



WEATHER OR NOT



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El Nino has strengthened and is expected to last into early 2016. The record warm Indian Ocean has been the hero of the 2015 growing season bringing welcome rain to the FarmLink region. Crops are looking good and yield potential - along with grower confidence - is high.

With the majority of nitrogen now applied and cereal crops approaching flag leaf and early head emergence, grower focus turns to protecting yield potential against disease and pest pressure. Keep an eye on your cereals for any signs of rust that can thrive in a warm, moist canopy.

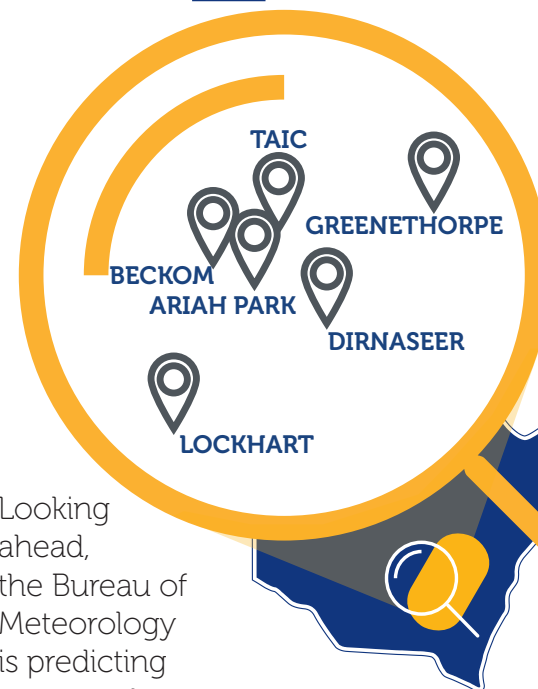
Remember fungicides only protect from the point of contact to the emerged tip of the leaf the product falls on. The leaves yet to emerge will not be protected so getting the timing right is imperative.

The most important thing is to weigh up your yield potential to determine an economic/ effort return.

Insect pressure appears to be low at present but be vigilant with your monitoring as things can change quickly. Subscribing to the FREE PestFacts south-eastern email service is one of the easiest ways you can stay informed about invertebrate pest threats in your region.

For canola, a Sclerotinia stem rot warning has been issued recently for southern New South Wales by the NSW Department of Primary Industries. In this warning, Kurt Lindbeck, NSW plant pathologist, is advising "farmers need to assess the disease risk to their crops before applying foliar fungicide - not all crops will need fungicide protection". GRDC have released a fact

sheet about management options of this fungal disease. It can be found [here](#).



Looking ahead, the Bureau of Meteorology is predicting a wetter than average spring in western and central Australia and average in south east Australia. El Nino can increase frost risk in early spring because of clear night skies so keep an eye on

the forecasts. As you will see from the yield reports in this newsletter, good rains can still contribute considerably to yield.

A few trends we have noted in this:

1. Yield potential has increased in response to the recent rain with the probability curves generally moving to the right.
2. Soil nitrogen status has dropped dramatically due to rapid growth in both the cereals and canola crops.
3. Most crops have now entered the reproductive stages of growth, ie

developing seed, so the window for applying nitrogen to increase yield is closing. The later nitrogen is applied in the growing season the more it contributes to protein over yield.

4. As we get closer to the end of the season confidence in the final yield prediction has increased, the yield curve becomes more vertical.

Since the last edition we have had some feedback around the use of the term 'cropping season rain'. That is the rain received since the end of the previous crop to the end of the

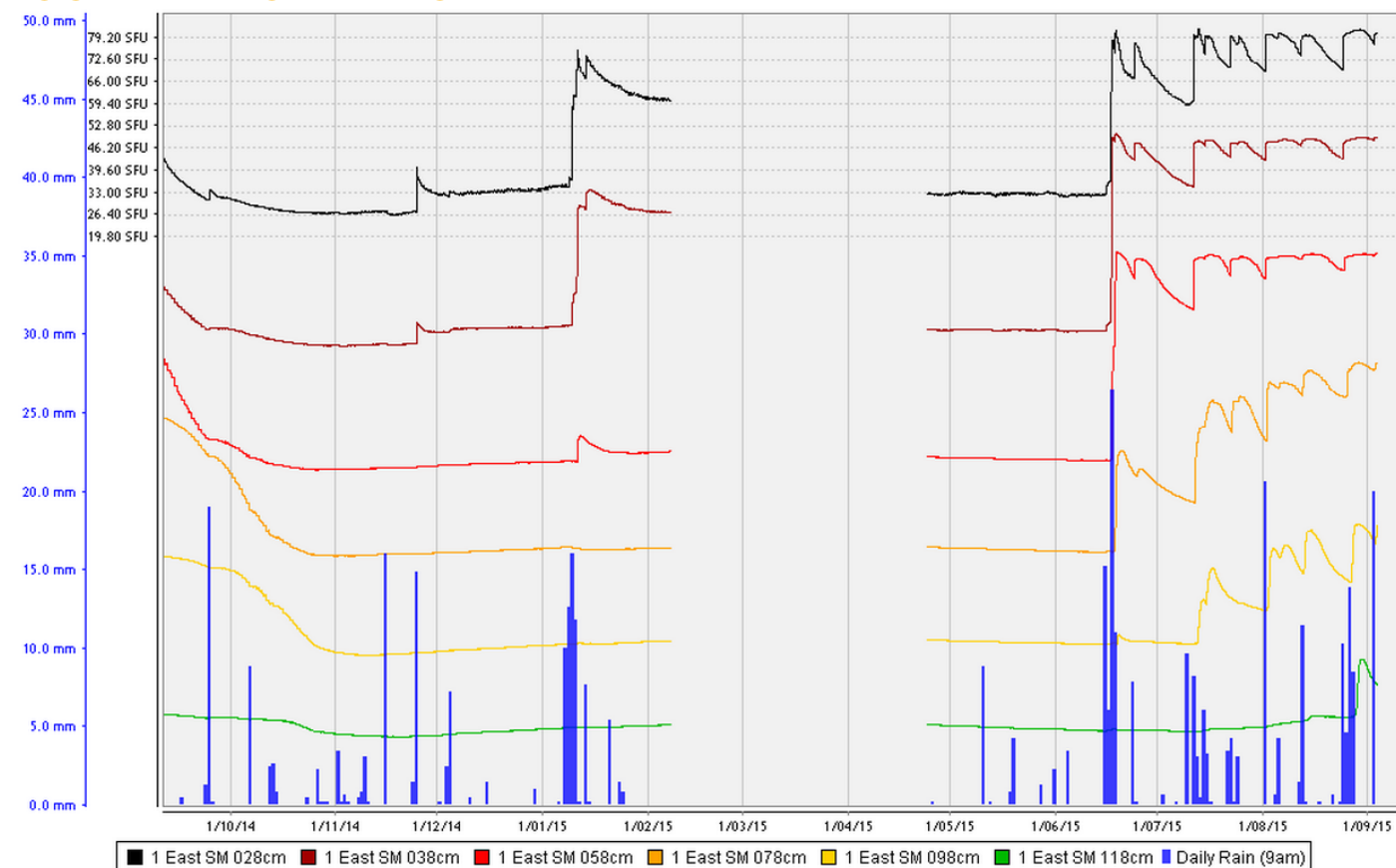
current crop i.e. November to October. When reviewing the cropping season rain with the growing season rain it can give the reader some insight into the contribution that summer rainfall is making to the crops yield potential.

