

PROJECT TITLE: Evaluation of intrastate barley nursery cultivars for disease resistance.

PROJECT LEADERS: Bob Stougaard, Weed Scientist, NWARC
Doug Holen, Research Associate, NWARC

PROJECT PERSONNEL: Tom Blake, Barley Breeder, Bozeman, MT
Pat Hensleigh, Research Associate, Bozeman, MT

OBJECTIVES:

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

RESULTS:

Cool temperatures extending from March through June resulted in slow emergence and seedling growth. Extensive vegetative growth (tillers) resulted from the extended spring-like climate. While dry throughout the growing season, plant stress was not noted as soil available moisture never reached wilting point. Yields exceeded those recorded in previous years ranging from 124 to 186 bu/A with a 64 entry mean of 149 bu/A. All entry test weights topped 50 lbs/bu with a high overall mean of 53.5 lbs/bu. While not severe, some lodging susceptibility differences were detected. Protein percentage across the nursery averaged 12.8 with good kernel plumpness (94%). Climatic conditions resulted in no measurable disease infections.

SUMMARY:

Yield, test weight, and seed plumpness excelled in the absence of disease and lodging pressure combined with good grain-fill temperatures and soil moisture. Eighteen cultivars yielded higher than the check variety 'Baronesse'.

FUTURE PLANS:

Continued barley evaluations for the purpose of identifying varieties best suited for production in Montana.

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

Planted: April 7, 1999

Harvested: August 23, 1999

VARIETY	Yield Bu/A	Test Wt Lbs/Bu	Moist %	Hd Date Julian	Height Inch	Lodge 0-9	Plump %	Protein %
MT960100	167.50	53.57	12.03	178.67	37.67	.00	92.00	12.5
MT960225	165.30	53.90	12.93	175.67	43.43	1.00	93.00	11.4
MT970107	165.20	54.53	12.13	175.33	41.33	1.33	97.00	12.5
MT960101	164.63	53.67	12.37	179.67	39.50	1.00	94.00	12.4
MT920073	162.70	53.23	11.87	174.33	39.50	.67	95.00	13.3
MT950186	161.60	54.83	11.27	179.33	43.30	.67	94.00	12.3
MT970231	158.83	53.17	15.27	175.33	42.13	2.33	94.00	12.7
MT970205	158.77	53.10	11.57	178.67	37.00	.00	95.00	12.1
MT970228	156.73	52.77	10.97	176.33	39.13	.67	92.00	13.1
GS 1750	156.63	53.37	13.60	177.67	42.40	.33	95.00	12.6
MT970248	156.23	53.17	13.73	173.67	43.43	1.67	94.00	12.9
MT970207	155.93	54.50	11.93	176.67	40.83	.00	95.00	12.2
MT960228	155.60	53.57	12.10	179.00	37.57	.33	95.00	12.2
AC 96/1114	155.40	51.97	12.63	177.33	38.60	.67	96.00	12.8
MT970229	155.13	54.70	15.20	179.33	40.43	1.00	95.00	12.4
MT960222	155.03	53.67	11.13	178.67	43.83	2.33	96.00	12.1
MT970245	154.90	51.83	11.70	174.67	43.57	1.67	92.00	12.6
MT960099	154.60	52.00	12.27	178.67	36.73	.33	90.00	13.2
BARONESSE	154.57	53.50	11.43	178.00	39.73	.33	95.00	12.8
MT970116	154.23	54.23	13.23	175.00	40.80	.00	94.00	12.6
MT920053	154.23	53.90	11.63	175.00	40.57	3.00	93.00	13.2
HARRINGTON	153.97	53.00	11.80	177.00	41.33	1.67	93.00	12.5
MT960198	153.20	54.13	11.80	175.67	40.17	1.00	92.00	13.0
MORAVIAN 22	153.07	53.20	11.03	183.00	37.67	1.00	97.00	12.6
MT970086	153.00	54.43	13.80	178.00	40.00	.00	95.00	12.9
LEWIS	152.97	53.67	11.50	176.67	41.47	1.33	91.00	13.1
MT970196	152.27	53.47	11.90	178.67	41.97	1.00	91.00	12.1
MT970148	152.07	52.27	11.20	173.33	37.53	1.00	93.00	11.8
MT970019	151.77	53.90	14.00	177.67	40.70	.00	97.00	12.5
MT920059	151.73	54.23	14.47	177.00	41.07	.33	95.00	12.9
MT970125	151.63	52.77	10.97	179.67	43.17	1.33	94.00	13.3
MT970110	151.43	54.13	13.13	180.00	42.90	.67	97.00	12.5
MTLB 5	151.40	53.57	12.40	178.00	40.83	1.00	94.00	13.1
MT970214	150.90	53.40	11.83	176.00	41.83	.33	95.00	12.5
MT970218	149.90	52.93	11.60	175.00	39.87	.00	96.00	13.0
MT940053	148.73	54.03	13.37	180.67	41.07	1.33	93.00	13.1
MT970053	148.00	52.53	13.67	176.00	39.73	1.00	95.00	12.1
MT960226	147.87	53.47	10.57	175.67	42.23	2.00	96.00	12.6
STARK	147.23	53.37	12.30	173.67	42.13	1.00	93.00	12.6
MT970026	147.23	53.73	14.63	176.33	38.33	.33	94.00	13.4
MTLB 6	146.93	52.90	13.73	175.33	36.50	.00	94.00	13.8
WPB XENA	146.47	52.50	11.87	178.00	39.40	.67	93.00	13.5
MT970177	146.47	53.03	11.87	176.00	40.67	.33	93.00	12.6
LOGAN	145.93	52.80	15.60	175.33	38.97	.67	90.00	12.6
MT910189	145.80	54.13	13.53	174.00	39.40	1.00	94.00	12.4
MT940082	145.80	54.17	12.27	178.00	38.43	.33	92.00	13.2
MT970105	145.70	54.23	12.57	173.33	43.83	1.00	93.00	13.0
MTLB 13	145.47	52.67	12.07	177.00	38.07	.67	94.00	12.8

