

WEATHER or NOT

A REVIEW OF SEASONAL AND CROP OUTLOOKS FOR THE FARMLINK REGION

August 2013

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The season so far....

Spring has sprung! Late August and early September has seen warmer weather encompass the FarmLink region and crop growth rates have increased accordingly. The Bureau of Meteorology advised that the July-August period has been the warmest on record and this has contributed to crops being more advanced than usual at the present time. Many growers are now targeting earlier sowing than has been practiced traditionally and this has also contributed to the faster progress of regional crops.

The spring phase is critical to crop production and growers will welcome any rainfall in the coming months. The short term forecast is still positive but has declined slightly to between 60-65% probability of above average rainfalls for the next three months.

Decile ratings for the region range from 3.5 in Ardlethan to 5 in Temora which means we have had rainfalls similar in 35% to 50% of historical years of 120 years of data. The table below gives a good comparison as to how much rainfall and PAW has been recorded and modeled for 2012 and 2013.

Table 1: Rainfall and PAW for YP wheat paddocks.

WHEAT	Ardlethan	Dirnaseer	Greenethorpe	Lockhart	WUE	EH Graham
GSR 12	103	169	174	117	82	na
GSR 13	159	231	215	188	203	204
PAW 12	44	130	79	77	140	13
PAW 13	11	59	88	64	98	85

The tables clearly show that we have had more in-crop rainfall in 2013. This however has not resulted in higher PAW when compared to 2012. The very wet summer of 2012 provided stored soil moisture which allowed crops to finish. The current modeled status of PAW at several sites indicates that yield potential in 2013 without additional rainfall will be limited. The situation for the YP canola crops is very similar as demonstrated in Table 2. On the modeling only the Greenethorpe site is setup to achieve similar yield to 2013.

Table 2: Rainfall and PAW for YP canola paddocks.

Canola	Ardlethan	Dirnaseer	Greenethorpe	Lockhart
GSR 12	103	169	174	117
GSR 13	159	231	215	188
PAW 12	66	116	107	123
PAW 13	13	50	103	32



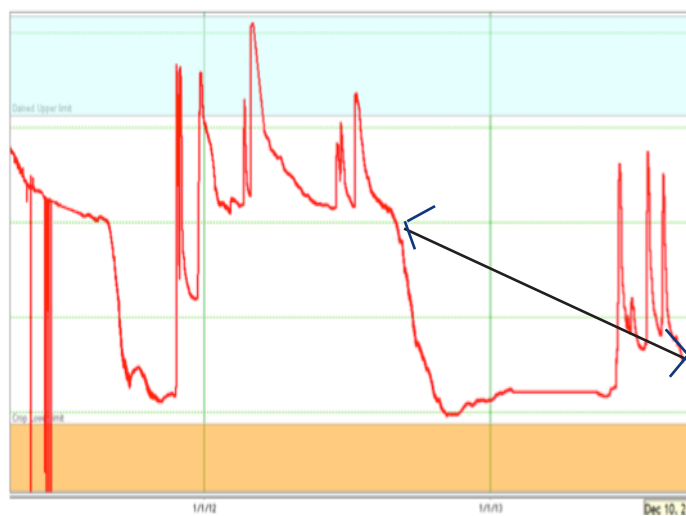
The season so far continued....

The moisture probe graphs for Dirnaseer Wheat (see below) contradict what the model is proposing. It has to be remembered that the model is predicting moisture to a depth of 180cm as opposed to the probes which measure to 122cm. So the higher model readings at Dirnaseer in 2012 compared to the probes are a result of the deeper profile and summer rainfall events. The Lockhart site probes concur with the model predictions which are contrary to the Dirnaseer site.

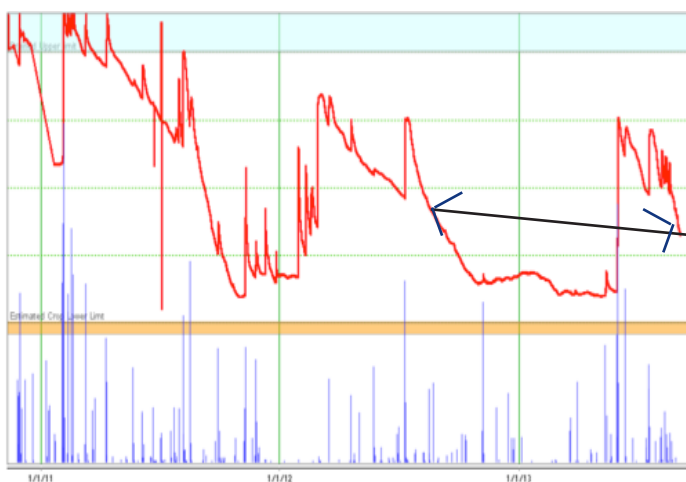
The Greenethorpe probe shows high probe levels in 2012 and low probe levels in 2013. The model predicts similar amounts of profile moisture for each year at the same time? These anomalies raise questions as to which system is most accurate and we wish to sample probe sites in the future to calibrate their accuracy at varying points in time.



Dirnaseer Wheat 2013 2nd Sept 2012 v 2013



Greenethorpe canola 2nd Sept 2012 v 2013



Lockhart wheat 2nd Sept 2012 v 2013

I hope everyone receives a large fall of rain in the near future as it will boost confidence and yields significantly.

Paul Breust

(*please use the results as a guide only and discuss potential outcomes of your own paddocks with your advisor.)

