



2009 Idaho Spring Barley Variety Performance Tests and 2007-2009 Yield Summaries

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Variety Testing

Spring varieties of wheat and barley are evaluated each year to provide performance information to help grower's select superior varieties for their growing conditions. The tests are done using growers fields or experiment station locations and the varieties are grown under conditions typical for crop production in the area. Varieties are included in these tests based on their potential adaptation in an area and commercial use of a variety. The number of entries is limited due to resource constraints. Individual plots were planted as 7 rows spaced 7" apart for 14' to 25' in length and replicated 3 or 4 times in a randomized complete block design.

Information Summarization

Agronomic performance data for 2009 spring barley tests are summarized by district in Tables 1-4. The state is divided into the Northern, the Southern, and the Eastern Districts. Previous Districts III and IV have been included in the Southern and Eastern Districts, respectively, and results are presented for 2-row barley in Table 3 and for 6-row barley in Table 4. Yield data are reported for individual sites while other agronomic data are averaged over all sites of each table. Bushel/acre yield results are based on 48 lb/bu at 11% moisture. Lodging ratings are the percent of a plot area lodged. Plump percentage is based on cleaned grain retained on a 6/64" screen. Thin grain percentage is clean grain passing through a 5.5/64" screen. Average values are presented at the bottom of listings and are followed by a least significant difference (LSD) statistic at the 10% level.

Average yield data from variety performance trials in 2007, 2008, and 2009 are presented in Table 5 for all districts. These data represent results of 5-12 site/years and can be a good indication of long term performance of a variety.

Information Interpretation

Average past performance of a variety is the best indicator available to predict future performance potential. Variety performance can vary from location to location

Table 1. Dryland spring barley performance in Northern District at Bonners Ferry, Genesee, and Moscow, 2009.

| Variety | Bonners | | | | Test Weight | Plant Height | Plumps | Thins |
|------------------------|----------------|-----------|-----------|------------|--------------|---------------|------------------|--------------------|
| | Ferry | Genesee | Moscow | Average | | | | |
| 2-Row Barley | bu/acre | | | | lb/bu | Inches | %>6/64 | %<5.5/64 |
| Baronesse | 40 | 82 | 78 | 67 | 48.5 | 28 | 96 | 1 |
| Bear (hullless) | 39 | 66 | 69 | 58 | 53.5 | 30 | 61 | 7 |
| Camas | 44 | 75 | 75 | 65 | 49.9 | 29 | 94 | 1 |
| Champion | 46 | 86 | 83 | 72 | 50.2 | 29 | 95 | 1 |
| Conrad | 42 | 83 | 82 | 69 | 49.1 | 28 | 96 | 1 |
| Harrington | 34 | 76 | 79 | 63 | 49.7 | 29 | 89 | 2 |
| Lenetah | 62 | 77 | 79 | 73 | 50.0 | 28 | 95 | 1 |
| Merit | 50 | 68 | 82 | 67 | 47.1 | 30 | 94 | 1 |
| AC Metcalfe | 43 | 67 | 86 | 66 | 49.5 | 31 | 97 | 1 |
| Salute | 48 | 75 | 78 | 67 | 49.4 | 29 | 98 | 0 |
| Spaulding | 49 | 74 | 74 | 66 | 51.0 | 29 | 94 | 1 |
| Tetonia | 56 | 84 | 78 | 73 | 50.4 | 27 | 94 | 1 |
| Radiant | 46 | 88 | 84 | 73 | 49.7 | 28 | 94 | 1 |
| 2-Row Average | 47 | 77 | 79 | 68 | 49.8 | 29 | 92 | 1 |
| 6-Row Barley | | | | | | | | |
| Step toe | 40 | 70 | 78 | 63 | 46.6 | 28 | 97 | 1 |
| Tradition | 35 | 72 | 88 | 65 | 48.8 | 32 | 95 | 1 |
| 6 Row Average | 38 | 71 | 83 | 64 | 47.7 | 30 | 96 | 1 |
| Overall Average | 45 | 77 | 80 | 67 | 49.5 | 29 | 93 | 1 |
| LSD (0.10) | 12 | 8 | 14 | 6 | 0.8 | 1 | >1 | >1 |
| CV (%) | 22 | 9 | 14 | --- | --- | --- | --- | --- |

Table 2. Irrigated spring barley performance in Southern District at Parma, 2009.

