PROJECT TITLE: Early Yield Spring Barley Evaluation.

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OBJECTIVE:
To evaluate experimental spring barley cultivars for yield, lodging, quality, and disease resistance in northwestern Montana.

RESULTS:
The 1998 growing season was good for spring sown small grains. Abundant rainfall through heading and heat with good soil moisture during grain fill resulted in high spring barley yields. All 64 entries topped 100 bu/A with MT970229 exceeding 135 bu/A and MT970120 the lowest at 103 bu/A. Test weight and percent plump were also exceptional, averaging 52.7 lbs/bu and 88% respectively across the nursery. The cultivar MT970086 had the highest test weight at 54.7 lbs/bu and MT970023 lowest at 50.1 lbs/bu. Percent plumps ranged from 96% (MT970021) to 69% (MT970023). Heavy yields and a late wind storm contributed to moderate lodging throughout the nursery. The cultivars Stander and MT970177 displayed the highest level of lodging resistance. Scald pressure was severe with no cultivars having resistance but a few showing tolerance. The onset of Scald was quick and complete but did not appear to have any agronomic consequences.

SUMMARY:
Favorable climatic conditions resulted in excellent cultivar performance in terms of yield, test weight, and kernel plumpness. Good documentation of lodging susceptibility was recorded as well as identifying those cultivars most susceptible to Scald.

FUTURE PLANS:
Continued spring barley evaluations for the purpose of identifying those cultivars suitable for successful production in Montana.

Table 1. Agronomic data from the Early Yield Spring Barley Nursery grown at the Northwestern Agricultural Research Center in Kalispell, MT.

Planted: April 10, 1998 Harvested: August 14, 1998

VARIETY	YIELD BU/A	TEST WT LBS/BU	PLUMP PERCENT	MOIST PERCENT	HD DATE JULIAN	HEIGHT INCH	LODGE 0-9	SCALD 0-3 1/
MT970229	135.2	53.6	90.0	10.8	172.7	35.4	2.89	3.00
Stander	133.7	52.5	94.0	11.2	169.5	39.4	1.35	2.00
MT970177	132.8	52.7	91.0	10.6	169.2	39.4	1.92	2.00
MT970053	132.4	53.5	93.0	10.6	171.9	39.4	4.25	2.00
MT970054	130.9	52.6	88.0	11.1	174.2	42.9	3.79	2.00
MT970110	130.6	53.0	92.0	11.0	173.6	37.4	3.33	2.67
MT970107	130.3	53.5	87.0	10.9	172.4	37.8	4.94	2.67
MT970245	129.0	52.7	95.0	11.1	169.2	41.7	3.41	1.67
MT970248	127.8	52.9	91.0	10.4	170.2	38.2	4.83	2.33
MT970180	127.7	52.7	86.0	10.2	171.3	41.7	4.52	2.33
MT970148	127.4	52.0	92.0	10.3	170.0	35.4	3.57	2.00
MT970125	127.3	52.3	92.0	10.8	173.0	39.0	2.54	2.00
MT970231	127.0	52.9	86.0	10.5	170.3	40.6	3.98	3.00
MT970139	126.0	52.1	86.0	10.9	170.7	39.4	3.98	1.67
MT970035	126.0	51.6	85.0	10.6	169.1	37.4	3.90	2.33
MT970155	125.3	53.8	95.0	10.5	173.5	34.6	3.35	2.00
MT970218	125.2	53.1	95.0	6.8	170.6	39.4	3.78	2.67
MT970113	124.9	54.3	90.0	10.4	172.0	38.6	4.24	3.00
MT970041	124.1	51.5	78.0	10.4	169.6	38.2	5.35	2.00
MT970228	123.8	52.7	91.0	11.4	171.3	35.8	3.25	2.67
MT970241	123.6	52.4	87.0	10.2	166.9	37.8	4.02	2.33
MT970143	122.7	52.8	83.0	10.5	169.9	36.2	3.81	3.00
MT970086	122.7	54.7	93.0	10.5	173.6	38.6	3.03	2.00
MT970226	122.6	52.7	81.0	10.4	174.2	37.8	3.40	2.67
MT970105	122.5	53.6	84.0	10.5	167.8	37.4	4.99	2.67
MT970050	122.4	50.8	84.0	10.2	169.0	38.2	4.54	1.67
MT970205	122.4	51.2	87.0	9.7	173.2	39.4	4.01	2.67
MT970244	122.1	53.1	92.0	11.0	168.6	40.2	2.56	2.33
MT970172	121.9	53.4	87.0	10.5	170.8	36.6	5.97	3.00
MT970029	121.9	52.3	93.0	10.2	171.9	39.8	3.79	3.00
MT970116	121.7	53.1	89.0	10.6	169.0	40.9	4.39	3.00
MT970214	121.5	51.5	88.0	10.0	172.3	37.4	2.65	2.67
MT970227	120.7	52.9	89.0	10.7	173.9	36.6	2.70	2.33
MT970023	120.5	50.1	69.0	7.3	170.6	36.2	3.86	2.67
MT970176	119.7	53.3	92.0	10.1	170.3	35.8	3.08	2.33
MT970196	119.7	53.4	88.0	11.4	170.9	37.8	5.27	2.33
Morex	119.1	50.4	84.0	9.6	167.3	43.7	6.19	2.00
MT970240	119.1	52.6	83.0	10.1	169.1	37.8	4.18	2.67
MT970026	118.8	54.6	94.0	10.4	171.9	38.6	4.98	2.67
MT970027	118.5	52.7	82.0	10.3	172.0	35.8	5.00	2.67
MT970230	118.0	53.7	87.0	10.2	169.8	38.6	3.08	2.67
Baronesse	117.5	52.5	82.0	10.5	172.2	33.1	4.29	2.67
MT970065	116.5	51.8	87.0	10.4	172.5	39.8	5.08	2.33
Harrington	116.0	50.3	76.0	7.1	172.5	36.2	4.92	2.67
MT970207	115.6	53.1	90.0	9.8	171.5	36.2	3.35	3.00
MT970217	114.8	51.7	95.0	10.3	177.3	40.6	3.97	1.67

