

# Crop Report

11-Jul-2017

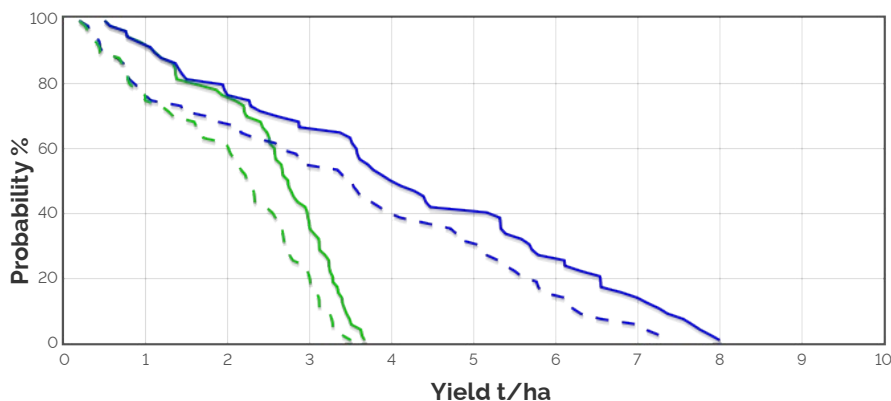
Toni Nugent: Graham  
Centre Field Site

**Crop: Wheat**  
**Cultivar: Gregory**  
 Sowing details: 150 plants/m<sup>2</sup> on 22-May  
 Expected maturity date: 27-Nov

**Paddock Details**  
 Initial conditions date: 1-May  
 Soil: Red Kandosol (No498-Generic)  
 1500 mm max rooting depth  
 Stubble: 0 kg/ha of Wheat  
 No till

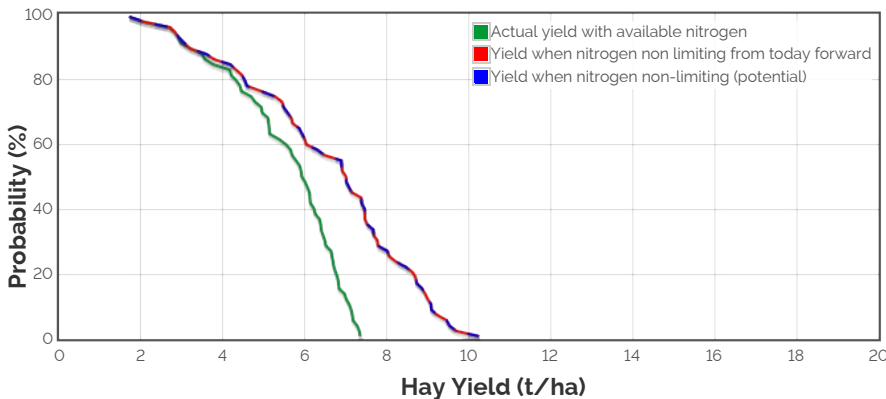
## Grain Yield Outcome

- Nitrogen limited Yield
- Nitrogen limited Yield with Frost and heat Effects
- Water limited Yield
- Water limited Yield with Frost and heat Effects



This graph shows the probability of exceeding a range of yield outcomes this season. It takes into account your pre-season soil moisture, the weather conditions so far, soil N and agronomic inputs. The long term record from your nominated weather station is then used to simulate what would have happened from this date on in each year of the climate record. The yield results are used to produce this graph.

