Comparison of wheat varieties

Sarah Noack and Peter Hooper, Hart Field-Site Group Inc

Key Findings

- Mace was the highest yielding commercially available hard wheat at 4.72 t/ha.
- Corack was the highest yielding APW variety at 4.42 t/ha.
- High levels of screenings were observed for Lincoln, Correll and Shield in both 2012 and 2013 at Hart.

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	1.4 m x 10 m	**Fertiliser**	DAP (18:20) + Zn 2% @ 60 kg/ha
Seeding date	18th May 2013		UAN (42:0) @ 75 L/ha, 11th July
			UAN (42:0) @ 70 L/ha, 29th Aug

The trial was a randomised complete block design with 3 replicates and 24 varieties. Fungicides were applied as necessary to keep the crop canopy free of disease ie. stripe rust.

All plots were assessed for grain yield, protein, test weight and screenings with a 2.0 mm screen.

Results

Grain yields at Hart in 2013 ranged from 3.51 t/ha for Lincoln and up to 4.72 t/ha for Mace (Table 1). The average wheat yield at Hart in 2013 was 4.07 t/ha, compared to 1.94 t/ha in 2012.

Scout and Cobra also yielded well and were not significantly different to Mace. Varieties closely following these yields included Corack, Emu Rock, Estoc, Axe, RAC-1843 and Phantom.

Wheat grain protein levels ranged from 11.1% (Corack and Mace) to 13.2% (Correll) with a site average of 12.0%. The highest yielding wheat variety Mace was the only AH variety to have a protein level below 11.5% required for Hard 2.

Screening levels ranged from 2.3% (Axe) to 7.9% (Lincoln) with a trial average of 4.5%. Wheat varieties with screening levels above the maximum for APW and Hard of 5% were Lincoln, Shield, Dart, Correll, IGW3424 and Kord CL Plus. Similarly in 2012 high screening levels were also recorded for Lincoln, Correll and Shield.

The only variety to produce a test weight value lower than 74 kg/hL, the minimum required for maximum grade, was Orion (71 kg/hL). The overall test weight values for the site averaged 78.2 kg/hL. Varieties with test weights lower than 76 kg/hL were Cobra, Lincoln and Correll. Similar test weight results were also seen for these three varieties at Hart in 2012.

Table 1. Grain yield (t/ha), protein (%), test weight (kg/hL) and screenings (%) of wheat varieties at Hart in 2013.

Quality	Variety	Grain yield (t/ha)	% of site average	Protein (%)	% of site average	Test Weight (kg/hL)	% of site average	Screenings (%)	% of site average
AH	Axe	4.30	106	12.3	102	79.8	102	2.3	51
	Catalina	4.08	100	12.4	104	79.9	102	4.4	97
	Cobra	4.47	110	12.0	100	75.2	96	4.2	94
	Correll	3.81	93	13.2	110	74.7	96	5.2	116
	Dart	3.90	96	11.5	96	78.7	101	6.5	144
	Emu Rock	4.36	107	11.9	100	80.0	102	4.5	100
	Gladius	3.81	94	12.9	108	78.1	100	4.1	92
	Grenade CL Plus	3.87	95	11.5	96	79.2	101	3.0	66
	AGT Katana	4.15	102	12.0	100	81.8	105	4.1	91
	Kord CL Plus	3.91	96	12.3	102	77.9	100	5.2	115
	Lincoln	3.51	86	11.8	99	74.6	95	7.9	176
	Mace	4.72	116	11.1	93	79.2	101	4.2	93
	Phantom	4.24	104	11.8	99	78.9	101	4.1	91
	Scout	4.48	110	11.7	98	79.2	101	4.6	102
	Shield	3.88	95	11.5	96	78.5	100	7.4	164
	Wallup	4.01	99	12.4	104	78.2	100	4.2	93
APW	Espada	3.92	96	11.8	98	76.7	98	3.5	77
	Estoc	4.30	106	12.0	100	81.0	104	3.4	76
	Corack	4.42	109	11.1	93	78.7	101	4.0	89
SOFT	Impala	3.78	93	12.1	101	77.1	99	3.8	84
	Orion	3.77	93	11.8	99	71.1	91	4.3	96
Unclassified	RAC-1843	4.25	104	12.1	101	80.2	103	3.4	76
	IGW3424	3.96	97	11.6	97	79.9	102	5.2	116
	LPB09-3278	3.82	94	12.6	105	76.8	98	4.6	102
	Site Average	**4.07**	100	**12.0**	100	**78.2**	100	**4.5**	100
	LSD (P≤0.05)	0.29		0.6		2.5		1.5	