

# Crop Report

10-Jul-2017

UpperNorthFS: Kuerschner

Crop: Wheat Cultivar: Mace

Sowing details: 150 plants/m<sup>2</sup> on 1-May Expected maturity date: 9-Nov

#### Paddock Details

Initial conditions date: 23-May

Soil: Loam over clay loam over sandy clay

loam (Morchard Hill No604)
700 mm max rooting depth

Stubble: 1000 kg/ha of Medic

No till

#### Grain Yield Outcome

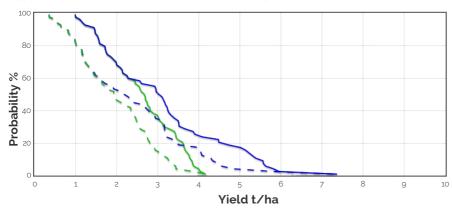
☑Nitrogen limited Yield

☑Nitrogen limited Yield with Frost and h

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

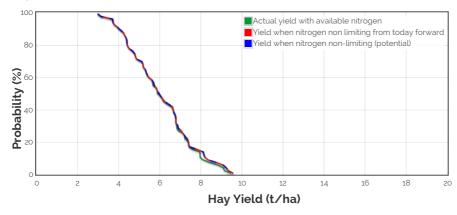
**☑**Water limited Yield

**☑**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.

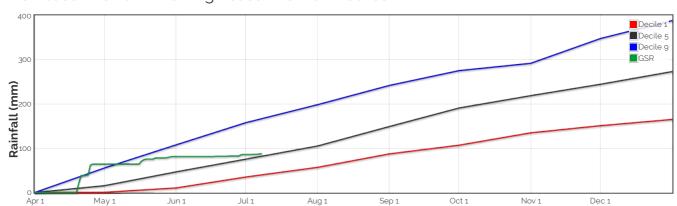
#### Hay Yield Outcome



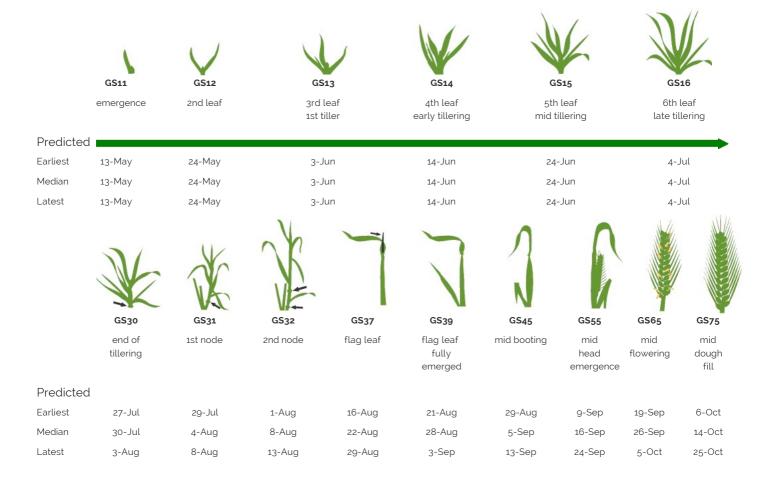
This graph shows the probability of exceeding a range of hay yield outcomes this season. It takes into account the same factors as the grain yield graph above. When above ground dry matter is below 2t/ha, hay yield is assumed to be 70% of dry matter, with a moisture content of 13%. When dry matter is 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: 1298.3kg/ha

# The Season So Far - Growing Season Rainfall Deciles



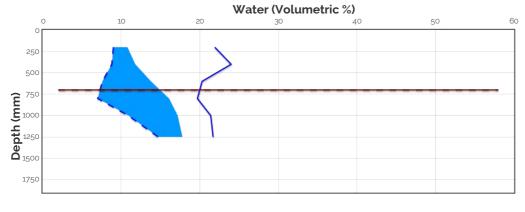
# Simulated and Predicted Crop Growth Stage



# Probability and Incidence of Frost and Heat Shock

rost damage during	flowering	Heat damage during grain fill
everity Probability	This Season	Severity Probability This Season
nild to 0°C 73%	0	mild 32 to 34°C
luring owering		moderate 18% <b>o</b>
noderate to -2°C luring owering & arly grain ll	0	severe Above 36°C
evere 0% ess than 2°C during owering & rain fill	0	