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Planted: April 7, 1999

Harvested: August 23, 1999

VARIETY	Yield Bu/A	Test Wt Lbs/Bu	Moist %	Hd Date Julian	Height Inch	Lodge 0-9	Plump %	Protein %
H1851195	144.80	52.27	14.93	177.00	42.00	.67	92.00	13.5
CHINOOK	144.50	53.87	15.57	177.33	40.57	2.00	91.00	13.1
MT960082	142.93	53.70	14.57	178.67	40.93	.33	97.00	13.2
MT940214	142.20	53.57	11.80	177.33	39.40	.33	95.00	12.3
MT970155	140.90	53.80	11.20	181.33	39.80	1.00	96.00	13.2
MERIT	140.83	52.77	10.77	177.33	42.00	1.00	95.00	12.7
BUSCH AGR 1202	140.70	52.10	12.13	177.33	39.27	1.00	94.00	Missing
H3860224	139.77	53.07	13.73	180.67	40.27	.33	93.00	13.5
JERSEY	137.27	53.23	13.53	181.67	40.27	.67	92.00	12.4
COORS C37	137.13	54.67	11.27	182.33	37.80	.00	98.00	12.4
MTLB 30	137.03	53.37	12.33	178.67	41.63	1.00	94.00	13.2
GALLATIN	136.90	53.90	11.87	176.00	42.23	.67	94.00	12.8
MT970129	130.77	54.00	11.10	182.67	36.50	.67	91.00	13.1
MT960045	130.67	53.77	12.97	184.00	36.87	.67	90.00	12.7
MOREX	127.63	50.07	10.60	173.67	44.87	2.67	93.00	13.4
WPB BZ594-35	123.67	60.93	16.33	176.67	35.30	.33	85.00	14.7
Mean	149.35	53.51	12.58	177.42	40.32	0.84	94.00	12.78
C.V.	8.10	1.02	13.07	0.60	4.17	88.8		
LSD (.05)	19.56	0.88	2.66	1.71	2.72	1.20		