PROJECT TITLE: Evaluation of winter wheat variety performance in trials near Broadview.

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OBJECTIVES:
To evaluate the agronomic performance of winter wheat varieties in an environment and cropping method representative of south central Montana.

RESULTS:
Broadview had moderate levels of growing season precipitation. The nursery yields were below those of the adjacent winter wheat field yields of 40 plus bushels per acre. It is speculated this yield difference is due to one of three factors or combination of all three. The wheat seed was placed deeper in the soil (1-1.5) than typical (0.5-1.0). The seeding date was slightly later than the farmers. There is the possibility the 18-46-0 was not placed with the seed as it was recorded. By mid-spring, plant vigor difference was readily visible between the adjoining field and the test plots. It does show the importance of cultural methods on productivity.

There was extensive sawfly cutting in rep one, cutting was reduced in rep two and was minimal in rep three. Most of the fallen stems were picked up by the plot combine. This masked the true effect of the sawfly on harvestable yield. In rocky or un-even soils, the combine header would not be operated at a 4 inch stubble height. The two Montana sawfly resistant varieties ranked in the top four for yield. Erhardt, a new winter hardy Montana variety, had the highest protein and ranked near the top in yield. Data are summarized in Table 1

SUMMARY:
The solid stem varieties Vanguard and Rampart demonstrated the potential benefits to utilizing solid stem varieties to reduce sawfly stem cutting. Less than 6% of the stems were cut for these two varieties while the nursery averaged 67% stem cutting.

FUTURE PLANS:
A winter wheat variety trial has been established for 1998.

Table 1 1997 Broadview Winter Wheat Variety Performance Trial
Exp. 3881 Southern Agricultural Research Center, Huntley, MT.

| Variety | Stems Standing | Grain Yield | Test Wt. | Protein Content |
|---|---|---|---|---|
| | % | bu/a | lbs/bu | % |
| VANGUARD | 95 | 30.7 | 60.0 | 14.7 |
| MT 9432 | 62 | 29.3 | 61.0 | 15.1 |
| ERHARDT | 52 | 28.7 | 60.8 | 16.1 |
| RAMPART | 95 | 28.7 | 59.7 | 15.3 |
| MT 91192 | 55 | 28.3 | 57.9 | 14.3 |
| AGASSIZ | 48 | 26.7 | 60.9 | 15.1 |
| NEELEY | 43 | 26.7 | 59.7 | 14.1 |
| YUMA | 38 | 26.3 | 52.5 | 13.4 |
| TIBER | 43 | 26.0 | 59.9 | 15.3 |
| MT 9222 | 23 | 26.0 | 59.2 | 15.1 |
| QT 542 | 30 | 25.7 | 58.6 | 13.8 |
| NUWEST | 58 | 25.7 | 59.9 | 15.3 |
| KESTREL | 33 | 25.0 | 57.3 | 13.2 |
| NORSTAR | 52 | 25.0 | 60.8 | 14.4 |
| BIGHORN | 57 | 24.3 | 60.0 | 14.3 |
| ROCKY | 38 | 24.0 | 60.1 | 14.2 |
| JUDITH | 18 | 23.3 | 56.3 | 15.0 |
| CENTURK | 29 | 22.0 | 59.6 | 14.2 |
| MCGUIRE | 53 | 21.7 | 59.8 | 15.6 |
| REDWIN | 22 | 21.3 | 59.3 | 15.9 |
| HAWK | 12 | 21.3 | 58.0 | 14.3 |
| PROMONTORY | 15 | 20.0 | 59.0 | 14.3 |
| ALLIANCE | 37 | 19.7 | 57.9 | 13.7 |
| MANNING | 18 | 18.7 | 57.4 | 14.7 |
| EXPERIMENTAL MEANS | 42.78 | 24.79 | 58.97 | 14.65 |
| F TEST FOR VAR. df=46 | 9.50 | 2.56 | 2.59 | 15.41 |
| C.V. 1: (S/MEAN)*100 | 28.66 | 14.18 | 3.39 | 2.29 |
| LSD (0.05) | 20.15 | 5.78 | 3.28 | .55 |

Planted: 10-3-1996
Harvested: 8-8-1997
Producer: Tony & Gail Erickson, Broadview.