

PROJECT TITLE: Selection and evaluation of winter triticale lines for grain production in Montana.

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OBJECTIVES:

To evaluate winter triticale lines for adaptation to Montana conditions and to develop varieties to be release by the Montana Agricultural Experiment Station for Montana grain producers.

RESULTS and SUMMARY:

The 2003 grain yields were similar to Tiber winter wheat(Tables 1-5).Mild winters have prevented the critical evaluation of winter triticale lines for winter hardiness. As a result, we have been reluctant to make conclusive decisions on the fitness of winter triticale lines. Through cooperation and support of numerous MAES agronomist and plant breeders we have been able to get some winter hardiness evaluations conducted at the Williston research center in western North Dakota. Out crossing and contamination still plague the winter triticale selection process. However, we are making progress with some lines that seem to self fertile and less susceptible to out crossing. Grain yields are much improved over the years. The grain plumpness and seedling vigor of winter triticale seems much improved over lines evaluated 20 years ago.

FUTURE PLANS:

The winter triticale project sole funding source is MAES. In reality it means numerous MAES researchers are going beyond the expectation of their jobs to assist in conducting the development of winter triticale.

Table 1 2003 Winter triticale grain agronomic performance at Moccasin.
Exp WTG: Central Agricultural Research Center, Moccasin, Montana.

ID	Pedigree	Trt	Head Date	Plant Height	Grain Yield	Grain Test Wt	Grain Protein
			d of Y	Inches	lbs/a	lbs/bu	
KT119	K99SRT119	19	163.7	45.0	2795	49.5	
KT84	91T113-C12-5	4	163.0	45.7	2755	50.3	
KT09	KW941531-6005	12	166.7	39.0	2679	49.3	
KT990	KT990174	11	164.7	44.0	2666	50.4	
T35	KT941289	5	165.3	44.0	2633	48.4	
KT35	KT941256-8007	1	167.7	39.7	2466	48.5	
KT3	KT941864-5002	3	167.3	44.3	2466	45.4	
WW1	Tiber	13	170.0	39.0	2448	57.9	
KT0111	KT941276-8004	15	168.7	40.7	2382	46.9	
KT0109	KT940608p9029	9	168.0	42.0	2357	49.2	
K943	KT943112	21	167.0	40.7	2341	46.8	
KT0106	KT940608p9003	10	168.3	42.3	2247	49.6	
KT991	KT991034	17	166.7	38.7	2236	46.2	
KT0107	KT940872p8006	20	168.0	44.3	2176	44.7	
KT0116	KT981146p9036	16	168.3	40.7	2173	50.9	
KT91	KT941776-5002	6	168.7	46.7	2121	46.4	
TR18	SR94719	2	171.3	41.3	2073	43.5	
KT0102	D98SRT99-3	14	168.0	42.7	2025	47.1	
TR19	SR94721	18	171.3	38.3	1966	45.9	
KT0108	KT940874p8012	8	169.3	42.0	1934	45.4	
TD01	Trical 102	7	168.0	50.3	1859	43.6	
OVERALL MEAN =			167.6	42.4	2323	47.9	
OVERALL COUNT =			63	63	42	42	
ERROR DF =			40	40	20	20	
F-RATIO TRTS =			37.39	2.698	6.457	17.19	
P-VALUE TRTS =			0	0.0034	0.0001	0	
CV (S/MEAN) % =			0.3648	7.509	6.679	2.264	
LSD(0.05 by t)=			1.009	5.26	323.7	2.261	

DATA SOURCE = FBWTG03.WWD(DBF)

Seeded: Sept 25, 2002 Emerged: Oct 6, 2002

Fertilizer: 10-10-10-5 w/seed 60 lbs N Top dress

Harvest: 5-Aug-03

Table 2 2003 Winter triticale grain nursery multi-localiton mean yield.
Exp WTC Montana & Wyoming Agricultural Experiment Station.

ID	Pedigree	Trt	Bozeman Moccasin Sheridan			Average	Rank	Protein	Protein
			lbs/a	lbs/a	lbs/a			Bozeman	Sheridan
K943	KT943112	21	5378	2341	4561	4093	1	16.2	12.2
KT119	K99SRT119	19	4917	2795	4543	4085	2	15.4	11.5
KT84	91T113-C12-5	4	6473	2755	2999	4076	3	14.6	10.9
KT0107	KT940872p8006	20	5197	2176	4756	4043	4	15.7	11.8
KT09	KW941531-6005	12	5793	2679	3620	4031	5	15.3	10.6
T35	KT941289	5	5753	2633	3478	3955	6	15.1	11.1
KT35	KT941256-8007	1	6055	2466	2999	3840	7	15.8	11.7
TR19	SR94721	18	4805	1966	4667	3813	8	16.7	13.5
KT991	KT991034	17	4769	2236	4366	3790	9	16.5	13.8
KT0111	KT941276-8004	15	5572	2382	3407	3787	10	17.8	13.5
WW1	Tiber	13	5101	2448	3631	3727	11	17.6	13.6
KT990	KT990174	11	4951	2666	3443	3687	12	15.0	11.4
KT3	KT941864-5002	3	5378	2466	3088	3644	13	15.6	11.0
KT0102	D98SRT99-3	14	5268	2025	3549	3614	14	17.8	14.5
KT0108	KT940874p8012	8	5557	1934	3141	3544	15	17.6	12.5
KT0109	KT940608p9029	9	5212	2357	2999	3523	16	18.7	12.6
KT0116	KT981146p9036	16	4619	2173	3461	3418	17	17.9	11.8
TR18	SR94719	2	5237	2073	2875	3395	18	16.4	12.0
KT0106	KT940608p9003	10	4812	2247	3106	3388	19	17.4	12.0
KT91	KT941776-5002	6	5299	2121	2744	3388	20	16.2	13.4
TD01	Trical 102	7	4177	1859	2957	2998	21	17.1	12.6
OVERALL MEAN =			5253	2323	3542	3706		16.5	12.3
LSD(0.05 by t)=			462	323.7	560.8				
CV (S/MEAN) % =			5.3	6.679	11.19				
P-VALUE TRTS =			<.0001	0.0001	0				