Durum Growers Association SA Inc

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www.durumgrowerssa.org.au

From the Chairman

2011 was a season with only average Durum yields. Despite significant stored moisture from 2010, and also widespread rain in February and March 2011, a five week dry spell from late August to early October had significant adverse impact on ultimate yield, despite reasonable rains during October. There were however areas, eg the West Wimmera with well structured soils, having significant levels of stored water, which had above average yields.

Pricing for Durum was a reverse to 2010, in that Durum at harvest retained its value in excess of $300 per tonne for DR1, whilst Bread wheat dropped in value, to be up to $80 per tonne lower than Durum. This amply illustrates the issue that growers should reflect in their decision making, that of long term price comparisons. Rural Solutions SA, estimate the 5 year average Gross Margin for Durum at a medium rainfall site at $475 per ha to be $105 per ha higher than APW Bread wheat at that site.

Dr Tony Rathjen will retire from the Waite Institute at the end of June. The Durum Growers Association puts on record its appreciation of Tony's efforts in initially fostering the Durum industry in this state and over a 20 year period developing varieties better adapted to the abiotic challenges of southern Australia soils.

My predecessor, John Green from Bute, received the Durum Grower of the Year Award from San Remo. This reflects his contribution in the last three years of organising agronomic trials across the Durum growing regions, undertaken by the SARDI New Varieties Agronomy Group and attracting funding from GRDC and SAGIT, augmented with sponsorship from San Remo, Viterra, Glencore Grain, ANZ, Graincorp, AGG and Landmark.

The most significant challenge facing the Durum industry in this state, is to maintain production at 250,000 -300,000 tonne, to ensure that all of San Remo's requirements, are met each year, with a buffer to be exported. We do know from previous experience about ten year's ago, that southern Australia Durum is of sufficient quality to penetrate and be sought after in the North African and Italian market.

I would particularly thank committee members of the Durum Growers Association for their contributions to the Durum industry, and also to Secretary, Monica Trengove for her organisation efforts in maintaining the website, and her organisational skills in putting on the Forums at Kaniva (March 21), and Blyth (April 3). Neville Sharpe as Treasurer and particularly as Seed Manager continues to make a significant contribution.

Leith Cooper, Chairman

San Remo Durum Grower of the Year

John Green, **Farmer Bute SA**

Allan Mayfield and Jason Able at the Mid North Crop Walk at Michael Jaeschke's property, Hart September 2011.

Inside this issue:

Cover Story:

Crop Walks & Forums—2011

John Green, Peter Botta [On-Farm Storage Expert] and David Maitland Farmer at Hart attended the Mid North Forum at Blyth 2011

Farmers at the SE Crop Walk at Ted Ridgway's property,

Neville Sharpe, John Green, Tony Rathjen, Kenton Porter and Jason Able at Simon Ballinger's property, SE.

Malcolm Eastwood of Kaniva was the winner of the 1 ton of Durum Seed [802].

TAFE Students, Wayne Davis, AWB and John Green at Crop Walk at Hart 2011.

Farmers at the SE Crop Walk at Simon Ballinger's property

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Seed Report 2012—Neville Sharpe

Total sales of seed this year were 460 tons consisting of - Hyperno, Saintly, Tjilkuri, WID802 and WID803.

WID802 and WID803 are at present being retested for quality and registration for release under PBR and for export. This is expected to occur by midyear, well before harvest.

Distribution of seed has been slow due to a large harvest and shortage of storage. Most orders have been fulfilled in the last two months.

Yield results for last year were mixed with the variable finish and rainfall at inappropriate times. It seems some varieties are going to suit different districts and will take another two years to know where they will perform best.

WID802 has performed very well with WID803 having a few screening problems in some areas. With all 800 lines seeding rates need to be kept down to 80 kgs, or less, as they tiller very well and need to have less plants with a bigger root system to fill the grain.

In general, harvest yields were good with the new 800 lines performing well.
Quality also has been very good despite the rainfall at harvest

An outbreak of black grain was discovered in a few crops around Maitland, Freeling & Tarlee and after some quick action it was found to be a fungus which had entered the head in October when the grain was under stress at flowering caused probably by rain. It was the first time this has been recorded and fortunately only occurred on a few properties. Nothing could have been done to alleviate it.

We now have new varieties of durum wheat which will compete in yield with bread wheat and give the Millers an excellent quality grain for pasta production.

Neville Sharpe
Seed Manager
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Industry News

Nitrogen Management in New Durum Varieties

A SA Durum Growers Association agronomy Project.
Kenton Porker and Rob Wheeler, SARDI Waite, 08 83039337, kenton.porker@sa.gov.au

Introduction:
The Durum Growers Assoc of SA led durum agronomy project, has now collected data from nitrogen trials over the past three years with funding from SAGIT and GRDC and corporate sponsors. Over the last few years, it has been difficult achieving the required 13% protein for DR1 in new durum varieties due to their higher yield potential, suggesting they require more nitrogen (N). However, when higher N rates and earlier applications of N are used it can often lead to increases in grain screening levels. These series of trials have examined appropriate management combinations of variety, nitrogen rate and timing to achieve 13% protein and to minimise downgrading due to excessive screenings.

2011 results:
There was no yield response to applied N at Wolseley, Paskeville, and Hart in the 2011 trials; hence variety differences in yield response to N cannot be identified. This is similar to current commercial practice where durum is sown into more fertile paddocks. Even so, across state-wide trials and seasons, varieties have responded similarly in yield to N on responsive sites as well. Whilst not yield responsive, additional N was still required in order to achieve 13% protein at these sites. However, consistent variety differences have emerged in grain protein and grain screening responses to N but are only likely to be expressed depending on the environmental conditions during grain fill.

