Hart Beat

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

30th July 2011 Issue 13

SOIL MOISTURE AT HART 2011

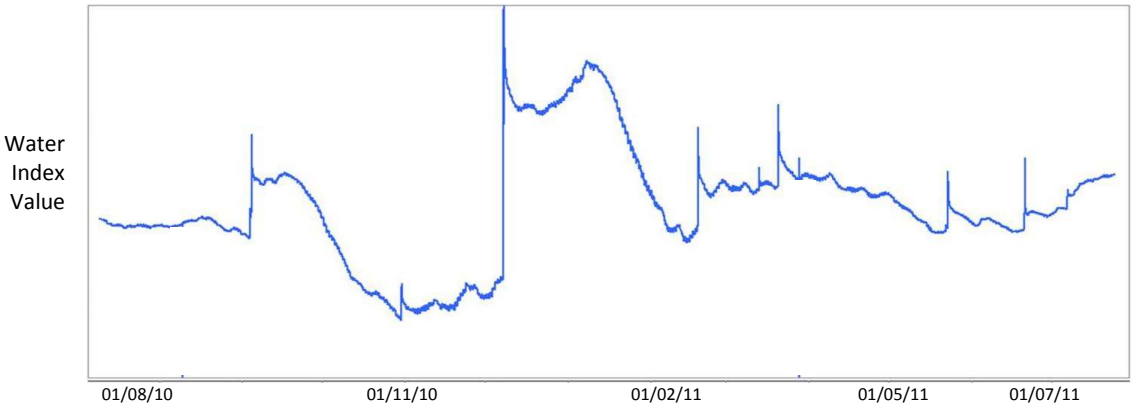


Figure 1 shows the change in moisture at Hart (as a relative index, not actual mm) between July 2010 and 30th July 2011. It is being continually measured by an Adcon Telemetry Advantage Pro moisture probe, and is positioned under the commercial crop. The total soil moisture (down to 90cm) at the Hart field-site is greater compared to the same time last year. Of note is the drying finish to 2010 and wet summer of 2011.

New trials at Hart in 2011

- Historic barley varieties – a selection of Australian and Canadian varieties
- Conserving soil moisture – treatments i.e reduced seed rates, slashing, wider rows etc, selected to reduce crop biomass
- Ryegrass control in breakcrops – looking at options besides selective grass herbicides
- Barley disease management – evaluating fungicides and their timing
- Wheat disease management – demonstration plots to show stripe and stem rust control
- Post-emergent ryegrass control – using pre-emergent herbicide on established ryegrass
- Group B tolerant crops – looking at the range of herbicide tolerant crops and their fit

2010 Hart result snippet

In the 2010 time of sowing trial the wheat varieties Axe and Gladius increased grain yield as time of sowing was delayed from May 1st until May 29th. The grain yield of Tjilkuri durum was not significantly affected by time of sowing and there was no significant response in grain yield to plant density for any of the wheat or durum varieties.

In previous seasons the results have been opposite to these, however 2010 produced a very mild and favourable finish to give these results.

See the 2010 Hart results book for more details.

DIARY DATES

HART FIELD DAY
Thursday 22nd September
Spring Twilight Walk
Tuesday 18th October

Further details:
www.hartfieldsite.org.au

Hart

Site information as of 30th July 2011

The season so far

Annual rain to date: 244mm
GSR to date: 116mm
GSR decile: 2.0
Current predicted PAW: 63mm

Crop growth

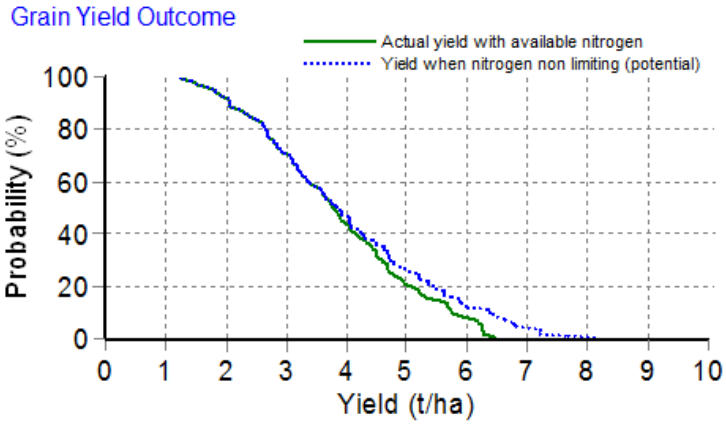
Variety: Gladius **Sowing date:** 30th May 2011
Nitrogen fertiliser: 9kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report30/07/2011)
These estimates are based on a 50% probability