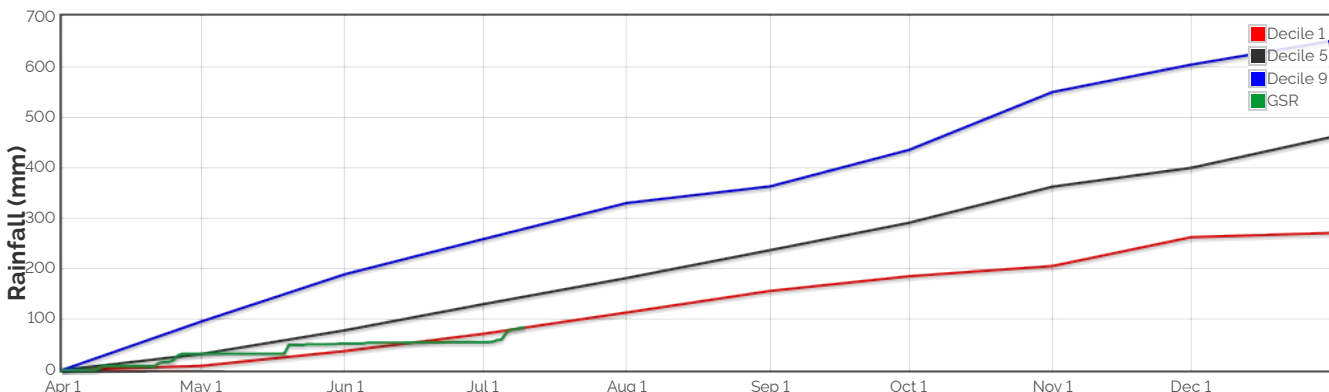
## Hay Yield Outcome



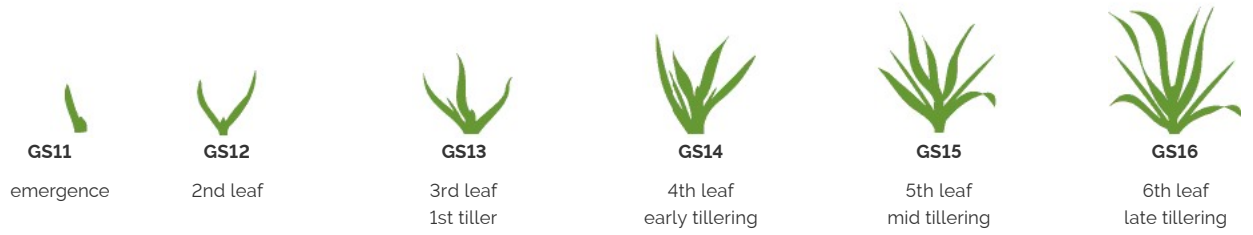
This graph shows the probability of exceeding a range of hay yield outcomes this season. It takes into account the same factors as the grain yield graph above. When above ground dry matter is below 2t/ha, hay yield is assumed to be 70% of dry matter, with a moisture content of 13%. When dry matter is between 2 and 12t/ha, hay yield is assumed to be between 70 and 75% of dry matter (sliding scale). When dry matter is above 12t/ha, hay yield is assumed to be between 75 and 80% (sliding scale).

Current dry matter: 132.7kg/ha

## The Season So Far - Growing Season Rainfall Deciles



# Simulated and Predicted Crop Growth Stage



Predicted

Earliest	5-Jun	21-Jun	5-Jul	15-Jul	23-Jul	2-Aug
Median	5-Jun	21-Jun	5-Jul	16-Jul	28-Jul	8-Aug
Latest	5-Jun	21-Jun	5-Jul	20-Jul	2-Aug	15-Aug



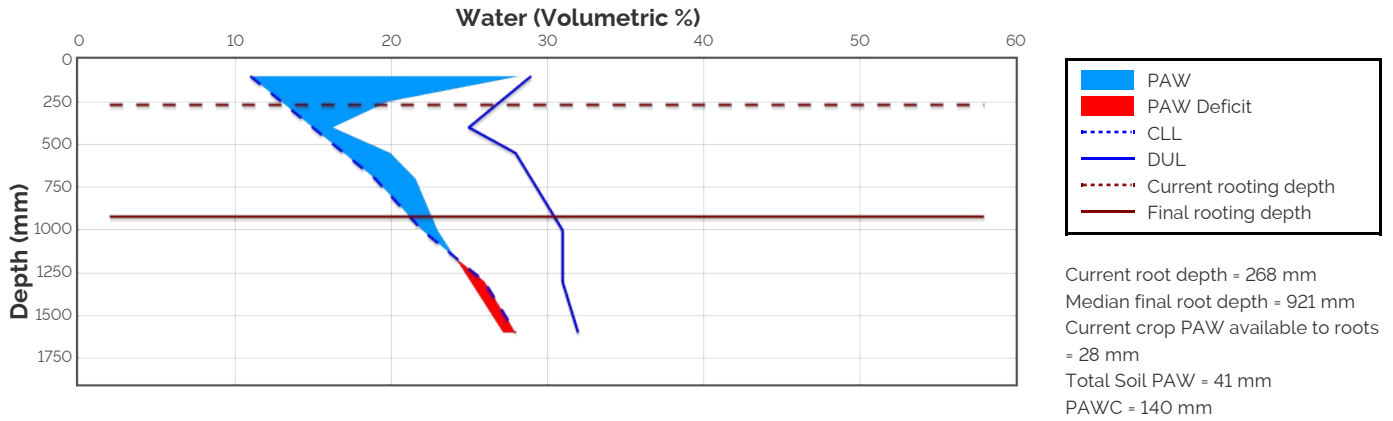
Predicted

Earliest	23-Aug	27-Aug	31-Aug	8-Sep	13-Sep	20-Sep	1-Oct	10-Oct	27-Oct
Median	28-Aug	1-Sep	5-Sep	17-Sep	22-Sep	30-Sep	10-Oct	19-Oct	4-Nov
Latest	4-Sep	7-Sep	12-Sep	25-Sep	29-Sep	8-Oct	18-Oct	29-Oct	19-Nov