REMINDER

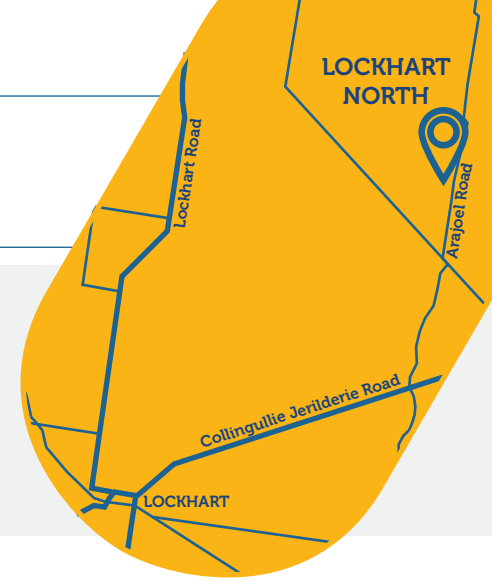
To view the full Yield Prophet reports online, go to: www.yieldprophet.com.au in the user login area, Username: farmlink, Password: farmlink

Yield Prophet reports were generated on 2nd September 2015.

LOCKHART NORTH PROBE 1



LOCKHART NORTH (PROBE 1)



Crop type: canola

Cultivar: Bonito

Sowing date: 22 April 2015

Soil type: sodosol

Directional guide: -35.1036 | 146.8754

Historic average yield: canola - 1.26t/ha

With the current nitrogen available to this canola crop, a yield of 2.5 t/ha is predicted. The historic average yield for canola at this site is approximately 1.3 t/ha. In these terms, no more nitrogen could be required however the grain yield potential outcome graph shows where nitrogen is non-limiting could be increased to 3.4 t/ha (50% probability) or more.

There is good soil moisture with 153 mm of plant available water. After 93 mm of rainfall received in August, the soil moisture probes are showing a very full soil profile with moisture reaching at least 118 cm. However, soil nitrogen is low with 2 kg/ha currently available.

While Yield Prophet is showing a potential yield response to additional nitrogen it is unlikely that it could be made available to crop in time for it to contribute to yield. That, said an adequate supply of N is important during pod fill to maximise seed oil content but too much may stimulate the plant to increase protein at the expense of oil content.

The challenge would be in finding an appropriate time and method of applying the nitrogen so that nitrogen is taken up efficiently by the plant ie. apply nitrogen before rain and that the crop is not damaged in the application process.

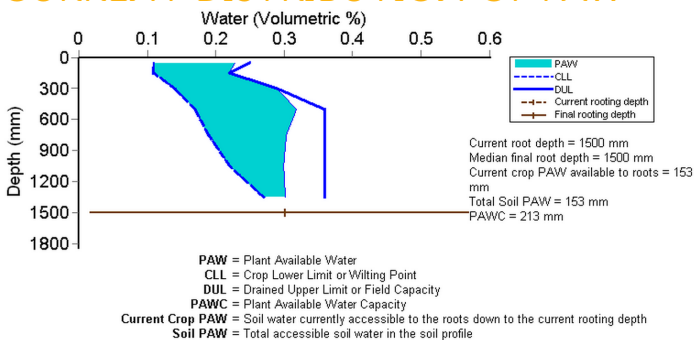
NITROGEN BUDGET

Initial N status @ 05-Apr	175 kg/ha
N mineralisation since 05-Apr	4 kg/ha
N tie up since 05-Apr	4 kg/ha
N applications	22-Apr: 5 kg/ha
Total N in plant	174 kg/ha
De-nitrification since 05-Apr	2 kg/ha
Leaching	0 kg/ha
Current N status:	2 kg/ha

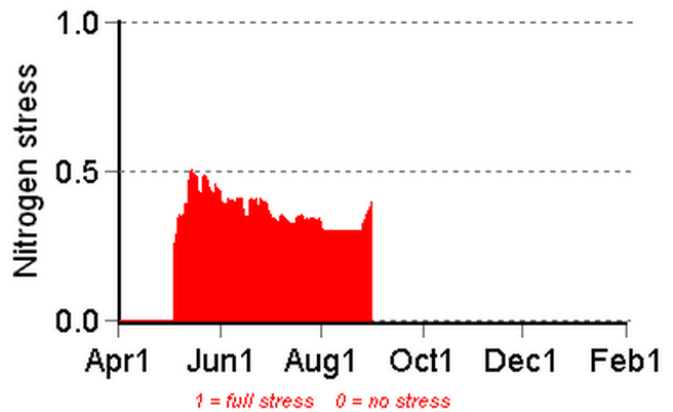
Median N mineralisation to maturity = 3 kg/ha

