



Hart Beat

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

15th August 2011 Issue 14

Nitrogen timing in barley

In 2010 at Hart, a GRDC funded barley agronomy trial was conducted in collaboration with SARDI, to improve nitrogen use efficiency. The trial included 2 malt barley varieties (Commander and Buloke) and 6 nitrogen timings on low soil nitrogen of 35 kg nitrogen/ha (0-60cm).

All the treatments received 60 kg nitrogen/ha. This was at sowing (4th May), or sowing and stem elongation (GS30, 13th July), all at stem elongation, or stem elongation and flag leaf emergence (GS37, 15th August).

In 2010, applying all the nitrogen at GS30 or an equal split between GS30 and GS37 produced the highest grain yields (Figure 1). These treatments maintained a greater proportion of tillers. The crop sensor strategy produced a similar yield, but with less nitrogen, 46 kg nitrogen/ha.

While there was little difference in grain quality between the treatments, grain protein significantly increased for the GS37 application. Although, this was still within malt receival grades.

At Hart in 2010, later application of nitrogen to malt barley increased grain yields and therefore maintained grain protein. While this was a single trial and was conducted in a season with a very mild finish, these results are also common in higher rainfall and mild districts.

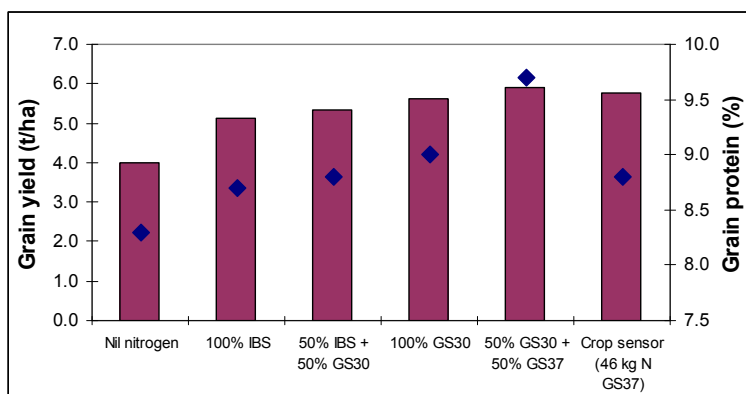


Figure 1. The effect of nitrogen timing on the grain yield and protein of malting barley for 60 kg nitrogen/ha, at Hart in 2010 (LSD yield 0.3t/ha and protein 0.53%).

For more details on the barley agronomy trial see the 2010 Hart Trials Results Book.

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 news, event reminders,
 photos and more.

DIARY DATES

2011

HART FIELD DAY

Thursday 22nd September

Spring Twilight Walk

Tuesday 18th October

2012

GETTING THE CROP IN

To be advised

WINTER WALK

Tuesday 24th July 2012

HART FIELD DAY

Tuesday 18th September 2012

Spring Twilight Walk

Tuesday 16th October 2012

Further details:

www.hartfieldsite.org.au

Hart

Site information as of 15th August 2011

The season so far

Annual rain to date: 269mm (25mm since last report)

GSR to date: 142mm

GSR decile: 3.0

Current predicted PAW: 57mm

Crop growth

Variety: Gladius Sowing date: 30th May 2011

Nitrogen fertiliser: 9kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 15/08/2011)

These estimates are based on a 50% probability

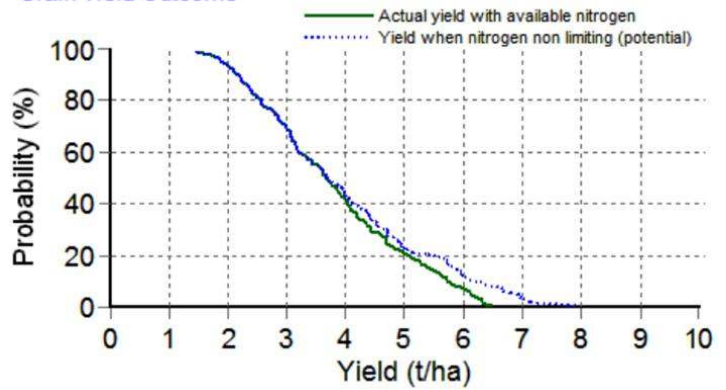
| Yield t/ha | Sown 30 th May (see graph) | Change from last report | Sown 10 th June | Change from last report |
|------------|---------------------------------------|-------------------------|----------------------------|-------------------------|
| Grain | 3.7 | -0.3 | 3.4 | -0.1 |

French & Schultz grain yield estimate:

100% WUE: 3.4 t/ha, 80% WUE: 2.7 t/ha

This model assumes that there is 38mm stored moisture, 110mm of evaporation and decile 5 (101mm) rainfall for the rest of the season.