ARDLETHAN ~ CANOLA

VARIETY CL575 SOWING DATE 27/4/2013

N APPLIED 89 kg/ha

SOIL TYPE Sandy clay over a medium clay

PLANT DENSITY 29 plants/m²

GROWING SEASON RAINFALL 159mm

CURRENT ROOTING DEPTH 665mm

PREDICTED FINAL ROOTING DEPTH 665mm

CURRENT CROP PAW 12mm

SOIL PAW 13mm

PAWC 216mm

DAILY WATER USE 0.5mm

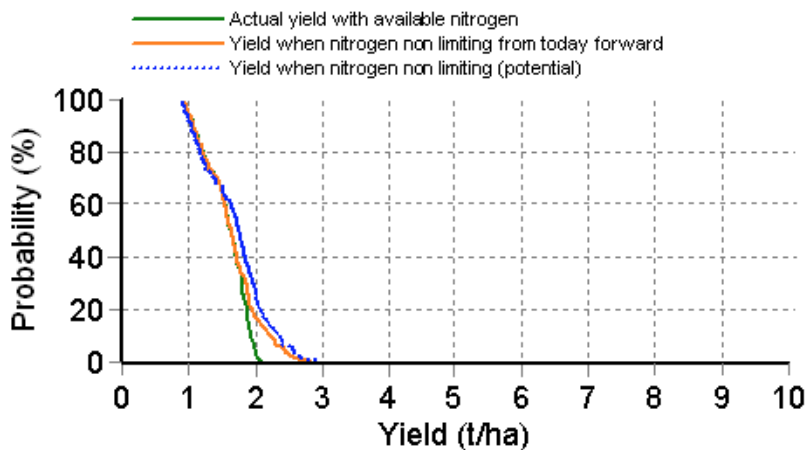
INITIAL N 100kg/ha

N PROFILE 27kg/ha

N AVAILABLE TO ROOTS 8kg/ha

CURRENTLY USING 0.3kg of N/ha/day

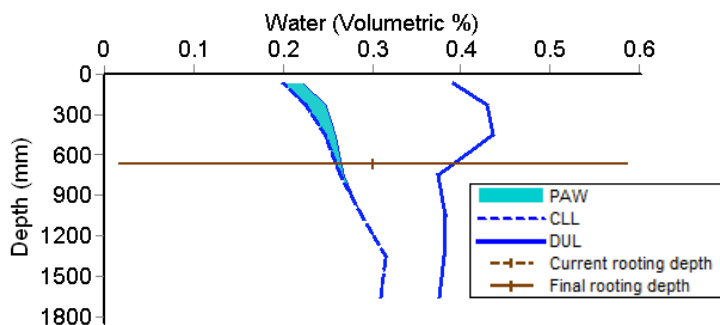
Grain Yield Probabilities *



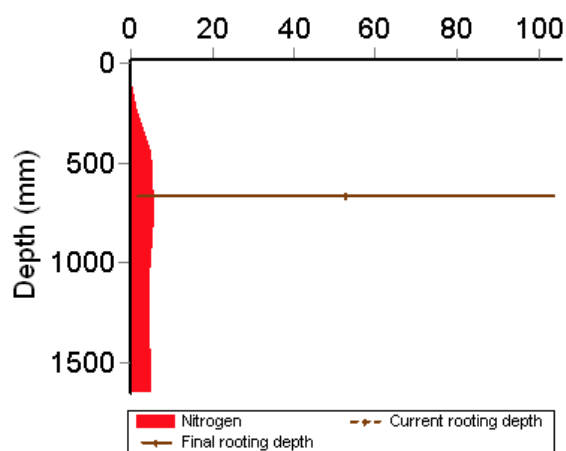
* given weather, soil N and agronomic inputs to date, and historical climate data (100 years) to simulate remainder of season. Does not account for disease, insect or weed pressure or extreme climatic events.

** PAW = plant available water; CLL = crop lower limit; DUL = drained upper limit. Note: Soil water parameters are taken from paddocks previously characterised on the same farm. Although the data should be representative of the paddock, minor discrepancies occur.

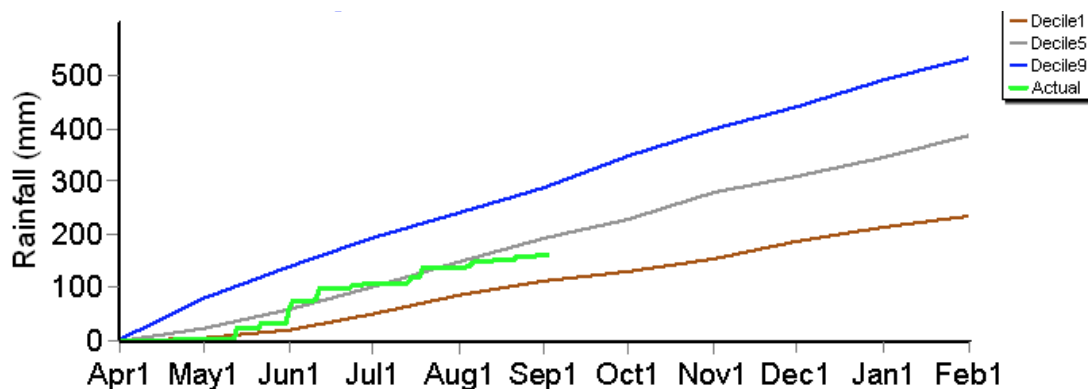
Water Availability **



Soil Nitrogen



Growing Season Rainfall

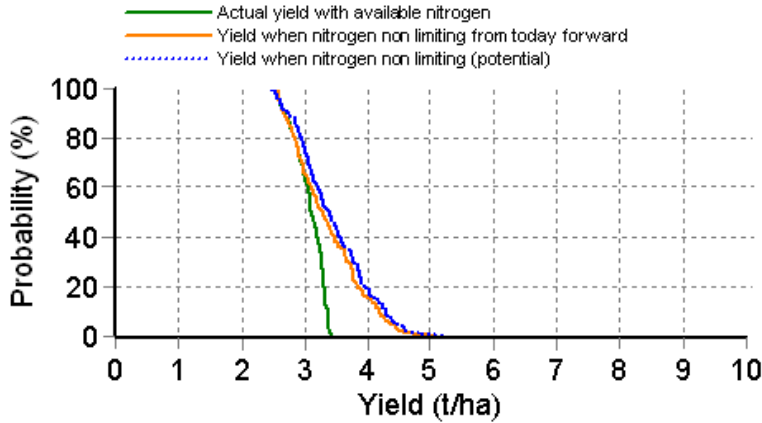


DIRNASEER ~ CANOLA

VARIETY Gem TT **SOWING DATE** 24/4/2013
N APPLIED 108kg/ha
SOIL TYPE Red Kandosol
SOWING DENSITY 65 plants/m²
GROWING SEASON RAINFALL 231mm
CURRENT ROOTING DEPTH 1650mm
PREDICTED FINAL ROOTING DEPTH 1650mm

CURRENT CROP PAW 45mm
SOIL PAW 45mm
PAWC 216mm
DAILY WATER USE 2.6mm
INITIAL N 133kg/ha **N IN PROFILE** 9kg/ha
N AVAILABLE TO ROOTS 8.1kg/ha
CURRENTLY USING 0.3kg of N/ha/day

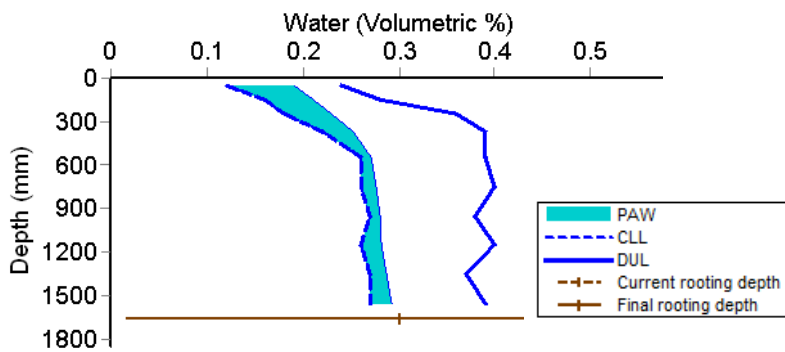
Grain Yield Probabilities *



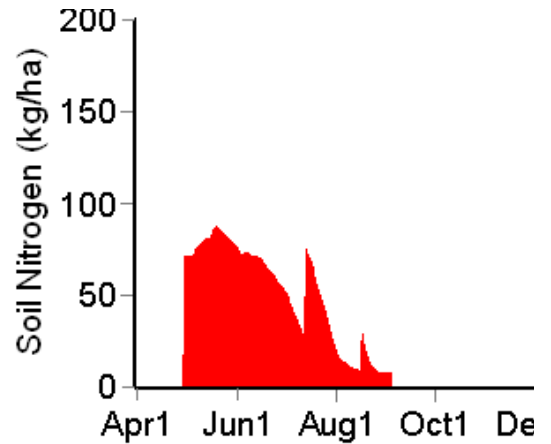
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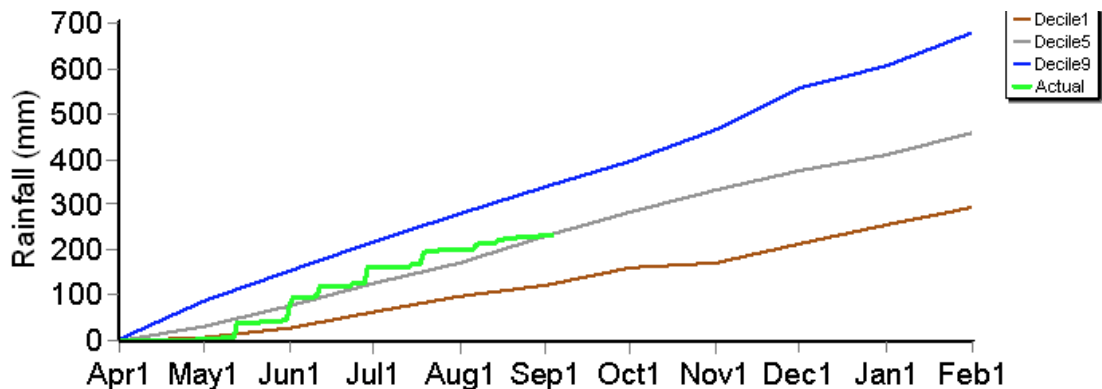
Water Availability **