| Variety | Parma | Test Weight | Plant Height | Plant Lodging | Thins |
|------------------------|----------------|--------------|---------------|---------------|-------------|
| 2-Row Barley | bu/acre | lb/bu | inches | % | % |
| Champion | 100 | 55 | 33.5 | 0 | 5 |
| Idagold | 126 | 52.2 | 28.4 | 0 | 7.2 |
| Lenetah | 99 | 54.2 | 35.2 | 0 | 4.2 |
| Merlin | 107 | 60.9 | 25.4 | 0 | 5.3 |
| Spaulding R579-1 | 136 | 54.5 | 35 | 0 | 5.3 |
| Tetonia | 141 | 53.4 | 34.9 | 0 | 8.4 |
| Average | 118 | 55 | 32.1 | 0 | 5.9 |
| 6-Row Barley | | | | | |
| Aquila | 122 | 52.6 | 38 | 0 | 9.5 |
| BG006 | 112 | 48 | 23.2 | 0 | 9.6 |
| Goldeneye | 148 | 52.8 | 37.5 | 0 | 9 |
| Millennium | 130 | 49.7 | 35.2 | 0 | 15.3 |
| Nebula | 123 | 46.2 | 26.9 | 0 | 8.7 |
| Average | 127 | 49.9 | 32.2 | 0 | 10.4 |
| Overall Average | 122 | 52.7 | 32.1 | 0 | 7.9 |
| LSD (0.10) | 16 | 0.9 | 2.6 | 0 | 3 |

Table 3. Irrigated Two-Row Spring Barley Performance in Eastern Districts at Rupert, Aberdeen, Idaho Falls, and Ashton, 2009.

| Variety | Yield | | | | Irrigated Average | | | | | | |
|-------------------|-----------|----------|-------------|--------|-------------------|-------------|--------------|---------|--------|-------|---------|
| | Irrigated | | | | Yield | Test Weight | Plant Height | Lodging | Plumps | Thins | Protein |
| | Rupert | Aberdeen | Idaho Falls | Ashton | | | | | | | |
| Feed | | | | | | | | | | | |
| Baronesse | 162 | 134 | 146 | 123 | 137 | 53.9 | 31 | 8 | 97 | 3 | 9.0 |
| Boulder | 137 | 130 | 129 | 96 | 123 | 55.1 | 32 | 14 | 98 | 2 | 9.5 |
| Burton | 135 | 127 | 140 | 96 | 123 | 53.7 | 34 | 6 | 97 | 3 | 9.7 |
| Calgary | 151 | 132 | 146 | 101 | 131 | 54.4 | 29 | 0 | 98 | 2 | 9.5 |
| Camas | 127 | 121 | 137 | 105 | 120 | 53.8 | 34 | 12 | 97 | 3 | 10.4 |
| CDC Bold | 130 | 134 | 137 | 99 | 125 | 52.9 | 33 | 8 | 97 | 3 | 9.7 |
| CDC Mc Gwire* | 106 | 118 | 137 | 92 | 113 | 61.3 | 33 | 7 | 88 | 12 | 10.4 |
| Champion | 148 | 143 | 138 | 105 | 132 | 54.0 | 32 | 10 | 97 | 3 | 9.5 |
| Clearwater* | 110 | 111 | 113 | 80 | 102 | 55.0 | 32 | 23 | 92 | 8 | 11.4 |
| Haxby | 123 | 121 | 130 | 92 | 114 | 54.6 | 33 | 10 | 98 | 2 | 9.5 |
| Hayes | 101 | 109 | 126 | 92 | 107 | 51.1 | 34 | 8 | 92 | 8 | 9.6 |
| Idagold II | 133 | 137 | 128 | 102 | 133 | 53.0 | 25 | 0 | 97 | 3 | 9.7 |
| Lenetah | 150 | 137 | 145 | 110 | 133 | 54.0 | 33 | 33 | 98 | 2 | 9.7 |
| Primo | 144 | 132 | 135 | 119 | 133 | 53.2 | 30 | 13 | 96 | 4 | 8.9 |
| Radiant | 134 | 127 | 138 | 113 | 128 | 53.6 | 33 | 18 | 94 | 6 | 9.0 |
| Spaulding | 151 | 140 | 144 | 118 | 137 | 55.0 | 34 | 3 | 98 | 2 | 9.5 |
| Tetonia | 145 | 138 | 139 | 98 | 128 | 53.4 | 33 | 12 | 94 | 6 | 9.4 |
| Valier | 121 | 118 | 125 | 98 | 113 | 53.7 | 33 | 14 | 97 | 3 | 10.0 |
| Xena | 149 | 140 | 141 | 104 | 134 | 53.4 | 33 | 20 | 95 | 5 | 9.5 |
| Malt | | | | | | | | | | | |
| AC Metcalfe | 112 | 117 | 129 | 93 | 114 | 53.4 | 35 | 18 | 97 | 3 | 10.1 |
| B1202 | 111 | 116 | 125 | 88 | 110 | 52.3 | 33 | 15 | 97 | 3 | 10.2 |
| CDC Stratus | 113 | 124 | 115 | 93 | 108 | 52.9 | 33 | 9 | 98 | 2 | 10.3 |
| Conrad | 134 | 130 | 134 | 104 | 126 | 53.1 | 32 | 13 | 98 | 2 | 10.2 |
| Copeland | 134 | 122 | 134 | 103 | 123 | 53.6 | 37 | 14 | 98 | 2 | 10.2 |
| Craft | 118 | 119 | 130 | 96 | 112 | 54.1 | 35 | 9 | 97 | 3 | 10.4 |
| Geraldine | 125 | 135 | 132 | 99 | 123 | 53.4 | 32 | 10 | 95 | 5 | 9.0 |
| Harrington | 112 | 105 | 109 | 93 | 103 | 52.4 | 34 | 37 | 93 | 7 | 10.3 |
| Hockett | 103 | 124 | 120 | 99 | 111 | 53.6 | 32 | 28 | 97 | 3 | 9.8 |
| Merit | 108 | 124 | 130 | 103 | 117 | 51.1 | 34 | 12 | 94 | 6 | 9.4 |
| Merit 16 | 114 | 112 | 127 | 103 | 114 | 52.1 | 32 | 11 | 94 | 6 | 9.6 |
| Moravian 69 | 143 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pinnacle | 124 | 129 | 143 | 85 | 119 | 54.0 | 36 | 1 | 99 | 1 | 9.5 |
| Average | 129 | 126 | 133 | 100 | 121 | 53.8 | 33 | 13 | 96 | 4 | 9.8 |
| LSD (0.05) | 22 | 16 | 12 | 18 | 9 | 2.0 | 1 | 13 | --- | 3 | 0.8 |