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Table 1. Agronomic data from the Early Yield Spring Barley Nursery grown at the Cont. Northwestern Agricultural Research Center in Kalispell, MT.

Planted: April 10, 1998 Harvested: August 14, 1998

VARIETY	YIELD BU/A	TEST WT LBS/BU	PLUMP PERCENT	MOIST PERCENT	HD DATE JULIAN	HEIGHT INCH	LODGE 0-9	SCALD 0-3 1/
MT970025	114.7	53.2	92.0	11.5	169.6	39.8	4.52	2.67
Hector	114.6	52.4	74.0	10.2	171.1	40.9	5.01	2.00
Gallatin	114.5	52.4	77.0	10.4	169.5	37.4	3.70	3.00
MT970158	114.0	53.3	90.0	10.5	174.7	38.6	3.01	2.67
MT970063	113.7	52.0	78.0	10.2	172.3	42.5	4.46	2.33
MT970219	113.7	52.1	90.0	11.2	171.0	37.0	5.13	3.00
Chinook	113.6	52.6	85.0	11.3	171.7	37.4	4.59	1.67
MT970021	113.0	52.9	96.0	10.7	170.2	35.4	3.49	3.00
Stark	112.6	52.9	93.0	10.2	167.8	39.4	2.95	2.33
MT970091	111.9	52.0	82.0	11.0	171.6	37.8	4.80	2.33
MT970126	111.6	53.2	92.0	10.6	172.4	40.6	3.16	2.00
MT970034	111.2	53.5	93.0	10.4	169.3	37.4	4.41	2.33
MT970194	111.1	53.7	90.0	10.7	168.4	35.8	3.14	2.00
MT970019	111.1	53.4	95.0	11.6	170.1	40.9	3.08	3.00
MT970129	108.7	53.0	76.0	10.0	173.7	33.9	3.60	3.00
MT970224	108.6	53.5	91.0	10.3	170.5	37.4	4.81	3.00
MT970048	106.8	51.2	76.0	10.7	174.1	28.7	5.76	2.33
MT970120	103.0	53.5	94.0	10.1	170.4	41.3	2.75	3.00
MEAN	118.6	52.7	88.0	10.4	171.2	38.1	3.95	2.46
C.V.	8.1			12.9	0.4		24.31	18.07
LSD (.05)	16.5			2.3	1.1		1.63	0.72

1/ Disease ratings 0=Highly Resistant, 3=Highly Susceptible