In more **favourable conditions** such as those experienced in the South East trial and at Paskeville in 2011 the challenge with growing the new varieties was attaining the required 13% protein required for DR1. The new durum varieties yielded higher than the older varieties (ie Tamaroi) with same amount of N supply but were unable to sustain grain protein above 13%. Averaged across these trials WID803 has been the highest yielding, followed by WID802, Hyperno and Tjilkuri, Saintly, and then Caparoi and Tamaroi yielding similarly. Under high yielding conditions the timing and rate of N application is critical in the new cultivars, while in the older variety Tamaroi, and low yielding Caparoi this is less important, as the applied amounts of N (80kg in these trials) has been more than sufficient in reaching 13% protein across all timings, suggesting they probably do not need as much N as other varieties. However in the other new varieties, applying all of the 80kg N at the late application (GS47) has often been the only treatment to achieve the 13%, in fact in 2011 an extra 40kg N was needed to achieve this target in WID802, Hyperno, Tjilkuri at Woseley (table 1). Grain size was not an issue in these environments, N had no significant effect on grain size and varieties were well within the 5% screening requirement..

Table 1. The effect of nitrogen treatments on protein % (at 11% moisture) in durum varieties at Wolseley 2011.

Nitrogen treatment	Caparoi	WID802	Hyperno	Saintly	Tamaroi	Tjilkuri
Nil	12.6	10.8	11.4	11.8	13.0	11.3
80kgN@GS31	13.6	12.6	12.8	12.8	13.8	12.5
40kgN(GS31)+ 40kgN(GS47)	13.6	12.9	12.9	12.7	14.0	12.5
80kgN@GS47	13.8	12.7	12.9	13.0	14.6	12.5
40kgN(GS31)+ 80kgN(GS47)	14.1	13.1	13.5	13.2	14.5	13.0
LSD Var x N (5%)				*0.56*		

In **less favourable** finishing conditions (hot and dry spells during grain fill) such as those experienced at Hart in 2011 any additional N has been detrimental to grain size and caused quality downgrading in new cultivars with inherent smaller grain such as WID803, WID802, and Hyperno (figure 1). Protein was less important due to the heat stress increasing protein in spring; however 40kgN was still required to reach 13%. Under these conditions larger grain varieties such as Caparoi and Tjilkuri have been less prone to quality downgrading. The agronomy trials have shown that if all the additional N is applied early (up to GS30) this often results in downgrading in these varieties and even a yield penalty due to the moisture stress during grainfill, however if the same amount or even more N is applied late in the season (GS47 to maturity), these varieties are much more likely to maintain an acceptable grain size. At Hart in 2011 the strategic treatments applied most of the N late in the season after stem elongation, Strategy 1 (60kgN@GS31 + 40@GS59) and Strategy 2 (60kgN@GS31 + 80kgN@GS59) applied significantly more N than the other N treatments at GS31 but resulted in much lower screening levels in WID803 (figure 1).

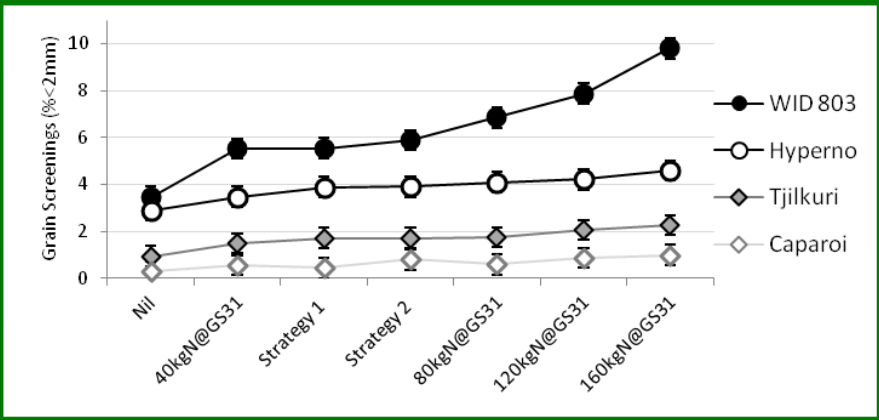

Figure 1. Durum varietal interactions with Nitrogen treatments on grain screening levels (%<2mm sieve) at Hart, 2011, Strategy 1 = 60kgN@GS31 + 40@GS59, and Strategy 2 = (60kgN@GS31 + 80kgN@GS59)

Conclusion:

Due to seasonal variability, it can often be difficult to find the balance between achieving 13% protein and maintaining grain size in the new higher yielding cultivars. The key outcomes from this research in 2011 has identified the best N management practice to maintain grain size and achieve 13% protein in the new durum varieties in both unfavourable and favourable seasons has been a strategic approach (ie the withholding of N until later in the season or in a split application with a small amount of N at GS30 followed by most at a later growth stage).

Key Outcomes:

- Durum varieties are responding similarly in yield and many quality measurements to applied N, but show differences in protein and screening levels.
- New durum varieties yield significantly higher with the same N supply but require more N to achieve 13% protein in a favourable environment and the later application of N (past GS47) is the most effective to achieve 13% protein
- In a dry spring, large amounts of early applied N predisposed WID803 with inherent small grain to quality downgrading due to high screenings, varieties with inherent larger grain (Tjilkuri and Caparoi) were not downgraded across N treatments.
- Variety choice is still equally important and growers concerned about not meeting protein targets or being downgraded for screenings should consider varieties with superior quality such as Caparoi. Whilst varieties with a moderate quality profile include Tjilkuri, Hyperno or the early maturing Saintly.

Acknowledgements

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