Soil Nitrogen



Growing Season Rainfall

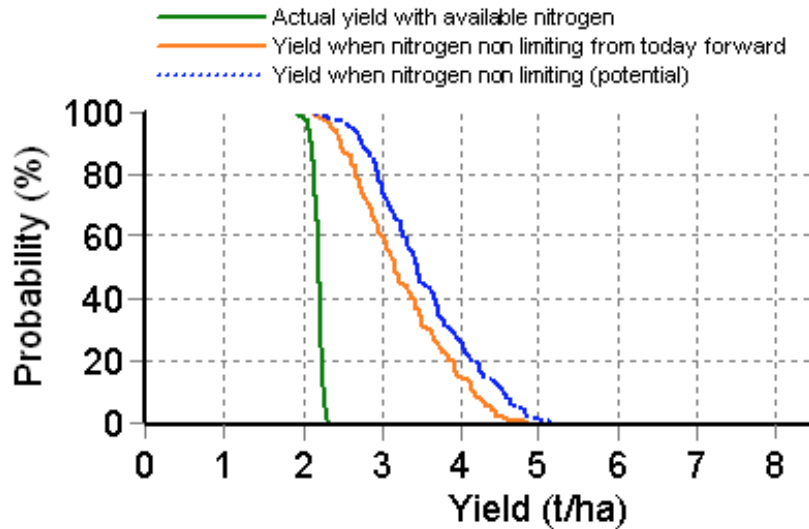


GREENETHORPE ~ CANOLA

VARIETY Gem TT **SOWING DATE** 2/5/2013
N APPLIED 30kg/ha
SOIL TYPE Heavy Red Kandosol
SOWING DENSITY 50 plants/m²
GROWING SEASON RAINFALL 215mm
CURRENT ROOTING DEPTH 1383mm
PREDICTED FINAL ROOTING DEPTH 1397mm

CURRENT CROP PAW 103mm
SOIL PAW 103mm
PAWC 150 mm
DAILY WATER USE 2.2mm
INITIAL N 106kg/ha **N PROFILE** 10kg/ha
N AVAILABLE TO ROOTS 2.7kg/ha
CURRENTLY USING 0.1kg of N/ha/day

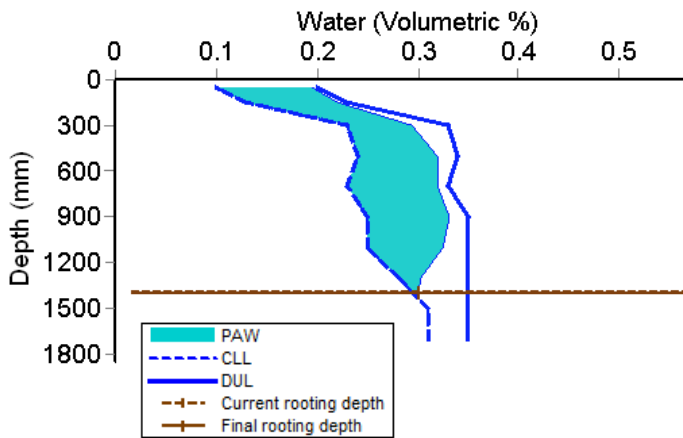
Grain Yield Probabilities *



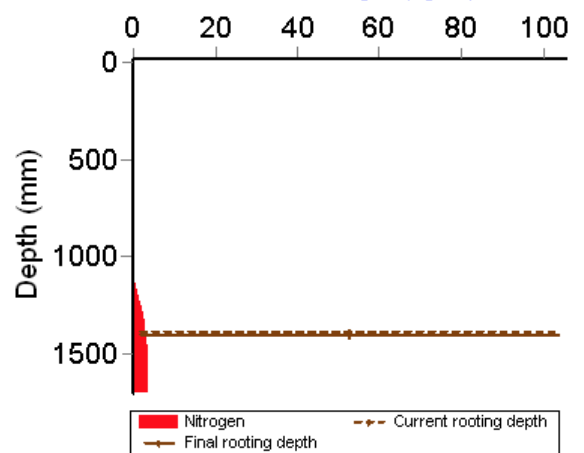
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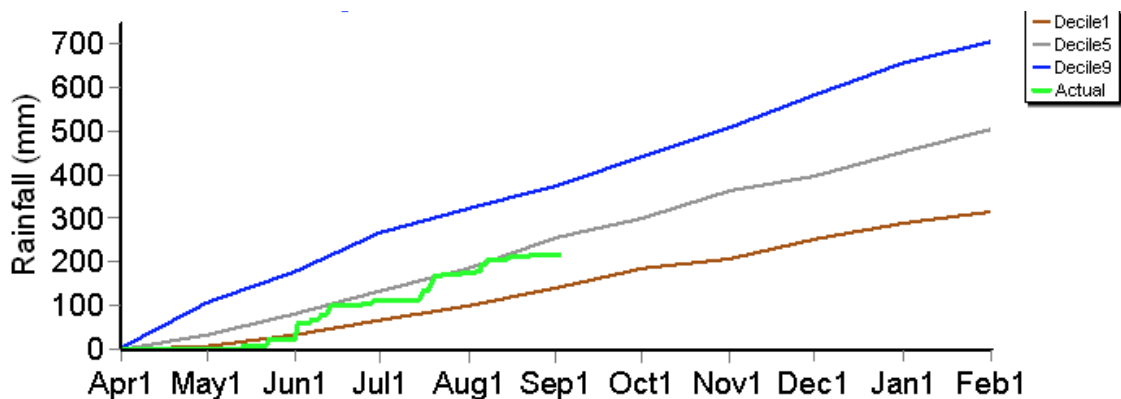
Water Availability **



Soil Nitrogen



Growing Season Rainfall

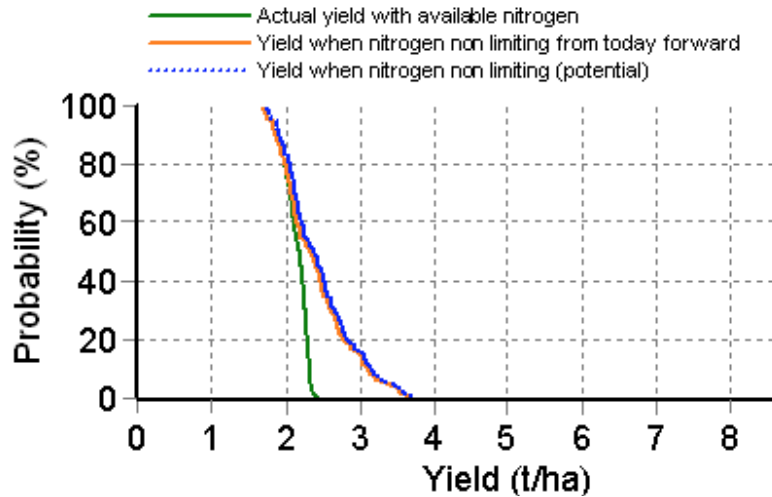


LOCKHART ~ CANOLA

VARIETY GEM TT **SOWING DATE** 25/4/2013
N APPLIED 71kg/ha
SOIL TYPE Brown Sodosol
SOWING DENSITY 20 plants/m²
GROWING SEASON RAINFALL 199mm
CURRENT ROOTING DEPTH 1002mm
PREDICTED FINAL ROOTING DEPTH 1002mm

CURRENT CROP PAW 31mm
SOIL PAW 32mm
PAWC 173mm
DAILY WATER USE 2.2mm
INITIAL N 128kg/ha **N PROFILE** 24kg/ha
N AVAILABLE TO ROOTS 12.2kg/ha
CURRENTLY USING 0.4kg of N/ha/day

