

WEATHER or NOT

A REVIEW OF SEASONAL AND CROP OUTLOOKS FOR THE FARMLINK REGION

October 2013

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The season so far....

The last few weeks have been a stark demonstration of the unpredictability of nature and therefore farming. Crops right across the region were setup for above average yields with Canola virtually finished and the wheat requiring a finishing rain to achieve full potential. Firstly the rain didn't eventuate and the dry weather was accompanied by a series of frosts of varying degrees.

Damage has been variable depending on the severity of the frost and the growth stage of the crops. As a general rule east of Temora has seen grain yield reductions in canola of between 10-90%. The more eastern sites have experienced the most severe damage. Wheat appears to have fared better in most locations but in some cases it has been worse. The yield prophet wheat crop at Greenethorpe suffered 95% grain loss from a -4.5 degrees incident and has subsequently been cut for hay. The canola at the same site has approximately 80% damage. These crops had respective yield predictions of 2.8 and 2.7t/ha so it has been a devastating incident to both morale and finances. Our thoughts go out to all growers who have had similar experiences.

The site at Dirnaseer also has significant frost damage in Canola with the low lying country being very severe. The wheat at this stage is showing no signs of damage but there is a chance it will take a bit longer for the damage to emerge and be visually recognisable. The experience in 1998 was a similar event but there was no moisture stress at the time of the frost then. The impacts of frost plus moisture stress this year may or may not be as bad as 1998 given that it is now common practice for many crops to be established 1-2 weeks earlier.

The Lockhart and Ardlethan sites appear to have escaped serious frost damage. The variability of frost damage makes it very difficult to formulate a strategy on how best to deal with affected crops. Phil Bowden, District Agronomist at Cootamundra has compiled information on a range of options and this has been circulated to all members. It would be wise to get your advisor to inspect crops with suspected damage to have a good idea of the actual level of loss prior to making any firm decisions.

At the time of writing most crops have run out of moisture and rainfall will only benefit later maturing crops. Ardlethan and Lockhart have good yield predictions for Canola and wheat is expected to achieve average yields. At the Temora WUE site the ungrazed Canola has had been significantly damaged while the grazed canola has been affected to a much lesser degree. The delay in flowering (10-14 days) from grazing appears to have reduced damage to this treatment. We are currently collecting samples to score accurately the damage in the canola treatments. The wheat, grazed and ungrazed, appears to have missed any severe frost damage. A list of yield potentials at the 50% probability level is detailed in Table1, over page.



The season so far continued....

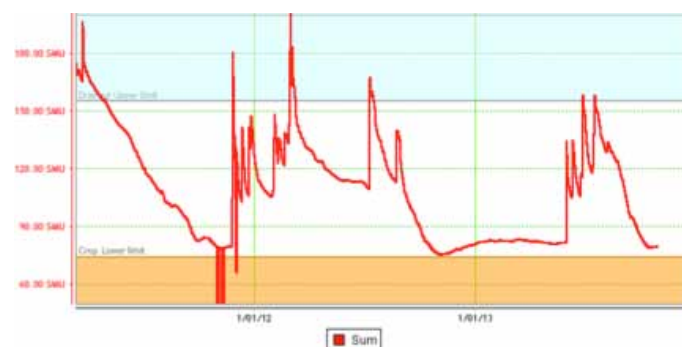
Site	Yield (50%)	PAW	N	GSR	Frost %
Ardlethan C	2	0	0	245	Low levels
Ardlethan W	3	2	22	245	Very low
Dirnaseer C	2.9	0	4	265.2	High levels
Dirnaseer W	2.7	10	72.3	265.2	None evident
Graham Centre W	4.2	10	46	250	tbc
Greenethorpe C	2.8	7	9	270.9	80
Greenethorpe W	2.7	9	33	270.9	95
Lockhart C	2.2	11	19	253.2	Very low
Lockhart W	3.3	11	33	253.2	Very low
Temora C	2.5	14	6	249.3	tbc
Temora W	4.2	12	26	249.3	tbc

Table 1: Yield predictions at 50% probability Yield Prophet Crops 2013.

Moisture Probe Graphs Temora Water Use Efficiency Site



Temora Wheat stubble retained, nil graze



Temora Canola, stubble retained, nil graze

The sum graphs above represent the total of all sensors for the Wheat and Canola at the Temora WUE site. The sum line has fallen to the crop lower limit and is flattening out which indicates no more moisture is being drawn from the profile. The probes measure to 1.22m and there may be some residual moisture below this level but given the lack of subsoil moisture at the start of the season and below average in crop rainfall this is highly unlikely.

A good rainfall event in October would have seen these predictions for wheat increase significantly. The short term forecast for spring rainfalls in July was positive but this did not eventuate. This will severely decrease the confidence of growers when using this weather data in the future. While there was a 60-65% chance of above average falls there was also 35-40% chance of below average rain. I guess it just confirms that predicting rainfall is not yet accurate enough to base critical decisions on and at best is a guide only.

Paul Breust
Research and Extension Coordinator

(*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 30 plants/m²

GROWING SEASON RAINFALL 245mm

CURRENT ROOTING DEPTH 840mm

PREDICTED FINAL ROOTING DEPTH 840mm

CURRENT CROP PAW 3mm

SOIL PAW 3mm

PAWC 216mm

DAILY WATER USE 0mm

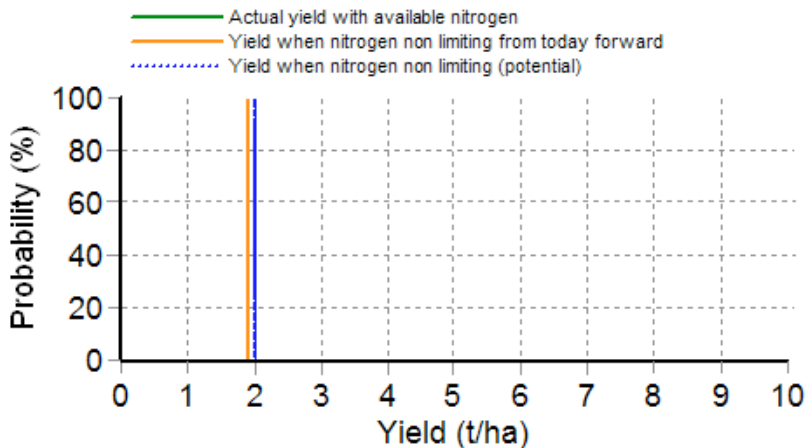
DEEP N 100kg/ha

N PROFILE 18kg/ha

N AVAILABLE TO ROOTS 0kg/ha

CURRENTLY USING 0kg of N/ha/day

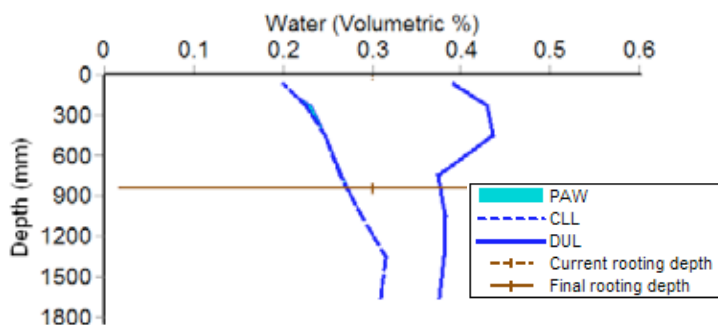
Grain Yield Probabilities *



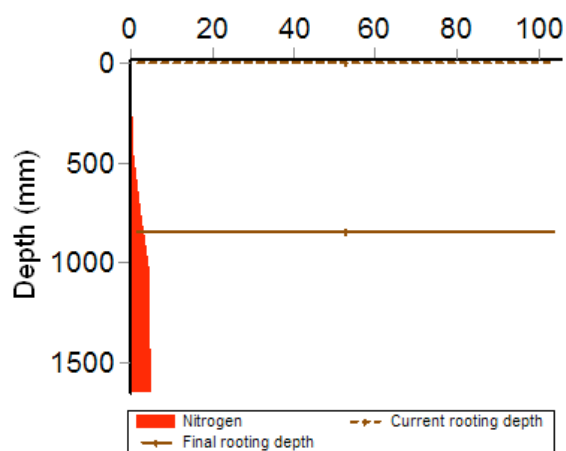
* given weather, soil N and agronomic inputs to date, and historical climate data (100 years) to simulate remainder of season. Does not account for disease, insect or weed pressure or extreme climatic events.

