

PROJECT TITLE: Intra-State Winter Wheat Variety Performance

PROJECT LEADER: P.L. Bruckner - MSU, Bozeman

PROJECT PERSONNEL: Gene A. Hockett - MSU, Bozeman  
Rhoda L. Burrows - MSU, Bozeman  
Greg D. Kushnak - WTARC, Conrad  
Gregg R. Carlson - NARC, Havre  
Gil F. Stallknecht - SARC, Huntley  
Bob N. Stougaard - NWARC, Kalispell  
Dave M. Wichman - CARC, Moccasin  
Joyce L.A. Eckhoff - EARC, Sidney

Objectives:

To evaluate new and existing varieties and lines of winter wheat on fallow under the growing conditions that occur at Bozeman, Conrad, Havre, Huntley, Kalispell, Moccasin, and Sidney.

RESULTS:

The 1992 winter wheat crop year was marked by low to average precipitation in the fall followed by a dry mild winter and early spring. Some locations experienced their coldest winter temperatures in late October. Eastern (Sidney) and Southern (Huntley & Bozeman) Montana had good to excellent precipitation levels and frequency mid-spring through the balance of the growing season. Central (Moccasin), Northcentral (Conrad & Havre), and Northwest Kalispell had low precipitation levels till late spring. Yields were above average at Sidney, Huntley, and Bozeman, near average at Kalispell and below average at Moccasin. Havre and Conrad both received hail. Sidney and Conrad were the only locations with sufficient winter kill to rate. Due to the mild conditions Russian wheat aphid infestations were wide spread in the Golden Triangle and the Judith Basin by early May. At Moccasin, the dry warm spring was especially hard on winter wheat which had early spring lush robust growth which depleted the soil moisture sooner. High nitrogen levels were detrimental on shallow soils.

SUMMARY:

Variety mean yields across the five harvested locations ranged from highs of 91.3 (Hybritech 'XNH 1486') and 88.7 'Meridian' bu/a to lows of 56.9 ('Winalta') and 58.2 ('Roughrider') bu/a. 'Judith' was the top yielding MSU developed variety. MT 8719 and MT 8713 were the top yielding MSU experimental lines.

FUTURE PLANS:

The intra-state winter wheat variety trial will be continued.

1992 INTRASTATE NURSERY (Expt. 35) - STATEWIDE REPORT - YIELD (BU/A)

Table 1

ID	PEDIGREE	Bzmn	Hunt	Sdny	Mocn	Kalsp	Avg	BYX	RSQ
XNH 1486	HYBRITECH	107.2	101.9	100.6	31.5	115.2	91.3	1.15	1.00
ID 360	MERIDIAN	116.2	89.4	103.8	24.2	109.8	88.7	1.24	0.96
HILL 81	HILL-81	130.9	90.0	77.2	26.7	106.0	86.2	1.15	0.76
PI499376	LENORE/KS73164	123.1	94.1	97.7	26.7	89.2	86.1	1.11	0.84
MT 8039	JUDITH	114.9	87.9	96.5	23.3	104.8	85.5	1.19	0.94
CI 17441	VONA	113.6	94.1	90.4	35.9	93.5	85.5	0.93	0.89
CI 17909	LEWJAIN	116.6	98.3	65.4	27.6	118.7	85.3	1.13	0.74
S86-736	S86-736	113.2	91.2	96.4	19.2	100.6	84.1	1.23	0.95
RH78W296	BIGHORN	113.1	88.7	82.0	26.3	110.4	84.1	1.12	0.89
ID 355	MC*2/NP824/3/LMH6	96.9	96.2	100.2	30.1	96.9	84.1	1.01	0.98
PI477287	RAM	101.3	97.6	98.3	9.9	108.0	83.0	1.39	1.00
CI 17940	ARCHER	98.6	102.4	91.9	20.9	99.1	82.6	1.16	0.97
CI 17860	NEELEY	87.0	94.9	97.4	21.8	111.7	82.5	1.17	0.97
PI517194	TIBER	95.8	88.5	88.4	23.2	116.1	82.4	1.16	0.96
S86-15	KESTREL	106.8	92.6	100.8	15.4	95.6	82.2	1.26	0.97
CI 17846	MANNING	90.5	104.5	80.6	23.2	111.6	82.1	1.13	0.91
CI 17952	HAWK	108.7	91.7	84.0	20.8	105.1	82.1	1.18	0.95
QT542-F2	HYBRITECH 542 F2	97.5	86.6	104.0	24.2	97.7	82.0	1.10	0.97
CI 17596	STEPHENS	105.9	98.3	46.1	29.0	128.8	81.6	1.06	0.55
QT 542	HYBRITECH 542	84.9	92.0	91.2	33.4	103.5	81.0	0.92	0.97
PI499375	KS73164/PI94424	100.1	95.2	88.0	21.2	99.1	80.7	1.13	0.98
PI499377	MANNING/MT7579	88.2	92.2	94.5	15.5	111.4	80.4	1.25	0.98
ID 297	BLIZZARD	88.9	85.6	95.9	32.5	97.1	80.0	0.91	0.99
CI 17879	ROCKY	92.7	84.7	96.2	27.6	96.5	79.5	0.99	0.99
CI 17902	WINRIDGE	81.6	83.2	96.0	20.9	115.7	79.5	1.15	0.91
MT 8719	RRI/MT 6928	102.7	89.4	93.2	6.3	104.8	79.3	1.40	1.00
PI495594	TAM 107	95.0	86.9	72.2	38.4	101.5	78.8	0.79	0.86
MT 90003	ORS-W 30-166/WRG/	100.2	86.9	88.8	23.7	93.7	78.7	1.04	0.97
IDHW0355	2*MC/NP824/3/LMH6	80.2	93.9	101.7	25.0	90.7	78.3	1.00	0.91
PI518591	ARAPAHO	86.4	96.4	91.7	14.3	96.8	77.1	1.19	0.98
RDW(SEL)	AC READYMADE	85.0	79.7	95.8	26.7	97.3	76.9	0.96	0.96
CI 17844	REDWIN	87.4	83.9	85.4	25.5	100.9	76.6	0.99	0.99
MT 8713	RRI/MT 6928	109.0	87.3	89.1	8.7	88.2	76.4	1.27	0.93
MT 90025	MT8001/MT7673//MT	84.3	80.1	101.5	26.2	90.0	76.4	0.95	0.92
NA 0001	THUNDERBIRD	93.8	87.9	79.6	27.0	92.3	76.1	0.93	0.96
MT 90027	ID103/WRG//MT7840	63.8	90.9	93.1	26.0	102.1	75.2	0.95	0.81
ND 8002	SEWARD	79.9	85.1	94.9	21.1	93.6	74.9	1.02	0.96
LAMAR	LAMAR	91.7	84.8	72.1	31.5	90.7	74.1	0.82	0.93
MT 88046	PMN5/MT 77003//HP	106.6	80.2	74.4	23.4	83.6	73.6	0.95	0.84
MT 90026	ID103/WRG//MT7840	78.5	77.4	87.0	24.1	93.7	72.1	0.93	0.98
MTSF2238	LEW/TBR//RDW	75.3	82.8	82.1	23.2	96.6	72.0	0.94	0.96
PI491533	NORWIN	96.3	73.6	80.1	14.5	95.1	71.9	1.11	0.95
CI 17727	WESTON	89.0	75.6	81.9	16.9	90.2	70.7	1.03	0.98
MT 88030	HP340/NRS//MT7216	89.0	86.0	82.4	11.9	83.4	70.5	1.10	0.97
MT 88028	HP340/NRS//MT7216	76.6	74.7	91.3	25.0	84.1	70.4	0.86	0.94
MT 88024	PMN5/WN//HP 344/F	78.6	74.7	83.7	29.4	84.4	70.2	0.78	0.99
CI 15075	CENTURK	71.1	84.1	88.9	20.9	84.3	69.8	0.92	0.93
MTSF1570	LEW/TBR//RDW	71.9	76.3	82.1	22.7	95.1	69.6	0.91	0.94
MT 88017	PMN5/WN//HP 344/F	74.8	80.6	78.9	30.8	80.5	69.1	0.72	0.97
CI 13190	WARRIOR	71.7	69.7	95.4	26.3	80.7	68.8	0.80	0.84
MTSF1258	LEW/TBR//RDW	80.5	74.3	67.6	23.2	97.0	68.5	0.89	0.91
MTSF1142	LEW/TBR//RDW	69.1	78.2	92.6	13.1	88.5	68.3	1.05	0.93
MT 88018	PMN5/WN//HP 344/F	74.7	78.2	87.0	24.7	75.2	68.0	0.80	0.92
CI 17735	NORSTAR	71.9	73.0	94.8	14.0	86.0	67.9	1.03	0.92