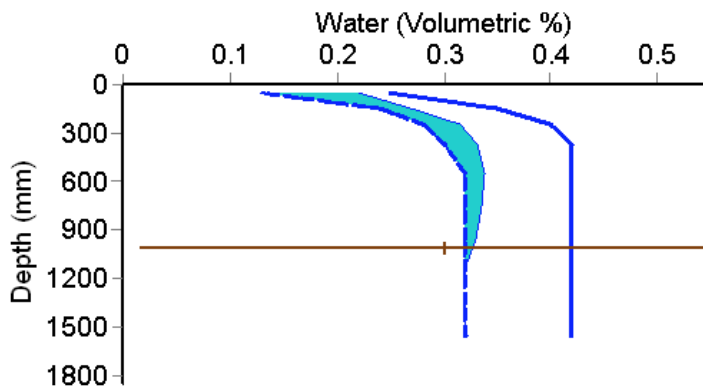
Grain Yield Probabilities *



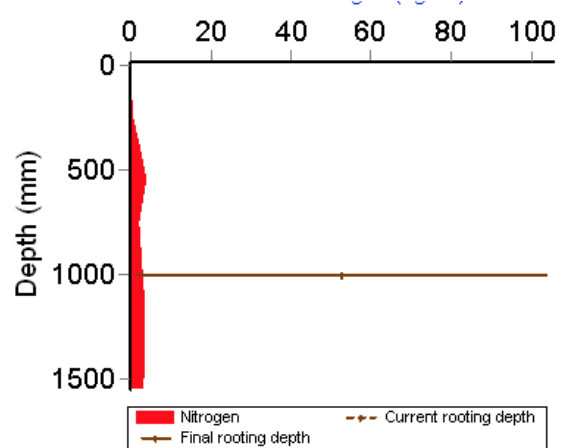
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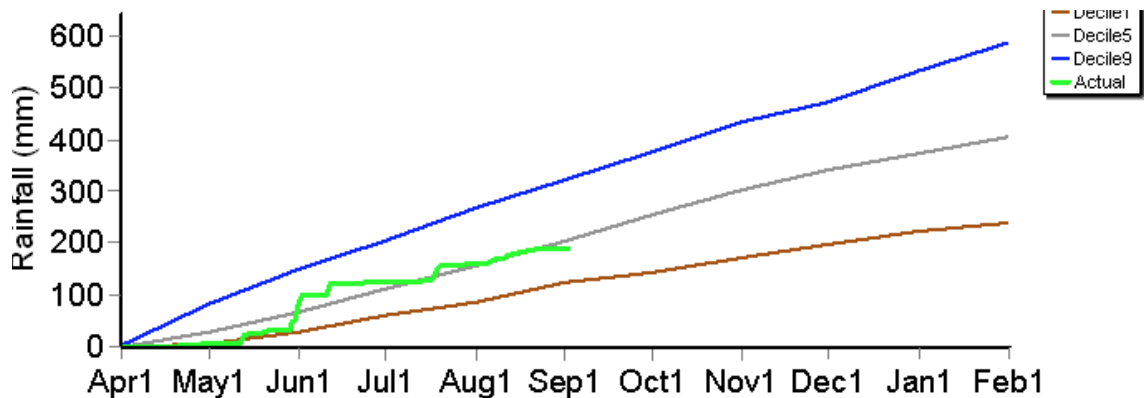
Water Availability **



Soil Nitrogen



Growing Season Rainfall



TEMORA WUE SITE ~ CANOLA

VARIETY Clearfield 575 **SOWING DATE** 23/4/2013

N APPLIED 100kg/ha

SOIL TYPE Red Chromosol

SOWING DENSITY 40 plants/m²

GROWING SEASON RAINFALL 203mm

CURRENT ROOTING DEPTH 1379mm

PREDICTED FINAL ROOTING DEPTH 1469mm

CURRENT CROP PAW 60mm

SOIL PAW 75mm

PAWC 206mm

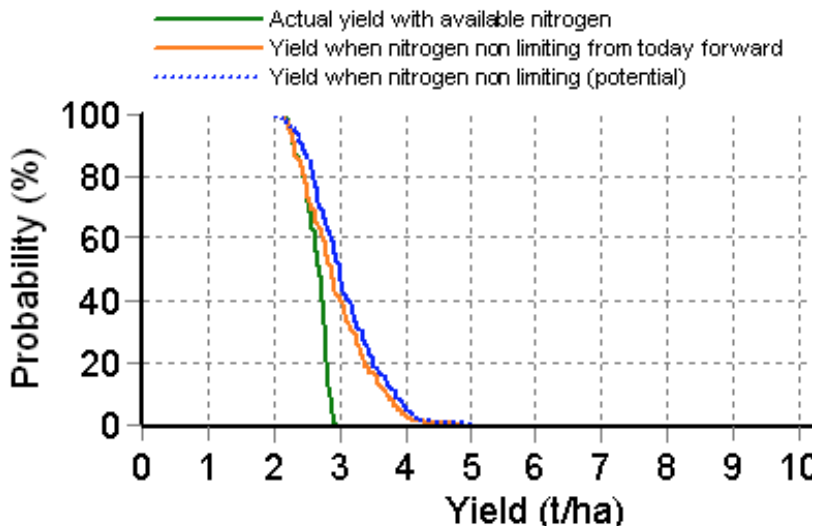
DAILY WATER USE 3.0mm

INITIAL N 91kg/ha **N PROFILE** 18kg/ha

N AVAILABLE TO ROOTS 10.5kg/ha

CURRENTLY USING 0.7kg of N/ha/day

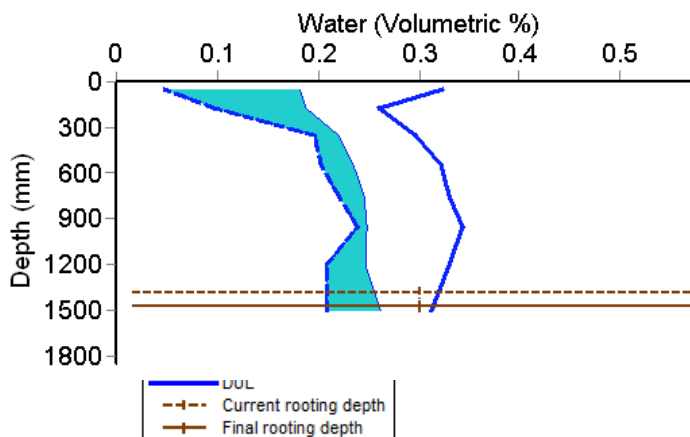
Grain Yield Probabilities *



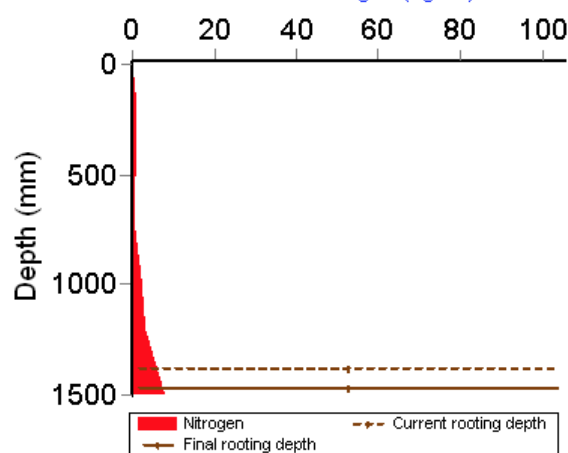
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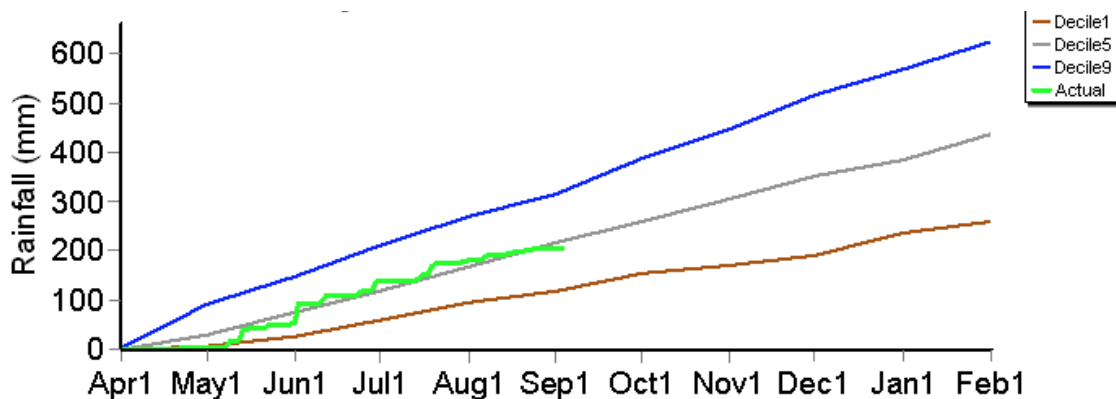
Water Availability **



