

PROJECT TITLE: 2003 Evaluation of IMI-tolerant winter wheat variety performance in recrop trials at Fife near Belt and Great Falls.

PROJECT LEADER: D. M. Wichman, Agronomist, Moccasin, MT

PROJECT PERSONNEL: P. L. Bruckner, Winter Wheat Breeder, Bozeman, MT
J. E. Berg, Winter Wheat Research Assoc., Bozeman, MT
J. Vavrovsky, Research Specialist, Moccasin, MT

OBJECTIVES:

Evaluate agronomic performance of IMI-tolerant winter wheat varieties in recrop or continuous crop environments in the goat grass infested area near Belt.

RESULTS:

2003 IMI-tolerant winter wheat variety trial was re-cropped till-plant after spring wheat. The site was very dry at seeding as the double disk plot drill penetrated the soil surface to a depth of $\frac{3}{4}$ to 1 inch. Stand establishment was good. The dry conditions persisted through the spring at the test site. Jointed goat grass numbers were low, but sufficient to show the effective control by the IMI herbicide. The jointed goat grass was pulled from the non-treated check varieties at grain harvest. Sawfly ranged from very low to almost 20% of the stems. Cutting height, 3 inches, was low because the grain did not feed well due to drought induced short stature and low tillering. Thus few heads remained on the ground after harvest.

RESULTS:

A test line, MTCL0316, with the highest amount of stem cutting, 18%, also had the highest mean grain yield. Yield variability was quite high so no significant yield differences were detected in the top 24 of 32 entries (Table 1). The high yielding line also had the highest test weight at 60.5 lbs/bu and the highest protein content (16.9), along with the variety Above. The lines with Daws parentage were generally inferior for two of more traits.

SUMMARY:

The IMI tolerant trait did provide the opportunity to control jointed goat grass without killing the wheat. The droughty conditions limited the evaluation of the yield potential of these lines. Some lines did show good yield potential relative to standard varieties in severe limited moisture environment.

FUTURE PLANS:

This IMI trial will be seeded elsewhere in the fall of 2003 as it does not seem necessary to have the goat grass present to accomplish the primary goal of developing an IMI tolerant variety with good yield potential and good milling quality grain.

Table 1 2003 Evaluation of Clearfield winter wheat varieties on **recrop** near Fife (Belt).
Exp Clrfdww Central Agricultural Research Center. Moccasin, Montana.

ID	Pedigree	Trt	Sawfly	Growth	Grain	Test	Plant	Protein
			stem cut	Stage	Yield	Weight	Ht.	Content
			%		bu/a	lbs/bu	"	%
MTCL0316	BigSky/IMMIBC304-6	16	18	10.3	23.2	60.5	27	16.9
MTCL0302	MTS9720//Fidel/Tiber	2	8	9.0	21.9	57.5	23	16.1
MTCL0313	MT9409/IMMIBC303-9//MTS9719	13	7	10.1	21.8	60.1	24	16.2
MTCL0330	Malcolm/Fidel//Eltan	30	3	9.0	21.6	55.0	24	16.9
MTCL0322	Rampart*2/Fidel	22	4	10.0	21.3	60.0	21	14.7
ABOVE	ABOVE	32	7	10.4	21.2	58.6	23	16.9
MTCL0326	Rampart*2/Fidel	26	3	10.2	20.9	59.1	25	16.1
MTI01158	Fidel/Tiber	31	18	9.5	20.6	58.6	24	14.7
MTCL0319	Rampart*2/Fidel	19	10	10.1	20.2	59.2	25	16.7
MTCL0305	MTW9727//Fidel/NuWest	5	4	10.2	20.1	59.4	21	15.8
MTCL0321	Rampart*2/Fidel	21	2	9.0	20.1	60.0	23	15.3
MTCL0312	Rampart//NuSky/IMMIBC303-6	12	18	9.5	19.9	59.0	23	14.7
MTCL0314	Tiber*2/IMMIBC303-17	14	13	9.0	19.6	59.6	23	16.8
MTCL0320	Rampart*2/Fidel	20	4	10.1	19.5	57.7	24	14.8
PI536994	ELTAN	34	8	9.0	19.2	54.9	24	15.2
MTCL0325	Rampart*2/Fidel	25	4	9.5	19.1	59.2	22	15.3
MTCL0310	MT9409*2/Fidel	10	18	9.0	18.9	54.6	28	15.2
PI586806	NUWEST	35	18	9.0	18.8	59.8	24	15.1
MTCL0308	MT9710//MT9402/Fidel	8	14	9.0	18.7	58.1	23	17.1
MTCL0318	Rampart/Fidel//Kestrel	18	5	10.2	18.5	59.3	23	16.2
MTCL0303	MTW9727//Fidel/NuWest	3	12	10.0	18.2	58.9	25	15.5
PI593889	RAMPART	33	1	9.5	18.1	58.5	26	15.2
MTCL0301	Promontory/Fidel//Morgan	1	10	9.0	18.0	57.9	22	14.9
MTCL0304	MTW9727//Fidel/NuWest	4	10	9.5	17.7	59.6	24	16.1
MTCL0315	Tiber*2/IMMIBC303-17	15	4	9.5	17.7	59.7	25	16.7
MTCL0309	MT9409*2/Fidel	9	13	9.0	17.7	55.7	25	14.9
MTCL0324	Rampart*2/Fidel	24	5	10.1	17.7	59.2	22	15.2
MTCL0306	MTW9727//Fidel/NuWest	6	5	10.0	17.6	58.3	23	15.7
CI 17860	NEELEY	36	9	9.0	17.3	56.7	23	15.3
MTCL0317	Rampart/Fidel//Kestrel	17	8	9.0	17.0	56.0	25	15.6
MTCL0323	Rampart*2/Fidel	23	2	10.1	16.9	60.4	21	14.3
MTCL0307	MT9710//MT9402/Fidel	7	10	9.0	16.6	56.9	25	15.3
MTCL0327	Daws*2/Fidel	27	8	9.5	16.1	57.5	23	16.7
MTCL0311	MT9440/IMMIBC302-15//MTS971	11	10	9.0	14.5	58.0	24	16.2
MTCL0329	Eltan//Daws/Fidel	29	8	9.0	12.6	55.0	21	14.5
MTCL0328	Daws*2/Fidel	28	4	9.0	12.3	52.0	23	13.3
OVERALL MEAN =			8.222	9.50	18.61	58.1	23.64	15.6
CV (S/MEAN) % =			63.06	3.249	15.02			
LSD(0.05 by t)=			10.53	0.6266	5.675			

Seed Date: 2-Oct-2002 Fertilizer: 10-10-10-10-5 w/seed, 90-0-0-0 spring TD
 Herbicide: 17-May-2002 applied 6oz/a Beyond to IMI tolerant varieties. Pre-boot, 50F, cloudy.
 Harvest Date: 02-Aug-2002 Jointed goatgrass stand was sparse to moderate.