Yield t/ha	Sown 30th May (see graph)	Change from last report	Sown 10th June	Change from last report
Grain	4.0	0.0	3.5	n/a

French & Schultz grain yield estimate:
100% WUE: 3.5 t/ha, 80% WUE: 2.7 t/ha
This model assumes that there is 38mm stored moisture, 110mm of evaporation and decile 5 (128mm) rainfall for the rest of the season.



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.

Condowie

Site information as of 30th July 2011

The season so far

Annual rain to date: 253mm
GSR to date: 125mm
GSR decile: 5.0
Current predicted PAW: 70mm

Crop growth

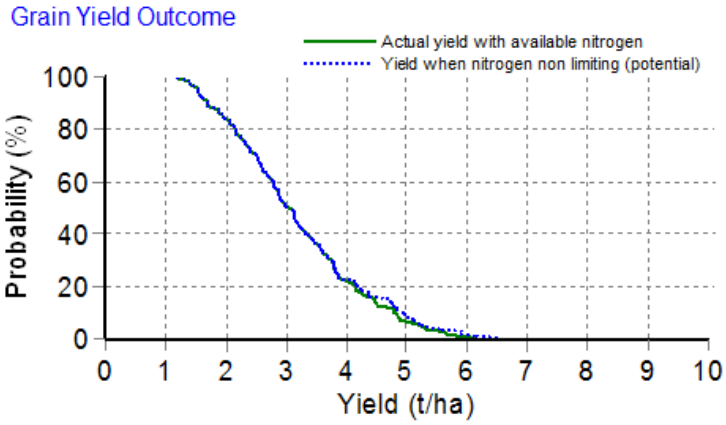
Variety: Gladius **Sowing date:** 21st May 2011
Nitrogen fertiliser: 8kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 30/07/2011)
These estimates are based on a 50% probability

Yield t/ha	Sown 21st May (see graph)	Change from last report	Sown 5th June	Change from last report
Grain	3.0	0.0	2.5	0.0

French & Schultz grain yield estimate:
100% WUE: 3.1 t/ha, 80% WUE: 2.5 t/ha
This model assumes that there is 38mm stored moisture, 110mm of evaporation and decile 5 (102mm) rainfall for the rest of the season.



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.

Kybunga

Site information as of 30th July 2011

The season so far

Annual rain to date: 254mm
GSR to date: 120mm
GSR decile: 1.5
Current predicted PAW: 119mm

Crop growth

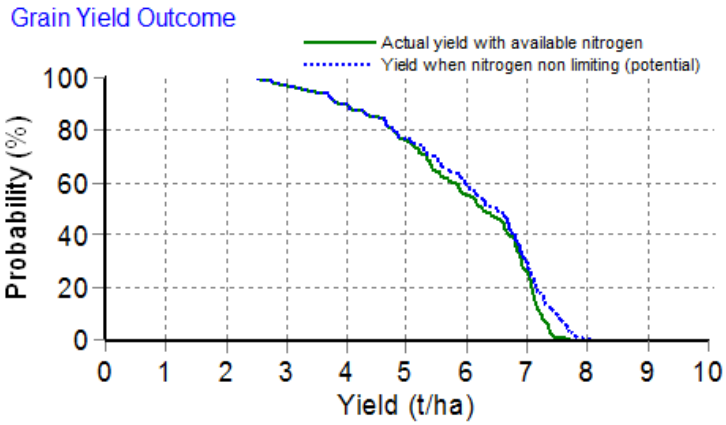
Variety: Gladius **Sowing date:** 15th May 2011
Nitrogen fertiliser: 30kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 30/07/2011)
These estimates are based on a 50% probability

Yield t/ha	Sown 15th May (see graph)	Change from last report	Sown 5th June	Change from last report
Grain	6.2	-0.2	5.1	0

French & Schultz grain yield estimate:
100% WUE: 3.3 t/ha, 80% WUE: 2.6 t/ha
This model assumes that there is 40mm stored moisture, 110mm of evaporation and decile 5 (113mm) rainfall for the rest of the season.



