



# Hart Beat

Hart Field Site Group Inc.  
www.hartfieldsite.org.au

September 2009 Issue 4



## MAIN HART FIELD DAY

Tuesday, September 15<sup>th</sup> 2009

10am start



Preparing for the main field day

### More trials and speakers for the main field day

- **Hay making and carting equipment** – Ashmore engineering, Jim Maitland and Peter McEwin
- **Barley varieties & agronomy** – Martin Lovegrove, SARDI and Sam Holmes, Holmes Farm Consulting
- **Getting the best out of new durum varieties** – Tony Rathjen, University of Adelaide and Leighton Wilksch, Landmark
- **Canola varieties** – Tony Craddock, Rural Directions
- **Pulse agronomy** – Wayne Hawthorne, Pulse Australia and Mick Lines, SARDI
- **Oat varieties and hay production** – Pamela Zwer, SARDI and Jeff Braun, Agrilink Agricultural Consultants
- **Controlling wild oats** – Ben Fleet, University of Adelaide and Grant Roberts, consultant and farmer
- **Soil water retention granules** – John Stepanic, Biocentral laboratories
- **Phosphorus fertiliser trial** – Greg Butler, SANTFA and Josh Hollit, Rural Directions
- **Zone management & crop scanners** – Sam Trengove, SPAA & Kym I'anson, farmer
- **Water use efficiency & soil moisture** – Victor Sadras & Chris Lawson, SARDI
- **Pre-emergent herbicides & fenceline weed control** – Chris Preston, University of Adelaide
- **Wheat agronomy** – Mick Faulkner, Agrilink Agricultural Consultants and Glenn McDonald, University of Adelaide

## SPRING TWILIGHT WALK

Thursday, October 15<sup>th</sup> 2009

4pm start

At the Hart site  
on the Blyth—Brinkworth Road

**FREE ENTRY**

**Also featuring Guest Speaker  
Justin Sherrard**

*General Manager of Rabobank  
Food & Agribusiness Research and Advisory  
for Australia and New Zealand*

Carbon and climate change in the  
food and agribusiness sector

BBQ and drinks supplied

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Rabobank

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# Hart

Site information as of 8<sup>th</sup> September 2009

Soil type: sandy clay loam  
 PAWC: 201mm  
 Average annual rainfall: 400mm  
 Average GSR (Apr to Oct): 305mm

## The season so far

Rain to date: 220mm  
 GSR to date: 211mm (26mm since last report)  
 GSR decile: 4  
 Maximum temp since sowing: 26.7°C  
 Minimum temp since sowing: -1.2°C  
 Average temp accumulation per day: 12.7°C  
 Current predicted soil N status: 57kg/ha  
 Current predicted PAW: 8mm  
 Current push probe depth: 44cm

## Grain & hay yield predictions

Yield prophet estimate: (Date of report 09/09/2009)

These estimates are based on a 50% probability

Yield t/ha	Sown 18 <sup>th</sup> May (see graph)	Change from last report	Sown 5 <sup>th</sup> May	Change from last report
Grain	2.4	-0.2	2.8	-0.5
Hay	5.0	-0.3	5.4	0.0

### French & Schultz grain yield estimate:

100% WUE: 3.2t/ha, 80% WUE: 2.5t/ha  
 This model assumes that there is 110mm of evaporation and decile 5 (58mm) rainfall for the remainder of the growing season.

## Pre-sowing soil nitrogen and water

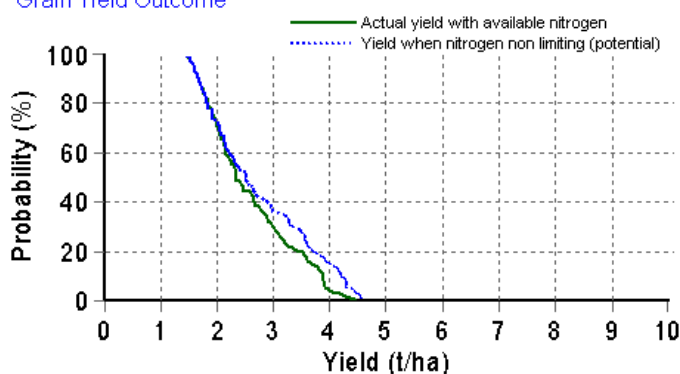
(measured 2<sup>nd</sup> April)  
 Soil N prior to sowing (0-90cm): 94kg/ha  
 Plant available water at sowing (0-90cm): 0mm