## 1992 INTRASTATE NURSERY (Expt. 35) - STATEWIDE REPORT - YIELD (BU/A)

Table 1 continued

ID	PEDIGREE	Bzmn	Hunt	Sdny	Mocn	Ka1sp	Avg	BYX	RSQ
MT 88026	PMN5/WN//HP 344/F	65.7	79.1	79.9	24.7	87.2	67.3	0.82	0.93
CI 8885	CHEYENNE	64.4	83.9	82.0	27.7	75.5	66.7	0.72	0.85
MT 88021	PMN5/WN//HP 344/F	79.7	75.6	76.0	20.7	74.5	65.3	0.84	0.98
MTSF1260	LEW/TBR//RDW	71.4	72.2	69.9	25.7	85.1	64.9	0.76	0.97
MT 88013	PMN5/WN//HP 344/F	66.7	77.9	78.8	27.6	73.2	64.8	0.69	0.91
PI491532	CREE	67.1	74.1	82.1	22.1	74.2	63.9	0.78	0.93
MT 88027	PMN5/WN//HP 344/F	74.0	70.3	67.0	26.2	81.0	63.7	0.72	0.97
PI478771	AGASSIZ	54.3	73.9	92.6	15.3	74.8	62.2	0.88	0.77
CI 17439	ROUGH RIDER	60.0	68.2	84.8	12.2	65.7	58.2	0.85	0.85
CI 13670	WINALTA	57.6	67.4	74.7	17.9	66.9	56.9	0.73	0.91
MT 88005	WSC/YOGO//RSC/3/T	53.6	60.3	71.4	8.4	71.5	53.0	0.85	0.93
*****	SITE MEAN *****	88.1	84.6	86.6	22.8	94.0	75.2	1.00	1.00

