

Title: Western Regional Hard Red Spring Wheat Evaluation – 2015

Objective: To evaluate hard red spring wheat varieties for agronomic performance in environments representative of northwestern Montana.

Results:

Significant differences were observed in heading date, percent stripe rust infection, head smut, yield, protein, test weight, and falling number. Heading dates averaged 171 Julian days (June 20) and spanned a 7 day period that ranged from 168 to 175 Julian days. Stripe rust averaged 5.4% and was observed on all cultivars. Glee was the most susceptible cultivar to stripe rust at 13.3% infection, and WB9518 was the least susceptible at 1.3% infection. Plant heights averaged 34.4 inches. Head Smut was detected in the nursery, with the highest infection levels being observed with Jefferson and UI Platinum. That being said, symptoms were noted on less than 3 heads per plot. Lodging was minimal with an average of 1.0%, ranging from 0.0% to 10.0% for Glee. Yields averaged 135.3 bu/A, ranging from 126.2 bu/A for UI Winchester to 143.7 bu/A for SY10136. Protein content averaged 13.0% and ranged from 12.1% for UC1741 to 14.8% for Egan. Test weight averaged 61.9 lb/bu and ranged from 60.7 lb/bu for Patwin 515 to 63.4 lb/bu for SY3051-9. Falling number averaged 375.3 seconds, ranging from 295.8 seconds for UC1744 to 491.6 seconds for Egan.

Summary:

Nine varieties were statistically equivalent to SY10136, the highest yielding variety. However, only one variety, SY3059-1, was statistically equivalent to Egan with respect to falling numbers. Varietal differences exist and therefore continual screening is important to identify those which perform best in northwestern Montana.

Table 1. Materials and Methods - Western Regional Hard Red Spring Wheat - 2015

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|                |                   |               |                           |
|----------------|-------------------|---------------|---------------------------|
| Seeding Date:  | 4/22/2015         | Harvest Date: | 8/18/2015                 |
| Julian Date:   | 112               | Julian Date:  | 230                       |
| Seeding Rate:  | 80 lb/A           | Soil Type:    | Creston SiL               |
| Previous Crop: | Winter Wheat      | Soil Test:    | 63-16-242                 |
| Tillage:       | Conventional-Till | Fertilizer:   | 250-40-90                 |
| Irrigation:    | None              | Herbicide:    | Huskie Complete 13.7 oz/A |
| Fungicide:     | Quadris 6 floz/A  | Insecticide:  | Warrior II 1.92 floz/A    |

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Table 2. Agronomic data from the evaluation of Western Regional Hard Red Spring Wheat lines 2015.

| Cultivar      |    | HD<br>Julian | SR<br>% | HT<br>in | Head <sup>1</sup><br>Smut | LOD<br>% | YLD <sup>2</sup><br>bu/A | PRO <sup>3</sup><br>% | TWT <sup>2</sup><br>lb/bu | FN<br>sec |
|---------------|----|--------------|---------|----------|---------------------------|----------|--------------------------|-----------------------|---------------------------|-----------|
| SY10136       | HW | 169          | 5.3     | 33.3     | 1.0                       | 0.0      | 143.7                    | 12.3                  | 60.8                      | 360.1     |
| SY3001-2      | HR | 172          | 5.7     | 34.7     | 1.0                       | 6.7      | 141.5                    | 13.1                  | 61.6                      | 391.8     |
| UC1745        | HR | 175          | 5.7     | 34.3     | 1.0                       | 0.0      | 140.5                    | 12.2                  | 62.8                      | 325.1     |
| WA8217        | HR | 171          | 4.3     | 35.7     | 1.0                       | 0.0      | 140.0                    | 13.1                  | 62.5                      | 382.8     |
| UC1741        | HW | 173          | 3.0     | 33.7     | 1.0                       | 0.0      | 139.4                    | 12.1                  | 60.9                      | 332.5     |
| UC1768        | HR | 173          | 2.7     | 34.3     | 1.0                       | 0.0      | 139.4                    | 12.6                  | 62.0                      | 387.6     |
| SY3051-9      | HR | 171          | 9.0     | 35.3     | 1.0                       | 0.0      | 136.4                    | 13.7                  | 63.4                      | 473.2     |
| WB9518        | HR | 171          | 1.3     | 34.3     | 1.0                       | 0.0      | 136.3                    | 13.9                  | 62.2                      | 372.8     |
| SY40292R      | HR | 173          | 3.7     | 36.0     | 1.0                       | 0.0      | 136.2                    | 13.5                  | 61.2                      | 391.9     |
| Patwin 515    | HW | 173          | 2.3     | 30.0     | 1.0                       | 0.0      | 135.3                    | 12.8                  | 60.7                      | 359.4     |
| Jefferson     | HR | 170          | 5.0     | 34.3     | 1.7                       | 0.0      | 132.2                    | 12.5                  | 62.2                      | 390.2     |
| UC1744        | HW | 171          | 4.0     | 34.3     | 1.0                       | 0.0      | 132.0                    | 13.3                  | 61.1                      | 295.8     |
| Glee          | HR | 170          | 13.3    | 36.3     | 1.0                       | 10.0     | 130.4                    | 12.4                  | 62.8                      | 338.1     |
| Egan          | HR | 173          | 4.7     | 36.3     | 1.0                       | 0.0      | 128.3                    | 14.8                  | 61.2                      | 491.6     |
| UI Platinum   | HW | 168          | 5.7     | 34.0     | 1.7                       | 0.0      | 127.5                    | 12.2                  | 62.7                      | 358.8     |
| UI Winchester | HR | 170          | 10.7    | 33.7     | 1.3                       | 0.0      | 126.2                    | 13.2                  | 62.3                      | 353.6     |
| Mean          |    | 171.5        | 5.4     | 34.4     | 1.1                       | 1.0      | 135.3                    | 13.0                  | 61.9                      | 375.3     |
| CV            |    | 0.6          | 59.4    | 6.6      | 21.6                      | 443.6    | 4.7                      | 2.7                   | 0.6                       | 3.5       |
| LSD           |    | 1.6          | 5.3     | ns       | 0.4                       | ns       | 10.5                     | 0.6                   | 0.6                       | 22.0      |
| Pr>F          |    | 0.0001       | 0.0061  | 0.2475   | 0.0063                    | 0.3305   | 0.0345                   | 0.0001                | 0.0001                    | 0.0001    |

HW: hard white, HR: hard red, HD: heading date, SR: stripe rust, HT: height, LOD: lodging, YLD: yield, PRO: protein, TWT: test weight, FN: falling number, ns: nonsignificant

<sup>1</sup> 1 means none detected, 2 means at least 1 to 3 heads infected per plot (60ft<sup>2</sup>)

<sup>2</sup> adjusted to 13% moisture

<sup>3</sup> adjusted to 12% moisture