## Crop growth

Variety: Gladius  
 Sowing date: 18th May  
 Nitrogen fertiliser at sowing: 30kgN/ha  
 Plant density: 162 plants per square metre  
 Current growth stage: head fully emerged (GS59)  
 Predicted date of mid flowering: 22<sup>nd</sup> September

This graph shows the chance of reaching the corresponding yield given weather, soil conditions and agronomic inputs to date, and historical climate data (100yrs) to simulate remainder of the season.

Grain Yield Outcome



# Condowie

Site information as of 8<sup>th</sup> September 2009

Soil type: sandy loam  
 PAWC: 127mm  
 Average annual rainfall: 349mm  
 Average GSR (Apr to Oct): 252mm

## The season so far

Rain to date: 202mm  
 GSR to date: 193mm (29mm since last report)  
 GSR decile: 5  
 Maximum temp since sowing: 29.3°C  
 Minimum temp since sowing: -1.2°C  
 Average temp accumulation per day: 12.6°C  
 Current predicted soil N status: 170kg/ha  
 Current predicted PAW: 5mm  
 Current push probe depth: n.a.

## Grain & hay yield predictions

Yield prophet estimate: (Date of report 09/09/2009)

These estimates are based on a 50% probability

Yield t/ha	Sown 30 <sup>th</sup> April (see graph)	Change from last report	Sown 15 <sup>th</sup> May	Change from last report
Grain	2.6	0.0	2.0	0.0
Hay	4.4	0.0	4.3	0.0

### French & Schultz grain yield estimate:

100% WUE: 2.7t/ha, 80% WUE: 2.2t/ha  
 This model assumes that there is 110mm of evaporation and decile 5 (52mm) rainfall for the remainder of the growing season.

## Pre-sowing soil nitrogen and water

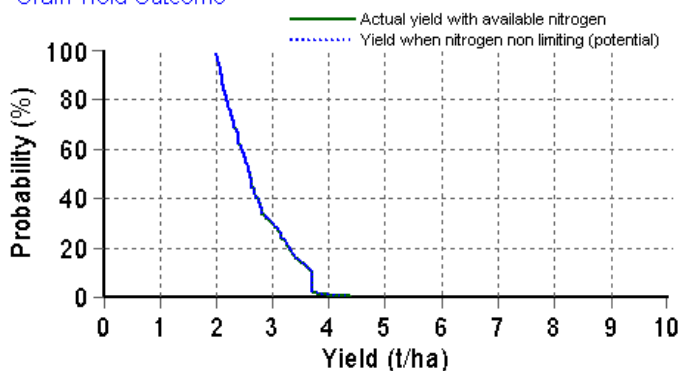
(measured 27<sup>th</sup> March)  
 Soil N prior to sowing (0-90cm): 244kg/ha  
 Plant available water at sowing (0-90cm): 0mm

## Crop growth

Variety: Gladius  
 Sowing date: 30<sup>th</sup> April  
 Nitrogen fertiliser at sowing: 20kgN/ha  
 Plant density: 162 plants per square metre  
 Current growth stage: end of flowering (GS69)  
 Predicted date of mid dough fill: 19<sup>th</sup> September

The graph below shows the chance of reaching the corresponding yield given weather, soil conditions and agronomic inputs to date, and historical climate data (100yrs) to simulate remainder of the season.

