

PROJECT TITLE: Evaluations of advanced yield winter wheat nursery cultivars for disease resistance.

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OBJECTIVES:

To evaluate predominately Montana experimental cultivars for yield, lodging, quality, and disease resistance. Focal points of disease identification and documentation include stripe and leaf rust and tan spot reactions, which are common production concerns in northwest Montana.

RESULTS:

Poor emergence and light winterkill resulted in plant populations averaging 89 percent stand survival. However, a cool and dry extended spring resulted in extensive tillering with moderate disease pressure (tan spot). Conditions throughout grain fill were hot and dry with ample soil moisture present, resulting in light lodging pressure and an absence of foliar diseases. Yields were exceptional ranging from 124 to 166 bu/A with a 36 entry mean of 147 bu/A. Test weights and proteins were average for this location at 60.2 lbs/bu and 11.7 percent respectively.

SUMMARY:

While not conducive to disease inoculation and infestation, climatic conditions were ideal for genetic yield expression in all cultivars. A 42 bu/A difference existed between the highest (MT9712) and lowest (MTS9873) yielding cultivars. Progress is apparent in the effort to create and identify cultivars superior to those currently recommended for production.

FUTURE PLANS:

Experimental winter wheat cultivars will continue to be evaluated at Kalispell to identify those with high yielding and disease resistance genetics for production in this region as well as across the state.

Table 1. Agronomic data from the Advanced Winter Wheat Nursery grown at the Northwestern Agricultural Research Center in Kalispell, MT.

Planted: September 24, 1998

Harvested: August 20, 1999

VARIETY	Yld Bu/A	Stand %	Test Wt Lb/Bu	Moist %	Hd Date Julian	Height Inch	Lodge 0-9	TanSpot 0-3	Protein %
MT9712	166.32	89.41	59.04	16.72	154.66	39.00	2.05	2.36	11.20
MTR98151	166.02	81.83	61.05	16.93	160.23	39.39	.28	1.35	11.10
MT98110	162.97	89.94	59.44	17.94	157.27	38.60	1.37	1.51	11.00
MT98128	161.81	92.24	59.90	17.59	156.57	37.78	1.01	1.81	10.60
NEELEY	159.16	85.87	61.34	17.27	162.04	39.96	.76	.92	11.30
MTR98140	159.07	88.11	59.51	17.53	157.05	38.52	.32	2.68	10.90
MTR98148	158.90	91.55	60.63	17.13	161.52	40.90	1.66	2.67	11.80
MT98121	156.18	88.03	60.32	18.05	162.53	39.60	1.05	1.59	10.90
MT9857	154.40	89.89	61.09	17.83	162.35	36.99	.63	1.02	11.90
MT98133	153.96	85.17	60.44	17.03	162.14	35.55	.04	1.11	11.30
JUDITH	152.66	88.25	59.26	17.26	154.41	38.86	1.32	2.65	11.20
MT9834	152.12	88.30	60.02	16.87	156.71	41.78	.60	1.35	11.60
MT9801	151.94	92.12	60.72	17.56	161.35	38.94	1.31	1.22	11.50
MTS9882	151.91	87.82	60.17	16.23	159.97	33.79	.66	2.06	11.00
MT98120	150.51	88.57	60.11	16.93	162.00	36.51	.72	1.89	10.80
Morgan	150.12	90.61	59.96	17.04	162.84	38.96	1.68	1.54	11.40
MT9805	149.28	91.90	60.35	16.65	159.34	40.88	.31	1.60	12.30
MT9844	147.99	86.49	60.85	17.94	155.84	39.20	.92	2.14	11.30
MT98122	146.84	88.73	60.12	18.31	159.67	38.23	.66	2.03	11.50
MT98113	146.70	85.11	60.94	18.20	159.29	36.46	.34	2.29	11.70
MT9822	146.41	90.37	60.49	16.26	152.99	40.27	.97	2.00	10.90
MT9802	146.24	89.27	60.50	18.37	161.85	37.78	.66	1.02	11.90
ERHARDT	146.04	88.07	61.93	17.47	158.47	37.42	.66	2.16	12.40
MT9811	145.95	90.03	60.57	18.18	159.80	39.48	3.66	1.48	11.20
MT9710	145.51	90.01	60.59	18.16	161.34	39.13	1.00	1.35	11.60
MT9859	145.14	91.01	62.19	18.51	162.48	37.96	.39	1.30	12.50
MT98127	144.32	82.63	61.12	18.24	157.60	36.44	2.02	3.03	11.50
MTS9860	141.98	87.73	59.04	15.40	163.60	40.88	1.43	.95	11.60
MT9833	140.06	91.83	60.27	17.41	157.63	42.95	.00	1.81	12.10
MTS9868	133.24	89.88	59.09	14.70	163.83	40.21	2.28	.78	12.60
MTS9871	132.52	93.15	59.79	17.02	156.20	34.38	.24	1.70	11.40
MTS9864	131.63	88.09	59.36	14.79	158.03	38.27	2.25	1.56	12.70
RAMPART	128.90	87.85	60.04	16.17	157.75	39.47	1.70	1.03	12.50
MTS9862	127.79	81.53	59.54	13.68	156.89	38.81	.07	1.65	14.10
MTS9869	126.41	89.47	59.12	14.86	162.97	42.42	2.64	.71	12.50
MTS9873	124.45	88.11	59.55	15.78	157.48	38.13	1.05	1.68	13.00
Mean	147.40	88.60	60.20	17.00	159.40	38.70	1.10	1.70	11.70
C.V.	3.70	4.17	0.68	4.44	0.57	2.55	73.4	23.3	
LSD (.05)	9.75	6.22	0.69	1.24	1.61	1.76	1.32	0.68	