Soil Nitrogen



Growing Season Rainfall

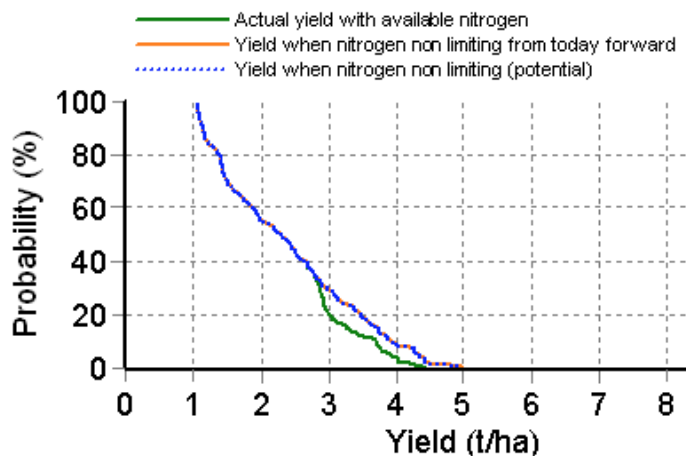


ARDLETHAN ~ WHEAT

VARIETY Gregory SOWING DATE 1/5/2013
 N APPLIED 68kg/ha
 SOIL TYPE Sandy clay over a medium clay
 SOWING DENSITY 120 plants/m²
 GROWING SEASON RAINFALL 159mm
 CURRENT ROOTING DEPTH 553mm
 PREDICTED FINAL ROOTING DEPTH 601mm

CURRENT CROP PAW 10mm
 SOIL PAW 11mm
 PAWC 216 mm
 DAILY WATER USE 0.5mm
 INITIAL N 140kg/ha N PROFILE 65kg/ha
 N AVAILABLE TO ROOTS 23.2kg/ha
 CURRENTLY USING 0kg of N/ha/day

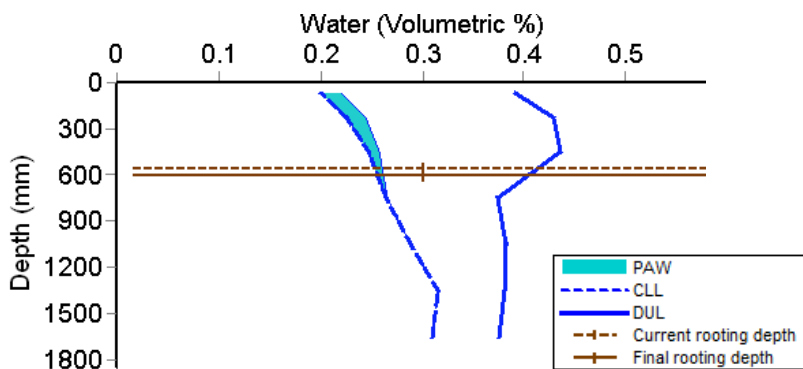
Grain Yield Probabilities *



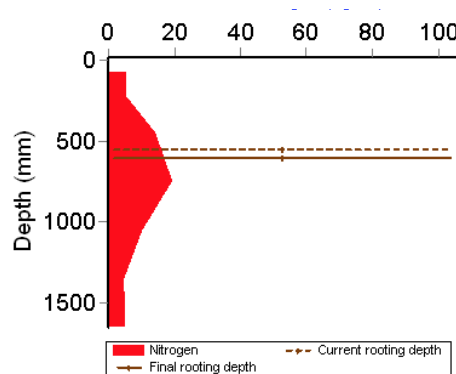
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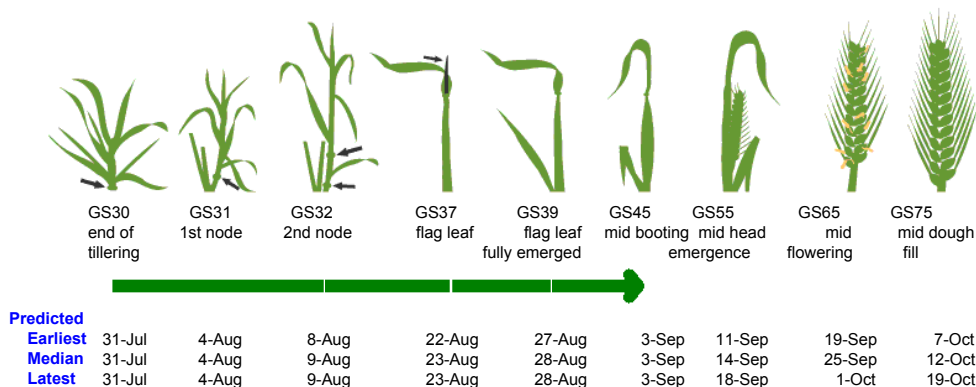
Water Availability **



Soil Nitrogen



Zadok's Growth Stages

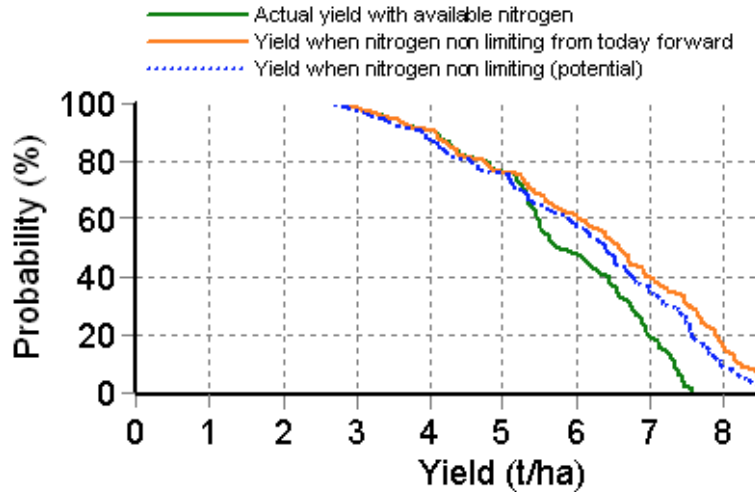


EH GRAHAM CENTRE ~ WHEAT

VARIETY Wedgetail SOWING DATE 15/4/2013
 N APPLIED 98kg/ha
 SOIL TYPE Red Kandosol
 SOWING DENSITY 70plants/m²
 GROWING SEASON RAINFALL 207mm
 CURRENT ROOTING DEPTH 898mm
 PREDICTED FINAL ROOTING DEPTH 1050mm

CURRENT CROP PAW 62mm
 SOIL PAW 62mm
 PAWC 216mm
 DAILY WATER USE 2.2mm
 INITIAL N 200kg/ha N PROFILE 53kg/ha
 N AVAILABLE TO ROOTS 28kg/ha
 CURRENTLY USING 0.4kg of N/ha/day