Median N tie up to maturity = 0 kg/ha

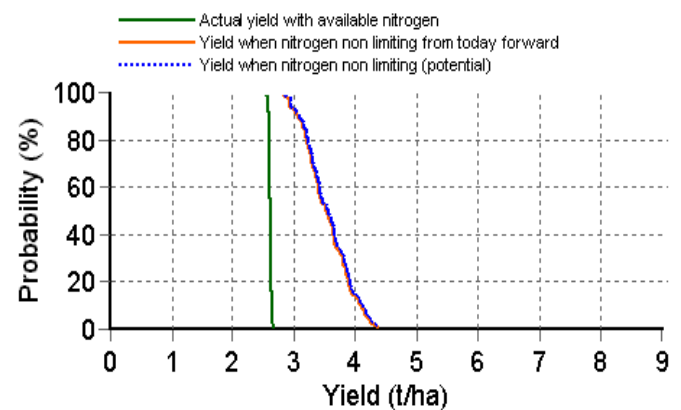
CURRENT DISTRIBUTION OF PAW



NITROGEN STRESS



GRAIN YIELD OUTCOME





ARIAH PARK NW (PROBE 1)

Crop type: canola
Cultivar: Stingray
Sowing date: 20 April 2015
Soil type: sandy clay
Directional guide: -34.2482 | 147.1984
Historic average yield: 1.2 t/ha

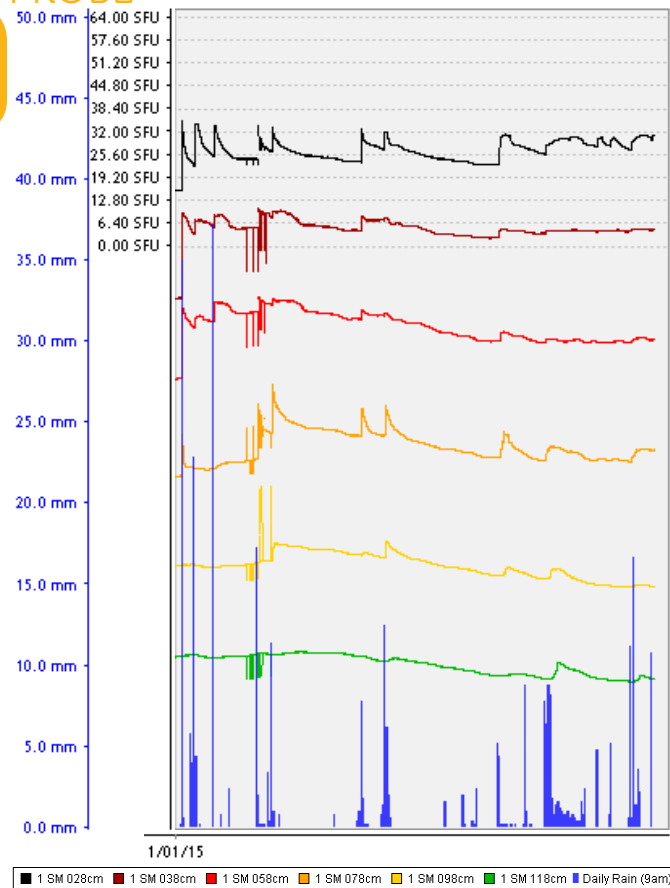
Since the August edition, the probability curves in the grain yield outcome graph have moved showing increased yield potential in response to recent good rains. The 100% probability, minimum yield, was 1.5 t/ha and is now 2.5 t/ha. The crop has been growing vigorously too: the August edition reported 120 kg/ha of nitrogen (N) available and now there is only 5 kg/ha N.

With the crop at the flowering growth stage, the opportunity to apply nitrogen has passed with the best yield gains to be made from applying N prior to bolting. The yield report is showing a minimal response to N application. There is a 50% probability that if N was applied, a yield increase could be made. There is a good soil water status with 111 mm of plant available

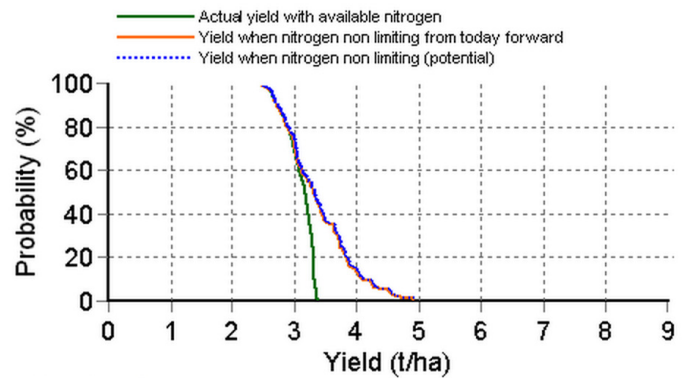
water (PAW). The Current Distribution of PAW shows the rooting depth approaching the 120 cm region where the profile is drier. This is also reflected in the soil moisture probe chart where moisture is evident at the 118 cm sensor.

With the season at decile 4, a good supply of nitrogen in the early stages of crop growth and good current soil moisture supply, it is unlikely that there is an economic benefit to be made from applying more nitrogen. Therefore it is advisable to protect this yield potential and monitor for other factors such as disease and pests.

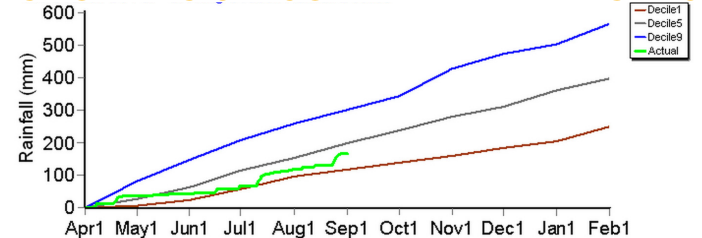
PROBE



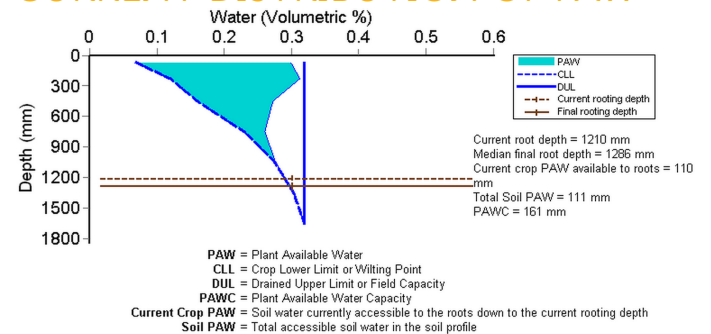
GRAIN YIELD OUTCOME



GROWING SEASON RAINFALL DECILES



CURRENT DISTRIBUTION OF PAW



ARIAH PARK SW (BLOCK 1 EAST PROBE)