** 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.

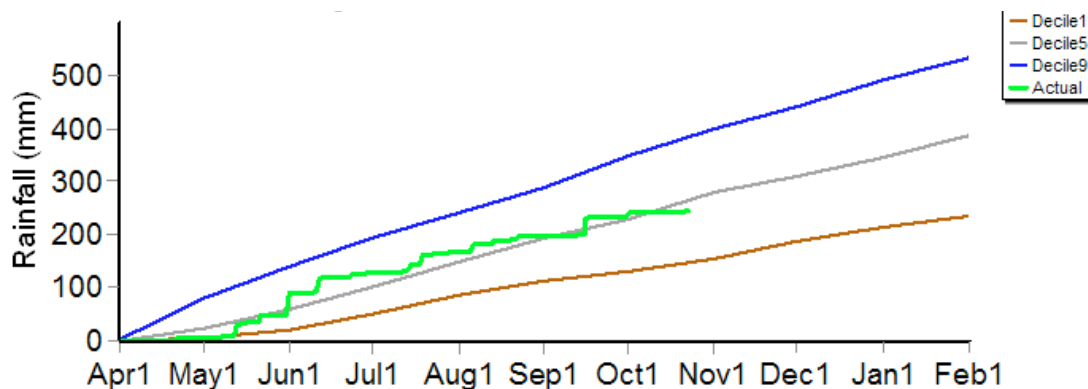
Water Availability **



Soil Nitrogen



Growing Season Rainfall

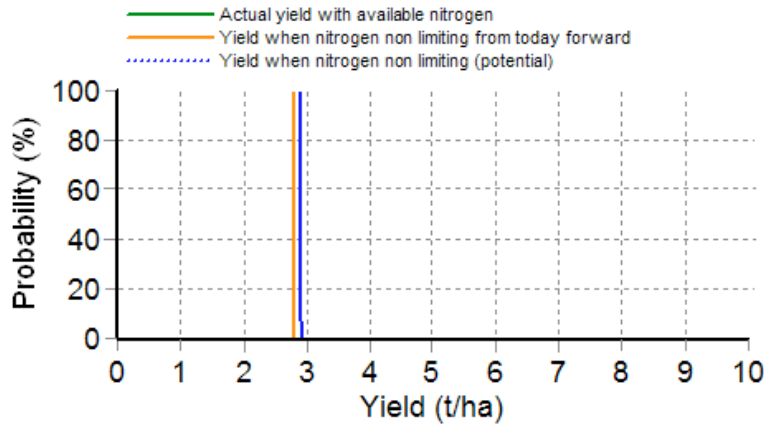


DIRNASEER ~ CANOLA

VARIETY Gem TT **SOWING DATE** 24/4/2013
N APPLIED 108kg/ha
SOIL TYPE Red Kandosol
SOWING DENSITY 65 plants/m²
GROWING SEASON RAINFALL 265mm
CURRENT ROOTING DEPTH 1648mm
PREDICTED FINAL ROOTING DEPTH 1648mm

CURRENT CROP PAW 4mm
SOIL PAW 4mm
PAWC 216mm
DAILY WATER USE 0mm
INITIAL N 133kg/ha **N IN PROFILE** 4kg/ha
N AVAILABLE TO ROOTS 0kg/ha
CURRENTLY USING 0kg of N/ha/day

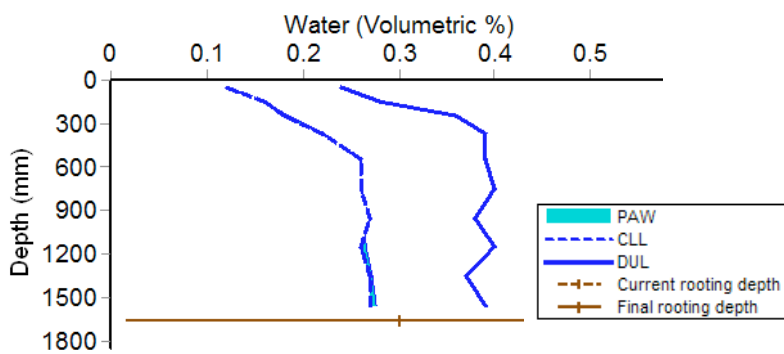
Grain Yield Probabilities *



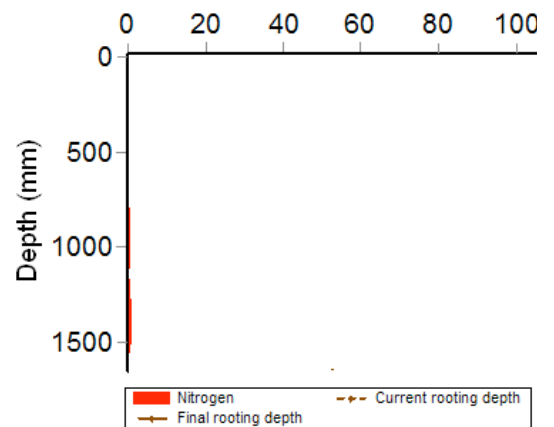
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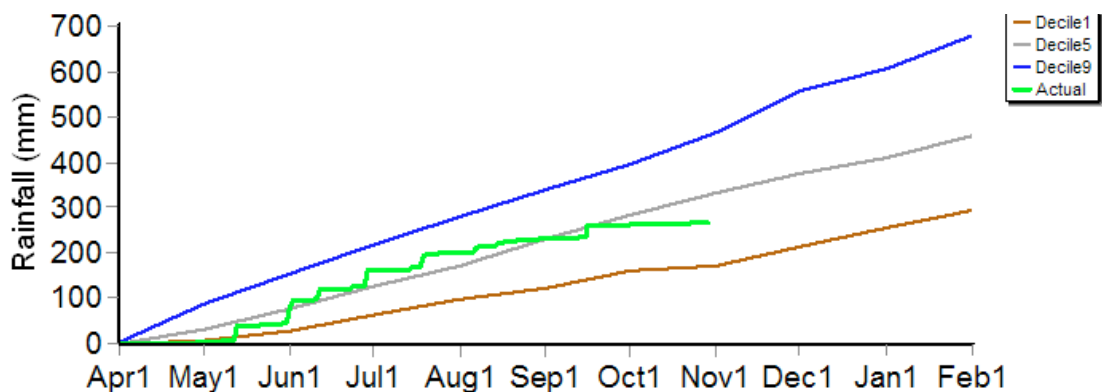
Water Availability **