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.

Spalding

Site information as of 30th July 2011

The season so far

Annual rain to date: 261mm
GSR to date: 121mm
GSR decile: 2.0
Current predicted PAW: 80mm

Crop growth

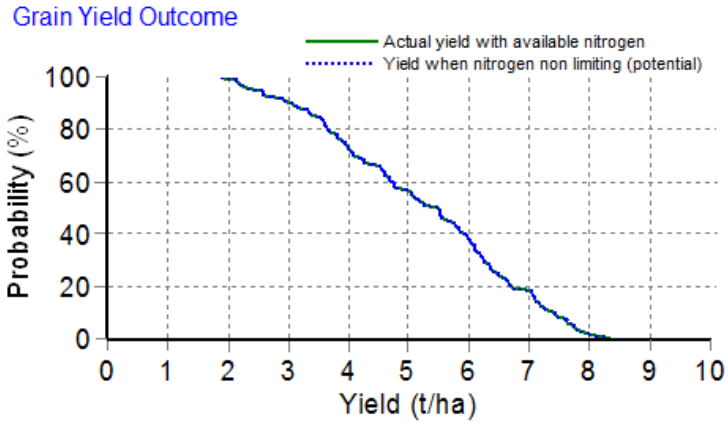
Variety: Gladius **Sowing date:** 19th May 2011
Nitrogen fertiliser: 48kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 30/07/2011)
These estimates are based on a 50% probability

Yield t/ha	Sown 19th May (see graph)	Change from last report	Sown 5th June	Change from last report
Grain	5.5	0.0	4.5	+0.1

French & Schultz grain yield estimate:
100% WUE: 3.8 t/ha, 80% WUE: 3.1 t/ha
This model assumes that there is 42mm stored moisture, 110mm of evaporation and decile 5 (138mm) rainfall for the rest of the season.



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.

Farrell Flat

Site information as of 30th July 2011

The season so far

Annual rain to date: 229mm
GSR to date: 116mm
GSR decile: 1.0
Current predicted PAW: 108mm

Crop growth

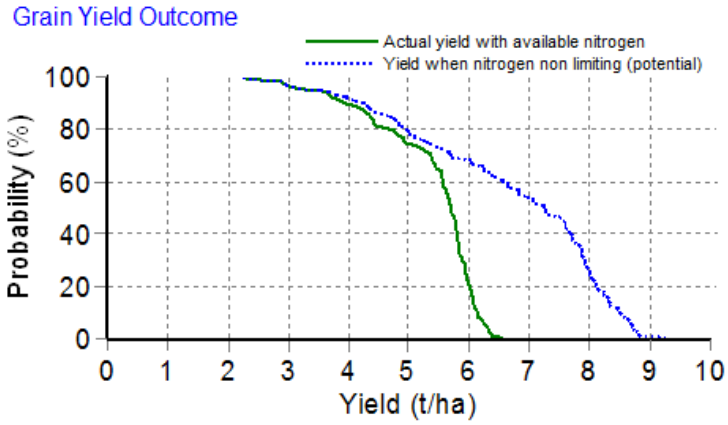
Variety: Gladius **Sowing date:** 15th May 2011
Nitrogen fertiliser: 70kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 30/07/2011)
These estimates are based on a 50% probability

Yield t/ha	Sown 15th May (see graph)	Change from last report	Sown 5th June	Change from last report
Grain	5.7	+2.1	5.4	+0.7

French & Schultz grain yield estimate:
100% WUE: 4.1 t/ha, 80% WUE: 3.3 t/ha
This model assumes that there is 34mm of soil moisture, 110mm of evaporation and decile 5 (156mm) rainfall for the rest of the season.



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.