Crop type: canola

Cultivar: 45Y86

Sowing date: 22 April 2015

Soil type: sandy loam changing to sandy clay at depth

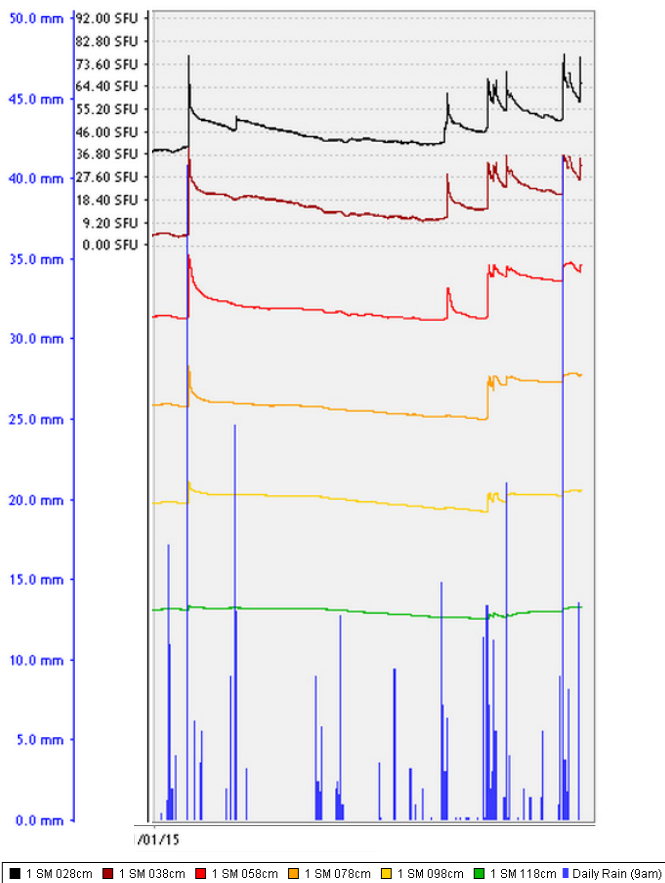
Directional guide: -34.383 | 147.1494

Historic average yield: canola - 1.45t/ha

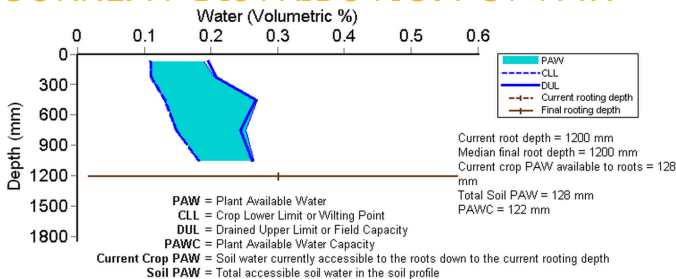
There may still be an opportunity to increase yield in this canola crop: the growing season rainfall decile is currently at 7 and the gap is considerable between the probability curves for yield with available nitrogen and the yield where nitrogen is non-limiting. Total plant available water is high at 128mm and there is no nitrogen available to the crop (See current distribution of soil nitrogen).

It is currently 'batting above its average' for yield potential (grain yield outcome graph).

PROBE



CURRENT DISTRIBUTION OF PAW

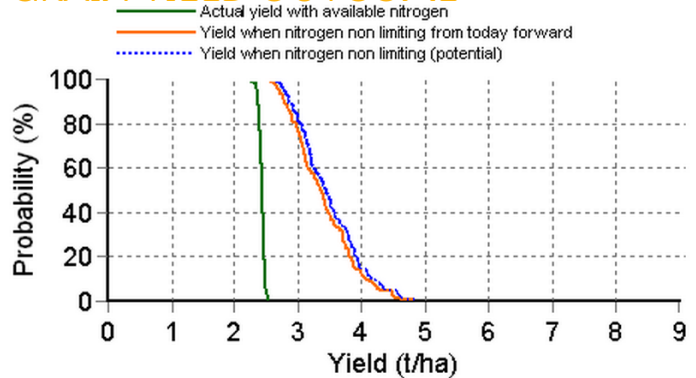


Where it is normally 1.45 t/ha however Yield Prophet is indicating there is a 100% probability of a 2.2 t/ha yield with the available nitrogen. This paddock received 100 kg/ha of urea in mid-June.

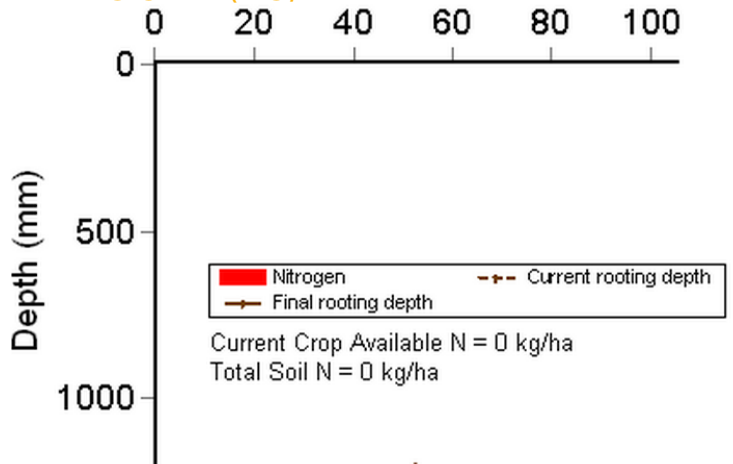
The crop has passed stem elongation where plant uptake is at its highest and it is at 80% flowering but nitrogen is still required at the pod filling stage and topdressing at early to mid-flowering can be beneficial if the crop is likely to run out of N. That said it is unlikely that applied nitrogen could become available to the crop prior to the end of flowering.

An adequate supply of N is important during pod fill to maximise seed oil content but too much may stimulate the plant to increase protein at the expense of oil content.

