Hart Winter Walk

Last week more than 80 attended the Hart Winter Walk on a rare sunny and calm morning.

Rohan Kimber from SARDI discussed his research using a spore trap to monitor fungal pathogens and the relationship with climatic triggers. This data will be modeled over multiple years to provide in-season reports on a number of cereal and pulse diseases.

Peter Boutsalis from the University of Adelaide discussed the geographical spread of target site herbicide resistance in the Mid North and Yorke Peninsula areas. He also displayed maps to show the large variation in spatial resistance patterns within single paddocks. Peter is currently investigating two new knockdown chemistries, both with low toxicity, and has seen promising results to date.

We also heard from Paul Bogacki from SARDI about recently released seed treatments for rhizoctonia. Higher yield increases have been observed when the products are banded in a fluid stream compared to seed treatments alone.

And of course, Larn McMurray covered the seasonal topics on pulses. Larn tells us there is an exciting new lentil variety soon to be released - attend his talk during the main Hart Field Day on 17th September to hear more!

Barley variety response to nitrogen fertiliser

In 2012 a trial at Hart examined barley varieties against nitrogen (N) rate and timing strategies for maximum yield and quality. Varieties selected in 2012 were Buloke, Commander, Fathom, Hindmarsh, IGB1101, Skipper and Wimmera.

All varieties responded similarly in grain yield to applied N. The 40 kg N/ha incorporated by sowing (IBS) treatment yielded similar to the nil, while all other remaining N treatments yielded higher, ranging from a 5% yield response using Greenseeker to 8% when 40 kg N/ha was applied at GS30 (Table 1).

The predetermined N strategies of 40 and 80 kg N/ha led to an oversupply of N and decline in grain quality in all varieties (Table 1). High grain protein levels were also likely to be a result of low rainfall after flowering in 2012.

Overall variety selection played a more important role on yield and quality than N management. The dry finish in 2012 favoured early to mid-maturing varieties. Wimmera (late maturing) yielded lowest at 2.47 t/ha and Fathom (early-mid) yielding highest at 3.30 t/ha (Table 2).

A similar trial in 2011 also found there was no significant yield response for Commander and Buloke with any N treatments, while Hindmarsh was more responsive (average yield increase of 0.6 t/ha) to earlier applications of N, regardless of rate.

In previous wet spring seasons such as 2010 (average 5.2 t/ha), later applications of nitrogen (GS30 and GS37) produced the highest yields and quality for Commander and Buloke malt barley.

N treatment	Grain yield (t/ha)	Test weight	AE* (kg grain/kgN)	Protein (%)
1. No applied N (nil)	2.88	71.2	-	11.7
2. 40kgN IBS	2.93	70.8	1.2	13.2
3. 80kgN IBS	3.07	70.1	2.4	13.3
5. 40kgN GS30	3.12	70.4	6.0	13.5
4. 80kgN GS30	3.05	70.2	2.1	14.8
6. 10kgN GS30 (Greenseeker)	3.01	70.6	13.0	13.2
LSD (5%)	0.10	NS		1.2

Variety	Grain Yield (t/ha)	Testweight (kg/hL)	Protein (%)
Buloke	2.79	70.2	12.8
Commander	2.96	70.5	12.8
Fathom	3.30	69.8	13.0
Hindmarsh	3.15	70.1	13.2
IGB1101	3.19	70.2	13.0
Skipper	3.20	70.1	13.2
Wimmera	2.47	72.6	14.7
LSD (5%)	0.09	1.6	0.3

Hart (sandy clay loam)

The season so far
Annual rain to date: 310mm
GSR to date: 258mm
GSR decile: 9.0
Current predicted PAW: 141mm

Crop growth
Variety: Mace wheat   **Sowing date:** 1st May
Nitrogen fertiliser: 65 kg N/ha

Site information as of 23rd July 2013

Grain yield predictions
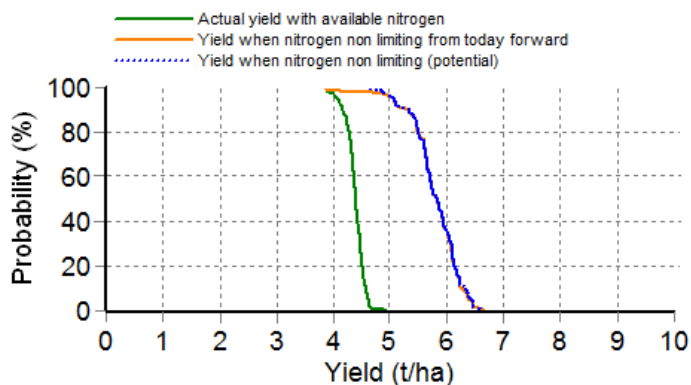These estimates are based on a 50% probability