Grain Yield Outcome



# Spalding

Site information as of 8<sup>th</sup> September 2009

**Soil type:** red brown earth  
**PAWC:** 150mm  
**Average annual rainfall:** 434mm  
**Average GSR (Apr to Oct):** 322mm

## The season so far

**Rain to date:** 282mm  
**GSR to date:** 262mm (35mm since last report)  
**GSR decile:** 6  
**Maximum temp since sowing:** 24.9°C  
**Minimum temp since sowing:** -1.9°C  
**Average temp accumulation per day:** 11.4°C  
**Current predicted soil N status:** 29kg/ha  
**Current predicted PAW:** 50mm  
**Current push probe depth:** 52cm

## Grain & hay yield predictions

**Yield prophet estimate:** (Date of report 09/09/2009)

These estimates are based on a 50% probability

Yield t/ha	Sown 9 <sup>th</sup> May (see graph)	Change from last report	Sown 15 <sup>th</sup> May	Change from last report
Grain	4.7	0.0	4.7	+0.1
Hay	7.7	-0.1	8.0	-0.2

### French & Schultz grain yield estimate:

100% WUE: 4.4t/ha, 80% WUE: 3.6t/ha  
 This model assumes that there is 110mm of evaporation and decile 5 (70mm) rainfall for the remainder of the growing season.

## Pre-sowing soil nitrogen and water

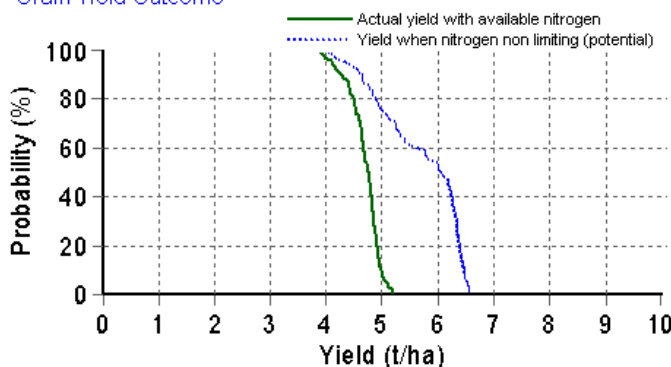
(measured 2<sup>nd</sup> April)  
**Soil N prior to sowing (0-90cm):** 107kg/ha  
**Plant available water at sowing (0-90cm):** 0mm

## Crop growth

**Variety:** Gladius  
**Sowing date:** 9<sup>th</sup> May  
**Nitrogen fertiliser at sowing:** 40kgN/ha  
**Plant density:** 182 plants per square metre  
**Current growth stage:** 70% of head emerged (GS57)  
**Predicted date of mid flowering:** 15<sup>th</sup> September

The graph below shows the chance of reaching the corresponding yield given weather, soil conditions and agronomic inputs to date, and historical climate data (100yrs) to simulate remainder of the season.

Grain Yield Outcome



# Tarlee

Site information as of 8<sup>th</sup> September 2009

**Soil type:** clay loam over rock  
**PAWC:** 122mm  
**Average annual rainfall:** 469mm  
**Average GSR (Apr to Oct):** 350mm

## The season so far

**Rain to date:** 341mm  
**GSR to date:** 321mm (60mm since last report)  
**GSR decile:** 7  
**Maximum temp since sowing:** 24.9°C  
**Minimum temp since sowing:** 0.6°C  
**Average temp accumulation per day:** 11.7°C  
**Current predicted soil N status:** 28kg/ha  
**Current predicted PAW:** 100mm  
**Current push probe depth:** 66cm

## Grain & hay yield predictions

**Yield prophet estimate:** (Date of report 09/09/2009)

These estimates are based on a 50% probability

Yield t/ha	Sown 1 <sup>st</sup> June (see graph)	Change from last report	Sown 10 <sup>th</sup> May	Change from last report
Grain	5.4	+0.6	5.0	0.0
Hay	7.6	+0.4	6.0	-0.1

### French & Schultz grain yield estimate:

100% WUE: 5.8t/ha, 80% WUE: 4.6t/ha  
 This model assumes that there is 110mm of evaporation and decile 5 (81mm) rainfall for the remainder of the growing season.