GRAIN YIELD OUTCOME



CURRENT DISTRIBUTION OF SOIL NITROGEN (KG/HA)





BECKOM NORTH (PROBE A)

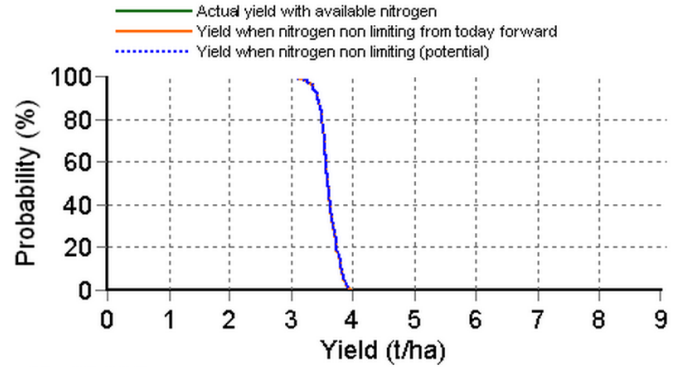
Crop type: wheat
Cultivar: condo
Sowing date: 19 May 2015
Soil type: sandy clay
Directional guide: -34.2895 | 146.9493
Historic average yield: wheat - 2.4t/ha

All three scenarios in the grain yield outcome graph (right) are overlapping each other so a yield response to additional nitrogen is unlikely. The yield potential ranges from a 100% probability of 3t/ha to a low probability of reaching 4 t/ha.

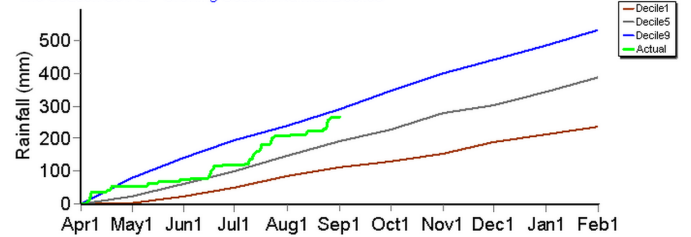
Now approaching full ear emergence, this wheat crop has ample water in the profile (163mm plant available water), a good nitrogen supply (73 kg/ha N) and the growing season is currently at a decile 8.

Topdressing with nitrogen is unlikely to yield a response therefore monitor for disease and pest pressure to protect the current yield potential.

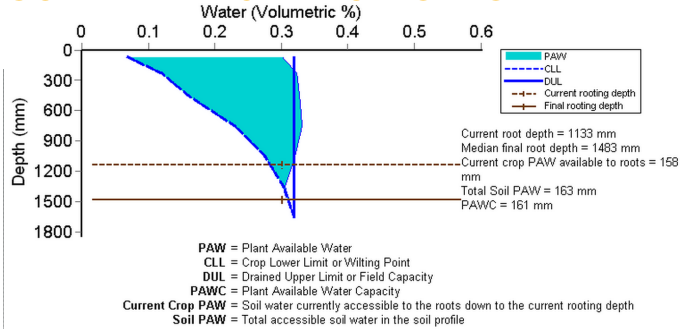
GRAIN YIELD OUTCOME



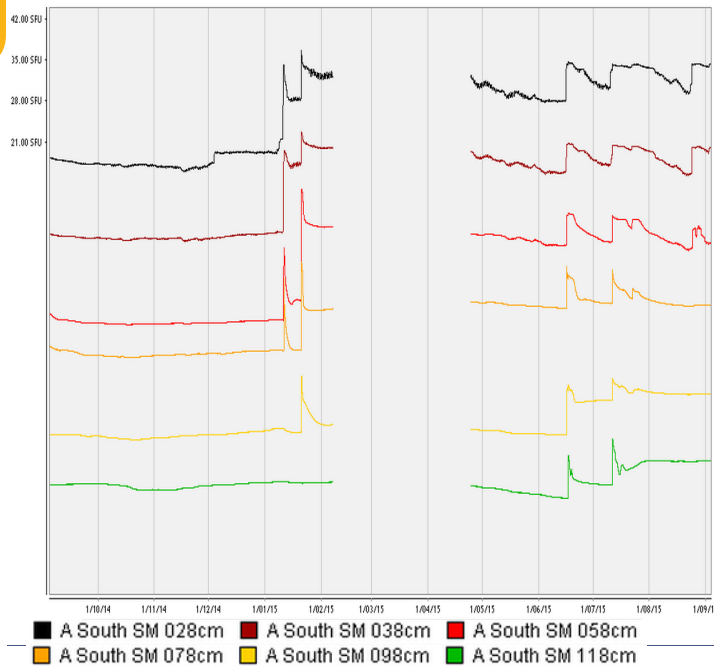
GROWING SEASON RAINFALL DECILES



CURRENT DISTRIBUTION OF PAW



PROBE



GREENETHORPE WEST (PROBE A)

Crop type: canola

Cultivar: gem

Sowing date: 26 April 2015

Soil type: sandy loam over a sandy clay and heavy clay

Directional guide: -34.013 | 148.2542

Historic average yield: canola - 1.8t/ha



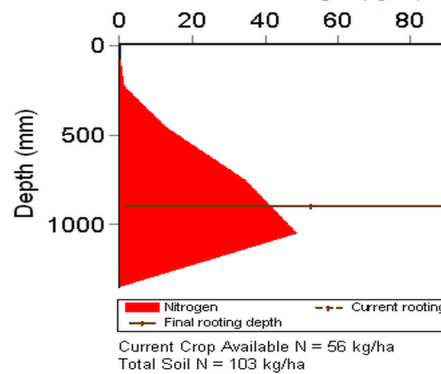
This canola crop received 75 mm of rain in August topping up the total soil plant available water to 102 mm. There is also good soil nitrogen with 103 kg/ha of N in reserve so as this crop enters the podding growth stage, it is in a good position to return a yield of 2.5 t/ha or more. The grain yield outcome report (below) suggests there is a 60% probability of reaching this yield and that there only a 20% probability of additional nitrogen increasing the yield by 0.5 t/ha.

The soil moisture probes are registering good water at depth therefore it is unlikely to require more moisture or nitrogen to return a good yield.

The canola crop is up to flowering so opportunities to apply nitrogen that would be plant available is minimal. More nitrogen is unlikely to be required so monitor for disease and pest pressure to protect the current yield potential.

