.1	61.3	62.2	53.1	95.1
Ember	--	--	--	--	60.1	60.1	94.9
Parshall	--	--	44.7	59.5	70.0	58.1	94.3
Amidon	33.8	38.7	48.4	64.8	56.1	48.4	93.8
Conan	--	--	--	60.0	57.8	58.9	91.3
MT9874	--	--	--	--	56.9	56.9	89.9
MTHW9904	--	--	--	--	55.7	55.7	88.0
Ernest	31.0	28.3	39.4	59.8	62.4	44.2	85.7
Argent	--	--	41.8	55.8	60.5	52.7	85.6
Verde	--	25.9	39.0	56.6	61.8	45.8	82.1
Pristine	--	--	--	--	51.3	51.3	81.0
Tioga	30.7	28.7	47.8	51.0	36.6	39.0	75.6
Explorer	--	--	--	53.0	42.1	47.6	73.7

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 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	1996	1997	1998	2000	2001	Ave	as % of McNeal
Alsen	--	--	--	64.8	63.7	64.3	103.6
Gunner	--	--	--	--	63.5	63.5	103.3
Parshall	--	--	64.2	63.7	63.8	63.9	102.8
CDC Bounty	--	--	--	--	63.0	63.0	102.4
ND722	--	--	--	--	63.0	63.0	102.4
Reeder	--	--	64.3	63.5	62.7	63.5	102.1
MT9929	--	--	--	--	62.8	62.8	102.1
Ember	--	--	--	--	62.8	62.8	102.1
Argent	--	--	64.2	63.0	62.7	63.3	101.8
Scholar	--	59.0	63.3	63.0	63.2	62.1	101.6
Ernest	62.2	58.3	64.0	63.0	62.2	61.9	101.5
GM50004	--	--	--	--	62.2	62.2	101.1
Amidon	61.3	58.3	63.0	62.7	61.8	61.4	100.7
Conan	--	--	--	63.0	61.7	62.4	100.6
MTHW9420	--	58.5	63.5	63.0	60.8	61.5	100.4
Verde	--	58.7	62.5	63.0	61.5	61.4	100.4
Tioga	61.8	58.2	62.5	62.5	60.2	61.0	100.1
McNeal	60.3	58.2	62.5	62.5	61.5	61.0	100.0
GM50010	--	--	--	--	61.3	61.3	99.7
MT9874	--	--	--	--	61.0	61.0	99.2
McVey	--	--	--	--	60.8	60.8	98.9
NK Bounty	--	--	--	--	59.8	59.8	97.2
WestBred Express	--	--	--	--	59.8	59.8	97.2
Explorer	--	--	--	--	59.7	59.7	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 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	1996	1997	1998	2000	2001	Ave	as % of McNeal
CDC Bounty	--	--	--	--	15.9	15.9	126.2
Gunner	--	--	--	--	15.0	15.0	119.0
ND722	--	--	--	--	14.7	14.7	116.7
Parshall	--	--	15.4	10.6	14.1	13.4	112.3
Ember	--	--	--	--	14.0	14.0	111.1
Argent	--	--	14.6	10.6	13.6	12.9	108.7
Reeder	--	--	13.5	11.3	13.8	12.9	108.1
Verde	--	14.9	15.8	12.9	12.1	13.9	106.9
Alsen	--	--	--	10.6	13.9	12.3	106.1
Ernest	14.3	15.5	15.7	10.5	14.2	14.0	105.7
Scholar	--	16.4	13.8	10.7	13.4	13.6	104.2
MTHW9904	--	--	--	--	13.1	13.1	104.0
Explorer	--	--	--	11.0	13.0	12.0	103.9
Tioga	13.3	16.0	12.9	12.1	14.4	13.7	103.5
Pristine	--	--	--	--	13.0	13.0	103.2
WestBred Express	--	--	--	--	12.9	12.9	102.4
McNeal	14.3	16.4	12.6	10.5	12.6	13.3	100.0
Amidon	13.8	14.6	14.7	10.1	13.0	13.2	99.7
MTHW9420	--	15.5	14.6	9.7	11.7	12.9	98.8
Conan	--	--	--	10.0	12.6	11.3	97.8
MT9929	--	--	--	--	11.9	11.9	94.4
NK Bounty	--	--	--	8.9	12.8	10.9	93.9
MT9874	--	--	--	--	11.6	11.6	92.1
McVey	--	--	--	8.7	11.1	9.9	85.7