## Pre-sowing soil nitrogen and water

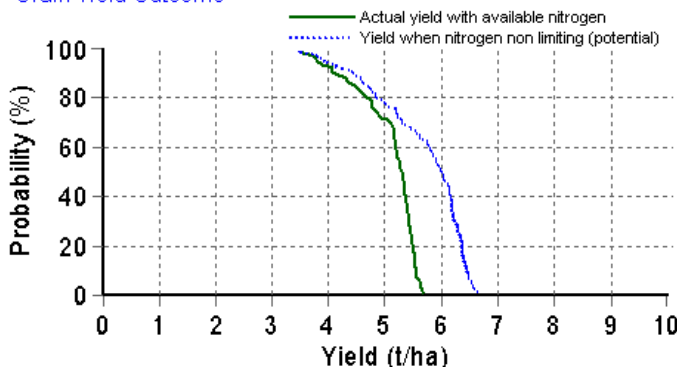
(measured 27<sup>th</sup> March)  
**Soil N prior to sowing (0-70cm):** 143kg/ha  
**Plant available water at sowing (0-90cm):** 7mm

## Crop growth

**Variety:** Gladius  
**Sowing date:** 1<sup>st</sup> June  
**Nitrogen fertiliser at sowing:** 50kgN/ha  
**Plant density:** 142 plants per square metre  
**Current growth stage:** flag fully emerged (GS39)  
**Predicted date of mid flowering:** 27<sup>th</sup> September

The graph below shows the chance of reaching the corresponding yield given weather, soil conditions and agronomic inputs to date, and historical climate data (100yrs) to simulate remainder of the season.

Grain Yield Outcome



# Hart Beat

## Crop topping pulses & pastures for control of ryegrass seed set

Trials at Hart in 2007 showed that low pressure air induction nozzles had the same efficacy as flat fans for controlling ryegrass seed set (Figure 1). This was using paraquat at 800ml/ha in 80L/ha of water. The ryegrass heads were at the soft dough stage.

Spraying pressures were 4.5 bar for the air induction nozzles and 3 bar for the others. All nozzle sizes were 110° 025 to produce fine (flat fan or amistar), medium (low drift) or medium/coarse (low pressure air induction) droplet sizes.



Hart field site 5<sup>th</sup> September 2009  
 Photo, John Heap SARDI

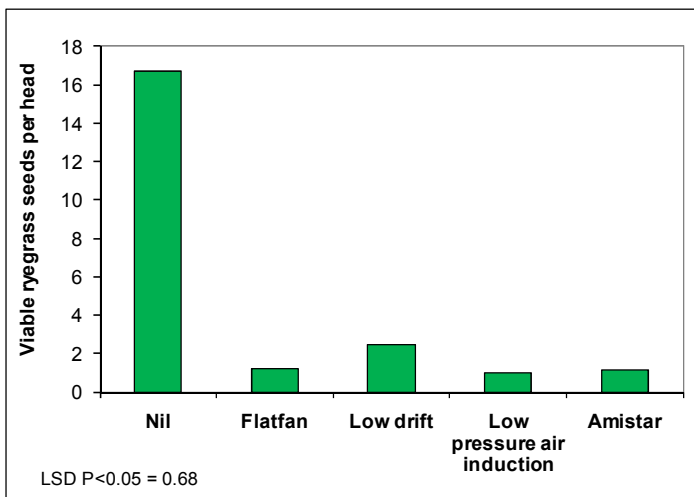


Figure 1. The control of ryegrass seeds per head using different droplet sizes, at Hart in 2007.

Table 1. Rainfall and soil water characteristics for the WUE sites.

Site	Average annual rainfall (mm)	Soil type	Drained upper limit (mm to 150cm)	Crop lower limit (mm to 150cm)	Plant Available Water Capacity (mm)
Condownie	350	Sandy loam	376	249	127
Hart	400	Sandy clay loam	683	482	201
Spalding	430	Red brown earth	469	319	150
Tarlee	470	Clay loam over rock	383*	263*	120*

\*depth to 125cm

## Hart field site contact information

### Sponsorship enquiries

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### Trials information

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