Soil Nitrogen



Growing Season Rainfall

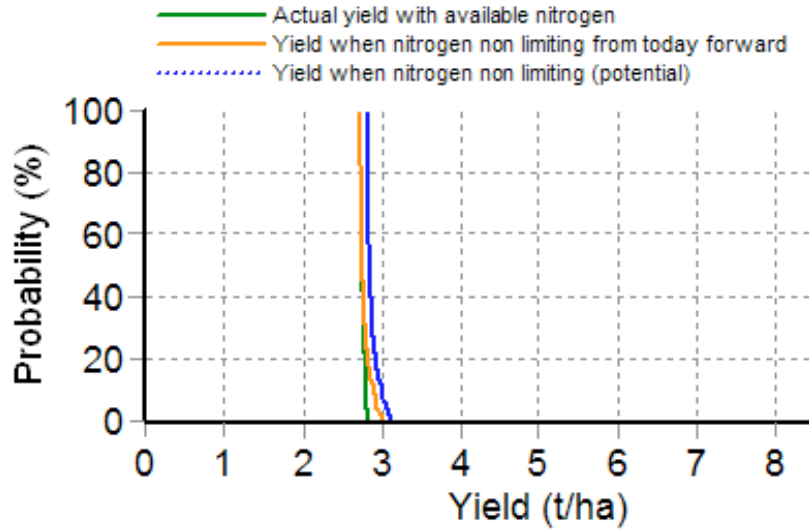


GREENETHORPE ~ CANOLA

VARIETY Gem TT **SOWING DATE** 2/5/2013
N APPLIED 99kg/ha
SOIL TYPE Heavy Red Kandosol
SOWING DENSITY 50 plants/m²
GROWING SEASON RAINFALL 271mm
CURRENT ROOTING DEPTH 1393mm
PREDICTED FINAL ROOTING DEPTH 1393mm

CURRENT CROP PAW 7mm
SOIL PAW 7mm
PAWC 150 mm
DAILY WATER USE 0.2mm
INITIAL N 106kg/ha **N PROFILE** 9kg/ha
N AVAILABLE TO ROOTS 1.4kg/ha
CURRENTLY USING 0kg of N/ha/day

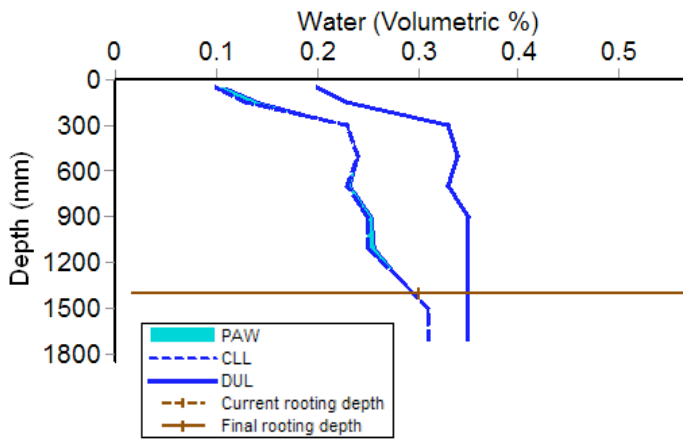
Grain Yield Probabilities *



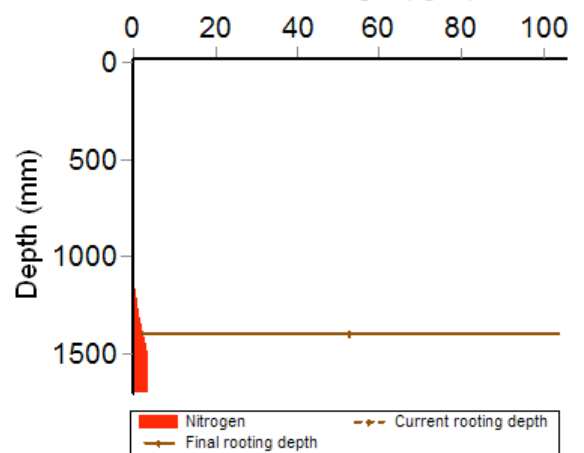
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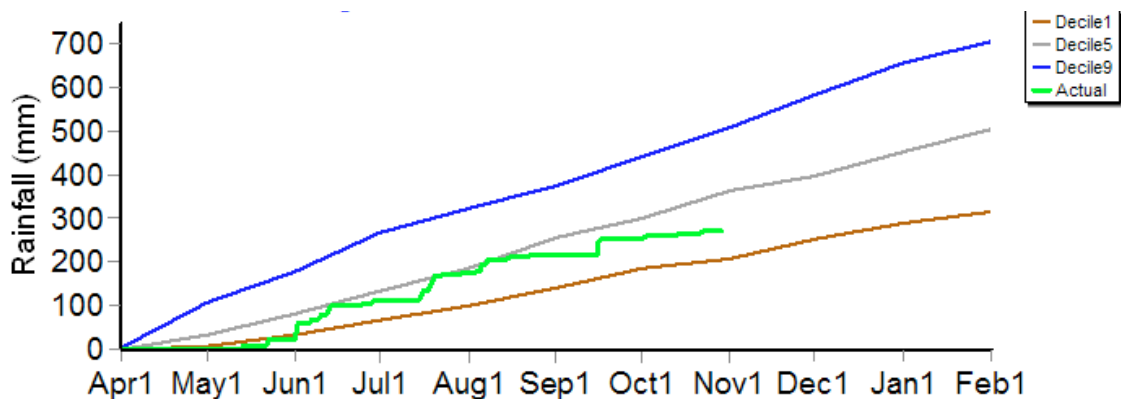
Water Availability **



Soil Nitrogen



Growing Season Rainfall

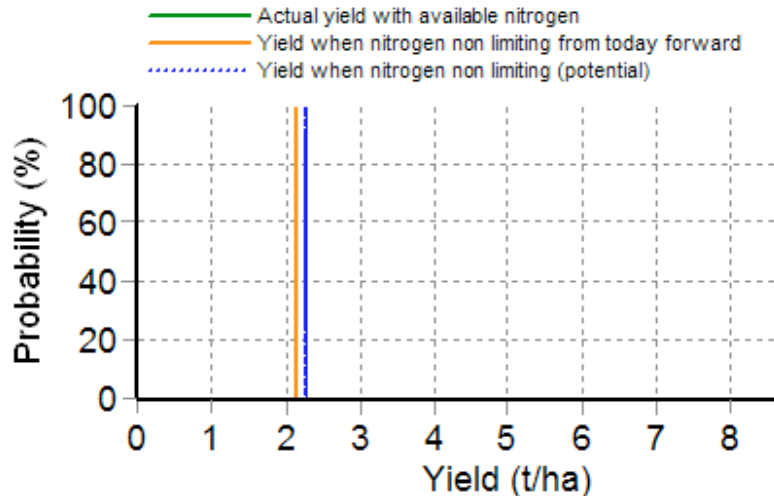


LOCKHART ~ CANOLA

VARIETY GEM TT SOWING DATE 25/4/2013
 N APPLIED 71kg/ha
 SOIL TYPE Brown Sodosol
 SOWING DENSITY 20 plants/m²
 GROWING SEASON RAINFALL 254mm
 CURRENT ROOTING DEPTH 1002mm
 PREDICTED FINAL ROOTING DEPTH 1002mm

CURRENT CROP PAW 1mm
 SOIL PAW 1mm
 PAWC 173mm
 DAILY WATER USE 0mm
 INITIAL N 128kg/ha N PROFILE 19kg/ha
 N AVAILABLE TO ROOTS 0kg/ha
 CURRENTLY USING 0kg of N/ha/day