Tarlee

Site information as of 30th July 2011

The season so far

Annual rain to date: 277mm
GSR to date: 140mm
GSR decile: 1.0
Current predicted PAW: 80mm

Crop growth

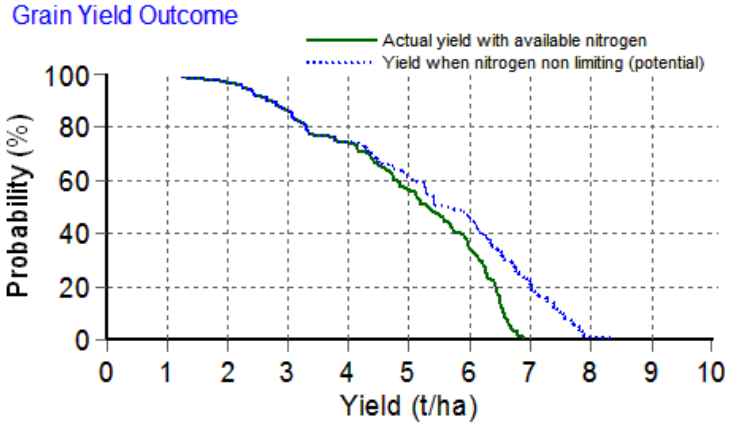
Variety: Scout **Sowing date:** 13th May 2011
Nitrogen fertiliser: 50kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 30/07/2011)
These estimates are based on a 50% probability

Yield t/ha	Sown 13th May (see graph)	Change from last report	Sown 5th June	Change from last report
Grain	6.0	+2.2	5.5	n/a

French & Schultz grain yield estimate:
100% WUE: 4.5 t/ha, 80% WUE: 3.6 t/ha
This model assumes that there is 41mm stored moisture, 110mm of evaporation and decile 5 (155mm) rainfall for the rest of the season.



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.

Hart Beat

Effect of wild oats on grain yield of barley

A trial funded by the GRDC in collaboration with the University of Adelaide has been running for the past 2 seasons in a paddock north of Clare. Previous treatments have produced a variation in wild oat plant number.

Wild oat plant number had a significant effect on the yield loss of barley (Figure 2). Approximately 20 to 25 WO plants per square metre caused a 50% loss in barley grain yield. Barley grain size was also significantly reduced (43 to 28 mg) under high wild oat densities.

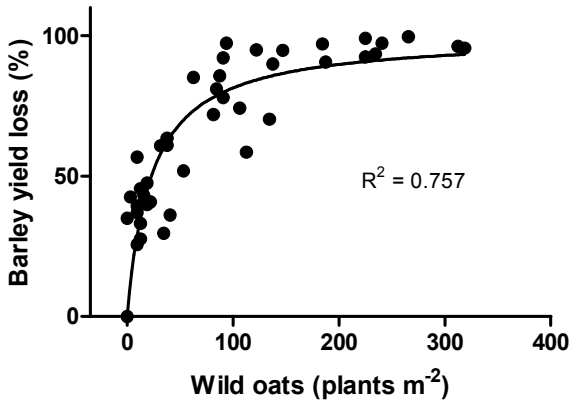


Figure 2. Effect of wild oat density on barley yield loss (%) at Clare in 2010.

PHOTO COMPETITION

Email us a photo of you **wearing your Hart hat somewhere unique** and you could win a Hart Gold Membership!

OR

Email us a photo of **someone 'famous' wearing your Hart hat** to also be in the running.

admin@hartfieldsite.org.au

Rainfall and water soil characteristics for WUE sites

Site	Average annual rainfall (mm)	Soil type	Pre-sowing soil moisture (0-90cm)(mm)	Pre-sowing soil nitrogen (0-90cm) (kg N/ha)	Plant Available Water Capacity (mm)
Condowie	350	Sandy loam	24	241	127
Hart	400	Sandy clay loam	26	189	201
Spalding	430	Red brown earth	51	265	150
Tarlee	470	Clay loam over clay on rock	26	100	163
Kybunga	428	Friable clay loam	85	185	263
Farrell Flat	474	Red clay loam over clay	64	123	173

HART FIELD-SITE GROUP INC – Contact information

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