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 25. Performance of spring wheat grown under dryland conditions at Scobey, MT.
 Planted: 9 May 2001 Harvested: 30 August 2001 Cooperator: Bobbie Roos

Variety	Height, inches	Grain protein	Test Weight	Yield Bu/acre	\$/acre ¹ +/- McNeal
Ernest	29	10.3	62.9	29.2	1.50
Amidon	29	10.4	62.4	29.1	1.20
McNeal	25	9.8	61.4	28.7	0.00
Scholar	27	10.3	62.6	28.2	-1.50
MT9874	25	9.7	61.8	26.9	-5.40
Reeder	24	11.7	63.4	25.0	-11.10
McVey	23	7.7	60.6	24.6	-12.30
Verde	24	9.9	63.3	23.6	-15.30
Conan	22	11.0	63.1	23.6	-15.30
Parshall	25	10.5	64.0	23.1	-16.80
Express	22	10.1	62.8	21.3	-22.20
MT9929	22	8.8	63.4	20.8	-23.70
NK Bounty	24	7.3	62.4	18.8	-29.70
Alsen	25	9.8	63.8	18.2	-31.50
Gunner	25	9.2	63.4	17.5	-33.60
ND722	24	9.4	63.8	16.7	-36.00
CDC Bounty	27	8.9	63.2	15.4	-39.90
MTHW9420	23	9.9	62.4	28.4	*
Pristine	24	9.2	63.9	24.0	*
Explorer	25	10.5	61.7	21.9	*
MTHW9904	25	9.5	64.3	21.7	*
Argent	24	8.8	63.0	18.5	*
average	25	9.7	62.9	23.0	
p value	<0.001	0.035	<0.001	<0.001	
CV (S/Mean)	6.0	12.9	0.5	17.2	
CV(SE/Mean)	3.5	7.5	0.3	9.9	
LSD 0.05	2.4	2.1	0.6	6.5	

¹Wheat 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	average	As % of McNeal
Amidon	59.5	29.1	44.3	112.4
McVey	58.8	24.6	41.7	105.8
Ernest	53.3	29.2	41.3	104.8
Scholar	53.9	28.2	41.1	104.3
McNeal	50.1	28.7	39.4	100.0
MTHW9420	48.6	28.4	38.5	97.7
Reeder	51.3	25.0	38.2	97.0
Conan	50.7	23.6	37.2	94.4
MT9874	--	26.9	26.9	93.7
Parshall	48.3	23.1	35.7	90.6
Argent	47.7	18.5	33.1	84.0
Pristine	--	24.0	24.0	83.6
Verde	--	23.6	23.6	82.2
Explorer	--	21.9	21.9	76.3
MTHW9904	--	21.7	21.7	75.6
Express	--	21.3	21.3	74.2
MT9929	--	20.8	20.8	72.5
NK Bounty	--	18.8	18.8	65.5
Alsen	--	18.2	18.2	63.4
Gunner	--	17.5	17.5	61.0
ND722	--	16.7	16.7	58.2
CDC Bounty	--	15.4	15.4	53.7

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	average	As % of McNeal
MTHW9904	--	64.3	64.3	104.7
Pristine	--	63.9	63.9	104.1
Alsen	--	63.8	63.8	103.9
ND722	--	63.8	63.8	103.9
MT9929	--	63.4	63.4	103.3
Gunner	--	63.4	63.4	103.3
Verde	--	63.3	63.3	103.2
Parshall	62.9	64.0	63.5	103.1
CDC Bounty	--	63.2	63.2	102.9
Reeder	62.9	63.4	63.2	102.6
Express	--	62.8	62.8	102.3
Scholar	62.7	62.6	62.7	101.8
Conan	62.2	63.1	62.7	101.8
MTHW9420	63.0	62.4	62.7	101.8
Ernest	62.3	62.9	62.6	101.6
Argent	62.2	63.0	62.6	101.6
NK Bounty	--	62.4	62.4	101.6
Amidon	62.0	62.4	62.2	101.0
MT9874	--	61.8	61.8	100.7
Explorer	--	61.7	61.7	100.5
McNeal	61.7	61.4	61.6	100.0
McVey	60.2	60.6	60.4	98.1