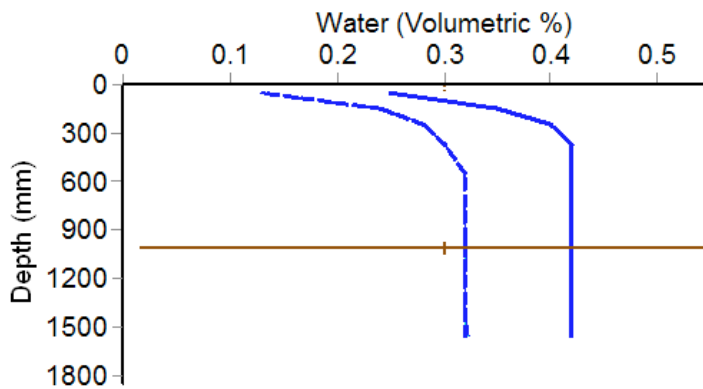
Grain Yield Probabilities *



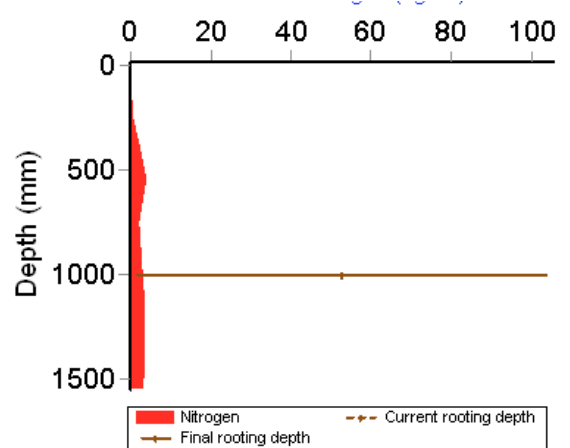
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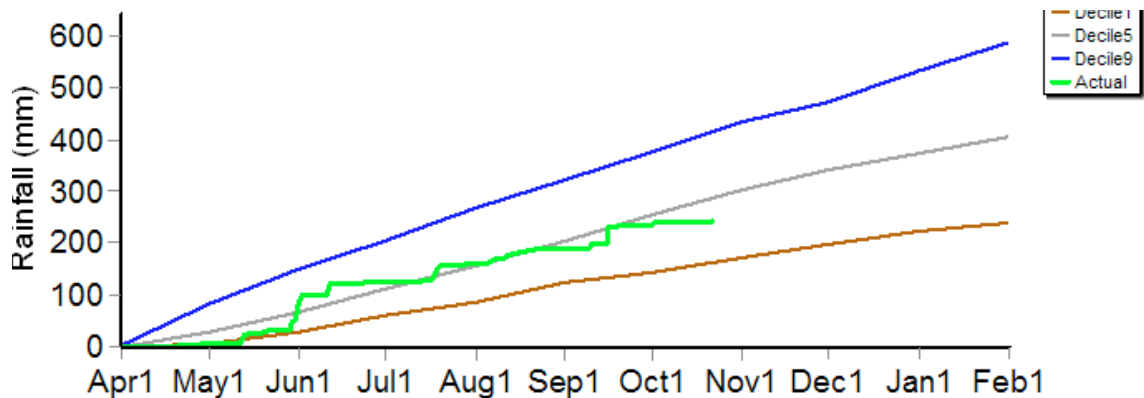
Water Availability **



Soil Nitrogen



Growing Season Rainfall

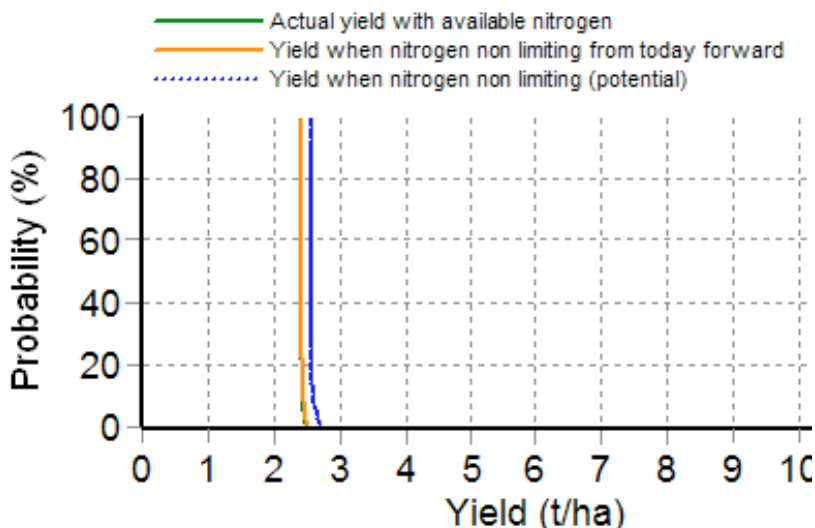


TEMORA WUE SITE ~ CANOLA

VARIETY Clearfield 575 **SOWING DATE** 23/4/2013
N APPLIED 100kg/ha
SOIL TYPE Red Chromosol
SOWING DENSITY 40 plants/m²
GROWING SEASON RAINFALL 249mm
CURRENT ROOTING DEPTH 1493mm
PREDICTED FINAL ROOTING DEPTH 1493mm

CURRENT CROP PAW 14mm
SOIL PAW 14mm
PAWC 206mm
DAILY WATER USE 0.2mm
INITIAL N 91kg/ha **N PROFILE** 6kg/ha
N AVAILABLE TO ROOTS 5.5kg/ha
CURRENTLY USING 0.1kg of N/ha/day

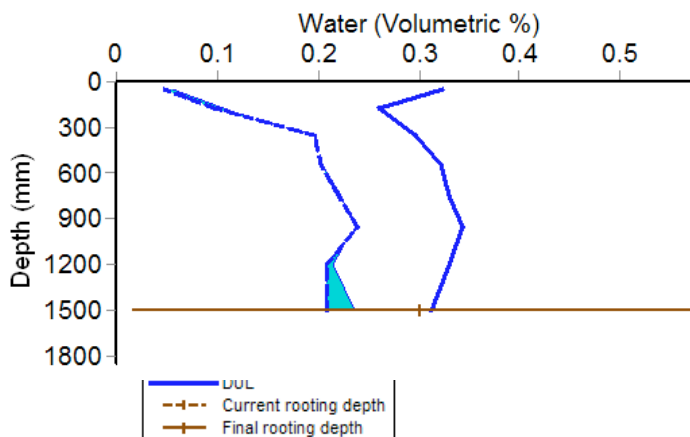
Grain Yield Probabilities *



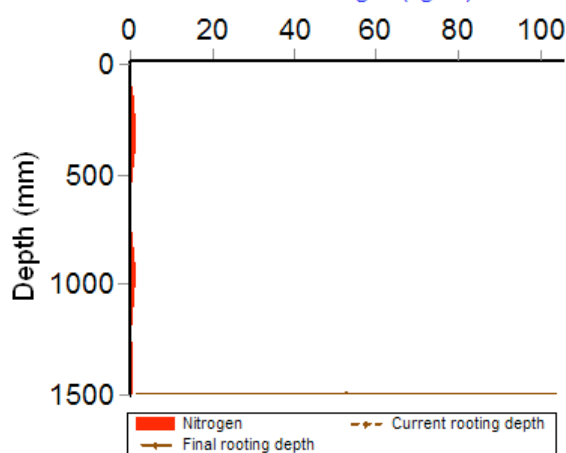
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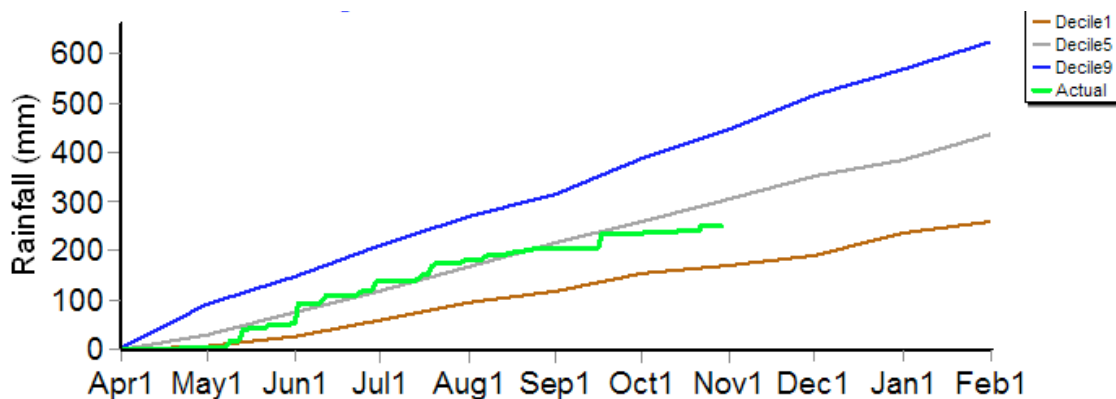
Water Availability **