#### Current Distribution of PAW



PAW
PAW Deficit
CLL
DUL
Current rooting depth
Final rooting depth

Current root depth = 700 mm Median final root depth = 700 mm Current crop PAW available to roots = 31 mm Total Soil PAW = 61 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 @ 23-May Rainfall since 23-May Irrigations Evaporation since 23-May Transpiration since 23-May Deep drainage since 23-May Run-off since 23-May

**Current PAW status:** 

81 mm 88 mm 42 mm 18 mm 0 mm 2 mm

61 mm

135 kg/ha

1 kg/ha

8 kg/ha

65 kg/ha

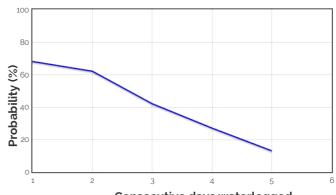
o kg/ha

o kg/ha

82 kg/ha

25-May: 11.5 kg/ha

#### Probability of Future Waterlogging Events



#### Consecutive days waterlogged

#### Nitrogen Budget

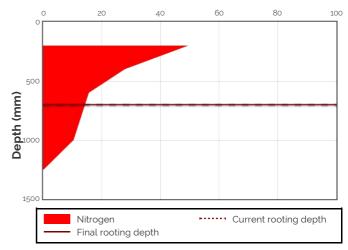
Initial N status @ 23-May
N mineralisation since 23-May
N tie up since 23-May
N applications

Total N in plant De-nitrification since 23-May Leaching

#### Current N status:

Median N mineralisation to maturity = 0.034 kg/ha Median N tie up to maturity = 6.415 kg/ha

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

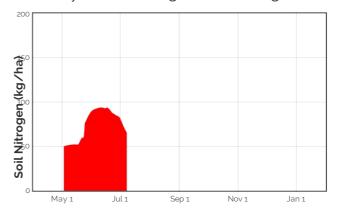


Current Crop Available N = 65 kg/ha Total Soil N = 82 kg/ha

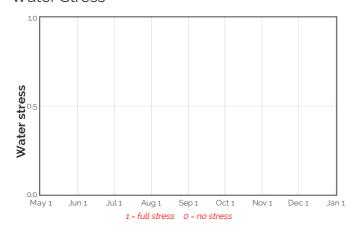
# Availability of Water to Growing Roots

# (May 1 Jul 1 Sep 1 Nov 1 Jan 1

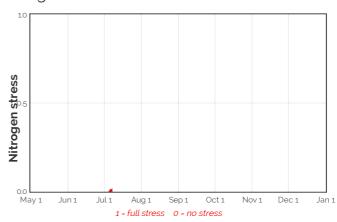
# Availability of Soil Nitrogen to Growing Roots



#### 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	(kg/ha)	above stress threshold	above CLL (mm)	to roots	(kg/ha)	(kg/ha)
			(mm)		(mm)		(kg/ha)		
10-Jul	16.0	0.4	0.6	1.6	1.6	29.9	60.4	0.0	0.0
11-Jul	16.0	0.1	0.5	1.5	1.1	29.4	59.2	0.0	0.0
12-Jul	16.0	0.1	0.5	1.4	0.6	28.9	58.0	0.0	0.0
13-Jul	16.0	0.1	0.5	1.3	-O.1	28.2	57.0	0.0	0.0
14-Jul	16.0	0.1	0.5	1.2	-0.6	27.7	55.9	0.0	0.0
15-Jul	16.0	0.1	0.6	1.1	-1.1	27.2	55.1	0.0	0.0
16-Jul	16.0	0.1	0.7	1.0	-1.7	26.6	54.2	0.0	0.0
17-Jul	16.0	0.1	0.7	0.9	-2.3	26.0	53.4	0.0	0.0
18-Jul	16.0	0.1	0.7	0.8	-2.9	25.4	52.7	0.0	0.0
19-Jul	16.0	0.1	0.7	0.8	-3.5	24.8	52.0	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