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 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	average	As % of McNeal
Reeder	10.4	11.7	11.1	114.4
Conan	11.0	11.0	11.0	113.4
Parshall	11.1	10.5	10.8	111.3
Argent	12.3	8.8	10.6	109.3
Explorer	--	10.5	10.5	107.1
Scholar	10.2	10.3	10.3	106.2
Amidon	10.0	10.4	10.2	105.2
Ernest	10.0	10.3	10.2	105.2
MTHW9420	10.3	9.9	10.1	104.1
Express	--	10.1	10.1	103.1
Verde	--	9.9	9.9	101.0
McNeal	9.6	9.8	9.7	100.0
Alsen	--	9.8	9.8	100.0
MT9874	--	9.7	9.7	99.0
MTHW9904	--	9.5	9.5	96.9
ND722	--	9.4	9.4	95.9
Pristine	--	9.2	9.2	93.9
Gunner	--	9.2	9.2	93.9
CDC Bounty	--	8.9	8.9	90.8
MT9929	--	8.8	8.8	89.8
McVey	9.3	7.7	8.5	87.6
NK Bounty	--	7.3	7.3	74.5

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.

Table 29. Summary of spring wheat yields in bu/acre at three irrigated off-station sites in eastern Montana, 2001. All sites are under pivot irrigation.

Variety	Larslan	Dagmar*	Brockton	average
Reeder	77.1	17.7	59.2	51.3
MT9874	79.0	16.1	53.4	49.5
McVey	72.0	25.2	51.2	49.5
Parshall	73.0	11.4	56.0	46.8
Gunner	72.0	16.3	50.9	46.4
Express	76.9	17.9	39.1	44.6
Alsen	72.7	17.5	42.2	44.1
Verde	71.0	18.6	42.0	43.9
MTHW9420**	70.4	15.1	44.9	43.5
MT9929	65.6	15.7	47.2	42.8
Ernest	67.3	13.0	43.6	41.3
Scholar	65.3	11.0	47.6	41.3
McNeal	66.0	10.8	46.8	41.2
CDC Bounty	68.3	15.2	39.1	40.9
Pristine**	58.2	19.6	44.7	40.8
Amidon	65.8	13.3	42.1	40.4
Argent**	64.1	13.7	40.6	39.5
ND722	65.4	10.6	38.8	38.3
NK Bounty	64.1	13.6	32.6	36.8
Conan	59.3	15.1	33.2	35.9
Explorer**	52.7	16.7	35.8	35.1
MTHW9904**	55.0	8.6	35.2	32.9
site average	67.3	15.1	43.9	
p value	<0.001	<0.001	0.002	
CV (S/Mean)	5.3	23.9	10.9	
CV(SE/Mean)	3.1	13.8	8.4	
LSD _{0.05}	5.9	5.9	10.9	

*severe scab infection

**hard white wheat

Cooperators:

County

Roosevelt (Brockton)

Sheridan (Dagmar)

Valley (Larslan)

Producer

Brad Bender

Steve Brekke

Kelly Donovan

CES Agent

Ardis Oelkers

Terry Angvick

Verlin Koenig

Table 30. Summary of spring wheat test weights as lb/bu at two irrigated off-station sites in eastern Montana, 2001. All sites are under pivot irrigation.

