

Comparison of durum varieties

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Key findings

- The average grain yield for all durum varieties at Hart was 2.63 t/ha. The highest yielding varieties were Westcourt and DBS Spes at 2.81 and 2.76 t/ha, respectively
- Grain protein levels were low (trial average 9.3%).
- Screening levels in the trial averaged 7%, with Bitalli, DBA Vittaroi and Westcourt all less than 5% for DR1 classification.
- Grain test weights were generally high across all durum varieties trialed, averaging 78 kg/hL.

Why do the trial?

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

How was it done?

Plot size	1.75 m x 10.0 m	Fertiliser	DAP (18:20) + Zn 2% + Impact @ 75 kg/ha
Seeding date	May 15, 2019		Easy N (42.5:0) @ 55 L/ha on Oct 7, 2019
Location	Hart, SA		

The trial was a randomised complete block design with three replicates and nine durum wheat varieties. Fungicides and herbicides were applied as necessary to keep the canopy free of disease and weeds. All plots were assessed for grain yield, protein, test weight and screenings (with a 2.2 mm screen).

Results and discussion

Durum grain yields ranged from 2.50 – 2.81 t/ha across all varieties (Table 1). The highest yielding varieties were Westcourt and DBS Spes at 2.81 and 2.76 t/ha, respectively. These varieties were closely followed by DBA Aurora and WID802. Looking at the long-term data there are a number of new durum varieties that have appeared at Hart for the first time in 2018 and 2019 (Table 2). For those varieties which have been trialed at Hart over multiple seasons DBA Aurora been the most consistent yielding across a number of seasons.

Grain protein levels were low in the trial ranging from 8.7 – 10.4%. Grain test weights were generally high with all varieties except WID802 meeting the requirements for DR1 classification. Screening levels were variable across the varieties trialed. Bitalli, DBA Vittaroi and Westcourt were the only varieties to fall below 5% screening for DR1 classification. The only variety to contain screening levels higher than 10% (DR3) was WID802.

Table 1. Grain yield (t/ha), protein (%), test weight (kg/hL) and screenings (%) of durum wheat varieties at Hart 2019.

Variety	Grain yield t/ha	% of site average	Protein %	% of site average	Test weight kg/hL	% of site average	Screenings %	% of site average
Bitalli (AGTD088)	2.62	99	9.1	98	79.5	101	3.9	58
DBA Aurora	2.72	103	9.1	98	77.3	99	8.4	124
DBA Vittaroi	2.53	96	9.2	99	79.5	101	3.5	51
Hyperno	2.50	95	10.4	112	79.4	101	8.7	129
Saintly	2.54	97	9.4	101	79.4	101	7.4	109
DBA Spes	2.76	105	8.9	96	77.8	99	5.9	87
Westcourt (AGTD090)	2.81	107	9.6	104	80.7	103	3.7	55
WID802	2.71	103	8.7	94	74.9	95	11.5	170
UAD1154197	2.50	95	9.0	97	77.4	99	7.8	116
<i>DR1 receival standards</i>			≥13.0		>76		<5%	
Site Average	2.63	100	9.3	100	78	100	7	100
LSD (P≤0.05)	0.07		0.8		1.2		1.4	

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

Variety	% of trial average					Grain yield (t/ha)
	2015	2016	2017	2018	2019	2019
Bitalli (AGTD088)					99	2.62
DBA Aurora	102	102	100	102	103	2.72
DBA Vittaroi				104	96	2.53
Hyperno	98	101	96	95	95	2.50
Saintly	97	85	100	90	97	2.54
DBA Spes				102	105	2.76
Westcourt (AGTD090)					107	2.81
WID802				101	103	2.71
UAD1154197					95	2.50
Trial mean yield t/ha	3.07	4.08	4.24	2.31		2.63
Sowing date	6th May	10th May	9th May	15th May		15th May
Apr-Oct rain (mm)	230	356	191	160		162
Annual rain (mm)	353	485	331	224		189

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