## 1992 INTRASTATE NURSERY (Expt. 35) - STATEWIDE REPORT - TEST WEIGHT (LB/BU)

Table 2

ID	PEDIGREE	Bozeman	Hunt- ley	Sidney	Moc- casin	Kali- spell	AVG	BYX	RSQ
CI 8885	CHEYENNE	61.5	61.3	63.23	60.85	58.2	61.0	0.55	0.35
CI 13190	WARRIOR	61.9	59.0	63.63	59.20	56.8	60.1	1.11	0.64
CI 13670	WINALTA	63.7	60.7	63.98	59.05	59.4	61.4	1.17	0.94
CI 15075	CENTURK	62.8	60.0	63.63	57.95	59.4	60.8	1.23	0.99
CI 17439	ROUGH RIDER	62.9	60.8	63.25	57.60	59.3	60.8	1.22	0.96
CI 17441	VONA	64.4	61.0	64.78	58.15	61.4	61.9	1.40	0.98
CI 17596	STEPHENS	62.2	59.0	56.83	58.20	60.2	59.3	0.12	0.01
CI 17727	WESTON	63.9	62.2	62.50	57.80	61.7	61.6	1.00	0.71
CI 17735	NORSTAR	63.8	61.2	64.00	58.90	59.9	61.6	1.17	0.97
CI 17844	REDWIN	63.3	61.7	64.63	59.40	61.9	62.2	0.99	0.95
CI 17846	MANNING	62.0	59.7	63.00	59.95	59.8	60.9	0.71	0.81
CI 17860	NEELEY	63.5	60.4	63.87	58.30	61.1	61.4	1.18	0.97
CI 17879	ROCKY	63.6	60.6	64.40	58.80	61.1	61.7	1.17	0.98
CI 17902	WINRIDGE	63.0	60.9	62.38	59.40	61.7	61.5	0.67	0.84
CI 17909	LEWJAIN	62.4	58.6	58.20	57.40	58.3	59.0	0.60	0.35
CI 17940	ARCHER	61.0	58.5	63.00	57.10	59.3	59.8	1.14	0.92
CI 17952	HAWK	64.4	62.2	64.13	58.65	62.5	62.4	1.10	0.86
HILL 81	HILL-81	63.3	59.2	57.73	58.55	59.8	59.7	0.34	0.09
ID 297	BLIZZARD	63.5	62.2	64.00	59.35	60.8	62.0	0.97	0.94
ID 355	MC*2/NP824/3/LMH6	62.4	61.7	63.50	59.20	60.0	61.3	0.85	0.87
ID 360	MERIDIAN	63.3	60.7	64.00	58.80	59.3	61.2	1.18	0.94
IDHW0355	2*MC/NP824/3/LMH6	62.2	60.9	63.37	58.50	50.2	61.1	1.02	0.94
LAMAR	LAMAR	63.7	61.0	65.48	59.50	61.3	62.2	1.20	0.95
MT 8039	JUDITH	62.6	60.0	63.00	57.05	60.4	60.6	1.21	0.96
MT 8713	RRI/MT 6928	63.7	61.2	63.50	54.55	61.6	60.9	1.70	0.78
MT 8719	RRI/MT 6928	63.7	60.9	64.00	57.40	61.7	61.5	1.31	0.91
MT 88005	WSC/YOGO//RSC/3/T	60.6	58.5	63.17	54.10	56.9	58.6	1.75	0.94
MT 88013	PMN5/WN//HP 344/F	63.1	60.2	62.87	57.45	59.8	60.7	1.21	0.98
MT 88017	PMN5/WN//HP 344/F	63.0	60.0	62.50	58.90	59.9	60.9	0.91	0.95
MT 88018	PMN5/WN//HP 344/F	63.2	60.0	62.75	59.00	60.1	61.0	0.93	0.95
MT 88021	PMN5/WN//HP 344/F	63.4	60.4	63.55	59.05	60.8	61.5	1.01	0.98
MT 88024	PMN5/WN//HP 344/F	62.7	59.2	62.38	58.85	60.4	60.7	0.87	0.89
MT 88026	PMN5/WN//HP 344/F	63.4	59.8	63.68	58.40	61.0	61.3	1.16	0.95
MT 88027	PMN5/WN//HP 344/F	62.8	61.1	63.45	59.30	60.2	61.4	0.89	0.97
MT 88028	HP340/NRS//MT7216	61.8	60.9	62.50	58.30	58.0	60.3	0.93	0.78
MT 88030	HP340/NRS//MT7216	63.1	60.9	62.75	57.40	60.6	61.0	1.12	0.91
MT 88046	PMN5/MT 77003//HP	63.8	60.6	63.25	59.65	61.2	61.7	0.88	0.93
MT 90003	ORS-W 30-166/WRG/	63.2	61.4	62.63	59.05	61.4	61.5	0.78	0.89
MT 90025	MT8001/MT7673//MT	63.5	61.3	64.50	58.40	59.6	61.5	1.30	0.96
MT 90026	ID103/WRG//MT7840	63.0	61.6	63.75	59.05	61.0	61.7	0.93	0.96
MT 90027	ID103/WRG//MT7840	61.4	60.7	64.50	57.20	60.9	60.9	1.20	0.79
MTSF1142	LEW/TBR//RDW	62.5	60.0	64.00	58.05	60.3	61.0	1.18	0.97
MTSF1258	LEW/TBR//RDW	62.4	60.5	62.82	60.15	61.3	61.4	0.57	0.90
MTSF1260	LEW/TBR//RDW	62.5	59.2	64.05	60.20	60.6	61.3	0.85	0.71
MTSF1570	LEW/TBR//RDW	62.7	59.5	63.63	59.25	60.3	61.1	0.98	0.91
MTSF2238	LEW/TBR//RDW	62.7	59.5	63.63	58.75	60.7	61.0	1.03	0.92
NA 0001	THUNDERBIRD	64.2	60.7	63.50	59.15	61.6	61.8	1.02	0.93
ND 8002	SEWARD	62.2	58.9	63.00	56.90	60.4	60.3	1.23	0.92
PI477287	RAM	60.5	59.0	62.75	58.35	59.3	60.0	0.82	0.83
PI478771	AGASSIZ	62.0	60.3	63.13	57.55	58.4	60.3	1.17	0.93
PI491532	CREE	62.1	60.8	62.63	60.30	58.4	60.8	0.65	0.55
PI491533	NORWIN	63.8	59.9	63.63	57.05	60.2	60.9	1.45	0.98
PI495594	TAM 107	62.2	60.9	63.60	58.85	60.1	61.1	0.93	0.95

## 1992 INTRASTATE NURSERY (Expt. 35) - STATEWIDE REPORT - TEST WEIGHT (LB/BU)

Table 2 continued

<u>ID</u>	<u>PEDIGREE</u>	<u>Bozeman</u>	<u>Hunt- ley</u>	<u>Sidney</u>	<u>Moc- casin</u>	<u>Kali- spell</u>	<u>AVG</u>	<u>BYX</u>	<u>RSQ</u>
PI499375	KS73164/PI94424	62.1	62.2	63.75	58.90	60.2	61.4	0.87	0.79
PI499376	LENORE/KS73164	61.9	56.5	63.25	57.95	58.3	59.6	1.28	0.74
PI499377	MANNING/MT7579	62.1	60.2	61.00	57.75	59.6	60.1	0.78	0.86
PI517194	TIBER	64.1	61.5	64.00	60.25	61.5	62.3	0.88	0.99
PI518591	ARAPAHO	60.7	58.9	63.08	56.30	59.4	59.7	1.22	0.90
QT 542	HYBRITECH 542	62.1	60.5	63.63	60.20	60.4	61.4	0.70	0.84
QT542-F2	HYBRITECH 542 F2	62.4	60.2	63.63	59.45	60.1	61.2	0.89	0.93
RDW(SEL)	AC READYMADE	63.5	61.6	64.00	59.85	61.1	62.0	0.88	0.99
RH78W296	BIGHORN	63.1	60.9	62.68	59.50	60.5	61.3	0.77	0.97
S86-15	KESTREL	62.9	60.4	63.87	59.20	60.2	61.3	1.01	0.97
S86-736	S86-736	62.9	62.0	63.50	60.00	60.1	61.7	0.76	0.84
XNH 1486	HYBRITECH	62.7	60.4	64.53	60.30	60.3	61.6	0.89	0.81
*****	SITE MEAN *****	62.8	60.4	63.20	58.58	60.2	61.0	1.00	1.00