Variety	Larslan	Dagmar	Brockton	average
Gunner	62.3	59.6	60.2	60.7
Parshall	62.2	59.4	60.5	60.7
Alsen	62.3	59.3	59.2	60.3
Scholar	61.3	56.1	60.5	59.3
CDC Bounty	62.7	59.1	55.8	59.2
ND722	61.3	57.9	58.5	59.2
Reeder	61.3	55.6	60.2	59.0
Ernest	61.3	55.6	60.0	59.0
Amidon	60.7	56.6	59.8	59.0
Argent*	59.8	57.0	58.0	58.3
McVey	59.3	58.2	56.5	58.0
Pristine*	59.8	55.9	57.2	57.6
Conan	59.5	56.6	56.5	57.5
Express	60.0	54.8	56.8	57.2
McNeal	57.7	55.0	58.8	57.2
MTHW9904*	59.5	55.7	56.2	57.1
MT9929	59.8	52.6	58.2	56.9
Verde	58.7	55.2	56.5	56.8
MT9874	58.0	53.3	58.0	56.4
MTHW9420*	57.3	52.0	56.8	55.4
Explorer*	56.3	54.5	54.2	55.0
NK Bounty	55.8	53.5	54.2	54.5
site average	59.9	56.1	57.8	
p value	<0.001	<0.001	<0.001	
CV (S/Mean)	1.2	2.5	1.7	
CV(SE/Mean)	0.7	1.5	1.2	
LSD _{0.05}	1.2	2.4	2.1	

*hard white wheat

Cooperators:

County

Roosevelt (Brockton)

Sheridan (Dagmar)

Valley (Larslan)

Producer

Brad Bender

Steve Brekke

Kelly Donovan

CES Agent

Ardis Oelkers

Terry Angvick

Verlin Koenig

Table 31. Summary of spring wheat heights in inches at two irrigated off-station sites in eastern Montana, 2001. All sites are under pivot irrigation.

Variety	Larslan	Dagmar	Brockton	average
CDC Bounty	37	38	36	37
ND722	34	36	37	36
Parshall	36	36	33	35
Amidon	34	38	33	35
MTHW9904*	32	35	36	34
Gunner	35	33	31	33
McVey	32	34	34	33
Ernest	33	37	30	33
McNeal	32	33	34	33
Argent*	35	33	32	33
Reeder	32	32	33	32
Alsen	32	32	31	32
Scholar	31	36	30	32
MT9874	31	34	28	31
Verde	31	32	29	31
NK Bounty	31	30	31	31
MT9929	30	30	30	30
Conan	29	30	31	30
Pristine*	29	32	30	30
Explorer*	30	32	29	30
MTHW9420*	27	30	28	28
Express	27	28	27	27
site average	32	33	31	
p value	<0.001	<0.001	0.012	
CV (S/Mean)	6.5	4.0	7.4	
CV(SE/Mean)	3.8	2.3	5.2	
LSD _{0.05}	3.4	2.2	4.8	

*hard white wheat

Cooperators:

County

Roosevelt (Brockton)

Sheridan (Dagmar)

Valley (Larslan)

Producer

Brad Bender

Steve Brekke

Kelly Donovan

CES Agent

Ardis Oelkers

Terry Angvick

Verlin Koenig

Table 32. Summary of spring wheat grain protein contents as percent at two irrigated off-station sites in eastern Montana, 2001. All sites are under pivot irrigation.

Variety	Larslan	Dagmar	Brockton	average
CDC Bounty	17.7	16.0	17.2	17.0
Gunner	17.0	14.8	14.7	15.5
Reeder	16.3	14.2	14.6	15.0
Parshall	16.3	14.2	14.2	14.9
Explorer*	15.0	14.9	14.8	14.9
Alsen	15.7	13.9	14.1	14.6
ND722	15.1	14.9	13.8	14.6
Ernest	15.4	14.7	13.4	14.5
Argent*	15.0	14.0	14.4	14.5
Scholar	14.9	14.3	13.6	14.3
MTHW9904*	14.3	14.3	14.4	14.3
Express	14.6	14.7	13.3	14.2
Conan	13.6	14.2	13.9	13.9
Pristine*	14.1	13.5	13.4	13.7
MT9874	14.2	13.8	12.9	13.6
McNeal	14.1	14.2	12.6	13.6
Verde	13.3	13.6	13.5	13.5
MT9929	14.0	13.4	13.0	13.5
MTHW9420*	14.0	13.2	13.1	13.4
Amidon	14.2	13.1	12.5	13.3
NK Bounty	13.6	13.4	12.6	13.2
McVey	13.2	12.4	13.5	13.0
site average	14.8	14.1	13.8	
p value	<0.001	<0.001	<0.001	
CV (S/Mean)	2.3	4.5	3.0	
CV(SE/Mean)	1.3	2.6	2.1	
LSD _{0.05}	0.6	1.1	0.9	