Soil Nitrogen



Growing Season Rainfall

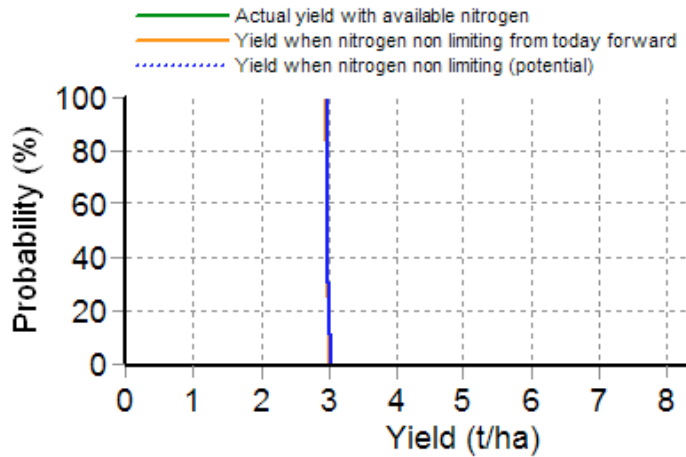


ARDLETHAN ~ WHEAT

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 245mm
CURRENT ROOTING DEPTH 782mm
PREDICTED FINAL ROOTING DEPTH 782mm

CURRENT CROP PAW 2mm
SOIL PAW 2mm
PAWC 216 mm
DAILY WATER USE 0mm
INITIAL N 140kg/ha **N PROFILE** 48kg/ha
N AVAILABLE TO ROOTS 22kg/ha
CURRENTLY USING 0kg of N/ha/day

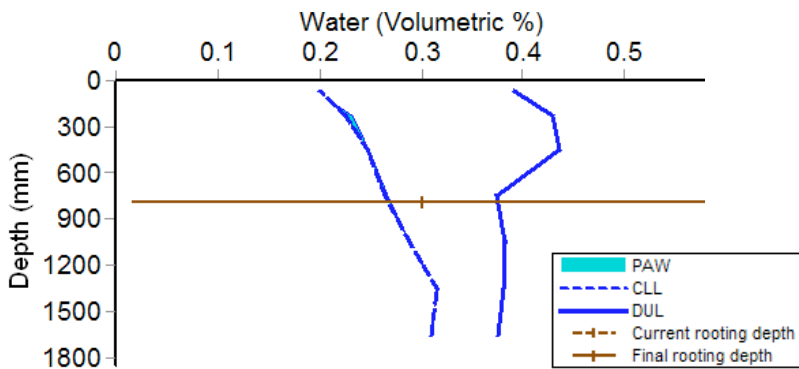
Grain Yield Probabilities *



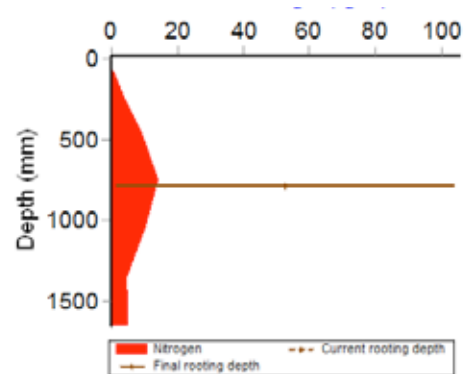
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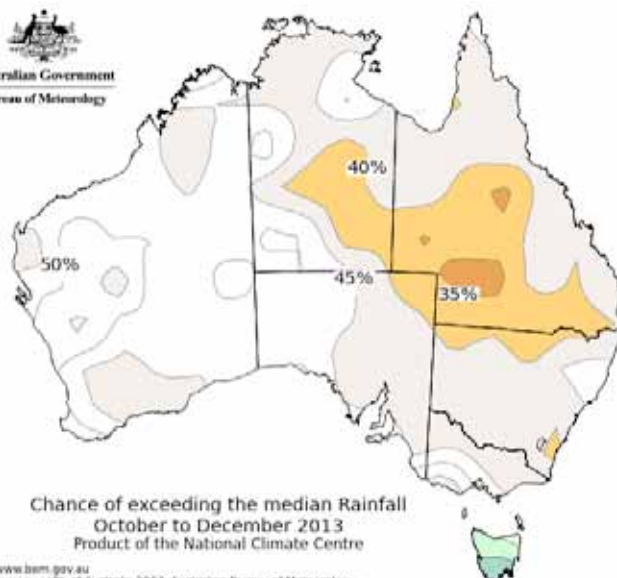
Water Availability **



Soil Nitrogen



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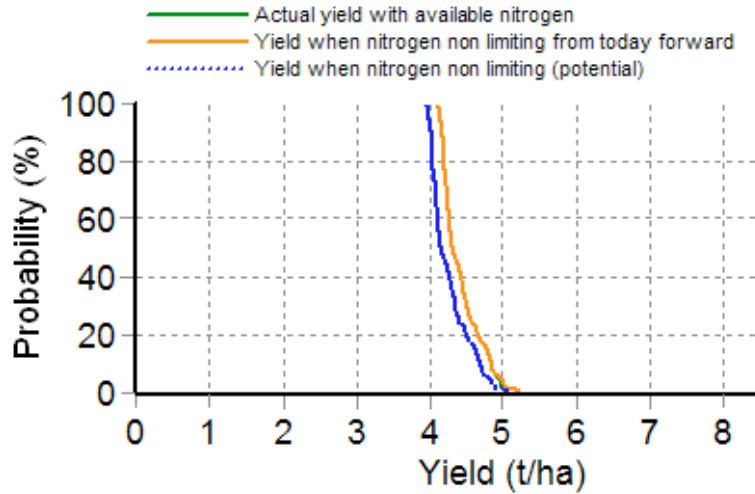
Model Run: 16/09/2013
based: 17/09/2013

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 250mm
 CURRENT ROOTING DEPTH 1050mm
 PREDICTED FINAL ROOTING DEPTH 1050mm

CURRENT CROP PAW 10mm
 SOIL PAW 10mm
 PAWC 216mm
 DAILY WATER USE 0.4mm
 INITIAL N 200kg/ha N PROFILE 46kg/ha
 N AVAILABLE TO ROOTS 24.2kg/ha
 CURRENTLY USING 0.1kg of N/ha/day

