

Comparison of wheat varieties

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Key Findings

- There were a number of high yielding (2.21 – 2.41 t/ha) AH varieties at Hart in 2018 including, Scepter, Grenade CL Plus, Scout, Hatchet CL Plus, Emu Rock, Beckom and Arrow.
- Cutlass and Trojan were the highest yielding APW varieties at 2.50 and 2.25 t/ha, respectively.
- Grain test weight and screening levels across all varieties averaged 78.9 kg/hL and 2.0%.

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) + Zn + Impact @ 80 kg/ha
Seeding date	14 th May 2018		UAN (42:0) @ 60 L/ha on 17 th July
			UAN (42:0) @ 55 L/ha on 2 nd August

This trial was a randomised complete block design with three replicates and 20 wheat varieties. Herbicides were applied as necessary to keep the crop free of weeds. All plots were assessed for grain yield, protein, test weight, and screenings with a 2.0 mm screen.

Results and discussion

For the 2018 season, Hart received well below average growing season rainfall (160 mm). Low summer rainfall also resulted in limited soil moisture available pre-seeding. Wheat grain yields ranged from 1.81 t/ha for Havoc up to 2.50 t/ha for Cutlass at Hart (Table 1). The highest yielding (2.21 – 2.41 t/ha) AH varieties included, Scepter, Grenade CL Plus, Scout, Hatchet CL Plus, Emu Rock, Beckom and Arrow. Both Cutlass and Trojan were the highest yielding APW varieties at 2.50 and 2.25 t/ha, respectively.

Long-term yield data shows Scepter, Trojan and Cutlass continue to perform well at Hart over a number of seasons (Table 2).

Wheat grain protein levels ranged from 10.4% (Cutlass) to 12.6% (Cobra), with a site average of 11.5%. While no hard varieties met the minimum protein for H1 classification, all but Arrow, Cosmick, Scepter and Scout, met the minimum protein requirement for H2 (11.5%). All varieties contained >10.5% protein to meet the minimum requirement for APW1 classification (with the exception of Cutlass at 10.4%).

Grain test weights averaged 78.9 kg/hL across all wheat varieties. DS Pascal was the only variety under the minimum requirement of 76 kg/hL at 75.4 kg/hL. Screening levels averaged 2.0% across the trial, with all varieties below the 5% maximum for Hard and APW classification.

Table 1. Grain yield (t/ha), protein (%), test weight (kg/hL) and screenings (%) of wheat varieties at Hart in 2018.

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	Arrow	2.18	102	10.8	94	80.0	101	1.5	72
	Beckom	2.21	104	12.0	104	79.2	100	1.5	72
	Cobra	2.05	96	12.6	109	77.6	98	1.9	92
	Cosmick	2.09	98	10.6	92	78.5	99	3.2	158
	Emu Rock	2.22	104	11.7	102	78.7	100	2.1	103
	Grenade CL Plus	2.35	110	11.6	101	78.4	99	1.8	87
	Hatchet CL Plus	2.25	106	12.1	105	80.7	102	1.7	85
	Havoc	1.81	85	12.3	106	78.5	100	2.9	144
	Kord CL Plus	2.13	100	12.1	105	78.9	100	2.5	123
	Mace	2.02	95	12.3	106	78.0	99	1.8	89
APW	Scepter	2.41	113	10.7	93	80.1	101	2.8	136
	Scout	2.27	107	11.4	99	77.4	98	1.7	81
	<i>H1 receival standard</i>			>13.0		>76		<5.0	
	Chief CL Plus	1.86	87	12.0	104	79.5	101	1.8	89
	Corack	1.84	86	12.0	104	79.0	100	1.7	85
	Cutlass	2.50	117	10.4	90	81.1	103	1.7	81
	DS Pascal	1.83	86	11.9	103	75.4	95	3.2	156
	Estoc	2.12	100	12.3	106	79.3	100	1.7	84
	Trojan	2.25	106	10.8	93	80.5	102	1.5	72
	<i>APW1 receival standard</i>			>10.5		>76.0		<5.0	
ASW	Razor CL Plus	2.21	104	10.6	92	79.1	100	2.1	102
	<i>ASW1 receival standard</i>			NA		>76		<5.0	
	RAC2388	2.27	107	10.7	93	78.2	99	1.8	89
Site Average		2.13	100	11.5	100	78.9	100	2.0	100
LSD (P≤0.05)		0.33		0.35		1.22		0.46	

Table 2. Wheat variety performance at Hart by year (expressed as % trial average).

		% of trial average					
Quality	Variety	2013	2014	2015	2016	2017	2018
AH	Arrow			105	98	103	102
	Beckom					112	104
	Cobra	110	108	104	105	100	96
	Cosmick		105	105	101	97	98
	Emu Rock	107	103	100	99	98	104
	Grenade CLPlus	95	93	102	96	95	110
	Hatchet CLPlus	104	82	51	88	86	106
	Havoc					97	85
	Kord CLPlus	96	94	97	90	97	100
	Mace	116	105	100	94	102	95
	Scepter			110	106	111	113
	Scout	110	102	110	103	107	107
APW	Corack	109	115	95	96	86	86
	Chief CL Plus						87
	Cutlass			104	119	104	117
	DS Pascal					90	86
	Estoc	106	100	104	108	96	100
	Trojan		108	113	121	113	106
ASW	Razor CLPlus					103	104
Unclass	RAC2388					108	107
Trial mean yield t/ha		4.07	4.8	4.27	3.87	3.83	2.13
Sowing date		18th May	8th May	6th May	10th May	8th May	14th May
A-O rain (mm)		303	280	230	356	191	160
Annual rain (mm)		377	426	353	485	331	224