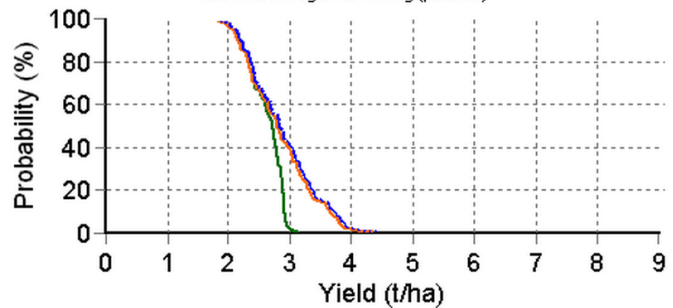
CURRENT DISTRIBUTION OF SOIL NITROGEN (KG/HA)

Current distribution of soil nitrogen (kg/ha)

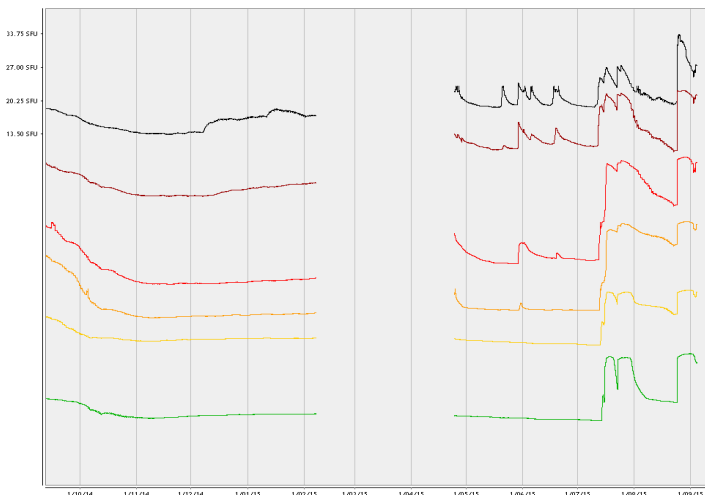


GRAIN YIELD OUTCOME

— Actual yield with available nitrogen
— Yield when nitrogen non limiting from today forward
- - - Yield when nitrogen non limiting (potential)

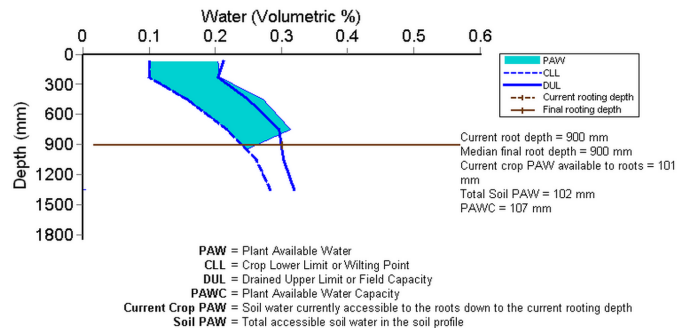


PROBE



■ A South SM 028cm ■ A South SM 038cm ■ A South SM 058cm
■ A South SM 078cm ■ A South SM 098cm ■ A South SM 118cm

CURRENT DISTRIBUTION OF PAW





DIRNASEER NE (PROBE 0)

Crop type: wheat
Cultivar: Sunvale
Sowing date: 13 May 2015
Soil type: red chromosol
Directional guide: -34.6131 | 147.7621
Historic average yield: wheat - 3.0t/ha

This wheat crop has significant yield potential with excellent soil moisture and soil nitrogen stores.

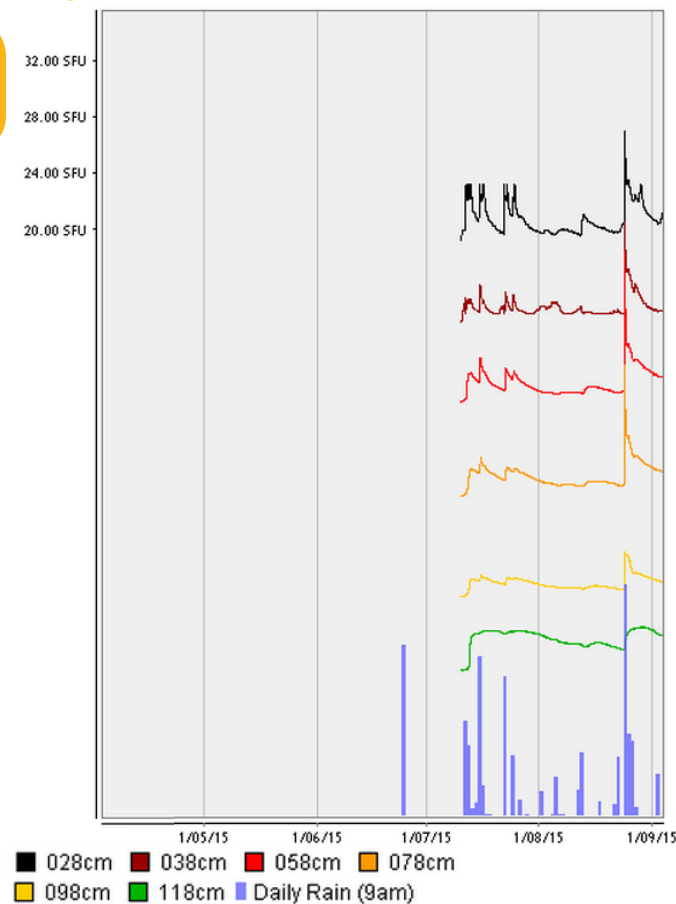
The current distribution of plant available water (PAW) is showing a full profile with 201 mm plant available water. This paddock registered 58 mm of rain in late August and a total of 79.6 mm for the month. This is reflected in the soil moisture probes where an increase in soil moisture is still registering right down to 118 cm in the profile.

Soil nitrogen levels are good too with 84 kg/ha nitrogen currently available to the crop.