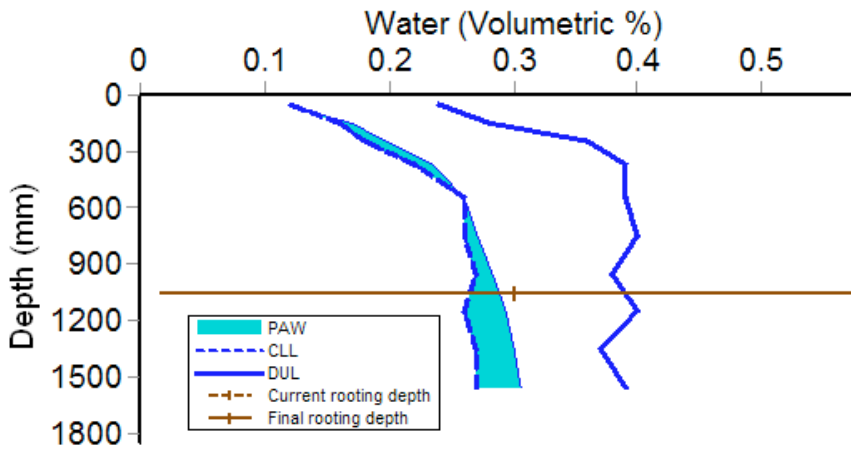
Grain Yield Probabilities *



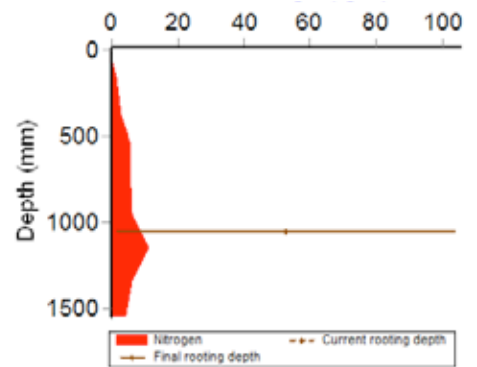
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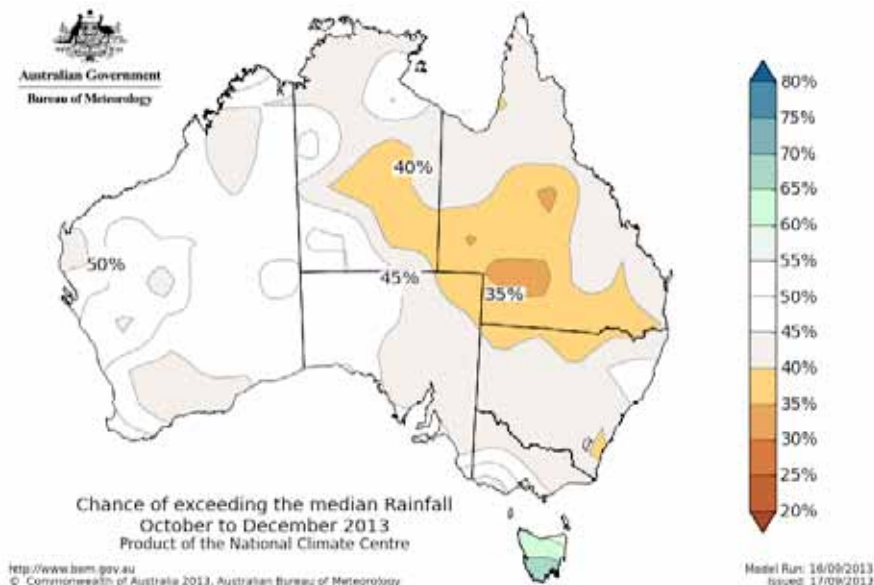
Water Availability **



Soil Nitrogen



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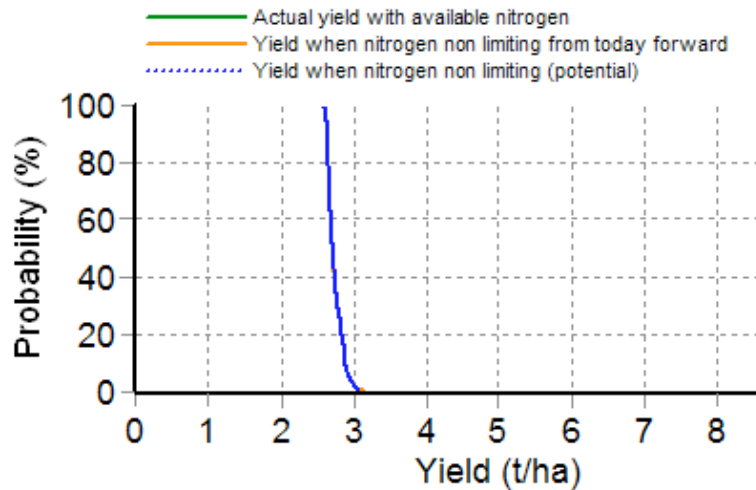


DIRNASEER ~ WHEAT

VARIETY Sunvale **SOWING DATE** 12/5/2013
N APPLIED 117kg/ha
SOIL TYPE Red Kandosol
SOWING DENSITY 119 plants/m²
GROWING SEASON RAINFALL 265mm
CURRENT ROOTING DEPTH 1650mm
PREDICTED FINAL ROOTING DEPTH 1650mm

CURRENT CROP PAW 7mm
SOIL PAW 10mm
PAWC 216mm
DAILY WATER USE 0.2mm
INITIAL N 129kg/ha **N PROFILE** 73kg/ha
N AVAILABLE TO ROOTS 72.3kg/ha
CURRENTLY USING 0.1kg of N/ha/day

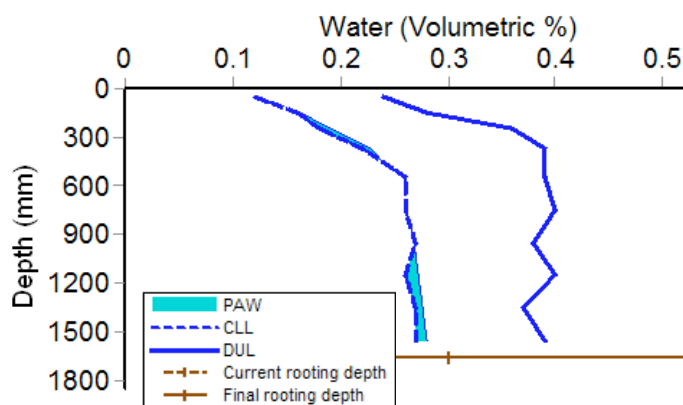
Grain Yield Probabilities *



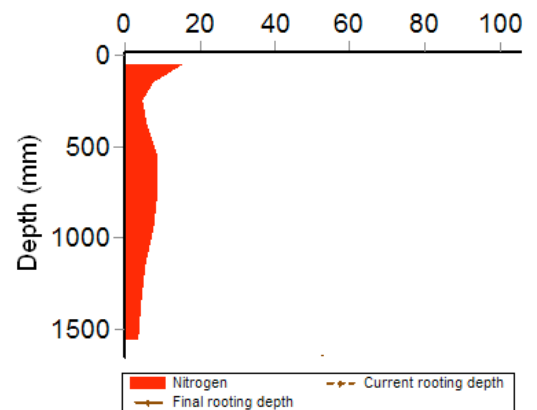
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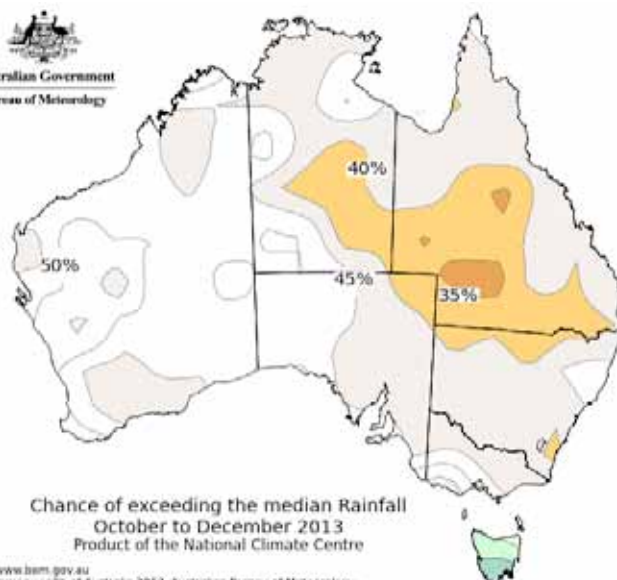
Water Availability **