*hard white wheat

Cooperators:

County

Roosevelt (Brockton)

Sheridan (Dagmar)

Valley (Larslan)

Producer

Brad Bender

Steve Brekke

Kelly Donovan

CES Agent

Ardis Oelkers

Terry Angvick

Verlin Koenig

Table 33. Performance of spring wheat grown under irrigated conditions at Larslan, MT.
 Planted: 19 April 2001 Harvested: 27 August 2001 Cooperator: Kelly Donovan

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- McNeal
Reeder	32	16.3	61.3	77.1	70.81
MT9874	31	14.2	58.0	79.0	68.82
WestBred Express	27	14.6	60.0	76.9	62.08
Parshall	36	16.3	62.2	73.0	49.53
Alsen	32	15.7	62.3	72.7	47.97
Gunner	35	17.0	62.3	72.0	44.34
CDC Bounty	37	17.7	62.7	68.3	25.14
Ernest	33	15.4	61.3	67.3	19.95
McVey	32	13.2	59.3	72.0	10.50
ND722	34	15.1	61.3	65.4	10.09
Scholar	31	14.9	61.3	65.3	9.57
Verde	31	13.3	58.7	71.0	5.78
Amidon	34	14.2	60.7	65.8	2.29
McNeal	32	14.1	57.7	66.0	0.00
MT9929	30	14.0	59.8	65.6	-2.00
NK Bounty	31	13.6	55.8	64.1	-21.02
Conan	29	13.6	59.5	59.3	-44.11
MTHW9420	27	14.0	57.3	70.4	*
Argent	35	15.0	59.8	64.1	*
Pristine	29	14.1	59.8	58.2	*
MTHW9904	32	14.3	59.5	55.0	*
Explorer	30	15.0	56.3	52.7	*
average	32	14.8	59.9	67.3	
p value	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	6.5	2.3	1.2	5.3	
CV(SE/Mean)	3.8	1.3	0.7	3.1	
LSD 0.05	3.4	0.6	1.2	5.9	

¹Wheat 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 34. Relative yields of spring wheat varieties as compared to McNeal when grown under irrigated conditions in Valley County in cooperation with CES.

Cultivar	1996	1997	1998	1999	2001	Ave	as % of McNeal
MT9874	--	--	--	--	79.0	79.0	119.7
Reeder	--	--	71.8	83.2	77.1	77.4	117.4
WestBred Express	--	--	--	--	76.9	76.9	116.5
Verde	--	106.7	69.6	--	71.0	82.4	111.4
Parshall	--	--	68.6	77.6	73.0	73.1	110.9
Alsen	--	--	--	--	72.7	72.7	110.2
Gunner	--	--	--	--	72.0	72.0	109.1
McVey	--	--	--	--	72.0	72.0	109.1
CDC Bounty	--	--	--	--	68.3	68.3	103.5
Argent	--	--	64.3	73.4	64.1	67.3	102.1
Ernest	65.5	99.2	63.8	74.5	67.3	74.1	100.5
McNeal	71.1	99.5	56.5	75.2	66.0	73.7	100.0
MTHW9420	--	100.6	47.1	77.3	70.4	73.9	99.4
MT9929	--	--	--	--	65.6	65.6	99.4
NK Bounty	--	--	--	--	64.1	64.1	97.1
Amidon	68.4	94.3	54.8	70.9	65.8	70.8	96.2
Conan	--	--	--	71.4	59.3	65.4	92.6
Scholar	--	87.5	55.6	61.0	65.3	67.4	90.6
Pristine	--	--	--	--	58.2	58.2	88.2
MTHW9904	--	--	--	--	55.0	55.0	83.3
Explorer	--	--	--	--	52.7	52.7	79.8

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 35. Relative test weights of spring wheat varieties as compared to McNeal when grown under irrigated conditions in Valley County in cooperation with CES.

