## Comparison of wheat varieties

**Key findings**

- Mace was the highest yielding commercially available hard wheat variety at Hart in 2011, yielding 3.82 t/ha. Espada, Kord CL Plus, Scout and Wyalkatchem were the highest yielding APW varieties, averaging 3.32 t/ha.

**Why do the trial?**

To compare the performance of new wheat varieties and lines against the current industry standards.

**How was it done?**

| | | | |
|---|---|---|---|
| **Plot size** | 1.4m x 10m | **Fertiliser** | 28:13 @ 90 kg/ha<br>UAN @ 70 L/ha, 29th July |
| **Seeding date** | 28th May 2011 | | |

The trial was a randomised complete block design with 3 replicates and 27 varieties. Fungicides were applied as necessary to keep the crop canopy free of disease ie. stripe rust.

Plot edge rows were removed prior to harvest. All plots were assessed for grain yield, protein, test weight and screenings with a 2.0 mm screen.

**Results**

Grain yields ranged from 2.80 t/ha (Lincoln) to 3.82 t/ha (Mace) at Hart in 2011 (Table 1).

Across all varieties Mace (3.82 t/ha) was the highest yielding, while the average grain yield for the site was 3.27 t/ha. The numbered line IGW3119 (3.58 t/ha) also performed well and was not significantly different to Mace. There was no significant difference between yields of the remaining varieties with all yielding above 3.0 t/ha, except for Lincoln (2.80 t/ha) and Yitpi (2.89 t/ha).

Wheat grain protein levels ranged from 9.3% (Mace and Impala) to 11.7% (Lincoln) with an average of 10.7%. Grain protein generally decreased with increasing grain yields (Figure 1) which is not an unusual occurrence.

The only variety producing a test weight lower than 74 kg/hL, the minimum required for maximum grade was the soft wheat variety Orion. There was no significant difference between test weights for the remaining varieties.

Axe, Wyalkatchem, IGW3119, Justica CL Plus, Espada and Gladius produced the lowest screenings at Hart in 2011 with an average of 0.65%. Correll produced the highest screenings at 1.9% and the average screenings across all varieties at Hart in 2011 was 1.0%.

*Figure 1. Relationship between grain yield (t/ha) and protein (%) in wheat at Hart in 2011.*

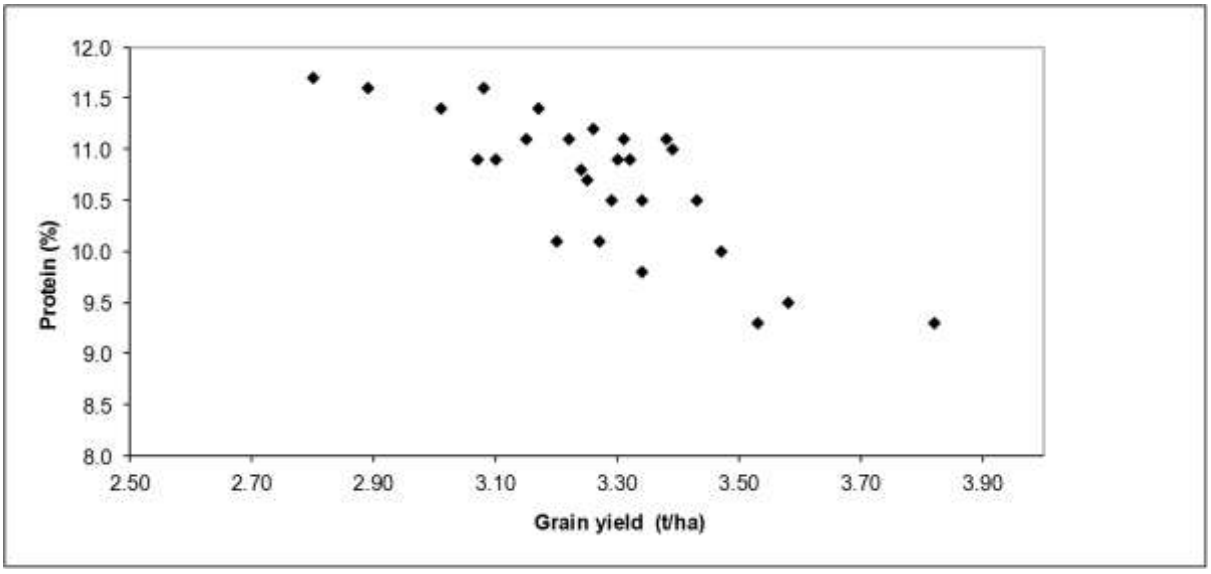

*Table 1. Grain yield (t/ha), protein (%), test weight (kg/hL) and screenings (%) of wheat varieties at Hart in 2011.*