## 1992 INTRASTATE NURSERY (Expt. 35) - STATEWIDE - PLANT HEIGHT (In.)

Table 3

ID	PEDIGREE	Bzmn	Havre	Hunt	Sdny	Mocn	KaIs	Avg	BYX	RSO
PI491533	NORWIN	32.2	21.1	29.5	24.0	17.5	29.5	25.6	0.55	0.95
CI 17952	HAWK	34.6	19.0	33.8	23.0	18.8	34.1	27.2	0.76	0.97
MT 8713	RRI/MT 6928	37.9	20.7	35.8	25.0	18.5	34.1	28.7	0.81	0.96
CI 17909	LEWJAIN	35.9	20.9	36.3	30.0	19.0	33.5	29.3	0.72	0.91
RH78W296	BIGHORN	36.7	21.8	35.5	27.5	21.5	34.1	29.5	0.67	0.96
ID 360	MERIDIAN	37.3	21.8	33.8	28.3	20.5	36.1	29.6	0.72	0.99
CI 17940	ARCHER	39.4	22.8	37.5	25.8	18.5	35.4	29.9	0.84	0.95
PI495594	TAM 107	40.9	21.7	35.8	25.0	21.3	37.4	30.3	0.84	0.95
CI 17441	VONA	40.3	21.4	37.5	25.3	22.5	36.1	30.5	0.80	0.93
CI 17596	STEPHENS	39.5	21.1	35.8	31.0	21.3	38.1	31.1	0.80	0.96
PI477287	RAM	40.7	23.9	37.3	28.3	21.3	40.0	31.9	0.84	0.99
PI518591	ARAPAHO	40.5	24.0	40.5	27.8	20.3	38.7	32.0	0.88	0.96
MT 8719	RRI/MT 6928	43.2	21.9	39.0	28.8	20.3	38.7	32.0	0.95	0.97
NA 0001	THUNDERBIRD	42.8	23.5	37.3	27.5	22.3	40.7	32.3	0.89	0.98
MT 88030	HP340/NRS//MT7	43.3	23.5	39.3	27.8	19.8	41.3	32.5	1.00	0.99
XNH 1486	HYBRITECH	41.0	24.4	37.8	30.3	22.3	40.0	32.6	0.81	1.00
HILL 81	HILL-81	43.0	23.4	36.5	31.5	23.0	38.7	32.7	0.80	0.95
MTSF1142	LEW/TBR//RDW	41.1	23.4	38.8	33.3	20.3	41.3	33.0	0.90	0.97
PI499376	LENORE/KS73164	42.5	24.9	38.8	31.0	23.5	38.7	33.2	0.78	0.97
MT 88017	PMN5/WN//HP 34	43.6	24.0	39.8	29.3	22.5	41.3	33.4	0.92	0.99
MT 88046	PMN5/MT 77003/	43.4	23.4	41.3	28.8	22.0	42.0	33.5	0.98	0.99
CI 17846	MANNING	43.2	24.9	40.8	28.8	24.8	39.0	33.6	0.81	0.95
PI499377	MANNING/MT7579	43.3	23.8	40.0	30.3	25.0	41.3	33.9	0.85	0.97
CI 17860	NEELEY	43.1	23.3	42.3	31.8	19.5	45.3	34.2	1.09	0.99
MTSF2238	LEW/TBR//RDW	42.6	25.5	41.5	30.8	24.3	44.0	34.8	0.89	0.99
ID 355	MC*2/NP824/3/L	43.3	24.1	43.3	30.8	20.5	47.9	35.0	1.13	0.99
CI 17879	ROCKY	44.4	24.5	41.5	31.0	21.5	47.2	35.0	1.08	1.00
MT 88027	PMN5/WN//HP 34	45.6	24.3	43.3	30.3	22.3	44.6	35.0	1.06	0.99
MT 88024	PMN5/WN//HP 34	44.4	27.2	41.0	29.3	24.3	44.6	35.1	0.91	0.98
CI 17902	WINRIDGE	47.1	23.6	39.3	32.8	22.0	46.6	35.2	1.08	0.98
IDHW0355	2*MC/NP824/3/L	44.2	24.1	42.0	32.8	19.0	49.9	35.3	1.19	0.97
LAMAR	LAMAR	47.2	23.6	42.5	29.0	22.5	47.9	35.4	1.16	0.98
QT542-F2	HYBRITECH 542	46.2	23.7	43.3	31.8	23.0	45.3	35.5	1.07	1.00
CI 15075	CENTURK	44.2	22.4	44.0	30.8	22.8	49.2	35.5	1.16	0.98
S86-15	KESTREL	46.6	25.1	41.5	34.0	22.5	44.0	35.6	1.00	0.99
MT 8039	JUDITH	45.6	25.4	43.0	32.0	24.3	44.6	35.8	0.97	0.99
AT 512 302 → ID 297	BLIZZARD	45.5	22.4	42.0	33.8	23.3	48.6	35.9	1.11	0.98
QT 542	HYBRITECH 542	45.6	25.8	43.3	31.5	24.0	46.6	36.1	1.02	1.00
PI517194	TIBER	46.2	25.3	41.8	32.3	23.0	48.6	36.2	1.08	0.99
MT 90003	ORS-W 30-166/W	46.6	25.3	41.8	33.0	23.8	47.2	36.3	1.04	1.00
CI 17844	REDWIN	47.5	25.4	41.5	31.8	22.8	48.6	36.3	1.11	0.99
MT 88026	PMN5/WN//HP 34	47.3	27.3	42.8	31.3	22.3	46.6	36.3	1.06	0.99
S86-736	S86-736	47.8	26.1	43.3	33.8	22.3	44.6	36.3	1.04	0.98
RDW(SEL)	AC READYMADE	48.5	24.4	43.3	32.0	22.3	47.9	36.4	1.17	1.00
ND 8002	SEWARD	45.1	24.0	44.5	34.3	21.8	48.6	36.4	1.14	0.99
CI 13190	WARRIOR	46.8	25.4	42.8	32.0	21.3	51.2	36.6	1.20	0.98
MT 90025	MT8001/MT7673/	46.5	24.6	45.0	33.0	22.0	48.6	36.6	1.16	1.00
MTSF1570	LEW/TBR//RDW	45.2	25.3	42.8	37.0	21.8	47.9	36.6	1.06	0.96
MTSF1258	LEW/TBR//RDW	45.9	24.3	42.8	35.5	23.8	47.9	36.7	1.05	0.98
MT 90026	ID103/WRG//MT7	48.6	24.8	43.5	33.8	22.0	48.6	36.9	1.17	1.00
MT 88021	PMN5/WN//HP 34	47.1	27.6	42.5	31.5	25.0	48.6	37.0	1.01	0.98
MT 90027	ID103/WRG//MT7	48.1	25.5	44.5	33.0	22.3	48.6	37.0	1.16	1.00