Cultivar	1996	1997	1998	1999	2001	Ave	as % of McNeal
CDC Bounty	--	--	--	--	62.7	62.7	108.7
Alsen	--	--	--	--	62.3	62.3	108.0
Gunner	--	--	--	--	62.3	62.3	108.0
Parshall	--	--	59.7	63.0	62.2	61.6	106.4
WestBred Express	--	--	--	--	60.0	60.0	104.0
Reeder	--	--	57.8	61.5	61.3	60.2	104.0
MT9929	--	--	--	--	59.8	59.8	103.6
Pristine	--	--	--	--	59.8	59.8	103.6
Ernest	62.2	61.2	56.3	60.2	61.3	60.2	103.4
MTHW9904	--	--	--	--	59.5	59.5	103.1
Argent	--	--	57.5	61.8	59.8	59.7	103.1
McVey	--	--	--	--	59.3	59.3	102.8
Amidon	61.0	60.3	54.7	60.5	60.7	59.4	102.0
Conan	--	--	--	60.0	59.5	59.8	102.0
MT9874	--	--	--	--	58.0	58.0	100.5
Scholar	--	59.2	55.2	59.5	61.3	58.8	100.5
McNeal	57.3	60.3	56.5	59.5	57.7	58.3	100.0
Verde	--	58.8	55.2	--	58.7	57.6	99.0
Explorer	--	--	--	--	56.3	56.3	97.6
MTHW9420	--	58.7	53.5	57.5	57.3	56.8	97.0
NK Bounty	--	--	--	--	55.8	55.8	96.7

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 36. Relative protein contents of spring wheat varieties as compared to McNeal when grown under irrigated conditions in Valley County in cooperation with CES.

Cultivar	1996	1997	1998	1999	2001	Ave	as % of McNeal
CDC Bounty	--	--	--	--	17.7	17.7	125.5
Gunner	--	--	--	--	17.0	17.0	120.6
Reeder	--	--	15.7	14.7	16.3	15.6	113.9
Parshall	--	--	15.8	14.4	16.3	15.5	113.4
Alsen	--	--	--	--	15.7	15.7	111.3
Scholar	--	14.9	15.2	13.7	14.9	14.7	107.1
Explorer	--	--	--	--	15.0	15.0	106.4
Argent	--	--	14.9	13.7	15.0	14.5	106.3
Ernest	14.6	13.7	15.1	13.9	15.4	14.5	105.1
WestBred Express	--	--	--	--	14.6	14.6	103.5
MTHW9904	--	--	--	--	14.3	14.3	101.4
MT9874	--	--	--	--	14.2	14.2	100.7
McNeal	14.4	13.8	14.6	12.3	14.1	13.8	100.0
Pristine	--	--	--	--	14.1	14.1	100.0
MT9929	--	--	--	--	14.0	14.0	99.3
Amidon	13.8	13.2	14.6	12.6	14.2	13.7	98.8
MTHW9420	--	12.9	14.4	12.1	14.0	13.4	97.4
Conan	--	--	--	12.1	13.6	12.9	97.3
NK Bounty	--	--	--	--	13.6	13.6	96.5
Verde	--	13.0	13.8	--	13.3	13.4	94.4
McVey	--	--	--	--	13.2	13.2	93.6

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 37. Performance of spring wheat grown under irrigated conditions at Dagmar, MT.
 Planted: 10 May 2001 Harvested: 29 August 2001 Cooperator: Steve Brekke
Severe scab infection