| Quality | Variety | Grain yield (t/ha) | % of Gladius | Protein (%) | % of Gladius | Test weight (kg/hL) | % of Gladius | Screenings (%) | % of Gladius |
|---|---|---|---|---|---|---|---|---|---|
| AH | Axe | 3.43 | 101 | 10.5 | 95 | 80.1 | 103 | 0.5 | 73 |
| | Catalina | 3.07 | 91 | 10.9 | 98 | 80.1 | 103 | 1.2 | 159 |
| | Clearfield JNZ | 3.15 | 93 | 11.1 | 100 | 79.3 | 102 | 0.8 | 107 |
| | Correll | 3.26 | 96 | 11.2 | 101 | 76.9 | 99 | 1.9 | 258 |
| | Emu Rock (IGW3167) | 3.34 | 99 | 10.5 | 95 | 78.6 | 101 | 1.5 | 205 |
| | Derrimut | 3.47 | 103 | 10.0 | 90 | 79.0 | 102 | 0.9 | 127 |
| | **Gladius** | **3.38** | **100** | **11.1** | **100** | **77.7** | **100** | **0.7** | **100** |
| | AGT Katana | 3.10 | 92 | 10.9 | 98 | 80.2 | 103 | 0.9 | 126 |
| | Lincoln | 2.80 | 83 | 11.7 | 105 | 78.0 | 100 | 1.5 | 205 |
| | Mace | 3.82 | 113 | 9.3 | 84 | 80.2 | 103 | 1.0 | 133 |
| | Peake | 3.25 | 96 | 10.7 | 96 | 77.4 | 100 | 1.2 | 164 |
| | Yitpi | 2.89 | 86 | 11.6 | 105 | 79.9 | 103 | 0.8 | 114 |
| | Young | 3.30 | 98 | 10.9 | 98 | 79.1 | 102 | 1.4 | 196 |
| APW | Espada | 3.39 | 100 | 11.0 | 99 | 79.0 | 102 | 0.7 | 92 |
| | Estoc | 3.17 | 94 | 11.4 | 103 | 81.1 | 104 | 0.8 | 114 |
| | Justica CL Plus | 3.08 | 91 | 11.6 | 105 | 78.0 | 100 | 0.7 | 92 |
| | Kord CL Plus | 3.31 | 98 | 11.1 | 100 | 79.2 | 102 | 0.8 | 105 |
| | Pugsley | 3.22 | 95 | 11.1 | 100 | 81.3 | 105 | 0.8 | 114 |
| | Scout | 3.29 | 97 | 10.5 | 95 | 79.0 | 102 | 1.1 | 151 |
| | Corack (VW2316) | 3.34 | 99 | 9.8 | 88 | 78.9 | 102 | 1.1 | 151 |
| | Wyalkatchem | 3.27 | 97 | 10.1 | 91 | 79.0 | 102 | 0.6 | 78 |
| ASW | Magenta | 3.01 | 89 | 11.4 | 103 | 77.0 | 99 | 1.2 | 164 |
| SOFT | Barham | 3.20 | 95 | 10.1 | 91 | 75.8 | 98 | 1.0 | 133 |
| | Impala (C51021) | 3.53 | 104 | 9.3 | 84 | 77.6 | 100 | 0.9 | 123 |
| | Orion | 3.24 | 96 | 10.8 | 97 | 73.0 | 94 | 1.6 | 219 |
| Unclassified | IGW3119 | 3.58 | 106 | 9.5 | 86 | 80.5 | 104 | 0.7 | 92 |
| | LPB07-104 | 3.32 | 98 | 10.9 | 98 | 79.0 | 102 | 1.0 | 137 |
| | Site mean | 3.27 | 97 | 10.7 | 96 | 78.7 | 101 | 1.0 | 138 |
| | LSD (0.05) | 0.32 | 9 | 0.95 | 9 | 0.88 | 1.1 | 0.41 | 56 |