## 1992 INTRASTATE NURSERY (Expt. 35) - STATEWIDE - PLANT HEIGHT (In.)

Table 3 continued

<u>ID</u>	<u>PEDIGREE</u>	<u>Bzmn</u>	<u>Havre</u>	<u>Hunt</u>	<u>Sdny</u>	<u>Mocn</u>	<u>Kals</u>	<u>Avg</u>	<u>BYX</u>	<u>RSQ</u>
MT 88028	HP340/NRS//MT7	47.8	26.5	44.5	33.3	24.3	45.9	37.1	1.03	0.99
CI 8885	CHEYENNE	43.0	24.9	42.5	34.5	26.0	52.5	37.2	1.02	0.91
MT 88013	PMN5/WN//HP 34	47.6	27.8	44.5	31.8	24.5	47.2	37.2	1.03	0.99
MTSF1260	LEW/TBR//RDW	47.9	27.0	43.8	35.3	23.0	46.6	37.3	1.04	0.99
CI 17439	ROUGH RIDER	47.4	23.7	45.8	33.8	22.8	50.5	37.3	1.22	0.99
PI491532	CREE	46.8	25.1	44.0	33.8	23.5	51.8	37.5	1.16	0.98
MT 88018	PMN5/WN//HP 34	47.3	28.3	45.0	33.5	23.5	48.6	37.7	1.06	0.99
PI499375	KS73164/PI9442	49.1	24.2	46.0	35.8	25.3	47.2	37.9	1.11	0.98
CI 13670	WINALTA	45.6	24.8	44.8	35.8	23.3	53.2	37.9	1.18	0.96
CI 17727	WESTON	45.8	28.0	45.5	35.5	22.5	50.5	38.0	1.09	0.97
MT 88005	WSC/YOGO//RSC/	50.9	26.0	44.0	36.3	19.0	51.8	38.0	1.32	0.97
CI 17735	NORSTAR	49.3	24.8	46.3	41.3	22.3	51.8	39.3	1.23	0.94
PI478771	AGASSIZ	47.6	27.1	46.5	36.3	<del>22.5</del>	55.1	39.5	1.20	0.97
*****	SITE MEAN ****	44.2	24.3	41.2	31.4	22.2	44.5	34.6	1.00	1.00

## 1992 INTRASTATE NURSERY (Expt. 35) - STATEWIDE REPORT - HEADDATE

Table 4

ID	PEDIGREE	Bzmn	Havre	Hunt	Sdny	Mocn	Kalsp	Avg	BYX	RSQ
CI 8885	CHEYENNE	160.5	155.5	152.0	164.3	156.5	154.3	153.0	1.03	1.00
CI 13190	WARRIOR	157.5	152.8	149.5	161.0	154.3	151.3	150.5	0.97	1.00
CI 13670	WINALTA	160.0	158.0	152.0	163.0	158.8	153.7	153.2	1.06	0.99
CI 15075	CENTURK	155.5	154.0	148.0	160.5	154.8	150.7	149.9	0.99	1.00
CI 17439	ROUGH RIDER	159.3	158.0	152.0	163.5	158.5	154.0	153.6	0.97	1.00
CI 17441	VONA	152.3	149.8	145.5	158.5	150.0	147.3	146.5	1.01	0.99
CI 17596	STEPHENS	162.5	162.0	153.0	170.5	161.3	156.7	156.7	1.10	0.99
CI 17727	WESTON	157.3	154.3	148.5	163.8	156.0	151.0	151.5	0.93	0.99
CI 17735	NORSTAR	164.3	161.3	156.5	167.0	163.3	156.0	157.0	1.06	0.99
CI 17844	REDWIN	159.3	157.3	151.5	163.0	155.5	154.0	152.6	1.01	1.00
CI 17846	MANNING	157.3	152.8	149.5	162.5	155.0	152.3	150.6	1.05	0.99
CI 17860	NEELEY	162.0	157.0	151.5	164.5	161.3	155.3	154.5	1.02	0.99
CI 17879	ROCKY	155.8	153.3	147.0	161.3	153.8	151.3	149.8	0.99	0.99
CI 17902	WINRIDGE	162.0	156.0	153.0	165.8	159.5	155.7	154.7	0.99	0.99
CI 17909	LEWJAIN	164.5	162.5	156.0	169.5	165.0	158.0	158.4	1.05	0.99
CI 17940	ARCHER	155.3	152.8	147.5	159.5	152.3	152.0	149.0	1.02	1.00
CI 17952	HAWK	153.8	150.8	146.5	159.5	151.8	150.7	148.0	1.02	0.99
HILL 81	HILL-81	163.3	161.0	154.5	169.0	162.0	154.3	156.4	1.07	0.98
ID 297	BLIZZARD	160.0	160.0	157.0	165.3	156.0	156.0	154.8	1.02	0.97
ID 355	MC*2/NP824/3	159.8	160.0	152.0	164.5	158.5	155.3	154.2	1.03	0.99
ID 360	MERIDIAN	161.3	161.5	156.0	166.8	159.8	156.7	156.4	0.96	1.00
IDHW0355	2*MC/NP824/3	161.0	157.5	152.0	164.8	159.3	155.0	154.2	1.00	0.99
LAMAR	LAMAR	154.8	152.0	146.0	161.5	152.5	150.7	148.6	1.07	0.99
MT 8039	JUDITH	156.0	153.8	148.0	161.0	152.8	151.3	149.7	1.02	1.00
MT 8713	RRI/MT 6928	157.0	158.5	151.0	162.0	154.8	153.7	151.8	1.04	0.98
MT 8719	RRI/MT 6928	159.5	159.3	152.0	162.3	156.0	153.7	153.0	1.01	0.99
MT 88005	WSC/YOGO//RS	159.8	157.3	151.0	164.8	159.5	153.3	153.8	0.96	0.99
MT 88013	PMN5/WN//HP	152.8	149.3	146.0	158.5	153.3	149.7	147.6	0.97	0.99
MT 88017	PMN5/WN//HP	155.0	152.3	148.5	159.8	154.5	151.3	149.5	0.99	0.99
MT 88018	PMN5/WN//HP	155.5	149.8	147.0	159.0	154.3	151.3	149.1	0.91	0.98
MT 88021	PMN5/WN//HP	155.0	151.8	148.0	159.0	153.8	150.3	149.3	0.91	0.99
MT 88024	PMN5/WN//HP	155.3	152.0	148.0	159.8	153.8	151.0	149.4	0.96	1.00
MT 88026	PMN5/WN//HP	154.3	149.3	146.5	159.0	154.0	150.7	148.4	0.96	0.98
MT 88027	PMN5/WN//HP	155.0	152.3	148.0	159.8	154.3	151.0	149.5	0.96	1.00
MT 88028	HP340/NRS//M	157.8	154.3	150.0	163.0	154.3	152.3	151.4	0.97	0.99
MT 88030	HP340/NRS//M	157.5	152.0	149.5	160.5	155.0	151.7	150.3	0.99	0.99
MT 88046	PMN5/MT 7700	154.3	151.8	147.5	158.8	152.0	151.0	148.6	0.96	1.00
MT 90003	ORS-W 30-166	161.5	158.5	150.5	165.0	156.8	154.3	153.9	0.97	0.98
MT 90025	MT8001/MT767	158.3	157.0	151.5	162.8	153.8	152.7	152.0	0.98	0.99
MT 90026	ID103/WRG//M	157.8	153.5	151.0	163.5	155.0	152.7	151.6	0.98	0.99
MT 90027	ID103/WRG//M	157.3	154.8	149.5	163.3	154.0	152.3	151.4	0.94	0.99
MTSF1142	LEW/TBR//RDW	160.0	160.8	153.5	166.5	159.0	155.0	155.3	0.97	0.99
MTSF1258	LEW/TBR//RDW	157.0	154.8	149.5	165.3	154.0	152.7	151.9	0.94	0.98
MTSF1260	LEW/TBR//RDW	157.0	155.3	149.5	166.0	153.5	152.3	151.9	0.95	0.97
MTSF1570	LEW/TBR//RDW	160.0	159.8	152.0	165.8	155.3	155.0	154.1	0.97	0.98
MTSF2238	LEW/TBR//RDW	157.0	158.0	150.0	163.3	153.3	153.7	151.7	1.02	0.99
NA 0001	THUNDERBIRD	152.3	149.8	146.0	159.3	152.3	149.3	147.5	0.97	0.99
ND 8002	SEWARD	160.0	159.0	151.5	164.0	160.3	156.7	154.5	1.00	0.99
PI477287	RAM	156.5	153.3	148.5	160.5	152.5	151.7	149.7	1.01	1.00
PI478771	AGASSIZ	161.3	158.0	152.5	164.3	158.5	154.3	154.1	0.99	0.99
PI491532	CREE	161.0	157.0	152.5	163.8	157.3	154.0	153.5	1.00	0.99
PI491533	NORWIN	161.8	157.5	153.0	163.0	158.8	155.0	153.9	1.04	0.99
PI495594	TAM 107	149.8	147.5	144.5	157.5	147.5	146.0	145.0	0.96	0.99
PI499375	KS73164/PI94	156.0	157.3	149.0	163.5	154.0	151.7	151.6	0.92	0.98

