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YIELD PROPHET

Crop Report

21-Aug-2017

UpperNorthFS: Bottrall

Crop: Wheat

Cultivar: EmuRock

Sowing details: 175 plants/m^2 on 1-May

Expected maturity date: 7-Nov

Paddock Details

Initial conditions date: 24-May

Soil: Light Clay Loam over Medium Clay (Morchard Plain No603-YP)
1000 mm max rooting depth

Stubble: 1000 kg/ha of Medic
No till

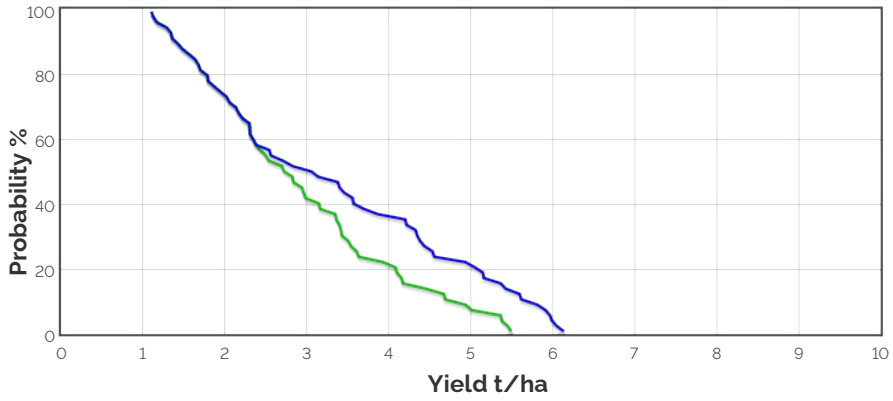
Grain Yield Outcome

☑ Nitrogen limited Yield

☐ Nitrogen limited Yield with Frost and heat Effects

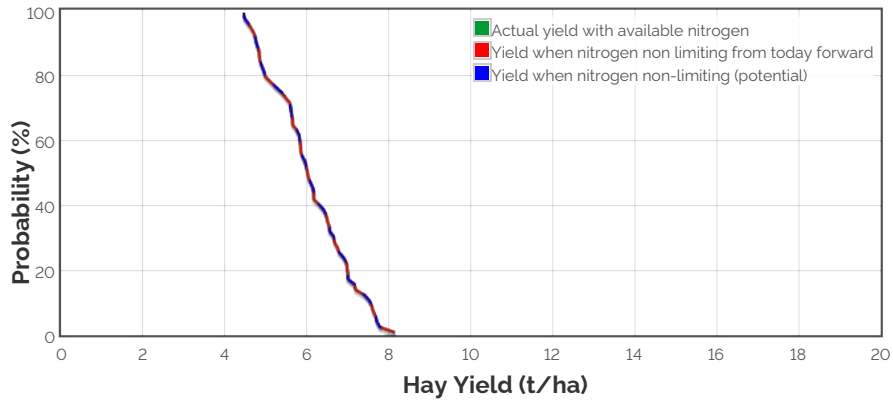
☑ Water limited Yield

☐ 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.