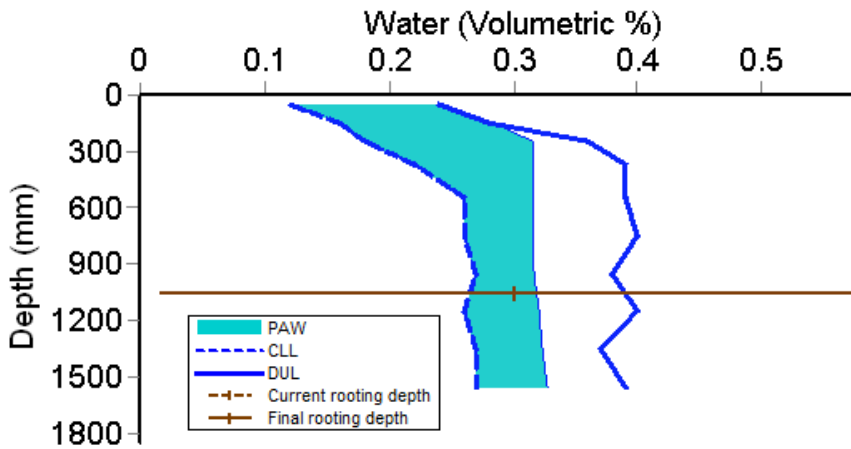
Grain Yield Probabilities *



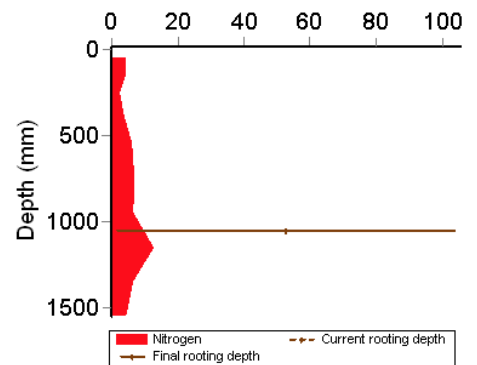
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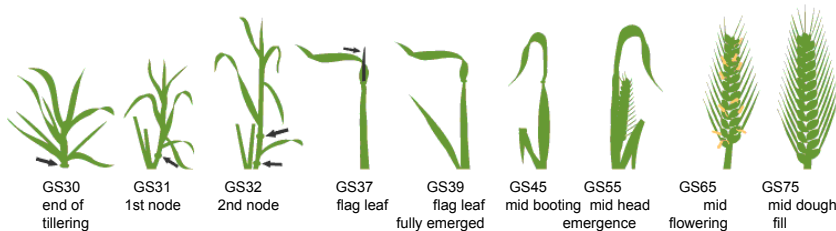
Water Availability **



Soil Nitrogen



Zadok's Growth Stages



Predicted	Earliest	Median	Latest	26-Aug	29-Aug	2-Sep	8-Sep	10-Sep	14-Sep	20-Sep	25-Sep	12-Oct
Earliest	26-Aug	29-Aug	2-Sep	8-Sep	10-Sep	14-Sep	20-Sep	25-Sep	4-Oct	11-Oct	17-Oct	4-Nov
Median	27-Aug	30-Aug	4-Sep	12-Sep	15-Sep	20-Sep	28-Sep	4-Oct	11-Oct	17-Oct	22-Oct	
Latest	27-Aug	2-Sep	8-Sep	20-Sep	27-Sep	4-Oct	11-Oct	17-Oct	22-Oct			

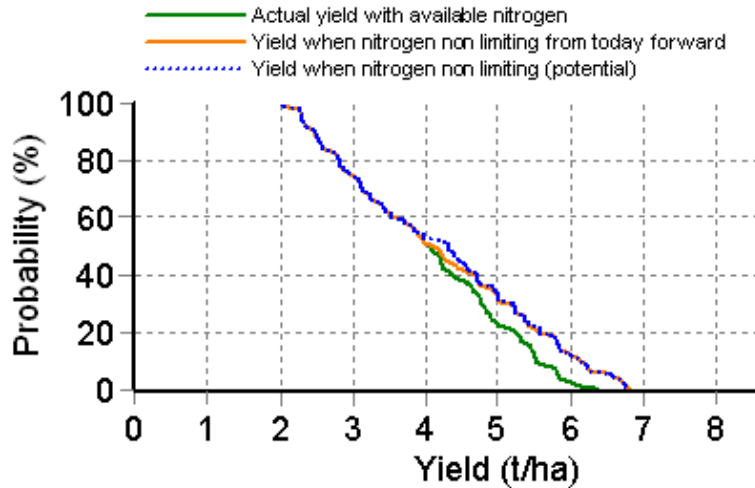
Probability and Incidence of Frost and Heat Shock

DIRNASEER ~ WHEAT

VARIETY Sunvale **SOWING DATE** 12/5/2013
N APPLIED 117kg/ha
SOIL TYPE Red Kandosol
SOWING DENSITY 119 plants/m²
GROWING SEASON RAINFALL 231mm
CURRENT ROOTING DEPTH 1295mm
PREDICTED FINAL ROOTING DEPTH 1650mm

CURRENT CROP PAW 46mm
SOIL PAW 55mm
PAWC 216mm
DAILY WATER USE 1.9mm
INITIAL N 129kg/ha **N PROFILE** 85kg/ha
N AVAILABLE TO ROOTS 75kg/ha
CURRENTLY USING 1.6kg of N/ha/day

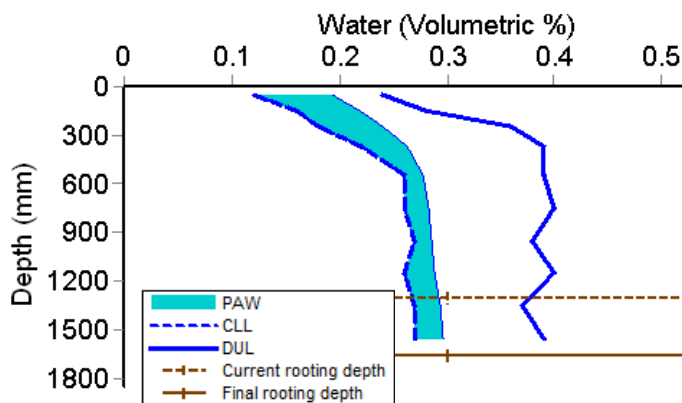
Grain Yield Probabilities *



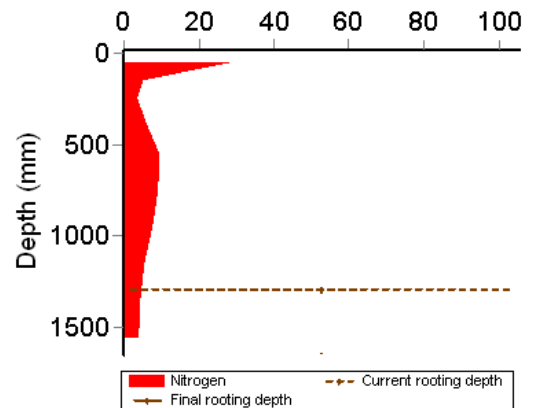
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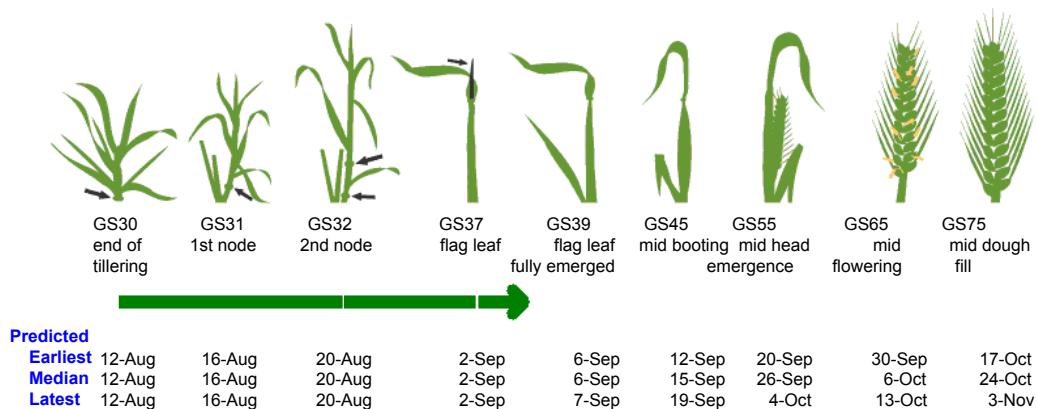
Water Availability **



