**Comparison of wheat varieties**

Rochelle Wheaton, Hart Field-Site Group

**Key Findings**

- Phantom, Scepter, Cobra and Scout were the highest yielding commercially available AH varieties at Hart in 2016, yielding between 4.01 and 4.28 t/ha.
- Trojan and Cutlass were the highest yielding APW varieties at 4.6 t/ha.
- Test weight and screening levels across the trial averaged 81.2 kg/hL and 0.7%.

**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**: 1.75 m x 10 m
- **Seeding date**: 10th May 2016
- **Fertiliser**: DAP (18:20) + Zn 2% @ 100 kg/ha
- **Seeding date**: 10th May 2016
- **Fungicides**: UAN (42:0) @ 95 L/ha, 4th July
- **Fungicides**: Systiva @ 150 mL/100 kg seed
- **Fungicides**: Amistar Xtra @ 400 mL/ha, 6th Aug
- **Fungicides**: Propiconazole (500 g/L) @ 250 mL/ha, 12th Sept

The trial was a randomised complete block design with three replicates and 21 varieties. Fungicides and herbicides were applied as necessary to keep the crop canopy free of disease and weeds. All plots were assessed for grain yield, protein, test weight and screening with a 2.0 mm screen.

**Results and discussion**

Wheat grain yields ranged from 3.24 t/ha for Axe up to 4.67 t/ha for Trojan (Table 1), with an average site yield of 3.87 t/ha. The highest yielding varieties were Trojan, Cutlass and Phantom, closely followed by Estoc, Scepter, Cobra and Scout, all yielding above 4.0 t/ha. Conditions throughout the growing season allowed later maturing varieties such as Trojan, Cutlass and Phantom, to grow for longer and achieve higher yields. Minor frost and hail damage occurred at the site during Spring. This should be taken into account when interpreting results. The long-term variety yield data shows that Trojan (111%) and Mace (107%) continue to perform well over a number of seasons (Table 1).

Wheat grain protein levels were generally low across the trial. No variety met the minimum protein level for Hard 1 or APW classification. Varieties that achieved protein levels of 10% or above were Axe, Arrow, Wallup, Emu Rock and Hatchet CL Plus.

Grain test weights across the trial averaged 81.2 kg/hL and all varieties exceeded 76 kg/hL, the minimum required for maximum grade (Table 1). Screening levels at the site averaged 0.7 % and all fell well below the maximum level of 5% for Hard and APW classification.
Table 1. Grain yield (t/ha), protein (%), test weight (kg/hL) and screenings (%) of wheat varieties at Hart in 2016. Mean grain yield (% of trial average) of Hart wheat variety trials (2010-2016) and number of trials.

<table>
<thead>
<tr>
<th>Quality</th>
<th>Variety</th>
<th>Grain yield</th>
<th>% of site average</th>
<th>Protein</th>
<th>% of site average</th>
<th>Test Weight</th>
<th>% of site average</th>
<th>Screenings</th>
<th>% of site average</th>
<th>Mean yield 2010-2016</th>
<th>No. of trials</th>
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H1 receival standard: >1.3, >70, <3.0

APW

|         | Corack          | 3.72        | 96                | 9.4     | 101               | 80.8        | 100               | 0.4        | 54                | 106                    | 6            |
|         | Cutlass         | 4.60        | 119               | 6.5     | 91                | 81.2        | 100               | 0.6        | 80                |                       |              |
|         | Estoc           | 4.17        | 108               | 9.3     | 100               | 83.6        | 103               | 0.8        | 108               | 101                    | 7            |
|         | Trojan          | 4.67        | 121               | 8.4     | 83                | 83.0        | 102               | 0.4        | 63                | 111                    | 4            |

APW1 receival standard: >10.5, >70, <5.0

Unclassified

|         | IGW5111        | 3.81        | 98                | 9.0     | 97                | 80.8        | 99                | 1.0        | 137               |                       |              |
|         | Site Average   | 3.87        | 100               | 9.3     | 100               | 81.2        | 100               | 0.7        | 100               |                       |              |
|         | LSD (Ps0.01)   | 0.52        | 0.89              | 0.88    | 0.28              |             |                   |            |                   |                       |              |

- Insufficient data (included in Hart wheat variety trials for less than three seasons)