

PROJECT TITLE: Agronomic performance evaluations of intrastate winter wheat nursery cultivars.

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OBJECTIVES:

To evaluate Montana adapted cultivars and experimental lines 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 84 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 50 to 166 bu/A with a 49 entry mean of 144 bu/A. Test weights and proteins were average for this location at 60.3 lbs/bu and 11.4 percent respectively.

SUMMARY:

While not conducive to disease inoculation and infestation, climatic conditions were ideal for genetic yield expression in cultivars. With the exception of Fidel (soft red winter wheat), all entries yielded above 100 bu/A. with protein levels typical for this region ranging from 10 to 13 percent and averaging 11.3 percent. Lodging was light in severity with cultivar differences detected but not of agronomic importance.

FUTURE PLANS:

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 Intrastate Winter Wheat Nursery grown at the Northwestern Agricultural Research Center in Kalispell, MT.

Planted: September, 24, 1998

Harvested: August 18, 1999

VARIETY	Yield Bu/A	Stand %	Test Wt Lb/Bu	Moist %	Hd Date Julian	Height Inch	Lodge 0-9	Tan Spot 0-3	Protein %
QUANTUM 7424	166.47	86.54	59.77	17.27	153.50	34.93	1.33	2.43	10.90
MT 9426	166.25	89.29	60.77	16.57	158.11	35.18	.67	1.00	10.00
QUANTUM 7406	166.00	90.83	60.00	16.60	151.08	36.21	1.33	2.68	10.50
UTAH 100	165.31	85.41	60.57	18.17	158.58	35.72	.00	1.80	11.10
AP7510	161.60	90.35	60.17	16.00	151.21	32.28	.33	1.96	11.30
MANNING	161.29	90.72	58.50	14.77	156.61	35.93	2.00	2.02	10.50
MT9513	160.83	87.67	59.90	16.13	157.29	37.20	1.00	1.72	10.60
KESTREL	160.50	80.96	61.37	16.17	159.49	39.51	.67	1.42	11.70
NEELEY	157.62	82.22	61.30	16.07	159.71	39.11	.67	1.69	11.20
JUDITH	156.97	85.31	59.73	16.63	154.32	38.50	1.00	2.67	11.40
PROMONTORY	156.80	83.83	60.80	14.93	156.49	35.91	.00	2.02	11.10
MT 9409	155.66	83.94	60.03	17.33	158.71	39.93	.00	1.75	11.50
WINDSTAR	155.06	81.75	58.33	13.97	154.17	36.99	1.67	2.54	11.00
QUANTUM 542	154.93	76.07	60.53	17.43	154.83	40.70	1.67	1.95	11.10
MTS97104	154.78	77.68	59.47	15.20	163.64	35.10	1.00	2.05	11.30
MTS9720	153.87	86.34	59.80	16.27	160.38	37.36	1.00	2.64	11.00
MT9524	153.53	92.65	62.43	17.27	157.73	42.06	.00	.84	11.90
CULVER	153.24	90.67	60.13	15.23	152.26	35.81	1.67	2.00	11.10
BIGHORN	151.94	85.77	59.83	16.77	157.10	32.88	1.33	2.61	11.30
MTS9719	151.91	88.40	60.00	14.80	163.15	40.71	1.00	1.51	11.00
AKRON	148.70	84.62	59.90	17.73	153.68	35.55	2.67	2.44	10.10
ID513	148.17	90.89	59.50	16.77	159.50	34.76	1.00	1.91	10.70
NUWEST	147.70	81.23	60.50	16.07	158.41	38.10	.33	1.56	11.30
ND9257	147.61	80.04	59.20	15.30	156.24	39.81	2.00	1.92	10.80
MTW9724	145.96	86.65	59.30	15.63	157.82	37.02	1.00	2.57	10.70
TIBER	145.39	81.27	61.33	15.17	161.13	41.98	.00	1.15	12.20
BIG SKY	143.99	88.64	62.07	16.43	156.82	41.18	.33	1.39	12.00
ERHARDT	143.42	80.80	61.73	17.17	156.89	36.43	.67	2.40	12.00
PRONGHORN	142.63	87.98	59.63	15.10	152.39	40.40	3.33	1.24	11.30
ROCKY	141.92	88.31	60.67	16.60	154.89	40.75	2.33	2.05	10.80
BLIZZARD	141.66	82.30	61.83	15.70	161.60	41.92	.00	1.71	12.30
MTW9441	141.47	86.66	60.50	17.07	160.04	38.99	.67	1.32	11.10
ID537	139.59	84.80	59.77	14.80	160.86	39.25	.00	1.40	11.30
MCGUIRE	139.42	85.54	60.60	14.80	153.67	40.13	.67	2.23	12.30
HALT	139.26	76.19	60.17	14.17	151.71	32.49	1.00	2.12	11.60
SD89153	138.53	86.49	62.57	17.47	156.14	40.38	.67	.92	11.60
SD92107	134.63	91.80	58.33	15.13	155.81	39.67	1.00	2.17	12.10
MORGAN	134.55	77.42	59.60	15.60	161.74	37.36	.67	1.92	11.10
REDWIN	132.76	85.37	62.07	16.30	157.48	40.28	.67	1.96	12.50
NUPLAINS	132.72	86.09	61.37	15.23	155.17	32.58	.33	1.88	11.40
TANDEM	130.96	87.84	59.97	15.23	153.07	37.94	2.00	1.60	12.30
VANGUARD	130.60	85.90	59.77	14.83	155.69	37.85	1.33	1.61	12.60
SD93267	130.28	92.68	60.43	15.00	152.19	43.14	2.00	1.64	12.50
RANSOM	130.06	85.01	60.03	16.33	156.05	41.47	3.00	2.39	11.70
RAMPART	129.21	87.19	60.07	14.60	156.47	37.89	1.67	1.32	12.90
ROUGH RIDER	128.19	90.02	60.37	16.57	157.68	44.63	3.00	1.44	11.80
NORSTAR	126.03	70.80	61.63	18.17	164.92	48.43	3.00	1.03	12.30
ELKHORN	125.65	83.46	60.10	14.07	161.41	43.59	2.67	1.85	12.30
FIDEL	49.53	3.59	58.37	19.37	161.16	29.25	.00	.96	13.00
Mean	144.40	83.60	60.30	16.00	157.10	38.30	1.20	2.20	11.30
C.V.	3.98	4.07	0.60	4.81	0.50	2.13	43.8	22.6	
LSD (.05)	9.77	5.85	0.59	1.25	1.32	1.39	0.82	0.70	