Soil Nitrogen



Zadok's Growth Stages

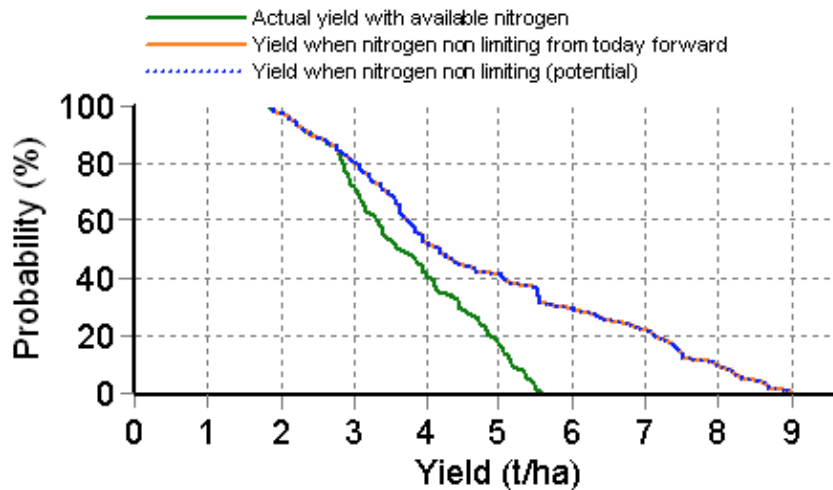


GREENETHORPE ~ WHEAT

VARIETY Gregory SOWING DATE 23/5/2013
 N APPLIED 80kg/ha
 SOIL TYPE Heavy Red Kandosol
 SOWING DENSITY 136 plants/m²
 GROWING SEASON RAINFALL 215mm
 CURRENT ROOTING DEPTH 997mm
 PREDICTED FINAL ROOTING DEPTH 1385mm

CURRENT CROP PAW 69mm
 SOIL PAW 88mm
 PAWC 150mm
 DAILY WATER USE 2.0mm
 INITIAL N 115kg/ha N PROFILE 55kg/ha
 N AVAILABLE TO ROOTS 35kg/ha
 CURRENTLY USING 1.2kg of N/ha/day

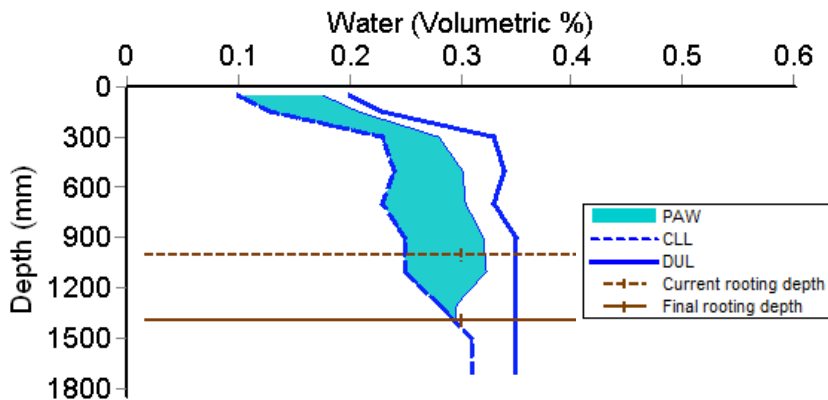
Grain Yield Probabilities *



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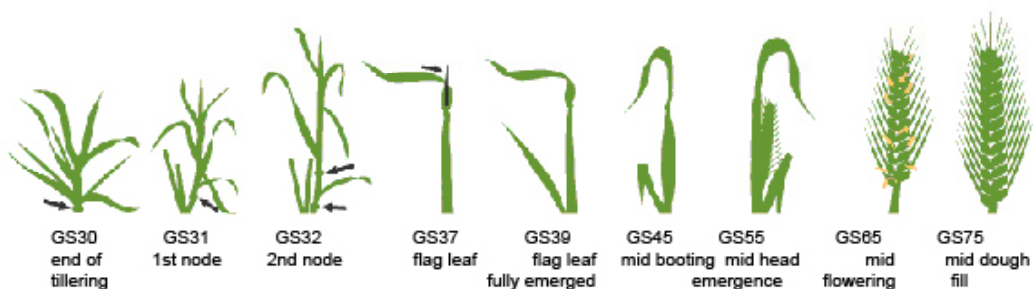
Water Availability **



Soil Nitrogen



Zadok's Growth Stages



Predicted	Earliest	Median	Latest
27-Aug	27-Aug	27-Aug	27-Aug
30-Aug	2-Sep	2-Sep	7-Sep
3-Sep	5-Sep	10-Sep	
13-Sep	9-Sep	14-Sep	
18-Sep	21-Sep	29-Sep	
25-Sep	25-Sep	5-Oct	
25-Sep	3-Oct	12-Oct	
5-Oct	12-Oct	23-Oct	
13-Oct	22-Oct	3-Nov	
28-Oct	6-Nov	18-Nov	

