

Comparison of durum varieties

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Key findings

- All durum varieties yielded similarly at Hart this season with a trial average of 2.10 t/ha.
- Grain test weights were high ranging between 81.5 – 84.8 kg/hL.
- Grain protein levels were below DR1 standards averaging 12.4% across all varieties.
- Screening levels for all durum varieties were below 5%.

Why do the trial?

To compare the performance of new durum varieties alongside current commercial standards.

How was it done?

Plot size	1.75 m x 10.0 m	Fertiliser	DAP (18:20) + 1% Zn + Impact @ 80 kg/ha
Seeding date	May 6, 2020		Easy N (42.5:0) 80 L/ha on June 18, 2020
Harvest date	November 26, 2020		Easy N (42.5:0) 50 L/ha on August 5, 2020
Location	Hart, SA		

The trial was a randomised complete block design with three replicates and six durum varieties. This trial was managed with the application of pesticides to ensure a weed, insect and disease-free canopy. All plots were assessed for grain yield (t/ha), protein (%), test weight (kg/hL) and screenings (%).

The newest durum varieties in this trial were Bitalli (AGTD088), Westcourt (AGTD090) and DBA Artemis (UAD1154197). These varieties were also included in Hart's 2019 durum variety trial as pre-commercial material, prior to their release later the same year.

Results and discussion

No yield differences were observed for durum varieties at Hart this season. The average durum grain yield for all varieties was 2.10 t/ha (Table 1).

Long-term yield data shows that DBA Aurora, DBA Spes and Westcourt continue to perform well at Hart across multiple seasons (Table 2). DBA Aurora, DBA Spes, DBA Vittaroi, DBA Artemis and Bitalli were also present among the top ten performing varieties for the Mid-North 2020 National Variety Trials (NVT) at Spalding and Mintaro.

Grain protein levels for all varieties ranged between 12 – 12.7%.

Grain test weights were high for all durum varieties, averaging 84 kg/hL.

Screenings were below 5% for all durum varieties complying with DR1 receival standards. Bitalli and DBA Artemis had the highest level of screenings at Hart this season and were $\geq 4\%$ (Table 1).

Table 1. Grain yield (t/ha), protein (%), test weight (kg/hL) and screenings (%) for durum varieties at Hart in 2020. Values shaded within each column show the highest performing varieties.

Variety	Grain yield t/ha	% of site average	Protein %	% of site average	Test weight kg/hL	% of site average	Screenings %	% of site average
Bitalli (D)	2.17	103	12.0	97	83.2	100	4.4	154
DBA Aurora (D)	2.22	105	12.3	99	83.8	100	2.8	101
DBA Vittaroi (D)	2.08	99	12.6	102	84.8	101	1.5	54
DBA Spes (D)	2.18	103	12.5	101	83.2	100	2.7	97
Westcourt (D)	2.32	110	12.2	98	84.7	101	1.4	50
DBA Artemis (D)	1.66	79	12.7	103	81.5	98	4.0	143
DR1 receival standards			≥13.0		>76		<5%	
Site Average	2.10	100	12.4	100	84	100	3	100
LSD (P≤0.05)	ns		ns		1.1		1.5	

Table 2. Long-term durum variety performance at Hart (expressed as % trial average).

Variety	% trial average					Grain yield (t/ha)
	2016	2017	2018	2019	2020	2019
Bitalli (D)				99	103	2.17
DBA Aurora (D)	102	100	102	103	106	2.22
DBA Vittaroi (D)			104	96	99	2.08
Hyperno (D)	101	96	95	95		
Saintly (D)	85	100	90	97		
DBA Spes (D)			102	105	104	2.18
Westcourt (D)				107	110	2.32
DBA Artemis (D)				95	79	1.66
Trial average yield t/ha	4.08	4.24	2.31	2.63	2.10	
Sowing date	May 10	May 9	May 15	May 15	May 6	
Apr-Oct rain (mm)	356	191	160	162	336	
Annual rain (mm)	485	331	224	189	503	

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