## Probability and Incidence of Frost and Heat Shock

Frost damage during flowering				Heat damage during grain fill			
Severity	Probability	This Season		Severity	Probability	This Season	
mild 2 to 0°C during flowering	52%	0		mild 32 to 34°C	42%	0	
moderate 0 to -2°C during flowering & early grain fill	4%	0		moderate 34 to 36°C	31%	0	
severe Less than -2°C during flowering & grain fill	0%	0		severe Above 36°C	6%	0	

## Current Distribution of PAW



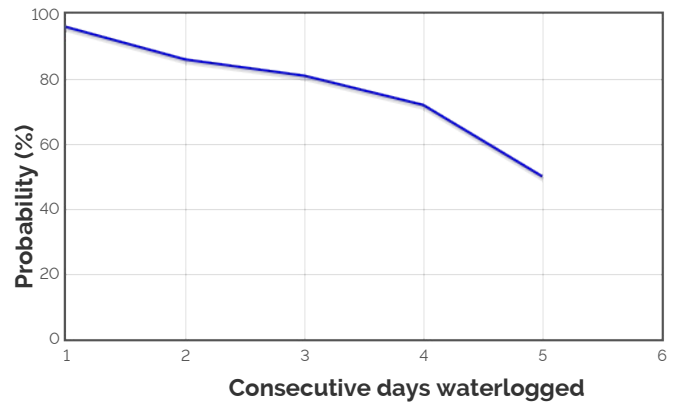
## Water Budget

Initial PAW status @ 1-May  
 Rainfall since 1-May  
 Irrigations  
 Evaporation since 1-May  
 Transpiration since 1-May  
 Deep drainage since 1-May  
 Run-off since 1-May

**Current PAW status:**

15 mm  
 84.6 mm  
 37 mm  
 1 mm  
 0 mm  
 0 mm  
**41 mm**

## Probability of Future Waterlogging Events



## Nitrogen Budget

Initial N status @ 1-May  
 N mineralisation since 1-May  
 N tie up since 1-May  
 N applications

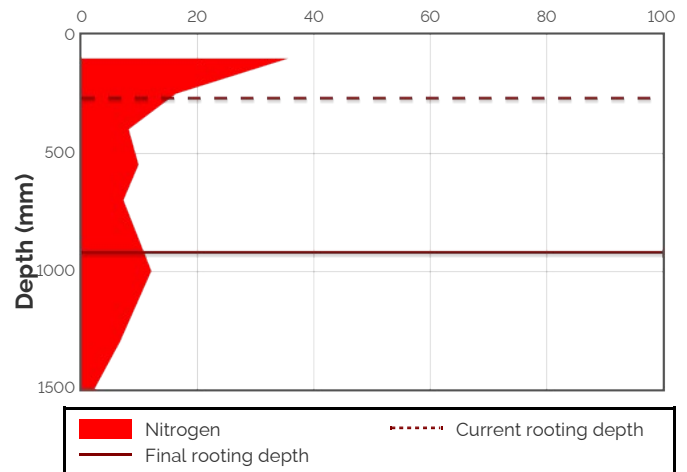
Total N in plant  
 De-nitrification since 1-May  
 Leaching

**Current N status:**

Median N mineralisation to maturity = 2.215 kg/ha  
 Median N tie up to maturity = 0 kg/ha

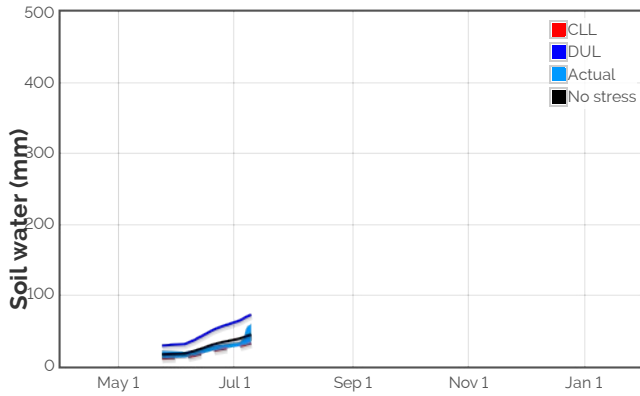
89 kg/ha  
 0 kg/ha  
 4 kg/ha  
 22-May : 12.6 kg/ha  
 8 kg/ha  
 0 kg/ha  
 0 kg/ha  
**92 kg/ha**

