

Project Title: Agronomic Performance Evaluation of Soft White Winter Wheat Cultivars.

Project Leader: Bob Stougaard

Project Personnel: Qingwu Xue, Fernando Guillen, Phil Bruckner, and Jim Berg

Objectives: To evaluate the agronomic performance of soft white winter wheat cultivars in environments and cropping systems representative of northwestern Montana.

Results:

The growing season during 2004-05 was ideal for soft white winter wheat growth and development. A mild winter helped to maintain excellent wheat stands and adequate soil moisture enhanced tillering in spring. In addition, exceptionally high precipitation (8 in) in June favored grain filling. Although the wet conditions in June provided conditions conducive for stripe rust infestation, all soft white entries were resistant to the disease. Yields ranged from 143.7 bu/ac (Hill 81) to 103.3 bu/ac (Hubbard). Test weight was normal (59 lb/bu in average) among the soft white entries. Hill 81, Simon and MAC-1 had test weights over 60 lb/bu. The hard red check variety (Neeley) yielded poorly (13 bu/ac) and had low test weight due to severe stripe rust infestation. Heading ranged from Julian 153 to 165, which was longer than the previous season. Plant height was similar to previous year and averaged 38.9 inches. Lodging was minimal in most of the entries. Grain protein averaged 11.3% and was comparable to previous season (11.6%).

Summary:

The 2004-05 season was ideal for evaluating stripe rust resistance. All the soft white entries showed excellent resistance to stripe rust, had high yields and normal test weight.

Future Plans:

Continue to evaluate soft white winter wheat cultivars for adaptation in District 1.

Table 1. Agronomic data from the Soft White Winter Wheat Nursery Grown at the Northwestern Agricultural Research Center Kalispell, MT.

Planted: September 27, 2004

Harvested: August 10, 2005

| Entry | Cultivar | Yield bu/ac | Test weight lb/bu | Grain moisture % | Heading date Julian | Plant height in | Lodging % | Stripe rust | | Protein % |
|-------------------|---------------------|----------------|-------------------------|------------------------|---------------------------|-----------------------|---------------|---------------|--------------|--------------|
| | | | | | | | | 6/9/05 % | 6/23/05 % | |
| 8 | Hill 81 | 143.7 | 62.8 | 12.4 | 161.3 | 39.4 | 0.0 | 0.0 | 0.0 | 11.3 |
| 12 | Simon | 142.7 | 61.2 | 11.3 | 156.0 | 39.1 | 0.0 | 0.0 | 0.0 | 10.6 |
| 3 | Rod | 139.8 | 59.3 | 12.7 | 161.3 | 40.4 | 0.0 | 0.0 | 3.3 | 10.5 |
| 10 | Finch | 139.3 | 60.9 | 13.1 | 164.3 | 39.9 | 0.0 | 0.0 | 5.0 | 11.5 |
| 4 | MAC-1 | 136.6 | 62.5 | 12.0 | 158.0 | 39.9 | 0.0 | 0.0 | 8.3 | 11.0 |
| 9 | Lambert | 132.8 | 60.5 | 10.9 | 154.7 | 41.2 | 0.0 | 0.0 | 0.7 | 11.6 |
| 13 | Masami | 131.1 | 58.3 | 12.3 | 162.3 | 40.3 | 0.0 | 0.0 | 8.3 | 11.0 |
| 2 | Eltan | 122.2 | 56.6 | 16.4 | 165.3 | 40.2 | 41.7 | 0.0 | 6.7 | 11.6 |
| 14 | WA7935 | 122.0 | 52.3 | 23.2 | 165.3 | 38.7 | 16.7 | 0.7 | 6.7 | 11.4 |
| 6 | MacVicar | 121.1 | 60.1 | 10.9 | 156.3 | 34.5 | 0.0 | 0.0 | 0.7 | 10.4 |
| 15 | MTCL0489 | 114.6 | 59.1 | 10.7 | 152.7 | 36.1 | 0.0 | 0.0 | 1.7 | 10.1 |
| 5 | Kmor | 114.0 | 57.5 | 10.9 | 163.3 | 38.3 | 0.0 | 6.7 | 13.3 | 10.6 |
| 7 | Lewjain | 110.7 | 56.9 | 14.9 | 164.0 | 34.1 | 1.7 | 4.0 | 11.7 | 11.6 |
| 11 | Hubbard | 103.3 | 56.7 | 10.9 | 159.0 | 43.6 | 0.0 | 0.0 | 4.0 | 10.3 |
| 1 | Neeley [#] | 13.4 | 37.4 | 9.7 | 158.0 | 38.1 | 0.0 | 55.0 | 95.0 | 15.4 |
| Mean | | 119.2 | 57.5 | 12.8 | 160.1 | 38.9 | 4.0 | 4.4 | 11.0 | 11.3 |
| c.v. (%) | | 6.60 | | | 1.29 | 3.94 | 320.67 | 205.89 | 25.47 | |
| LSD (0.05) | | 13.15 | | | 3.46 | 2.56 | 21.45 | 15.23 | 4.69 | |

[#]: Hard-red winter wheat.