LOCKHART ~ WHEAT

VARIETY Ellison SOWING DATE 7/5/2013

N APPLIED 44kg/ha

SOIL TYPE Brown Sodosol

SOWING DENSITY 87 plants/m²

GROWING SEASON RAINFALL 199mm

CURRENT ROOTING DEPTH 1352mm

PREDICTED FINAL ROOTING DEPTH 1636mm

CURRENT CROP PAW 60mm

SOIL PAW 64mm

PAWC 173mm

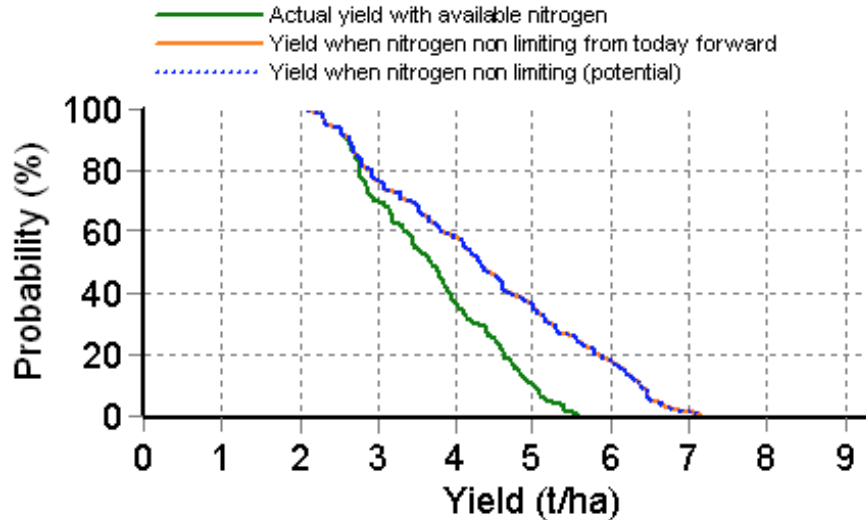
DAILY WATER USE 2.2mm

INITIAL N 110 kg/ha N PROFILE 37 kg/ha

N AVAILABLE TO ROOTS 31kg/ha

CURRENTLY USING 0.4kg of N/ha/day

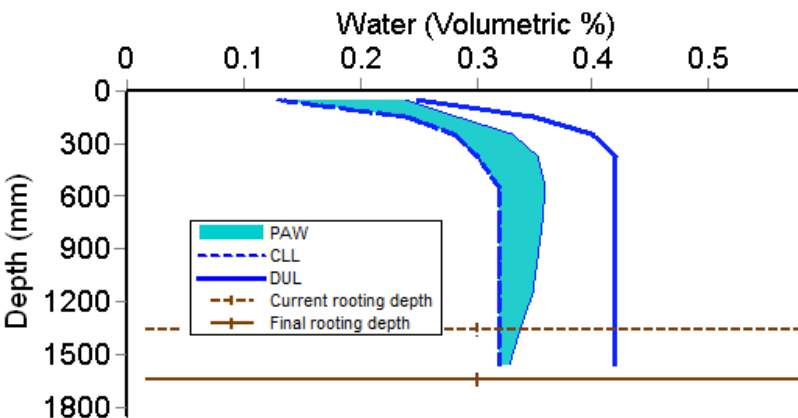
Grain Yield Probabilities *



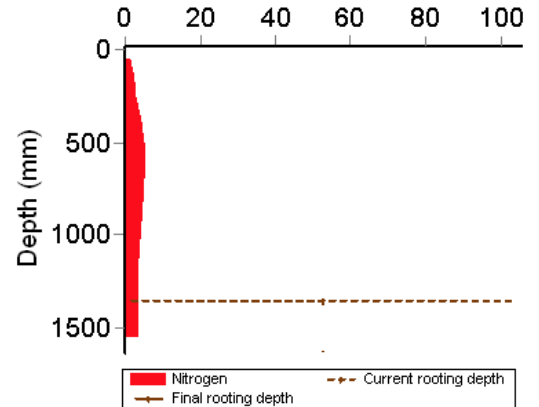
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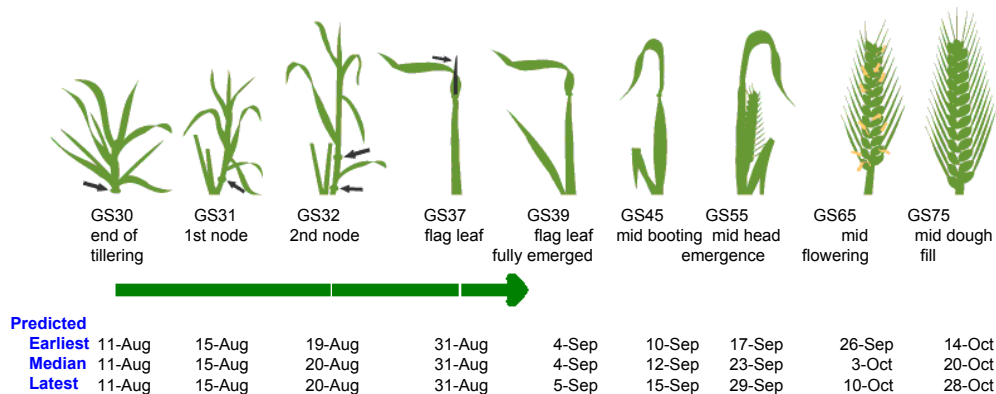
Water Availability **



Soil Nitrogen



Zadok's Growth Stages



TEMORA WUE SITE ~ WHEAT

VARIETY Gauntlet SOWING DATE 23/4/2013

N APPLIED 128kg/ha

SOIL TYPE Red Chromosol

SOWING DENSITY 100 plants/m²

GROWING SEASON RAINFALL 203mm

CURRENT ROOTING DEPTH 1296mm

PREDICTED FINAL ROOTING DEPTH 1344mm

CURRENT CROP PAW 95mm

SOIL PAW 98mm

PAWC 204mm

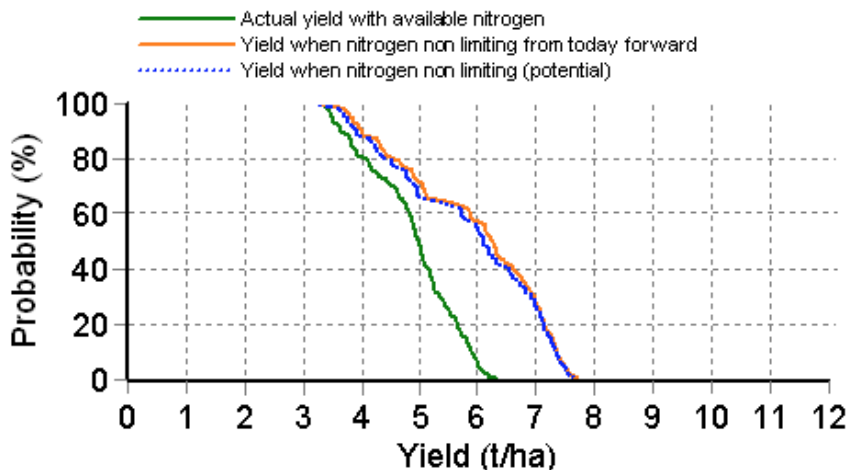
DAILY WATER USE 2.4mm

INITIAL N 85kg/ha N PROFILE 54kg/ha

N AVAILABLE TO ROOTS 41kg/ha

CURRENTLY USING 3.2kg of N/ha/day

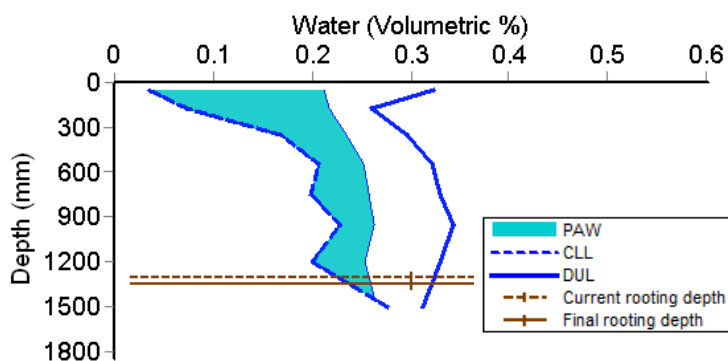
Grain Yield Probabilities *



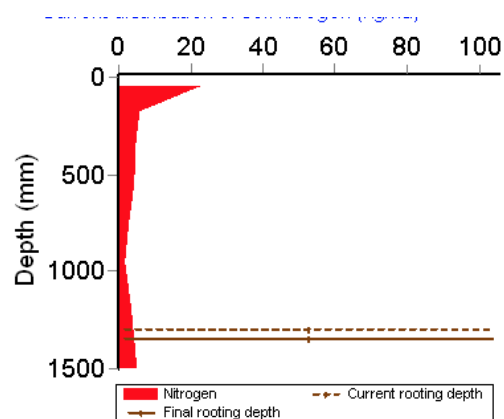
* given weather, soil N and agronomic inputs to date, and historical climate data (100 years) to simulate remainder of season. Does not account for disease, insect or weed pressure or extreme climatic events.

** PAW = plant available water; CLL = crop lower limit; DUL = drained upper limit. Note: Soil water parameters are taken from paddocks previously characterised on the same farm. Although the data should be representative of the paddock, minor discrepancies occur.

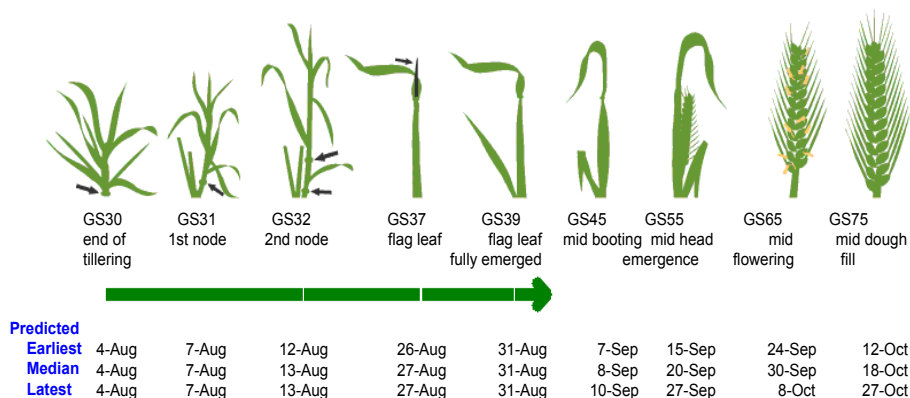
Water Availability **



Soil Nitrogen



Zadok's Growth Stages



YIELD PROPHET PADDOCKS



ARDLETHAN Wheat 2 September 2013



ARDLETHAN Canola 2 September



DIRNASEER Wheat 2 September 2013



DIRNASEER Canola 2 September 2013



GREENETHORPE Wheat 2 Sep 2013



GREENETHORPE Canola 2 Sep 2013



LOCKHART Wheat 2 September 2013



LOCKHART Canola 2 September 2013

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