Grain Yield Outcome



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 15th August 2011

The season so far

Annual rain to date: 275mm (22mm since last report)

GSR to date: 147mm

GSR decile: 5.0

Current predicted PAW: 62mm

Crop growth

Variety: Gladius Sowing date: 21st May 2011

Nitrogen fertiliser: 8kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 15/08/2011)

These estimates are based on a 50% probability

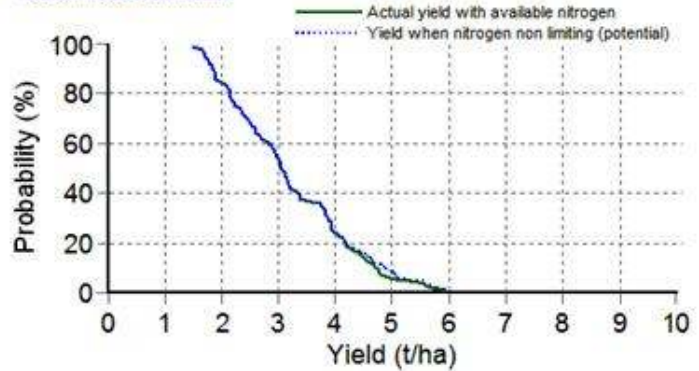
| Yield t/ha | Sown 21 st May (see graph) | Change from last report | Sown 5 th June | Change from last report |
|------------|---------------------------------------|-------------------------|---------------------------|-------------------------|
| Grain | 3.0 | 0.0 | 2.5 | 0.0 |

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 (80mm) rainfall for the rest of the season.

Grain Yield Outcome



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 15th August 2011

The season so far

Annual rain to date: 288mm (34mm since last report)

GSR to date: 154mm

GSR decile: 3.5

Current predicted PAW: 118mm

Crop growth

Variety: Gladius Sowing date: 15th May 2011

Nitrogen fertiliser: 60kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 15/08/2011)

These estimates are based on a 50% probability

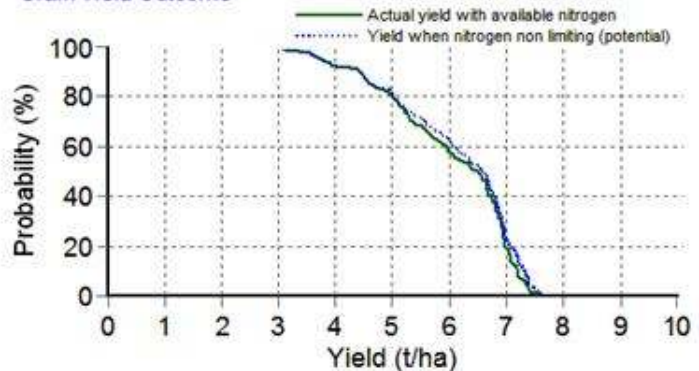
| Yield t/ha | Sown 15 th May (see graph) | Change from last report | Sown 5 th June | Change from last report |
|------------|---------------------------------------|-------------------------|---------------------------|-------------------------|
| Grain | 6.5 | +0.3 | 5.4 | +0.3 |

French & Schultz grain yield estimate:

100% WUE: 3.43 t/ha, 80% WUE: 2.74 t/ha

This model assumes that there is 40mm stored moisture, 110mm of evaporation and decile 5 (87mm) rainfall for the rest of the season.

Grain Yield Outcome



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 15th August 2011

The season so far

Annual rain to date: 297mm (36mm since last report)

GSR to date: 157mm

GSR decile: 4.0

Current predicted PAW: 82mm

Crop growth

Variety: Gladius Sowing date: 19th May 2011

Nitrogen fertiliser: 48kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 15/08/2011)

These estimates are based on a 50% probability

| Yield t/ha | Sown 15 th May (see graph) | Change from last report | Sown 5 th June | Change from last report |
|------------|---------------------------------------|-------------------------|---------------------------|-------------------------|
| Grain | 5.5 | 0.0 | 4.5 | 0.0 |

French & Schultz grain yield estimate:

100% WUE: 4.0 t/ha, 80% WUE: 3.2 t/ha

This model assumes that there is 42mm stored moisture, 110mm of evaporation and decile 5 (110mm) rainfall for the rest of the season.