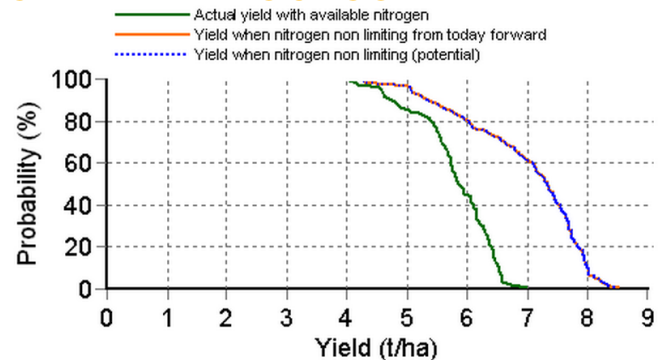
The grain yield outcome report (below) is showing a 100% probability of 4 t/ha with available nitrogen. The growing season is currently at decile 7. If this continues to the end of the season, the crop has a potential of above 6t/ha with the current available nitrogen. Yield Prophet is still showing a potential benefit from additional nitrogen but given it received 100 kg/ha of urea at the end of July other paddocks might be in greater need of N.

Monitor for disease and pest pressure to protect the current yield potential.

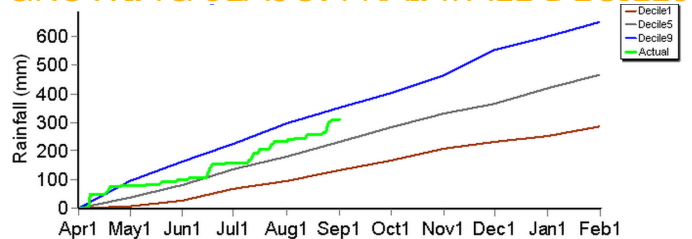
PROBE



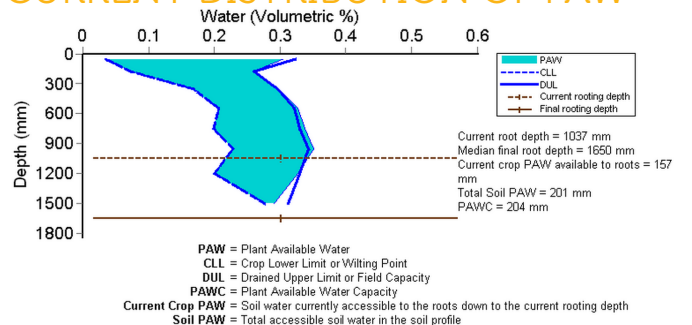
GRAIN YIELD OUTCOME



GROWING SEASON RAINFALL DECILES



CURRENT DISTRIBUTION OF PAW



TAIC Paddock 16 (PROBE A)



Crop type: wheat

Cultivar: Spitfire

Sowing date: 10 May 2015

Soil type: sandy clay

Directional guide: -34.4171 | 147.5316

Historic average yield: 2.06 t/ha

This wheat crop is at the flag leaf emergence to fully emerged stage (Zadocks growth stage 37 to 39). The nitrogen requirements are still high at this growth stage so it's important to ensure there's an adequate supply but also to take into account the bigger growing season picture.

The current soil N status is 32 kg/ha which means the crop may run out of nitrogen before the growing season finishes. The grain yield outcome report (below right) is suggesting that there is a 100% probability of receiving a yield of 4.2 t/ha and a 50% probability of nearly 5 t/ha. Yield Prophet is showing that with the addition of nitrogen significant gains could be made.

Soil moisture is excellent with a total soil plant available water of 188mm. Recent rainfall in late August is registering in the soil moisture probes down to 98 cm in the profile.

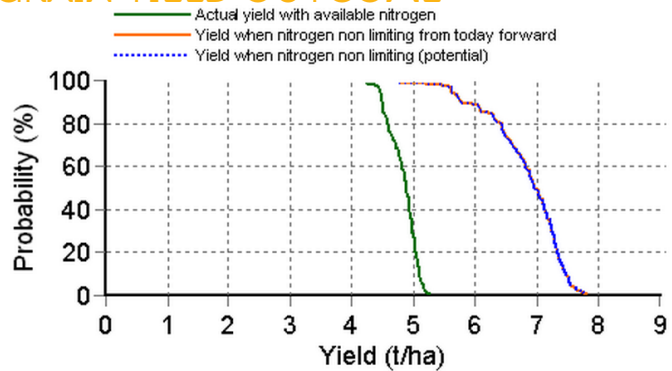
This crop received 60 kg/ha of urea in late July but, as suggested in the previous edition, if this paddock is to reach its potential, it is likely to need more N.

NITROGEN BUDGET

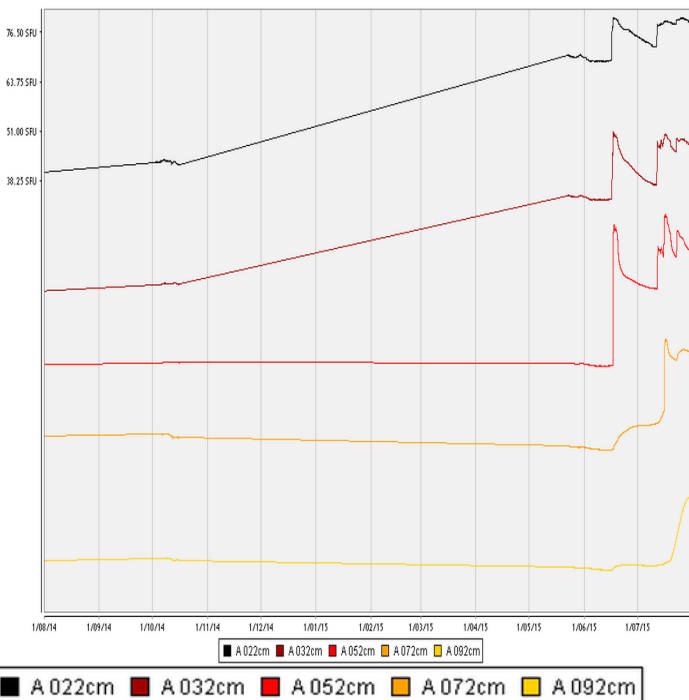
Initial N status @ 05-Apr	137 kg/ha
N mineralisation since 05-Apr	2 kg/ha
N tie up since 05-Apr	19 kg/ha
N applications	10-May: 5 kg/ha 14-Jul: 38 kg/ha
Total N in plant	128 kg/ha
De-nitrification since 05-Apr	5 kg/ha
Leaching	0 kg/ha
Current N status:	32 kg/ha