Yield t/ha	Sown 1st May (see graph)	Change since last report	Sown 20th May	Change since last report
Grain	5.1	0.5	5.3	1.1

French & Schultz grain yield estimate:
100% WUE: 5.8 t/ha, 80% WUE: 4.7 t/ha
This model assumes that there was 0mm stored moisture, 110mm of evaporation and decile 5 (143mm) 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.

Pinery (silty clay loam)

The season so far
Annual rain to date: 259mm
GSR to date: 232mm
GSR decile: 9.0
Current predicted PAW: 80mm

Crop growth
Variety: Mace wheat   **Sowing date:** 1st May
Nitrogen fertiliser: 65 kg N/ha

Site information as of 23rd of July 2013

Grain yield predictions
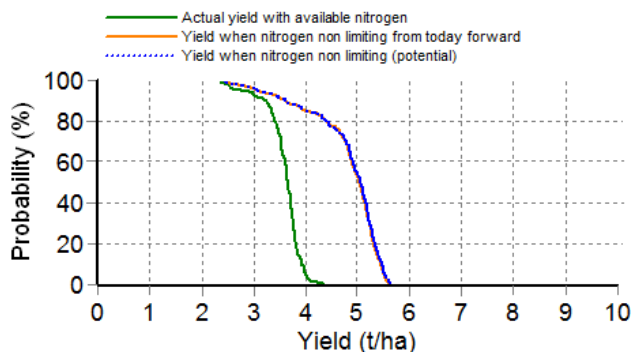These estimates are based on a 50% probability

Yield t/ha	Sown 1st May (see graph)	Change from last report	Sown 20th May	Change since last report
Grain	4.3	0.5	3.8	0.8

French & Schultz grain yield estimate:
100% WUE: 5.0 t/ha, 80% WUE: 4.0 t/ha
This model assumes that there was 0mm stored moisture, 110mm of evaporation and decile 5 (129mm) 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 (clay loam)

The season so far
Annual rain to date: 293mm
GSR to date: 262mm
GSR decile: 10.0
Current predicted PAW: 140mm

Crop growth
Variety: Mace wheat   **Sowing date:** 1st May
Nitrogen fertiliser: 65 kg N/ha

Site information as of 21st July 2013

Grain yield predictions
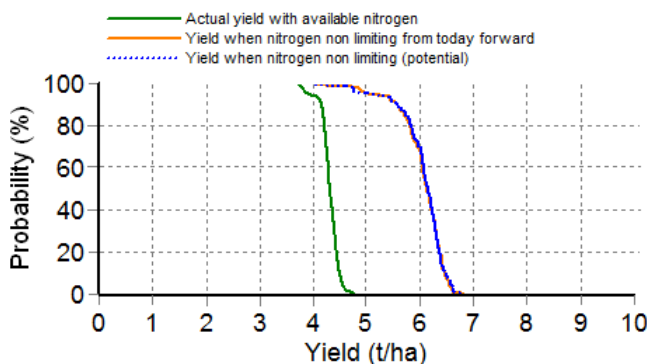These estimates are based on a 50% probability

Yield t/ha	Sown 1st May (see graph)	Change from last report	Sown 20th May	Change since last report
Grain	5.2	0.4	5.3	0.3

French & Schultz grain yield estimate:
100% WUE: 6.5 t/ha, 80% WUE: 5.2 t/ha
This model assumes that there was 0mm stored moisture, 110mm of evaporation and decile 5 (175mm) 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 (red brown earth)

The season so far
Annual rain to date: 273mm
GSR to date: 234mm
GSR decile: 8.0
Current predicted PAW: 131mm

Crop growth
Variety: Mace wheat **Sowing date:** 1st May
Nitrogen fertiliser: 65 kg N/ha