* indicates hullless variety

Table 4. Irrigated Six-Row Spring Barley Performance in Eastern Districts at Rupert, Aberdeen, Ashton, and Idaho Falls, 2009.

| Variety | Yield | | | | Irrigated Average | | | | | | |
|-------------------|-----------|----------|-------------|--------|-------------------|-------------|--------------|---------|--------|-------|---------|
| | Irrigated | | | | Yield | Test Weight | Plant Height | Lodging | Plumps | Thins | Protein |
| | Rupert | Aberdeen | Idaho Falls | Ashton | | | | | | | |
| Feed | | | | | | | | | | | |
| Aquila | 115 | 124 | 124 | 85 | 112 | 52.4 | 37 | 4 | 95 | 5 | 9.6 |
| Colter | 127 | 131 | 130 | 88 | 119 | 50.7 | 36 | 2 | 93 | 7 | 8.0 |
| Creel | 129 | 131 | 134 | 96 | 123 | 51.2 | 37 | 12 | 92 | 8 | 8.2 |
| Goldeneye | 117 | 117 | 143 | 105 | 121 | 51.7 | 36 | 16 | 93 | 7 | 9.7 |
| Herald | 128 | 124 | 117 | 96 | 116 | 49.4 | 38 | 3 | 94 | 6 | 8.7 |
| Millennium | 129 | 140 | 133 | 90 | 123 | 50.5 | 37 | 5 | 91 | 9 | 9.4 |
| Steptoe | 120 | 124 | 134 | 102 | 120 | 49.3 | 35 | 20 | 95 | 5 | 8.5 |
| Malt | | | | | | | | | | | |
| Celebration | 81 | 105 | 108 | 76 | 93 | 51.6 | 36 | 21 | 97 | 3 | 11.3 |
| Lacey | 93 | 116 | 120 | 78 | 102 | 52.7 | 37 | 15 | 97 | 3 | 10.3 |
| Legacy | 85 | 119 | 124 | 94 | 106 | 51.8 | 38 | 30 | 95 | 6 | 10.0 |
| Morex | 99 | 117 | 120 | 103 | 110 | 51.0 | 37 | 32 | 90 | 10 | 10.2 |
| Tradition | 74 | 115 | 128 | 79 | 99 | 52.5 | 39 | 2 | 98 | 2 | 10.3 |
| Average | 110 | 122 | 129 | 92 | 114 | 51.3 | 37 | 13 | 94 | 6 | 9.5 |
| LSD (0.05) | 20 | 11 | 11 | 20 | 8 | 0.5 | 2 | 11 | --- | 3 | 0.7 |

Table 5. Spring Barley Yield Average for 2007-2009 in Idaho.