Soil Nitrogen

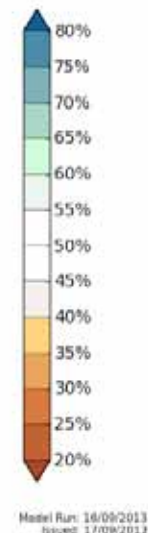


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Chance of exceeding the median Rainfall
October to December 2013
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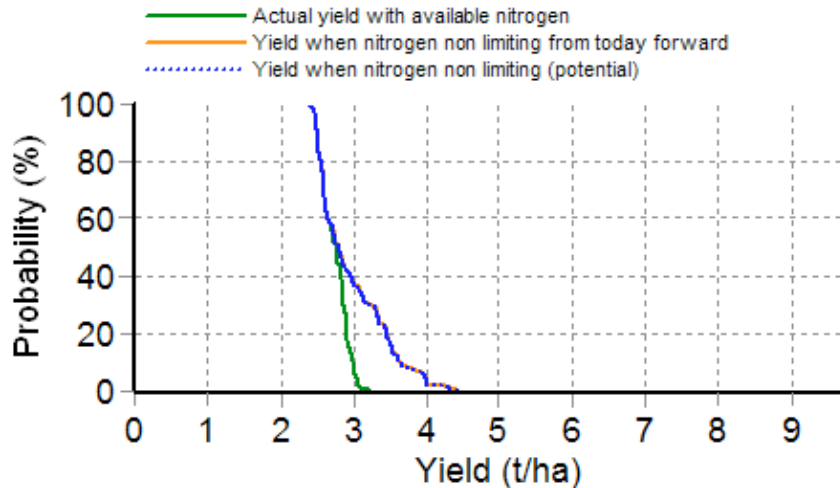
Model Run: 18/09/2013
Issued: 17/09/2013

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 271mm
 CURRENT ROOTING DEPTH 1381mm
 PREDICTED FINAL ROOTING DEPTH 1381mm

CURRENT CROP PAW 9mm
 SOIL PAW 9mm
 PAWC 150mm
 DAILY WATER USE 0.3mm
 INITIAL N 115kg/ha N PROFILE 33kg/ha
 N AVAILABLE TO ROOTS 25kg/ha
 CURRENTLY USING 0kg of N/ha/day

Grain Yield Probabilities *

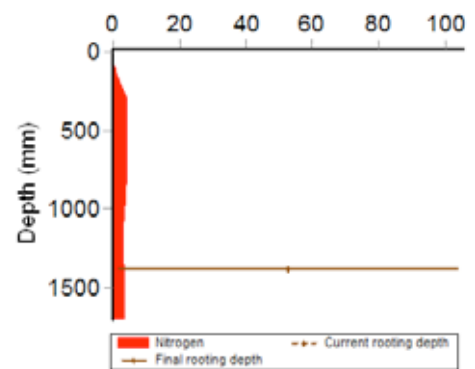
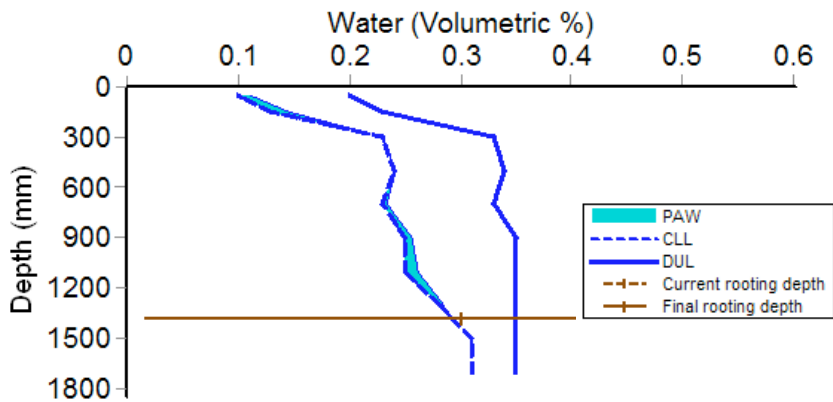


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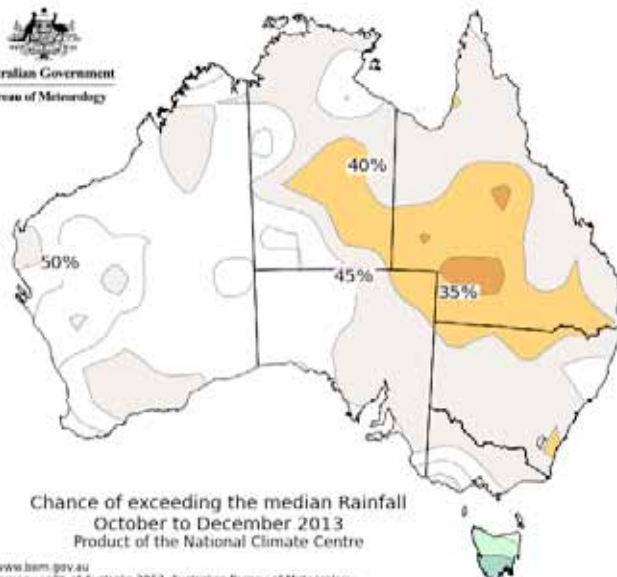
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Water Availability **

Soil Nitrogen



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Model Run: 18/09/2013
 Issued: 17/09/2013