Site information as of 23rd July 2013

Grain yield predictions
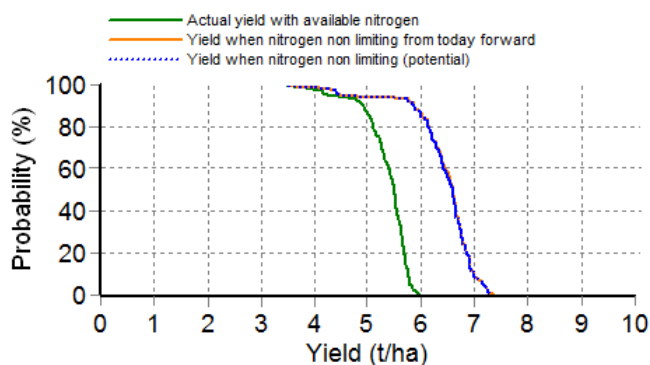These estimates are based on a 50% probability

Yield t/ha	Sown 1st May (see graph)	Change from last report	Sown 20th May	Change since last report
Grain	6.0	0.4	5.7	0.7

French & Schultz grain yield estimate:
100% WUE: 5.6 t/ha, 80% WUE: 4.5 t/ha
This model assumes that there was 0mm stored moisture, 110mm of evaporation and decile 5 (157mm) 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 (red clay loam)

The season so far
Annual rain to date: 305mm
GSR to date: 270mm
GSR decile: 8.0
Current predicted PAW: 138mm

Crop growth
Variety: Mace wheat **Sowing date:** 1th May
Nitrogen fertiliser: 65 kg N/ha

Site information as of 23rd July 2013

Grain yield predictions
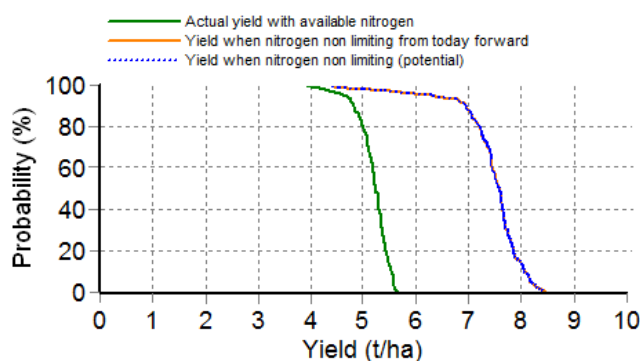These estimates are based on a 50% probability

Yield t/ha	Sown 1st May (see graph)	Change from last report	Sown 20th May	Change since last report
Grain	6.4	0.7	6.3	1.3

French & Schultz grain yield estimate:
100% WUE: 6.7 t/ha, 80% WUE: 5.4 t/ha
This model assumes that there was 0mm stored moisture, 110mm of evaporation and decile 5 (175mm) 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 (clay loam)

The season so far
Annual rain to date: 256mm
GSR to date: 223mm
GSR decile: 8.0
Current predicted PAW: 78mm

Crop growth
Variety: Mace wheat **Sowing date:** 1st May
Nitrogen fertiliser: 65 kg N/ha

Site information as of 23rd July 2013

Grain yield predictions
These estimates are based on a 50% probability

Yield t/ha	Sown 1st May (see graph)	Change from last report	Sown 20th May	Change since last report
Grain	5.2	0.3	5.4	0.6

French & Schultz grain yield estimate:
100% WUE: 5.7 t/ha, 80% WUE: 4.6 t/ha
This model assumes that there was 0mm stored moisture, 110mm of evaporation and decile 5 (173mm) rainfall for the rest of the season.
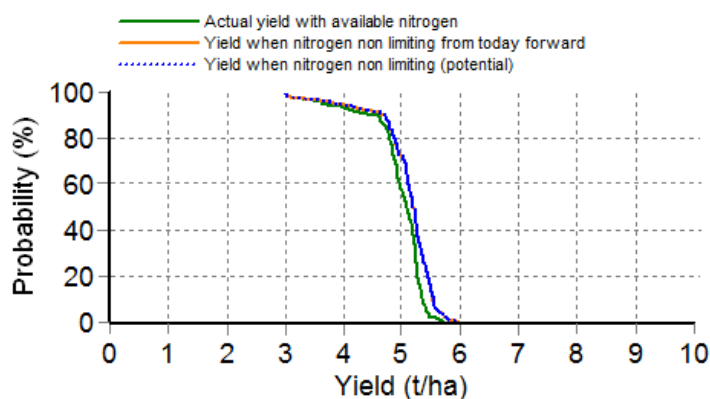
Grain Yield Outcome

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.

WINTER WALK 2013

Larn McMurray, SARDI

Peter Boutsalis, Uni of Adelaide

Hart Winter Walk – 23rd July 2013

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