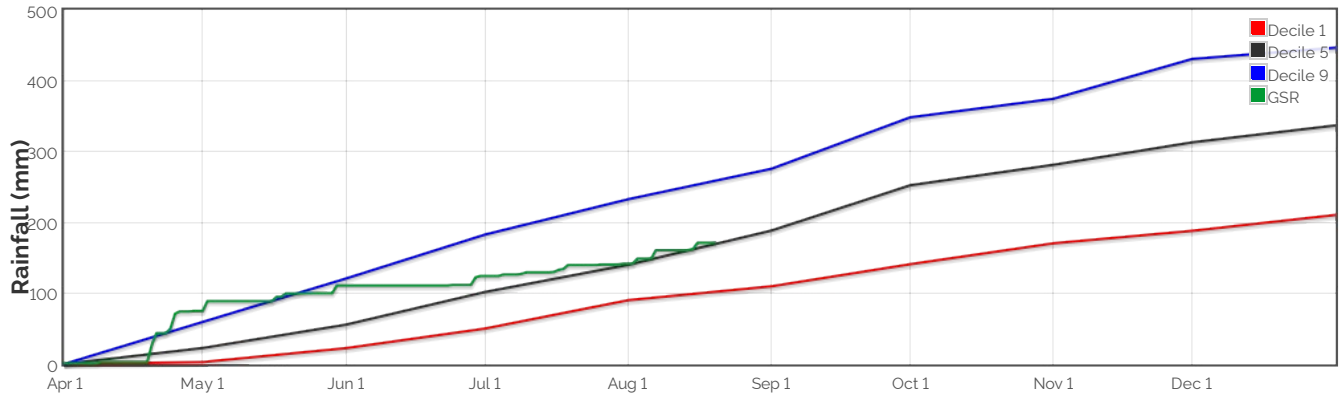
Hay Yield Outcome



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: 4916.2kg/ha

The Season So Far - Growing Season Rainfall Deciles



Simulated and Predicted Crop Growth Stage

	GS11	GS12	GS13	GS14	GS15	GS16
	emergence	2nd leaf	3rd leaf 1st tiller	4th leaf early tillering	5th leaf mid tillering	6th leaf late tillering
Predicted						
Earliest	13-May	24-May	2-Jun	14-Jun	23-Jun	4-Jul
Median	13-May	24-May	2-Jun	14-Jun	23-Jun	4-Jul
Latest	13-May	24-May	2-Jun	14-Jun	23-Jun	4-Jul

	GS30	GS31	GS32	GS37	GS39	GS45	GS55	GS65	GS75
	end of tillering	1st node	2nd node	flag leaf	flag leaf fully emerged	mid booting	mid head emergence	mid flowering	mid dough fill
Predicted									
Earliest	28-Jul	31-Jul	6-Aug	18-Aug	23-Aug	29-Aug	8-Sep	17-Sep	5-Oct
Median	28-Jul	31-Jul	6-Aug	18-Aug	24-Aug	1-Sep	13-Sep	23-Sep	12-Oct
Latest	28-Jul	31-Jul	6-Aug	18-Aug	25-Aug	4-Sep	17-Sep	29-Sep	20-Oct

Probability and Incidence of Frost and Heat Shock

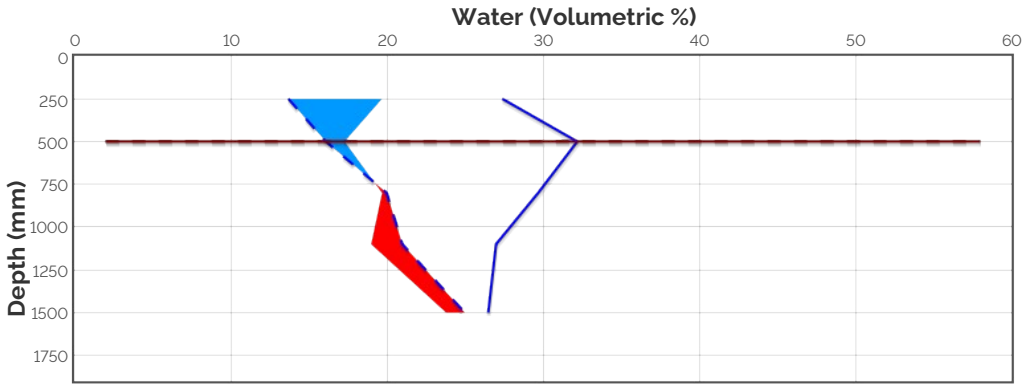
Frost damage during flowering

Severity	Probability	This Season
mild 2 to 0°C during flowering	65%	0
moderate 0 to -2°C during flowering & early grain fill	6%	0
severe Less than -2°C during flowering & grain fill	0%	0

Heat damage during grain fill

Severity	Probability	This Season
mild 32 to 34°C	32%	0
moderate 34 to 36°C	9%	0
severe Above 36°C	6%	0