## 1992 INTRASTATE NURSERY (Expt. 35) - STATEWIDE REPORT - HEADDATE

Table 4 continued

<u>ID</u>	<u>PEDIGREE</u>	<u>Bzmn</u>	<u>Havre</u>	<u>Hunt</u>	<u>Sdny</u>	<u>Mocn</u>	<u>Kalsp</u>	<u>Avg</u>	<u>BYX</u>	<u>RSQ</u>
PI499376	LENORE/KS731	159.8	157.5	151.0	164.0	156.0	153.0	152.9	1.00	1.00
PI499377	MANNING/MT75	158.3	157.8	149.0	164.5	156.0	152.3	152.0	1.09	0.99
PI517194	TIBER	160.5	159.0	151.5	164.3	156.5	154.0	157.6	0.00	0.00
PI518591	ARAPAHO	153.8	154.5	148.5	159.8	152.0	151.0	148.8	1.07	0.98
QT 542	HYBRITECH 54	155.5	153.8	148.0	160.0	153.5	150.7	149.5	1.00	1.00
QT542-F2	HYBRITECH 54	155.8	154.0	147.5	161.0	154.5	151.0	149.8	1.03	1.00
RDW(SEL)	AC READYMADE	160.3	157.8	151.5	163.3	155.0	154.3	153.2	0.96	1.00
RH78W296	BIGHORN	159.0	158.5	151.0	164.3	156.0	154.3	152.7	1.09	0.99
S86-15	KESTREL	160.5	158.3	151.5	162.3	159.0	155.3	153.7	1.00	0.99
S86-736	S86-736	160.0	157.8	151.5	163.8	158.5	155.3	153.7	1.01	1.00
XNH 1486	HYBRITECH	155.5	152.5	146.5	159.8	151.0	151.0	148.6	1.02	1.00
*****	SITE MEAN **	157.9	155.6	150.2	162.8	155.7	152.9	151.8	1.00	1.00

1992 INTRASTATE NURSERY - SEEDLING GROWTH HABIT & WINTER SURVIVAL

Table 5

ID	PEDIGREE	GROWTH HABIT*	PERCENT SURVIVAL		
			SIDNEY	CONRAD	AVG.
CI 17735	NORSTAR	4.75	65.00	54.78	59.89
S86-15	KESTREL	3.75	61.25	57.50	59.38
CI 17844	REDWIN	2.50	60.00	48.11	54.06
PI518591	ARAPAHO	1.75	51.25	56.25	53.75
PI491533	NORWIN	3.75	47.50	57.50	52.50
PI491532	CREE	1.75	47.50	57.50	52.50
CI 13190	WARRIOR	2.25	45.00	60.00	52.50
ND 8002	SEWARD	3.00	53.75	50.00	51.88
PI517194	TIBER	2.50	46.25	56.44	51.35
S86-736	S86-736	4.50	57.50	45.00	51.25
XNH 1486	HYBRITECH	3.00	47.50	55.00	51.25
CI 17860	NEELEY	3.75	37.50	61.25	49.38
PI478771	AGASSIZ	2.75	42.50	55.00	48.75
CI 17439	ROUGH RIDER	3.75	52.50	44.78	48.64
RDW(SEL)	AC READYMADE	2.50	56.25	40.00	48.13
CI 8885	CHEYENNE	1.25	42.50	53.75	48.13
CI 15075	CENTURK	2.00	40.00	55.00	47.50
MT 90025	MT8001/MT7673//MT781	3.25	51.25	43.75	47.50
CI 17952	HAWK	2.75	36.25	57.50	46.88
MT 8719	RRI/MT 6928	4.75	50.00	42.50	46.25
NA 0001	THUNDERBIRD	1.50	45.00	47.50	46.25
MT 8039	JUDITH	3.00	45.00	47.50	46.25
MT 8713	RRI/MT 6928	3.00	61.25	30.00	45.63
QT542-F2	HYBRITECH 542 F2	3.25	45.00	46.25	45.63
MT 88046	PMN5/MT 77003//HP344	3.75	45.00	43.75	44.38
QT 542	HYBRITECH 542	3.50	40.00	48.75	44.38
ID 355	MC*2/NP824/3/LMH66/5	3.25	47.50	40.00	43.75
MT 88026	PMN5/WN//HP 344/FRD	3.00	46.25	40.00	43.13
PI495594	TAM 107	3.00	41.25	43.75	42.50
MT 88030	HP340/NRS//MT7216(18	5.00	31.25	53.75	42.50
CI 13670	WINALTA	3.00	41.25	41.45	41.35
IDHW0355	2*MC/NP824/3/LMH66/5	3.25	42.50	40.00	41.25
MT 88005	WSC/YOGO//RSC/3/TD25	2.25	33.75	47.50	40.63
MT 90003	ORS-W 30-166/WRG//ID	3.25	36.25	45.00	40.63
MT 88027	PMN5/WN//HP 344/FRD	3.00	42.50	37.50	40.00
CI 17940	ARCHER	2.00	36.25	41.25	38.75
MT 90027	ID103/WRG//MT7840/MT	2.50	28.75	46.25	37.50
ID 297	BLIZZARD	3.00	35.00	38.75	36.88
MT 88021	PMN5/WN//HP 344/FRD	2.50	35.00	36.25	35.63
MT 88013	PMN5/WN//HP 344/FRD	3.00	36.25	35.00	35.63
CI 17727	WESTON	3.00	25.00	45.00	35.00
MT 88024	PMN5/WN//HP 344/FRD	2.75	38.75	31.25	35.00
CI 17902	WINRIDGE	2.75	33.75	35.00	34.38
CI 17441	VONA	3.00	25.00	43.75	34.38
MT 90026	ID103/WRG//MT7840/MT	2.50	35.00	32.50	33.75
MT 88017	PMN5/WN//HP 344/FRD	2.25	33.75	32.50	33.13
MTSF2238	LEW/TBR//RDW	2.75	36.25	30.00	33.13
MT 88028	HP340/NRS//MT7216(18	2.00	25.00	40.00	32.50
LAMAR	LAMAR	2.75	23.75	40.00	31.88

