

PROJECT TITLE: Advanced Yield Winter Wheat Evaluation: Lodging and disease resistance.

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OBJECTIVE:
To evaluate adapted, new, and introduced cultivars for yield, lodging, quality, and disease resistance in northwestern Montana. Special attention to fully document dwarf bunt (TCK), stripe rust, and leaf rust reactions.

RESULTS:
Overall yields were good considering that winter survival ranged from 61% (MT9426) to 85% (MT9513), with a mean of 67%. Yields for the 36 entries ranged from 123 (MT9535) to 76 (MTW9617) bu/A with an overall mean of 97. Test weights were fair with 50% of the cultivars below 60 lbs/bu but four topping 62 (MT9523, MT9623, MTS97107, and MT9658). The mean test weight was 59.8. Lodging was significant throughout the nursery. MT9523 and MT9602 illustrated excellent lodging resistance while nine other cultivars showed good straw strength. Winter conditions were ideal for the germination and plant inoculation of TCK. Ten of the entries were very susceptible to TCK with four cultivars (MT9535, MT9610, MTS97104, and MT9557) displaying moderate resistance. Moderate to high levels leaf rust was present and documented. Eleven of the 36 cultivars were highly susceptible with none found to be resistant.

SUMMARY:
Yields and test weight were good in relation to the poor growing season and heavy disease pressures present throughout. This crop year was beneficial in gathering good lodging and disease notes and specific cultivar responses to the detrimental conditions.

FUTURE PLANS:
High yielding disease resistant cultivars will continue to be evaluated at Kalispell to identify those with the best potential for production in this region as well as document potential production problems for producers across the state.

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

Planted: September 25, 1996

Harvested: August 20, 1997

VARIETY	W SURV 3	HD DATE JULIAN	HEIGHT INCH	LDG 0-9	YIELD BU/A	TWT LB/BU	LF RUST 0-3 1/	TCK 0-3 1/	AGRO 0-9 2/
MT9535	64.45	165.46	39.63	5.06	123.35	59.60	3.00	1.19	4.18
NEELEY	77.67	165.89	44.37	5.39	113.09	61.20	1.00	1.91	3.93
MTS97102	70.80	165.92	39.50	1.98	108.45	58.60	1.00	1.92	5.03
MT9610	73.56	163.93	47.10	4.66	107.69	60.30	1.00	1.32	4.36
MT9523	73.05	162.78	42.53	1.06	105.18	62.20	3.00	2.02	4.96
MT9623	70.89	166.56	47.77	4.56	105.11	62.00	2.00	1.68	3.89
MT 9426	60.89	165.11	39.23	6.73	105.11	60.20	1.00	1.89	3.73
MTW9505	69.37	164.22	43.17	3.75	101.49	61.00	2.00	1.62	4.82
MT9605	62.36	162.22	45.97	1.76	101.22	59.20	3.00	2.51	3.92
MTS97104	74.20	167.44	38.07	1.24	101.07	57.40	3.00	1.08	5.75
KESTREL	71.06	164.28	45.30	3.42	100.49	60.30	2.00	2.83	4.28
MT9557	69.77	163.83	38.07	7.19	100.27	57.90	2.00	1.36	3.86
MTW9635	82.93	163.90	41.60	3.46	100.26	58.90	1.00	2.09	4.03
MTS97105	70.49	166.68	38.87	1.31	100.23	58.10	2.00	1.75	4.33
MT9513	84.74	163.75	38.97	2.33	98.85	60.30	1.00	2.59	4.35
MTS97103	74.94	166.75	40.83	1.22	98.11	57.80	3.00	1.57	4.84
REDWIN	63.91	164.64	45.17	2.00	97.26	61.30	1.00	1.98	3.97
MT9601	79.43	163.87	38.07	6.80	96.97	58.30	1.00	2.67	2.97
MTS97107	78.62	162.53	45.40	4.84	96.86	62.10	1.00	1.57	4.33
JUDITH	75.37	162.60	39.63	3.39	96.02	58.80	2.00	2.62	4.15
MT 9403	71.21	162.94	40.17	2.01	95.52	60.40	2.00	2.35	4.71
MT9526	65.00	166.15	43.30	1.40	94.90	60.70	3.00	2.44	5.54
MT 9431	72.10	163.06	43.17	1.56	94.20	61.90	2.00	2.06	4.39
MTS97101	70.80	166.31	41.20	1.52	93.56	57.40	3.00	1.70	4.20
MT9602	69.94	166.83	38.87	.54	93.26	60.10	3.00	1.59	5.42
MT 9409	71.90	164.92	37.27	4.01	92.95	58.80	3.00	2.46	4.16
MT9620	63.79	165.75	46.20	3.56	92.74	60.10	2.00	2.24	3.97
MTW9636	70.20	166.40	41.07	1.61	91.69	57.70	1.00	2.16	4.27
MT9621	62.79	164.74	44.87	5.46	90.88	61.80	3.00	2.44	3.53
MT9640	70.92	162.40	39.50	4.30	89.52	59.90	2.00	2.78	3.20
MT9506	69.71	164.28	41.47	4.94	89.41	60.80	1.00	2.33	4.12
MTW9633	66.06	161.96	45.70	3.97	87.79	59.70	1.00	3.14	3.71
MT 9402	81.72	163.06	39.80	2.46	87.75	57.40	1.00	2.41	4.31
MT9658	70.09	162.42	35.27	2.73	87.24	62.20	1.00	2.98	4.28
MTW9631	68.30	165.81	42.67	4.38	86.25	58.40	2.00	2.53	4.05
MTW9617	73.62	163.29	40.17	3.38	75.81	58.50	3.00	3.22	3.46
MEAN	67.4	164.5	41.7	5.6	97.2	59.8	1.9	2.1	4.3
C.V.	11.1	0.4	4.0	27.6	7.6	NA	NA	23.1	13.3
LSD (.05)	13.6	1.1	2.7	1.6	12.7	NA	NA	0.9	1.0

1/ DISEASE LEVELS: 1=LOW, 2=MODERATE, 3=HIGH

2/ AGRONOMIC SCORE BASED ON OVERALL APPEARANCE (POOR 0 TO 9 GOOD)