Current Distribution of PAW



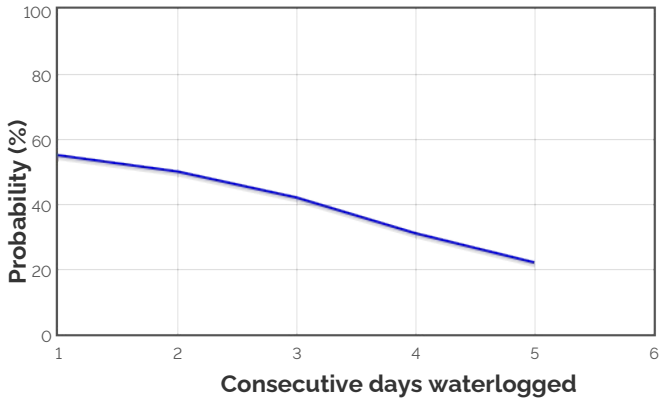
Current root depth = 499 mm
Median final root depth = 499 mm
Current crop PAW available to roots = 19 mm
Total Soil PAW = 19 mm
PAWC = 128 mm

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	53 mm
Rainfall since 24-May	71.8 mm
Irrigations	
Evaporation since 24-May	40 mm
Transpiration since 24-May	62 mm
Deep drainage since 24-May	0 mm
Run-off since 24-May	0 mm
Current PAW status:	**19 mm**

Probability of Future Waterlogging Events

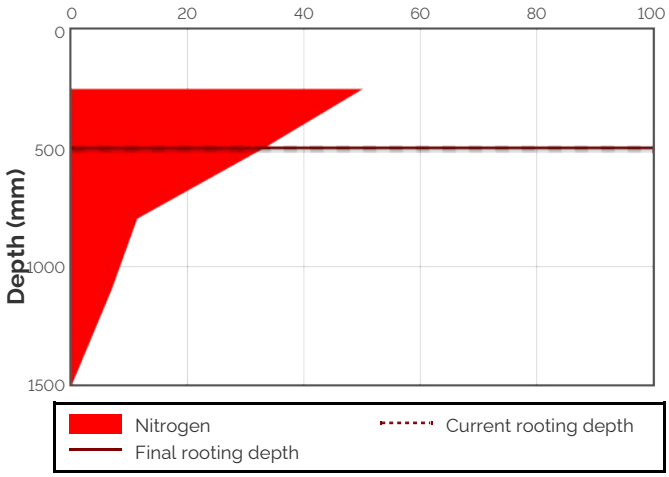


Nitrogen Budget

Initial N status @ 24-May	166 kg/ha
N mineralisation since 24-May	1 kg/ha
N tie up since 24-May	4 kg/ha
N applications	
	25-May : 18 kg/ha
Total N in plant	116 kg/ha
De-nitrification since 24-May	0 kg/ha
Leaching since 24-May	0 kg/ha
Current N status:	**67 kg/ha**

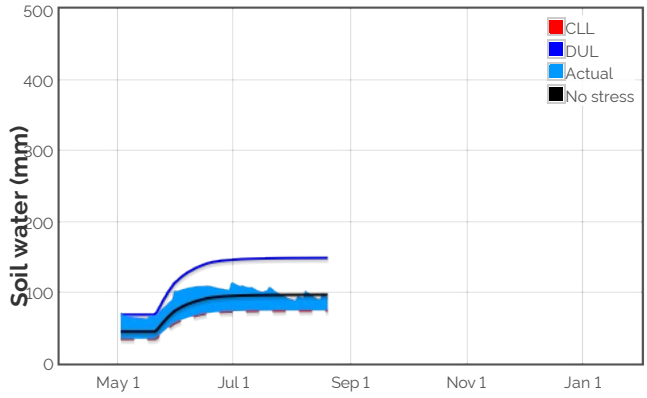
Median N mineralisation to maturity = 0.77 kg/ha
Median N tie up to maturity = 0.746 kg/ha

Current distribution of soil nitrogen (kg/ha)