Grain Yield Outcome



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 15th August 2011

The season so far

Annual rain to date: 267mm (38mm since last report)

GSR to date: 154mm

GSR decile: 2.0

Current predicted PAW: 115mm

Crop growth

Variety: Gladius Sowing date: 15th May 2011

Nitrogen fertiliser: 70kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 15/08/2011)

These estimates are based on a 50% probability

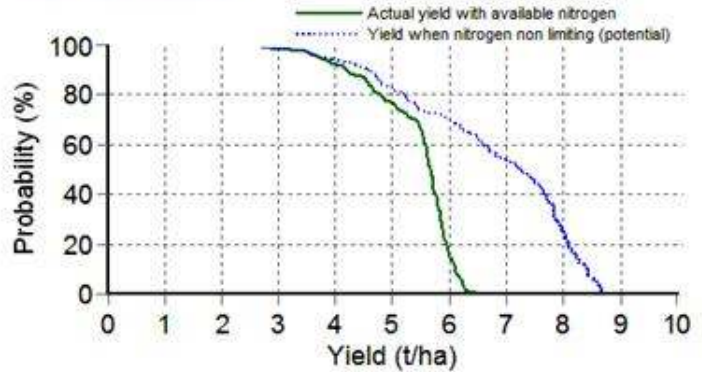
| Yield t/ha | Sown 15 th May (see graph) | Change from last report | Sown 5 th June | Change from last report |
|------------|---------------------------------------|-------------------------|---------------------------|-------------------------|
| Grain | 5.6 | -0.1 | 5.6 | +0.2 |

French & Schultz grain yield estimate:

100% WUE: 4.0 t/ha, 80% WUE: 3.2 t/ha

This model assumes that there is 34mm of soil moisture, 110mm of evaporation and decile 5 (124mm) rainfall for the rest of the season.

Grain Yield Outcome



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 15th August 2011

The season so far

Annual rain to date: 257mm (20mm since last report)

GSR to date: 168mm

GSR decile: 1.2

Current predicted PAW: 50mm

Crop growth

Variety: Scout Sowing date: 13th May 2011

Nitrogen fertiliser: 70kgN/ha

Grain yield predictions

Yield prophet estimate: (Date of report 15/08/2011)

These estimates are based on a 50% probability

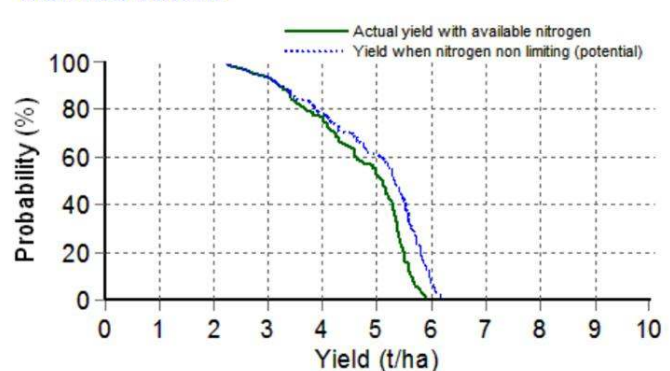
| Yield t/ha | Sown 13 th May (see graph) | Change from last report | Sown 5 th June | Change from last report |
|------------|---------------------------------------|-------------------------|---------------------------|-------------------------|
| Grain | 5.1 | -0.9 | 4.5 | -1.0 |

French & Schultz grain yield estimate:

100% WUE: 4.6 t/ha, 80% WUE: 3.7 t/ha

This model assumes that there is 41mm stored moisture, 110mm of evaporation and decile 5 (132mm) rainfall for the rest of the season.

Grain Yield Outcome



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

Hart results snippet

For the control of glyphosate resistant ryegrass along fencelines the addition of other herbicides or doubling the glyphosate rate did not greatly improve control. Two applications of Spray.Seed at 3.2L/ha, Spray.Seed mixed with diuron at 6L/ha or Alliance at 4L/ha applied alone all provided the best levels of control for the currently registered products and mixtures.



Hart Trials Manager, Peter Hooper wearing his Hart hat at the Taj Mahal earlier this year.

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



Hart board member Damien Sommerville stopping off for a Guinness in Ireland while wearing his Hart hat.

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) |
|--------------|------------------------------|-----------------------------|---------------------------------------|---|-------------------------------------|
| Condownie | 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 |

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HIGH RAINFALL ZONE

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