

# Crop Report

10-Jul-2017

UpperNorthFS: Clark

Crop: Wheat Cultivar: Trojan

Sowing details: 200 plants/m<sup>2</sup> on 10-May Expected maturity date: 18-Nov

#### Paddock Details

Initial conditions date: 24-May

Loam over clay loam over sandy clay Soil:

loam (Morchard Hill No604) 1000 mm max rooting depth

Stubble: 1000 kg/ha of Canola

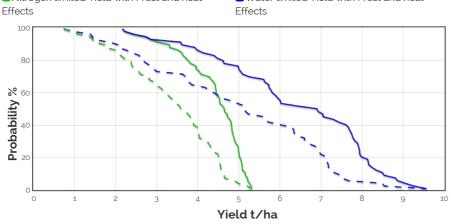
No till

#### Grain Yield Outcome

**☑**Nitrogen limited Yield **☑**Nitrogen limited Yield with Frost and heat Effects

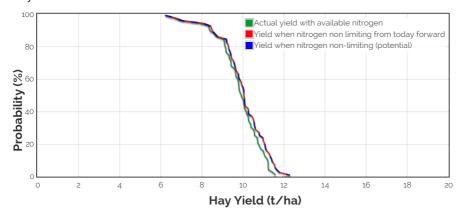
**☑**Water limited Yield

**☑**Water limited Yield with Frost and heat



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.

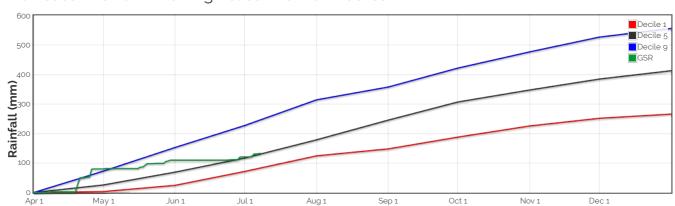
#### Hay Yield Outcome



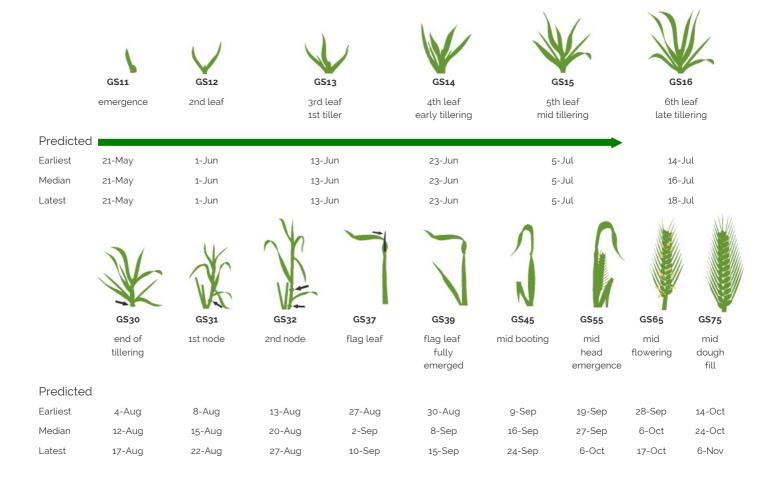
This graph shows the probability of exceeding a range of hay yield outcomes this season. It takes into account the same factors as the grain yield graph above. When above ground dry matter is below 2t/ha, hay yield is assumed to be 70% of dry matter, with a moisture content of 13%. When dry matter is 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: 858.4kg/ha

#### The Season So Far - Growing Season Rainfall Deciles



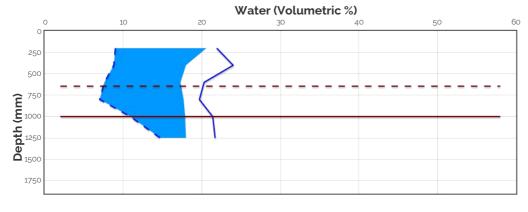
## Simulated and Predicted Crop Growth Stage

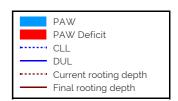


# Probability and Incidence of Frost and Heat Shock

rost damage during f	lowering	Heat damage during gra	Heat damage during grain fill			
everity Probability	This Season	Severity Probability	This Season			
nild to 0°C 59%	0	mild 32 to 34°C 49%	0			
luring owering		moderate 34 to 36°C 21%	0			
noderate to -2°C luring owering & arly grain Il	0	severe Above 36°C 6%	O			
evere 0% ess than 2'C during owering & rain fill	0					