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	
McVey	34	12.4	58.2	25.2	a
Pristine**	32	13.5	55.9	19.6	a
Verde	32	13.6	55.2	18.6	a
Express	28	14.7	54.8	17.9	a
Reeder	32	14.2	55.6	17.7	a
Alsen	32	13.9	59.3	17.5	a
Explorer**	32	14.9	54.5	16.7	
Gunner	33	14.8	59.6	16.3	
MT9874	34	13.8	53.3	16.1	
MT9929	30	13.4	52.6	15.7	
CDC Bounty	38	16.0	59.1	15.2	
Conan	30	14.2	56.6	15.1	
MTHW9420**	30	13.2	52.0	15.1	
Argent**	33	14.0	57.0	13.7	
NK Bounty	30	13.4	53.5	13.6	
Amidon	38	13.1	56.6	13.3	
Ernest	37	14.7	55.6	13.0	
Parshall	36	14.2	59.4	11.4	
Scholar	36	14.3	56.1	11.0	
McNeal	33	14.2	55.0	10.8	
ND722	36	14.9	57.9	10.6	
MTHW9904**	35	14.3	55.7	8.6	
average	33	14.1	56.1	15.1	
p value	<0.001	<0.001	<0.001	<0.001	
CV (S/Mean)	4.0	4.5	2.5	23.9	
CV(SE/Mean)	2.3	2.6	1.5	13.8	
LSD _{0.05}	2.2	1.1	2.4	5.9	

a indicates significantly greater yield than check variety, McNeal, at a probability of 0.05

Table 38. 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	1996	1998	1999	2000	2001	Ave	as % of McNeal
Pristine	--	--	--	--	19.6	19.6	181.5
Express	--	--	--	--	17.9	17.9	165.7
MT9874	--	--	--	--	16.1	16.1	149.1
MT9929	--	--	--	--	15.7	15.7	145.4
CDC Bounty	--	--	--	--	15.2	15.2	140.7
McVey	--	--	51.5	60.2	25.2	45.6	125.9
Alsen	--	--	--	49.5	17.5	33.5	122.3
Reeder	--	78.4	63.6	54.0	17.7	53.4	119.4
Gunner	--	--	--	48.6	16.3	32.5	118.4
Verde	--	73.3	--	48.1	18.6	46.7	111.9
Explorer	--	--	--	42.7	16.7	29.7	108.4
NK Bounty	--	--	--	45.5	13.6	29.6	107.8
Parshall	--	69.9	59.9	51.4	11.4	48.2	107.6
Argent	--	71.4	55.5	46.0	13.7	46.7	104.2
Ernest	47.4	67.2	56.8	51.1	13.0	47.1	103.5
Amidon	53.3	63.7	53.6	44.7	13.3	45.7	100.4
McNeal	48.6	70.3	53.9	44.0	10.8	45.5	100.0
ND722	--	--	--	--	10.6	10.6	98.1
MTHW9420	--	64.0	47.4	40.8	15.1	41.8	93.5
Scholar	--	66.1	38.3	49.4	11.0	41.2	92.1
Conan	--	--	45.3	35.3	15.1	31.9	88.0
MTHW9904	--	--	--	--	8.6	8.6	79.6