\*1= Upright 5=Prostrate

## 1992 INTRASTATE NURSERY - SEEDLING GROWTH HABIT &amp; WINTER SURVIVAL

Table 5 continued

ID	PEDIGREE	GROWTH HABIT*	PERCENT SURVIVAL		
			SIDNEY	CONRAD	AVG.
PI499376	LENORE/KS73164	3.25	35.00	27.50	31.25
MT 88018	PMN5/WN//HP 344/FRD	2.00	28.75	32.50	30.63
MTSF1570	LEW/TBR//RDW	3.25	30.00	30.00	30.00
ID 360	ID 360	3.50	30.00	30.00	30.00
PI477287	RAM	3.50	23.75	35.00	29.38
CI 17879	ROCKY	3.00	23.75	31.25	27.50
PI499375	KS73164/PI94424	3.25	30.00	22.50	26.25
CI 17846	MANNING	2.75	17.50	27.50	22.50
RH78W296	BIGHORN	3.00	18.75	26.25	22.50
MTSF1142	LEW/TBR//RDW	2.50	27.50	17.50	22.50
PI499377	MANNING/MT7579	3.50	20.00	23.75	21.88
MTSF1260	LEW/TBR//RDW	2.00	15.00	21.25	18.13
MTSF1258	LEW/TBR//RDW	1.50	12.50	21.25	16.88
CI 17909	LEWJAIN	3.75	8.75	21.25	15.00
HILL 81	HILL-81	3.50	10.00	13.75	11.88
CI 17596	STEPHENS	3.00	6.25	16.25	11.25

## \*\*\*\*\* STATISTICAL TABLE \*\*\*\*\*

	SDLG HABIT	SDNY SURV	CNRD SURV
EXPERIMENTAL MEANS	2.94	37.23	40.20
TOTAL OBSERVATIONS	260.00	260.00	255.00
NO. OF REPLICATIONS	4.00	4.00	4.00
NO. OF VARIETIES	65.00	65.00	65.00
REP. MEAN SQUARE	1.06	986.41	564.50
VAR. MEAN SQUARE	2.30	716.11	567.80
ERROR MEAN SQUARE	.27	68.83	115.60
ERROR DEGREES OF FREEDOM	192.00	192.00	187.00
F TEST FOR REPS.	3.95	14.33	4.88
F TEST FOR VAR.	8.57	10.40	4.91
STANDARD ERROR	.52	8.30	10.75
STANDARD ERROR OF THE MEAN	.26	4.15	5.38
C.V. 1: (S/MEAN)*100	17.61	22.28	26.58
C.V. 2: (S OF MEAN/MEAN)*100	8.81	11.14	13.29
LSD (0.05)	.72	11.57	15.00