| Site/Years | District | | |
|-------------------|----------|----------|------------------|
| | Northern | Southern | Southern/Eastern |
| 2-Row Feed | 11 | 5 | 12 |
| | bu/acre | | |
| Baronesse | 69 | --- | 136 |
| Bear* | 61 | --- | --- |
| Boulder | --- | --- | 132 |
| Burton | --- | --- | 133 |
| Calgary | --- | --- | 141 |
| Camas | 66 | --- | 130 |
| CDC Bold | --- | --- | 136 |
| CDC McGwire | --- | --- | 115 |
| Champion | 72 | --- | 144 |
| Clearwater | --- | --- | 109 |
| Haxby | --- | --- | 125 |
| Hays | --- | --- | 111 |
| Idagold | --- | 140 | --- |
| Idagold II | --- | --- | 135 |
| Lenetah | 73 | --- | 137 |
| Merlin | --- | 127 | --- |
| Primo | --- | --- | 136 |
| Radiant | 72 | --- | 131 |
| Salute | 67 | --- | --- |
| Spaulding | 68 | --- | 141 |
| Tetonia | 73 | --- | 133 |
| Valier | --- | --- | 123 |
| Xena | --- | --- | 142 |
| 2-Row Malt | | | |
| AC Metcalfe | 65 | --- | 114 |
| B1202 | --- | --- | 118 |
| CDC Stratus | --- | --- | 116 |
| Conrad | 66 | --- | 125 |
| Craft | --- | --- | 119 |
| Geraldine | --- | --- | 125 |
| Harrington | 62 | --- | 111 |
| Hockett | --- | --- | 120 |
| Merit | 63 | --- | 118 |
| Merit 16 | --- | --- | 124 |
| Pinnacle | --- | --- | 124 |
| Average | 66 | 134 | 127 |
| 6-Row Feed | | | |
| Aquila | --- | 133 | 130 |
| BG 006 | --- | 123 | --- |
| Colter | --- | --- | 129 |
| Creel | --- | --- | 127 |
| Goldeneye | --- | 143 | 135 |
| Herald | --- | --- | 127 |
| Millennium | --- | 147 | 140 |
| Nebula | --- | 141 | --- |
| Steptoe | 64 | --- | 128 |
| 6-Row Malt | | | |
| Lacey | --- | --- | 116 |
| Legacy | --- | --- | 119 |
| Morex | --- | --- | 111 |
| Tradition | 63 | --- | 114 |
| Average | 64 | 144 | 125 |

* indicates hullless variety

and year to year. The results reported in this article are for 2009 trials; previous results can be found in the spring 1992 to 2009 issues of Idaho Grain Magazine. Average performance over locations and years more accurately indicates varieties' relative performance. Try to evaluate as much information as you can selecting varieties. Yield is a primary characteristic used to select varieties, but disease resistance, maturity, lodging tendency, and quality characteristics such as test weight and plumpness are also important variety selection considerations. Also consider that plots are managed according to the average expected yield, latest varietal maturity, and / or performance of the surrounding crop in a grower's field, whether it be wheat or barley. Varietal performance may not reflect actual performance in your field when a specific variety is managed for optimal economic performance.

Reported small differences among varieties in yield and other characteristics are usually of little importance due to chance differences in tests. Utilize the LSD statistic to determine the true difference between varieties. If differences between varieties are greater than the 10% LSD value, the varieties are considered "significantly different." This means that there is a 9 in 10 chance that the reported difference between varieties is a true difference and not due to other experimental factors or chance variation. If no significant differences are determined for a trial, n.s. is used in place of the LSD.

Further Information

Information on variety characteristics can be found in Extension publication: "2006 Certified Seed Selection Guide for Spring Barley and Oats" (Progress Report 328) and "2006 Certified Seed Selection Guide for Spring Wheat" (Progress Report 327). Variety performance information for winter wheat and winter barley has been published in the fall issues of Idaho Grain. An excellent Extension Publication for barley producers is "Idaho Spring Barley Production Guide" (Bulletin 742) that was updated for 2003, and for spring wheat producers there is "Irrigated Spring Wheat Production Guide for Southern Idaho" (Bulletin 697). Both of these publications are available on the web (see the Idaho Ag Communications website at <http://info.ag.uidaho.edu/591/catalog/crops.html> and look for this publication as a pdf file under "Other Cereals Publications"). In addition, all these publications are free through the University of Idaho Agriculture Publications (ph. 208-885-7982) or contact your county Extension Office. Additional Idaho small grain variety performance information is available on the web at <http://www.cals.uidaho.edu/cereals/>. ♦