#### Current Distribution of PAW





Current root depth = 645 mm Median final root depth = 1000 mm Current crop PAW available to roots = 65 mm Total Soil PAW = 104 mm PAWC = 146 mm

PAW = Plant Available Water

**CLL** - Crop Lower Limit or Wilting Point

**DUL** - Drained Upper Limit or Field Capacity

PAWC = Plant Available Water Capacity

Current Crop PAW = Soil water currently accessible to the roots down to the current rooting depth

Soil PAW = Total accessible soil water in the soil profile

#### Water Budget

Initial PAW status @ 24-May Rainfall since 24-May Irrigations Evaporation since 24-May Transpiration since 24-May Deep drainage since 24-May Run-off since 24-May

**Current PAW status:** 

108 mm 133.2 mm 74 mm 10 mm 4 mm 8 mm

153 kg/ha

1 kg/ha

9 kg/ha

48 kg/ha

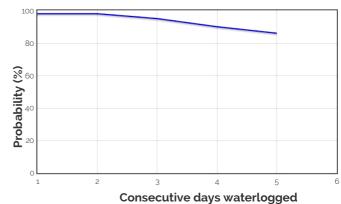
1 kg/ha

1 kg/ha

123 kg/ha

25-May: 19.6 kg/ha

# Probability of Future Waterlogging Events



#### Nitrogen Budget

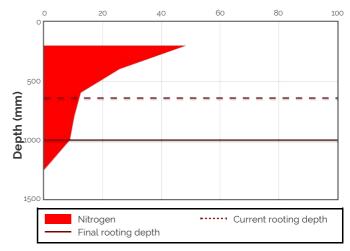
Initial N status @ 24-May N mineralisation since 24-May N tie up since 24-May N applications

Total N in plant De-nitrification since 24-May Leaching

#### Current N status:

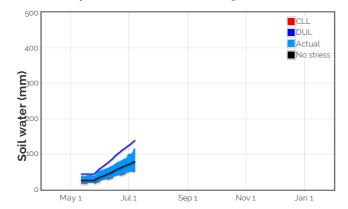
Median N mineralisation to maturity = 0.074 kg/ha Median N tie up to maturity = 5.855 kg/ha

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



Current Crop Available N = 84 kg/ha Total Soil N = 123 kg/ha

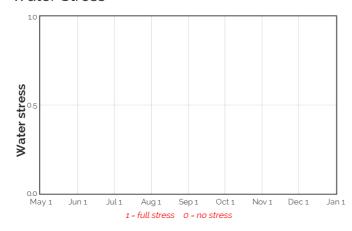
## Availability of Water to Growing Roots



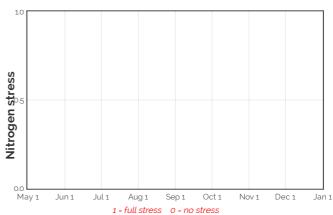
## Availability of Soil Nitrogen to Growing Roots



#### 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	Evap.	Water	N use	Water avail. to roots	Water avail. to roots	N avail.	MineralisationN tie up	
	Stage	(mm)	use (mm)	(kg/ha)	above stress threshold (mm)	above CLL (mm)	to roots (kg/ha)	(kg/ha)	(kg/ha)
10-Jul	15.6	0.6	0.4	2.2	39.3	66.2	80.9	0.0	0.1
11-Jul	15.7	0.5	0.3	2.2	39.2	66.5	79.8	0.0	0.1
12-Jul	15.8	0.5	0.4	2.2	39.1	66.9	78.8	0.0	0.1
13-Jul	15.9	0.5	0.4	2.3	39.0	67.0	76.9	0.0	0.1
14-Jul	16.0	0.5	0.4	2.5	38.9	67.3	76.0	0.0	0.1
15-Jul	16.0	0.5	0.4	2.5	38.7	67.4	74.8	0.0	0.1
16-Jul	16.0	0.6	0.5	2.5	38.4	67.7	72.3	0.0	0.1
17-Jul	16.0	0.6	0.5	3.1	38.3	67.8	70.5	0.0	0.1
18-Jul	16.0	0.6	0.5	2.6	37.6	67.8	68.9	0.0	0.0
19-Jul	16.0	0.5	0.5	2.8	37.3	67.7	66.9	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