## Current distribution of soil nitrogen (kg/ha)

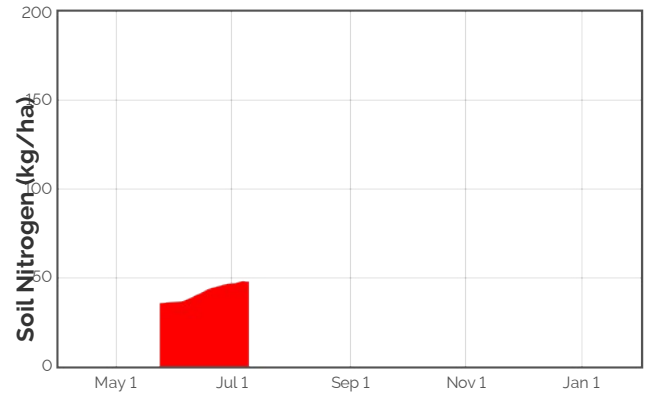


Current Crop Available N = 48 kg/ha  
 Total Soil N = 92 kg/ha

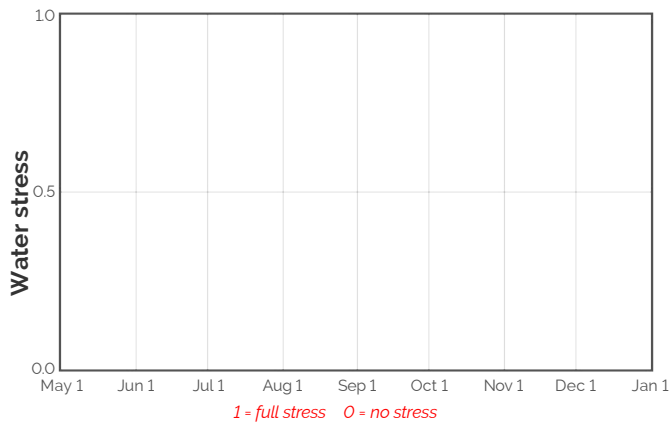
## Availability of Water to Growing Roots



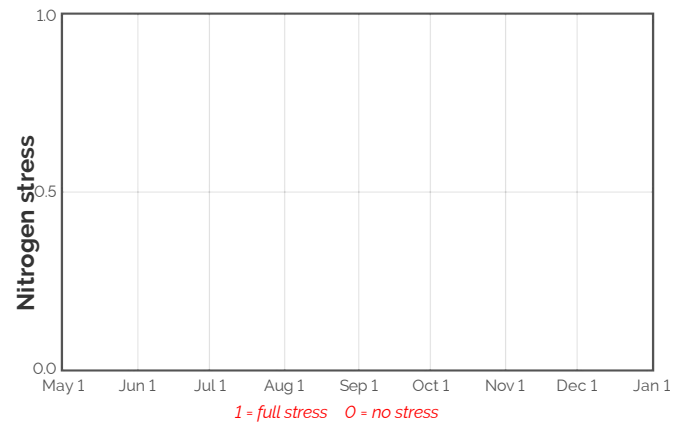
## Availability of Soil Nitrogen to Growing Roots



## Water Stress



## Nitrogen Stress



Brief periods of mild to moderate stress do not necessarily lead to reduced yield. To see the likely impacts of additional nitrogen fertiliser rates use the Nitrogen and Nitrogen Profit reports.

## Median projected crop performance and requirements for the next 10 days assuming no rain and no added fertiliser

Date	Growth Stage	Evap. (mm)	Water use (mm)	N use (kg/ha)	Water avail. to roots above stress threshold (mm)	Water avail. to roots above CLL (mm)	N avail. to roots (kg/ha)	Mineralisation (kg/ha)	N tie up (kg/ha)
11-Jul	13.7	1.1	0.1	0.5	14.3	26.7	47.6	0.0	0.0
12-Jul	13.8	1.0	0.1	0.5	13.1	25.7	47.5	0.0	0.0
13-Jul	13.9	1.0	0.1	0.5	11.8	24.6	47.4	0.0	0.0
14-Jul	13.9	0.8	0.1	0.5	10.7	23.6	47.2	0.0	0.0
15-Jul	14.0	0.6	0.1	0.6	9.8	22.8	47.0	0.0	0.0
16-Jul	14.1	0.5	0.1	0.6	9.1	22.3	46.8	0.0	0.0
17-Jul	14.2	0.4	0.1	0.6	8.4	21.9	46.6	0.0	0.0
18-Jul	14.3	0.4	0.1	0.7	7.8	21.5	46.4	0.0	0.0
19-Jul	14.3	0.4	0.1	0.8	7.3	21.1	46.1	0.0	0.0
20-Jul	14.4	0.3	0.1	0.8	6.7	20.7	45.8	0.0	0.0

The water available to roots above the stress threshold is the amount of PAW (mm) above one third of the total water holding capacity of this soil. If the water values are below this stress threshold the water available to roots above the stress threshold will be negative.

# Bureau of Meteorology Seasonal and Monthly Outlooks

