Comparison of wheat varieties

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Key Findings

- There were a number of high yielding (3.82 – 4.24 t/ha) AH varieties at Hart in 2017 including, Beckom, Scepter, Arrow, Cobra, Mace and Scout.

- Trojan and Cutlass were the highest yielding APW varieties at 4.32 and 4.00 t/ha, respectively.

- Test weight and screening levels across the trial were good, averaging 80.2 kg/hL and 0.8%.

Why do the trial?

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

How was it done?

Plot size	1.75 m x 10.0 m	**Fertiliser**	DAP (18:20) + Impact @ 100 kg/ha
Seeding date	8th May 2017		UAN (42:0) @ 60 L/ha on 3rd July
			UAN (42:0) @ 60 L/ha on 2nd August

This trial was a randomised complete block design with three replicates and 20 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 screenings with a 2.0 mm screen.

Growing season rainfall at Hart in 2017 was 191 mm, well below the long-term average (300 mm). At the time of sowing there was stored soil moisture at depth (>70% of the 'bucket' full). Minor heat and frost events were recorded during flowering. This should be taken into account when interpreting results.

Results and discussion

Wheat grain yields at Hart ranged from 3.29 t/ha for Corack up to 4.32 t/ha for Trojan (Table 1), with an average site yield of 3.83 t/ha. Varieties which yielded above 4.0 t/ha included Trojan, Beckom, Scepter, RAC2388, Scout and Cutlass. The long-term variety yield results shows that Trojan (112%), Scepter (109%) and Cutlass (109%) continue to perform well over a number of seasons at Hart.

Wheat grain protein levels ranged from 9.7% (RAC2388 and RAC2517) to 11.7% (Kord CL Plus). The only AH varieties to meet the minimum protein requirement for Hard 2 classification were Hatchet and Kord CL Plus. Varieties to achieve 10.5% and above (minimum requirement for APW1 classification) were Beckom, Emu Rock, Grenade CL Plus, Estoc, DS Pascal and Corack.

Grain test weights across the trial averaged 80.2 kg/hL, with all varieties exceeding 76 kg/hL, the minimum requirement for maximum grade. Screening levels at the site averaged 0.8 % and all varieties fell 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 2017. Mean grain yield (% of trial average) of Hart wheat variety trials (2010-2017) and number of trials.

Quality	Variety	Grain yield t/ha	% of site average	Protein %	% of site average	Test Weight kg/hL	% of site average	Screenings %	% of site average	Mean yield 2010-2017	No. of trials
	Arrow	3.94	103	10.0	96	80.8	101	0.4	48	101	3
	Beckom	4.29	112	10.6	102	80.4	100	0.7	91	-	
	Cobra	3.82	100	10.4	100	78.5	98	0.6	84	103	6
	Cosmick	3.73	97	10.1	97	79.8	100	2.5	334	102	4
	DS Darwin	3.61	94	9.9	94	80.4	100	0.5	71	-	
	Emu Rock	3.75	98	10.9	104	80.8	101	0.7	88	105	7
AH	Grenade CL Plus	3.63	95	10.5	101	79.9	100	0.4	55	96	6
	Hatchet CL Plus	3.31	86	11.8	113	79.7	99	0.3	39	82	5
	Havoc (LPB13-1995)	3.73	97	10.2	98	80.5	100	0.5	65	-	
	Kord CL Plus	3.70	97	11.7	112	79.9	100	1.0	131	95	7
	Mace	3.91	102	10.4	100	80.2	100	0.4	51	106	8
	Scepter	4.24	111	9.8	93	81.0	101	0.7	90	109	3
	Scout	4.11	107	10.0	96	82.2	102	0.4	58	106	8
	H1 receival standard			>13.0		>76.0		<5.0			
	Corack	3.29	86	11.0	105	80.8	101	0.2	31	103	7
	Cutlass	4.00	104	9.9	95	80.0	100	0.6	79	109	3
APW	DS Pascal	3.44	90	11.1	106	76.5	95	2.8	369	-	
	Estoc	3.68	96	11.2	107	81.8	102	0.7	98	100	8
	Trojan	4.32	113	10.0	96	80.4	100	0.5	68	112	5
	APW1 receival standard			>10.5		>76.0		<5.0			
Unclassified	RAC2388	4.13	108	9.7	92	79.8	100	0.6	77	-	
	RAC2517	3.95	103	9.7	93	80.7	101	0.5	67	-	
	Site Average	3.83	100	10.5	100	80.2	100	0.8	100		
	LSD (P≤0.05)	0.52		0.79		0.84		0.37			

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