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 39. 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	1996	1998	1999	2000	2001	Ave	as % of McNeal
CDC Bounty	--	--	--	--	59.1	59.1	107.5
Gunner	--	--	--	63.0	59.6	61.3	106.0
Alsen	--	--	--	62.8	59.3	61.1	105.5
ND722	--	--	--	--	57.9	57.9	105.3
Parshall	--	63.3	61.2	62.8	59.4	61.7	104.9
Argent	--	62.8	60.0	62.0	57.0	60.5	102.8
Reeder	--	62.0	60.0	61.8	55.6	59.9	101.8
Ernest	63.2	62.3	58.8	62.5	55.6	60.5	101.7
Pristine	--	--	--	--	55.9	55.9	101.6
McVey	--	--	57.3	60.8	58.2	58.8	101.5
Amidon	62.8	60.7	59.0	62.0	56.6	60.2	101.3
MTHW9904	--	--	--	--	55.7	55.7	101.3
Scholar	--	61.8	56.8	62.5	56.1	59.3	100.9
Conan	--	--	58.3	59.3	56.6	58.1	100.3
McNeal	62.0	61.5	58.0	60.7	55.0	59.4	100.0
Express	--	--	--	--	54.8	54.8	99.6
Verde	--	60.8	--	60.2	55.2	58.7	99.4
Explorer	--	--	--	59.3	54.5	56.9	98.4
NK Bounty	--	--	--	58.7	53.5	56.1	97.0
MT9874	--	--	--	--	53.3	53.3	96.9
MT9929	--	--	--	--	52.6	52.6	95.6
MTHW9420	--	59.2	53.7	58.5	52.0	55.9	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 40. 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	1996	1998	1999	2000	2001	Ave	as % of McNeal
CDC Bounty	--	--	--	--	16.0	16.0	112.7
Argent	--	15.6	16.0	14.6	14.0	15.1	111.3
Gunner	--	--	--	14.9	14.8	14.9	111.2
Reeder	--	15.6	16.1	14.2	14.2	15.0	111.1
Parshall	--	14.7	16.5	14.4	14.2	15.0	110.5
Explorer	--	--	--	14.0	14.9	14.5	108.2
Ernest	10.9	15.2	15.7	12.7	14.7	13.8	106.3
Alsen	--	--	--	14.4	13.9	14.2	106.0
Scholar	--	15.0	14.6	12.8	14.4	14.2	105.0
ND722	--	--	--	--	14.9	14.9	104.9
Conan	--	--	14.3	14.2	14.2	14.2	104.7
Express	--	--	--	--	14.7	14.7	103.5
Verde	--	13.7	--	13.2	13.6	13.5	101.3
MTHW9904	--	--	--	--	14.3	14.3	100.7
Amidon	10.8	14.1	14.8	12.5	13.1	13.1	100.3
McNeal	11.0	13.3	14.1	12.5	14.2	13.0	100.0
MT9874	--	--	--	--	13.8	13.8	97.2
MTHW9420	--	13.0	13.5	12.3	13.2	13.0	96.1
NK Bounty	--	--	--	12.1	13.4	12.8	95.5
Pristine	--	--	--	--	13.5	13.5	95.1
MT9929	--	--	--	--	13.4	13.4	94.4
McVey	--	--	13.9	12.0	12.4	12.8	93.9

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 41. Performance of spring wheat grown under irrigated conditions at Poplar, MT. Planted: 8 May 2001 Harvested: 27 August 2001 Cooperator: Brad Bender
Severe *Septoria* and tan spot infection

Variety	Height, inches	Grain protein	Test weight	Yield, bu/acre	\$/acre ¹ +/- McNeal
Reeder	33	14.6	60.2	59.2	90.73
Parshall	33	14.2	60.5	56.0	71.64
Gunner	31	14.7	60.2	50.9	51.03
MT9874	28	12.9	58.0	53.4	36.64
McVey	34	13.5	56.5	51.2	35.67
Scholar	30	13.6	60.5	47.6	18.36
MT9929	30	13.0	58.2	47.2	7.94
McNeal	34	12.6	58.8	46.8	0.00
Alsen	31	14.1	59.2	42.2	-0.02
Ernest	30	13.4	60.0	43.6	-0.88
CDC Bounty	36	17.2	55.8	39.1	-7.67
Verde	29	13.5	56.5	42.0	-8.58
ND722	37	13.8	58.5	38.8	-20.48
Amidon	33	12.5	59.8	42.1	-21.15
Express	27	13.3	56.8	39.1	-26.05
Conan	31	13.9	56.5	33.2	-44.93
NK Bounty	31	12.6	54.2	32.6	-63.90
MTHW9420	28	13.1	56.8	44.9	*
Pristine	30	13.4	57.2	44.7	*
Argent	32	14.4	58.0	40.6	*
Explorer	29	14.8	54.2	35.8	*
MTHW9904	36	14.4	56.2	35.2	*
average	31	13.8	57.8	43.9	
p value	0.012	<0.001	<0.001	0.002	
CV (S/Mean)	7.4	3.0	1.7	10.9	
CV(SE/Mean)	5.2	2.1	1.2	8.4	
LSD 0.05	4.8	0.9	2.1	10.9	

¹Wheat 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.