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 ¾ 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.

<table>
<thead>
<tr>
<th>ID</th>
<th>Pedigree</th>
<th>Sawfly Stem cut</th>
<th>Growth Stage</th>
<th>Grain Yield</th>
<th>Test Weight</th>
<th>Plant Ht.</th>
<th>Protein Content</th>
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OVERALL MEAN = 8.222 9.50 18.61 58.1 23.64 15.6
CV (S/MEM) % = 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.