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 254mm

CURRENT ROOTING DEPTH 1631mm

PREDICTED FINAL ROOTING DEPTH 1631mm

CURRENT CROP PAW 11mm

SOIL PAW 11mm

PAWC 173mm

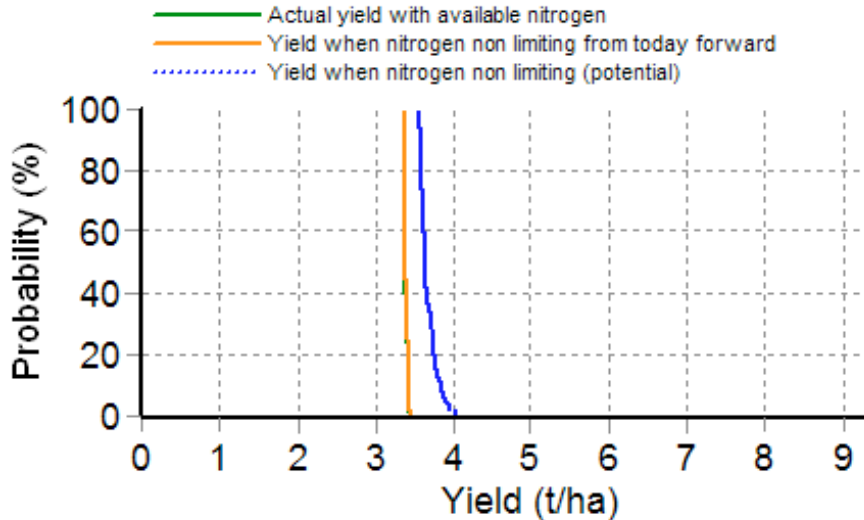
DAILY WATER USE 0.1mm

INITIAL N 110 kg/ha N PROFILE 33 kg/ha

N AVAILABLE TO ROOTS 32kg/ha

CURRENTLY USING 0kg of N/ha/day

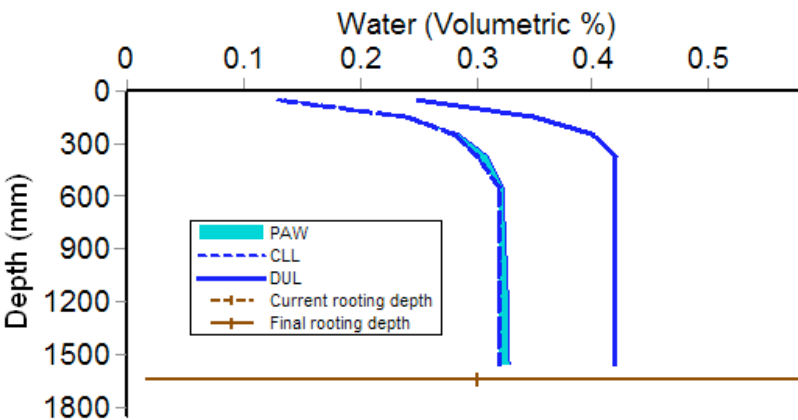
Grain Yield Probabilities *



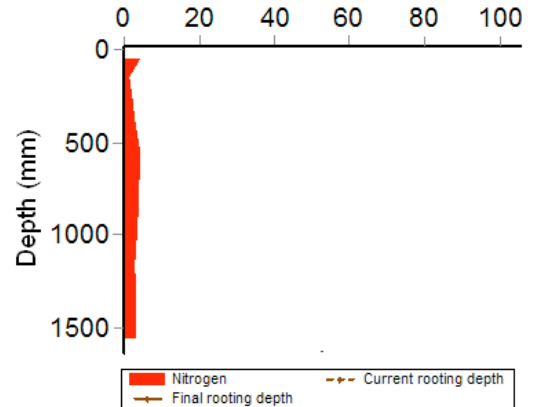
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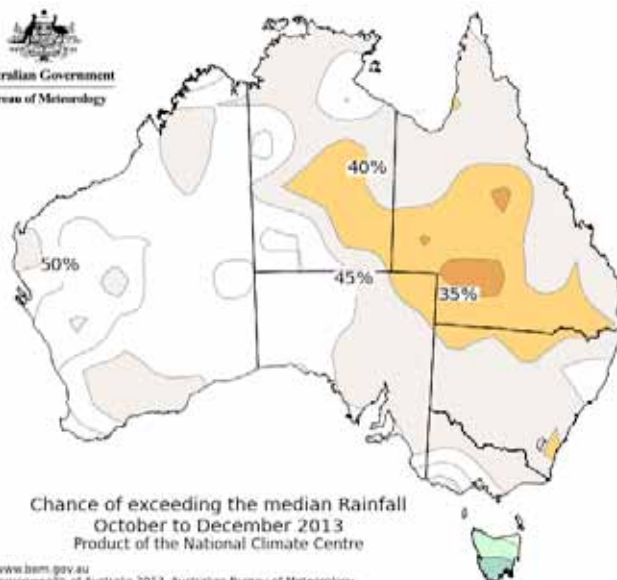
Water Availability **



Soil Nitrogen



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Model Run: 16/09/2013
Issued: 17/09/2013

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 249mm

CURRENT ROOTING DEPTH 1343mm

PREDICTED FINAL ROOTING DEPTH 1344mm

CURRENT CROP PAW 12mm

SOIL PAW 12mm

PAWC 204mm

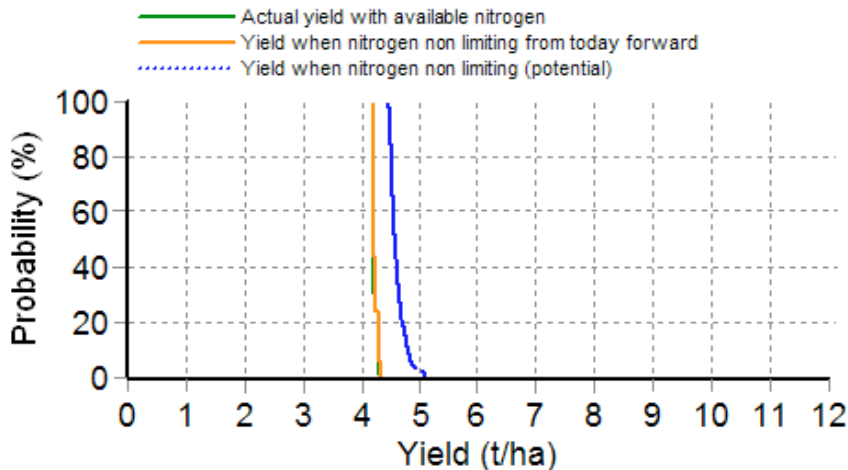
DAILY WATER USE 0.1mm

INITIAL N 85kg/ha N PROFILE 26kg/ha

N AVAILABLE TO ROOTS 21kg/ha

CURRENTLY USING 0kg of N/ha/day

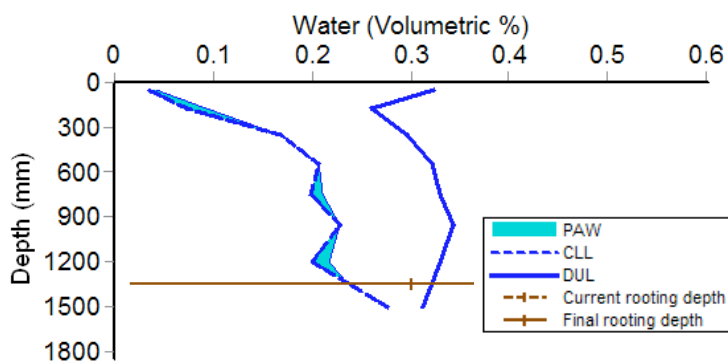
Grain Yield Probabilities *



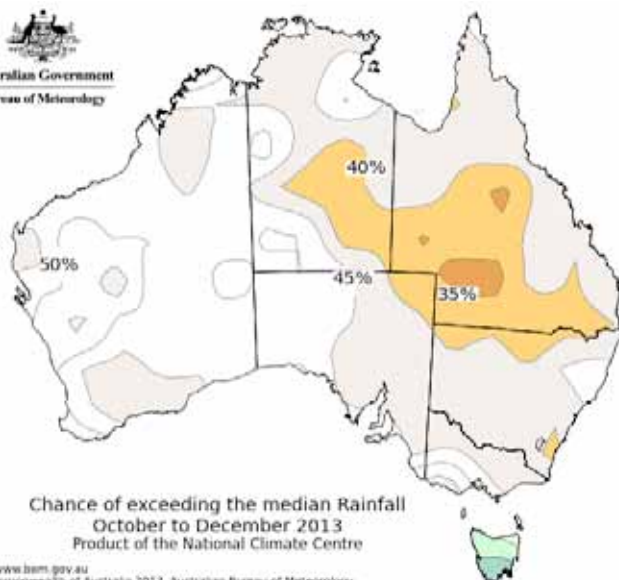
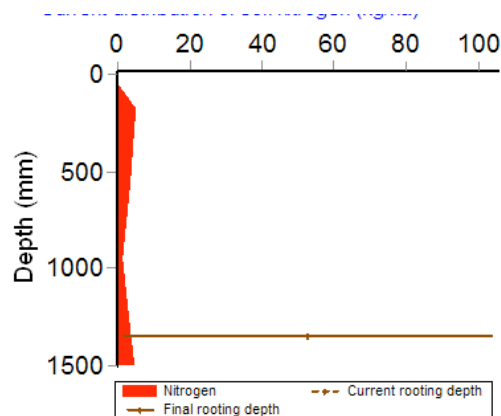
* given weather, soil N and agronomic inputs to date, and historical climate data (100 years) to simulate remainder of season. Does not account for disease, insect or weed pressure or extreme climatic events.

** 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



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Model Run: 16/09/2013 based: 17/09/2013

YIELD PROPHET PADDOCKS



ARDLETHAN Wheat 30 October 2013



ARDLETHAN Canola 30 October 2013



DIRNASEER Wheat 30 October 2013



DIRNASEER Canola 30 October 2013



GREENETHORPE Wheat 30 Oct 2013



GREENETHORPE Canola 30 Oct 2013



LOCKHART Wheat 30 October 2013



LOCKHART Canola 30 October 2013

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