\*1= Upright 5=Prostrate

1989-92 YIELDS OF SELECTED INTRASTATE NURSERY ENTRIES

Table 6

VARIETY	BOZEMAN					HAVRE				SIDNEY				KALISPELL				MOCASIN			
	1989	1990	1991	1992	AVG	1989	1990	1991	AVG	1990	1991	1992	AVG	1990	1991	1992	AVG	1989	1990	1992	AVG
NEELEY	69.8	66.4	96.7	87.0	80.0	34.9	37.3	56.6	42.9	44.6	22.3	97.4	54.8	104.1	102.1	111.7	105.9	50.0	43.3	21.8	38.4
REDWIN	65.9	62.9	74.0	87.4	72.6	33.3	37.6	56.7	42.5	41.4	37.3	85.4	54.7	85.8	97.0	100.9	94.5	40.1	35.0	25.5	33.6
TIDER	51.4	64.7	87.1	95.8	74.8	36.5	43.6	58.5	46.2	41.8	29.8	88.4	53.3	93.5	109.5	116.1	106.4	48.1	40.2	23.2	37.2
WINALTA	64.4	58.7	71.1	57.6	62.9	37.6	37.7	54.9	43.4	33.4	51.3	74.7	53.1	77.2	70.1	66.9	71.4	44.3	36.3	17.9	32.8
BASE AVE	62.9	63.2	82.2	81.9	72.6	35.6	39.0	56.7	43.7	40.3	35.2	86.5	54.0	90.1	94.7	98.9	94.6	45.6	38.7	22.1	35.5
ROCKY	61.7	62.4	92.0	92.7	77.2	42.3	39.2	65.2	48.9	38.5	33.0	96.2	55.9	89.6	91.4	96.5	92.5	48.1	37.9	27.6	37.9
NORSTAR	45.6	45.9	66.8	71.9	57.5	33.3	35.8	47.0	38.7	35.1	65.5	94.8	65.1	76.5	74.5	86.0	79.0	45.6	33.4	14.0	31.0
ROUGH RIDER	58.2	55.2	65.7	60.0	59.8	34.5	37.3	50.4	40.7	34.7	54.3	84.8	57.9	73.7	72.0	65.7	70.5	41.7	31.8	12.2	28.6
CENTURK	63.8	62.8	87.2	71.1	71.2	39.5	44.3	60.8	48.2	38.3	24.0	88.9	50.4	94.4	86.6	84.3	88.4	43.5	42.8	20.9	35.7
CREE	60.6	57.7	72.5	67.1	64.5	35.6	38.6	57.2	43.8	41.6	45.8	82.1	56.5	78.3	67.4	74.2	73.3	46.2	33.2	22.1	33.8
NORWIN	72.7	70.3	68.1	96.3	76.9	43.3	35.1	61.9	46.8	35.7	51.7	80.1	55.8	85.9	94.3	95.1	91.7	45.0	43.6	14.5	34.4
CHEYENNE	54.8	57.5	86.2	64.4	65.8	35.7	42.3	54.4	44.1	37.2	49.7	82.0	56.3	74.0	66.8	75.5	72.1	47.1	38.5	27.7	37.8
AGASSIZ	56.8	48.6	73.6	54.3	58.3	35.1	33.9	53.0	40.7	37.6	44.4	92.6	58.2	68.1	62.9	74.8	68.6	46.1	33.3	15.3	31.5
JUDITH	69.5	69.8	87.8	114.9	85.5	35.8	39.7	67.7	47.7	41.4	34.7	96.5	57.5	107.5	127.6	104.8	113.3	50.1	40.8	23.3	38.1
QUANTUM	54272.2	83.1	110.9	84.9	87.8	46.6	47.0	68.3	54.0	55.5	44.3	91.2	63.6	94.8	101.8	103.5	100.0	53.1	42.2	33.4	42.9
WINRIDGE	55.9	57.1	80.2	81.6	68.7	35.2	35.4	49.0	39.9	42.0	38.5	96.0	58.8	98.6	89.5	115.7	101.3	47.1	38.4	20.9	35.5
SEWARD	71.1	63.2	84.2	79.9	74.6	37.8	38.2	61.8	45.9	41.6	50.9	94.9	62.5	80.3	85.1	93.6	86.3	50.5	40.7	21.1	37.4
BLIZZARD	53.1	54.6	81.3	88.9	69.5	39.0	40.3	55.1	44.8	39.0	27.2	95.9	54.0	95.8	104.0	97.1	99.0	40.8	35.3	32.5	36.2
MT 88005	48.7	43.8	61.6	53.6	52.0	32.7	35.0	48.6	38.8	35.4	43.0	71.4	49.9	69.6	64.8	71.5	68.6	41.1	26.5	8.4	25.3
MT 8713	69.3	63.8	70.0	109.0	78.0	41.1	36.9	60.3	46.1	45.0	48.0	89.1	61.0	92.1	96.2	88.2	92.2	51.3	39.4	8.7	33.1
MT 8719	72.3	71.2	73.4	102.7	79.9	40.1	37.0	61.5	46.2	35.7	51.4	93.2	60.1	96.3	101.6	104.8	100.9	43.7	35.5	6.3	28.5
AVERAGE	61.9	61.0	79.5	81.0	70.9	37.5	38.6	57.4	44.5	39.8	42.3	88.8	57.0	86.8	88.3	91.3	88.8	46.2	37.4	19.9	34.5

## 1989-92 YIELD SUMMARY, cont.

Table 6 continued

VARIETY	HUNTLEY					CONRAD			STATION YEARS	ADJ MEAN	PERCENT	
	1989	1990	1991	1992	AVG	1989	1990	AVG			CHECKS	RANK
NEELEY	43.6	52.8	44.5	94.8	58.9	63.4	86.3	74.9	22	65.1	106.37	3
RELWIN	45.8	63.7	54.7	83.8	62.0	54.9	73.0	63.9	22	61.0	99.75	10
TIRER	53.0	56.3	51.1	88.5	62.2	67.3	73.7	70.5	22	64.4	105.37	4
WINDALTA	42.1	54.4	43.5	67.3	51.8	62.6	67.0	64.8	22	54.1	88.51	17
BASE AVE	46.1	56.8	48.5	83.6	58.7	62.0	75.0	68.5	22	61.2	100.00	
ROCKY	53.5	57.7	55.7	84.6	62.9	60.8	82.5	71.6	22	64.1	104.73	5
NORSTAR	41.4	49.0	46.1	72.9	52.3	61.1	63.6	62.3	22	54.8	89.60	16
ROUGH RIDER	49.8	54.7	48.6	68.1	55.3	61.5	58.8	60.2	22	53.3	87.22	18
CEJUTURK	44.9	60.6	59.3	84.1	62.2	60.9	74.9	67.9	22	60.8	99.43	12
CRFE	45.9	48.6	48.2	74.1	54.2	60.0	67.5	63.8	22	55.7	91.01	15
NOPWIN	45.2	45.3	46.1	73.6	52.5	60.1	72.7	66.4	22	60.7	99.32	13
CHEYENNE	52.1	56.8	47.6	83.8	60.1	58.7	71.3	65.0	22	57.5	93.94	14
AGASSIZ	44.4	46.8	43.9	73.8	52.2	60.0	68.0	64.0	22	53.1	86.75	19
JUDITH	46.2	57.3	67.6	87.8	64.7	63.1	80.7	71.9	22	68.8	112.56	2
QUANTUM 542	55.1	66.8	58.7	91.9	68.1	61.9	88.7	75.3	22	70.7	115.63	1
WINRIDGE	49.1	50.9	54.3	83.2	59.4	68.4	69.2	68.8	22	61.6	100.79	9
SEWARD	52.8	59.0	55.4	85.0	63.0	57.3	71.9	64.6	22	62.6	102.28	8
BLIZZARD	46.1	43.2	46.9	0.0	55.1	65.7	72.6	69.2	21	61.0	99.68	11
MT 88005	45.3	50.2	44.9	60.2	50.2	65.3	64.1	64.7	22	49.4	80.69	20
MT 8713	39.4	55.5	56.7	87.2	59.7	64.8	67.1	65.9	22	62.7	102.56	7
MT 8719	48.1	51.1	58.5	89.3	61.8	62.5	70.5	66.5	22	63.9	104.55	6
AVERAGE	47.2	54.0	51.9	81.0	58.5	62.0	72.2	67.1	22	60.3	98.55	