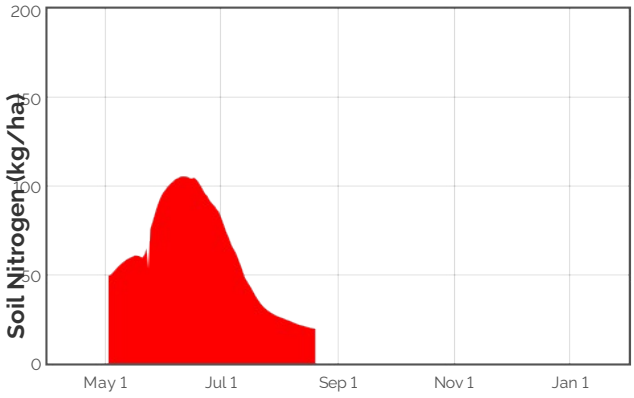


Current Crop Available N = 19 kg/ha
Total Soil N = 67 kg/ha

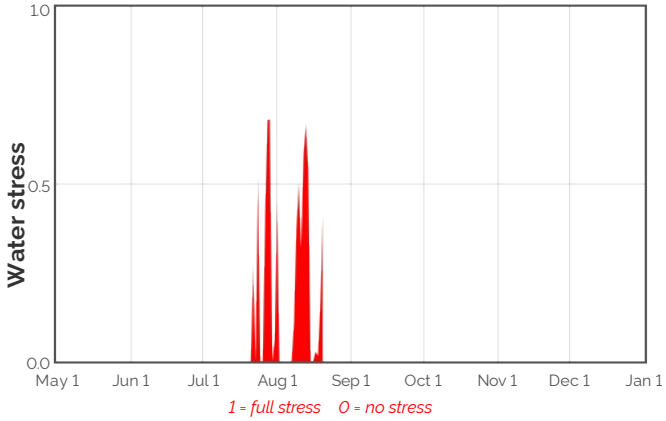
Availability of Water to Growing Roots



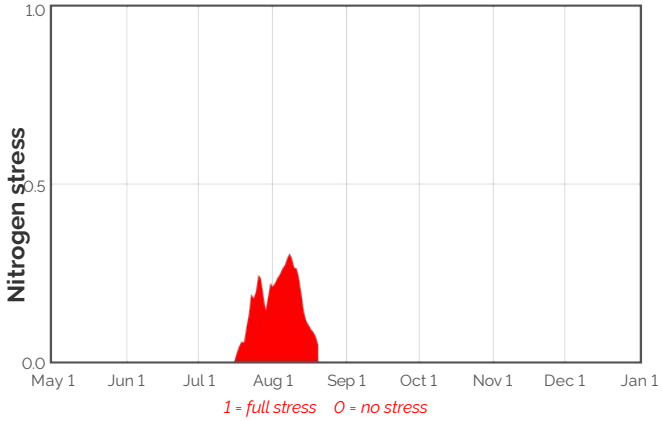
Availability of Soil Nitrogen to Growing Roots



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)
21-Aug	38.6	0.4	1.1	0.2	-5.8	16.5	19.1	0.0	0.0
22-Aug	39.0	0.5	1.0	0.1	-7.2	15.1	18.9	0.0	0.0
23-Aug	39.4	0.5	0.9	0.1	-8.5	13.8	18.8	0.0	0.0
24-Aug	39.7	0.6	0.8	0.1	-9.6	12.7	18.7	0.0	0.0
25-Aug	40.2	0.6	0.7	0.1	-10.8	11.5	18.5	0.0	0.0
26-Aug	41.1	0.5	0.6	0.1	-12.0	10.3	18.4	0.0	0.0
27-Aug	41.8	0.6	0.6	0.1	-13.0	9.3	18.3	0.0	0.0
28-Aug	42.6	0.5	0.5	0.1	-14.2	8.1	18.2	0.0	0.0
29-Aug	43.3	0.6	0.4	0.1	-15.3	7.0	18.1	0.0	0.0
30-Aug	44.1	0.5	0.4	0.1	-16.0	6.3	18.1	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