**Section:** PREC

**Title:** 202~~4~~ Western Regional Spring Barley Nursery Performance Evaluation

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**Introduction**

The University of Wyoming Powell Research and Extension Center (PREC) conducts barley variety performance trials in cooperation with Briess Malt Barley and USDA-ARS as part of an ongoing research program.

**Objectives**

The purpose of this nursery is to observe and evaluate the performance of different malt and feed barley varieties under different growing conditions across the Pacific Northwest, Intermountain West, and Northern Great Plains regions, including northwest Wyoming. Barley yield and quality varies greatly across regions and varieties, so we want to observe each variety in multiple locations for the local companies to be able to decide the varieties best suited for their needs. Data on grain yield, plant height, lodging, disease resistance, drought resistance, and protein concentration are some of the factors to be considered by farmers and industry professionals.

**Materials and Methods**

The experiment was located at PREC during 2024. Fertilizer was applied March 29 at the rates of 120 lb/ac of nitrogen (N), 70 lb/ac of P2O5 (P), 20 lb/ac potassium (K), 50 lb/ac calcium, 6 lb/ac zinc, 4 lb/ac manganese, and 1 lb/ac boron based on a February soil test. The experimental design was a randomized complete block with three replications. On April 6, 60 barley varieties were established in plots 4.8 by 15 feet set at a row spacing of 7 inches. The seeding rate was 100 pounds of seed per acre. Soil type was a Garland clay loam. Weeds were controlled by a post application of Husky® 13 oz/ac. on May 21. Measurements included heading and maturity dates, height, lodging (0% = no lodging and 100 = complete lodging), grain yield, test weight, moisture, and kernel plumpness. Plots were harvested on Aug 15 using a Zurn research plot combine, and 400g sub-samples were saved from each plot for quality tests.

**Results and Discussion**

Results from 2024 are presented in Table 1. The highest yielding entry was LGBU16-1519A at 234 bu/ac. Entries in bold are regional checks.

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Table 1. Western Regional Barley Variety Data from PREC (Powell, WY) in 2024.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variety** | **DTM** | **Height** | **Lodging** | **Test Weight** | **Yield2** |
|  |  | **(cm)** | **(%)** | **(lbs/Bu)** | **(Bu/acre)** |
| 16ARS039-0 | 103 | 92 | 3 | 53 | 164 |
| 16ARS067-13 | 108 | 80 | 0 | 51 | 201 |
| 17ARS069-1 | 101 | 93 | 0 | 54 | 166 |
| 17ARS072-5 | 107 | 89 | 7 | 53 | 211 |
| 18ARS114-066 | 105 | 94 | 3 | 53 | 184 |
| 20WAM-248.1 | 100 | 88 | 17 | 45 | 181 |
| 20WAM-487.1 | 100 | 89 | 3 | 52 | 141 |
| 20WAM-721.1 | 103 | 92 | 33 | 53 | 191 |
| 20WAM-783.1 | 103 | 95 | 23 | 51 | 169 |
| 2ND39010 | 101 | 89 | 7 | 50 | 162 |
| **AAC Synergy1** | **101** | **94** | **24** | **51** | **173** |
| AB Dram | 100 | 97 | 43 | 52 | 153 |
| **ABI Eagle1** | **107** | **89** | **3** | **52** | **176** |
| ABI Raptor | 100 | 71 | 3 | 51 | 201 |
| **ABI Voyager1** | **104** | **96** | **13** | **53** | **177** |
| **AC Metcalfe1** | **104** | **94** | **7** | **53** | **152** |
| ACC Connect | 100 | 92 | 10 | 51 | 176 |
| BC Elinor | 109 | 80 | 0 | 50 | 220 |
| Breun (BC) Leandra | 108 | 80 | 10 | 50 | 232 |
| Breun (BC) Lexy | 108 | 80 | 3 | 51 | 217 |
| CDC Bow | 100 | 99 | 0 | 52 | 149 |
| CDC Churchill | 104 | 85 | 7 | 52 | 187 |
| CDC Clear | 106 | 98 | 0 | 59 | 142 |
| **CDC Copeland1** | **106** | **99** | **38** | **52** | **169** |
| CDC Copper | 100 | 73 | 0 | 50 | 199 |
| CDC Fraser | 102 | 92 | 17 | 51 | 174 |
| Diablo | 100 | 73 | 0 | 51 | 182 |
| LCS Bojo (Czech Republic) | 109 | 84 | 3 | 54 | 204 |
| LCS Bojo (US) | 100 | 70 | 0 | 51 | 197 |
| LCS Bojo (Wyoming) | 108 | 85 | 12 | 53 | 199 |
| LGBU16-1322A | 109 | 82 | 8 | 52 | 228 |
| LGBU16-1519A | 109 | 78 | 13 | 50 | 247 |
| LGBU17-1320A | 110 | 77 | 0 | 49 | 242 |
| LGBU17-8502A | 109 | 79 | 0 | 50 | 216 |
| LGBU17-8509B | 109 | 78 | 3 | 51 | 208 |
| **Merit 571** | **107** | **92** | **3** | **52** | **184** |
| **ND Genesis1** | **100** | **99** | **0** | **50** | **141** |
| RGT Asteroid | 110 | 82 | 3 | 52 | 204 |
| RGT Planet | 108 | 81 | 8 | 52 | 210 |
| SeCan Hulless | 100 | 71 | 0 | 51 | 203 |
| Voyager | 103 | 98 | 12 | 53 | 179 |
| X20001-76 | 108 | 94 | 0 | 52 | 195 |
|  15080-003 | 109 | 75 | 0 | 52 | 230 |
|  15082-072 | 108 | 85 | 0 | 51 | 203 |
|  16035-029 | 108 | 81 | 3 | 52 | 208 |
|  16059-005 | 109 | 80 | 0 | 52 | 212 |
|  16139-044 | 108 | 72 | 0 | 51 | 213 |
|  2IM16-0154 | 106 | 88 | 3 | 53 | 177 |
|  2IM17-2221 | 106 | 90 | 0 | 52 | 176 |
|  2IM19-5249 | 103 | 94 | 7 | 51 | 174 |
|  ABI RAPTOR | 102 | 88 | 0 | 51 | 177 |
|  MT18M11004 | 104 | 93 | 17 | 54 | 158 |
|  MT19\_M061\_19 | 102 | 94 | 0 | 51 | 163 |
|  MT19\_M064\_04 | 106 | 98 | 8 | 52 | 173 |
|  MT19\_M067\_02 | 106 | 91 | 0 | 50 | 156 |
|  MT19\_M080\_13 | 101 | 85 | 0 | 49 | 150 |
|  YU518-409 | 107 | 91 | 0 | 54 | 198 |
|  YU518-493 | 107 | 91 | 0 | 53 | 188 |
|   |   |   |   |   |   |
| **LSD (0.05)** | **2.4** | **6.0** | **14.1** | **2.9** | **14.6** |
| **Location Mean** | **105** | **87** | **7** | **52** | **187** |
| **Check Mean** | **104** | **95** | **13** | **52** | **167** |

*1**Entries in bold with superscript 1 are regional checks*

*2 Adjusted to 14.5% moisture*