Median N mineralisation to maturity = 3 kg/ha
Median N tie up to maturity = 1 kg/ha

GRAIN YIELD OUTCOME



PROBE



LOCKHART NORTH (PROBE 0)

Crop type: wheat

Cultivar: Suntop

Sowing date: 12 May 2015

Soil type: sandy clay loam over light clay

Directional guide: -35.1036 | 146.8754

Historic average yield: wheat - 2.43t/ha

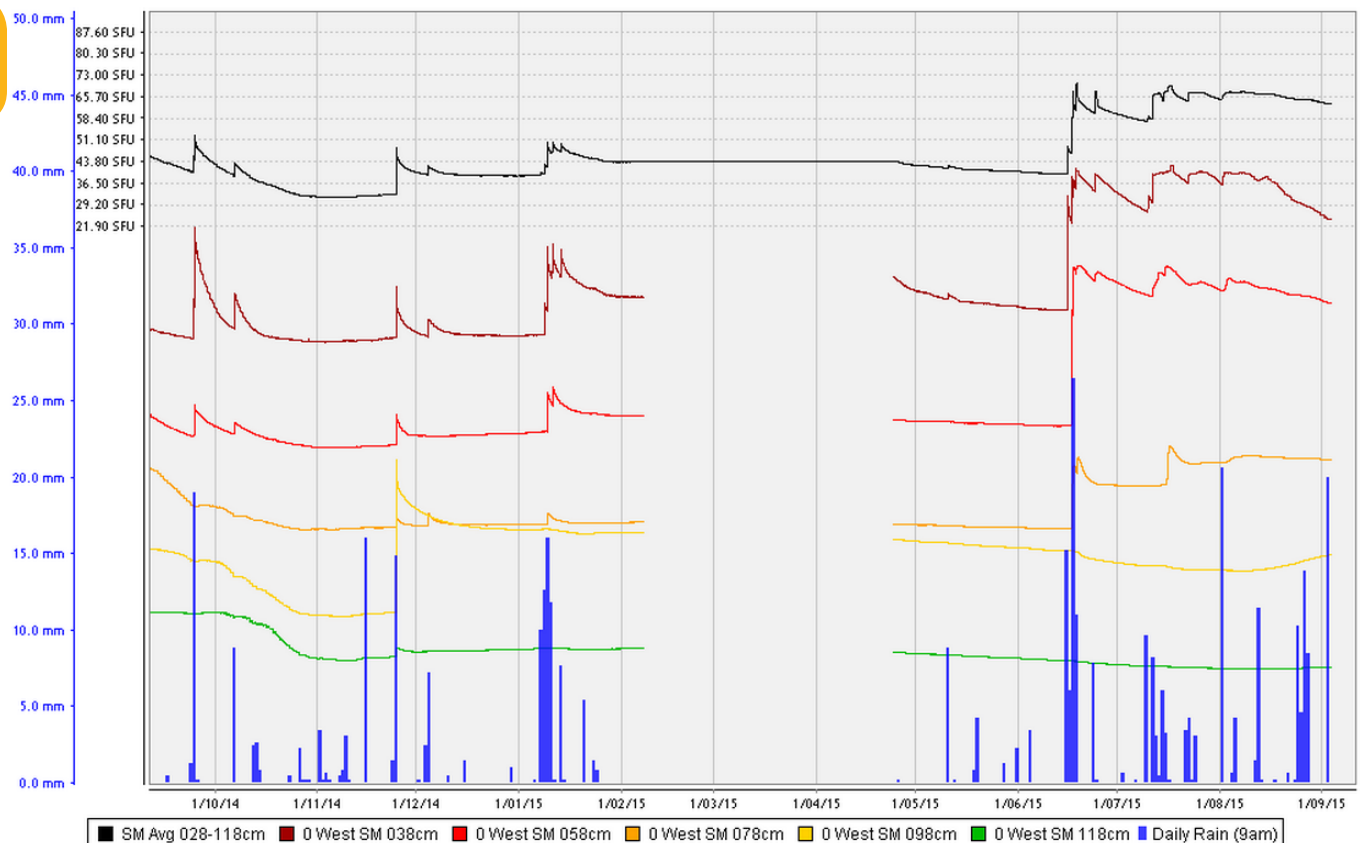
This wheat crop has considerable yield potential. The grain yield outcome report (right) is indicating there are significant yield benefits to be made with the application of nitrogen. At the 50% probability mark, the yield potential with available nitrogen is around 3 t/ha. The addition of nitrogen however, would increase yield potential to possibly 6 t/ha. Soil water status is excellent too with plant available water at 165 mm.

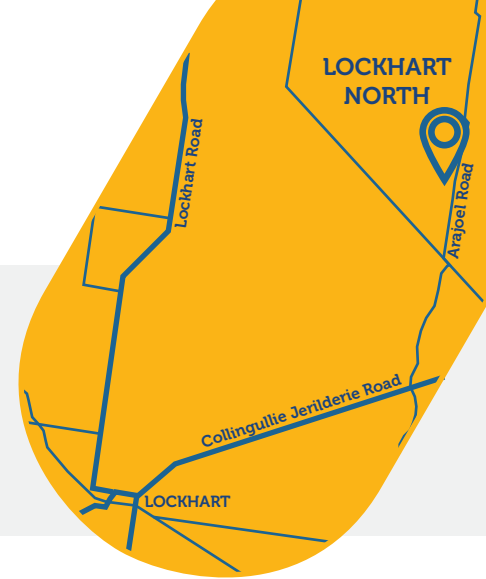
Soil nitrogen status is also low. There is a total of 16 kg/ha of N available and without the addition of more nitrogen, the crop is likely to start showing signs of stress. The Yield Prophet Nitrogen stress graph (pictured below right) is showing an index reading of 0.7, i.e. the crop is growing at 30% of its potential.

The soil moisture probe output is showing that drainage in this soil has been slow with no movement at the 98cm sensor until the last 15 days. The top four layers have been showing patterns of a soil close to or at water logging. Following rain, the moisture increases towards saturation followed by decline back to drained upper limit.

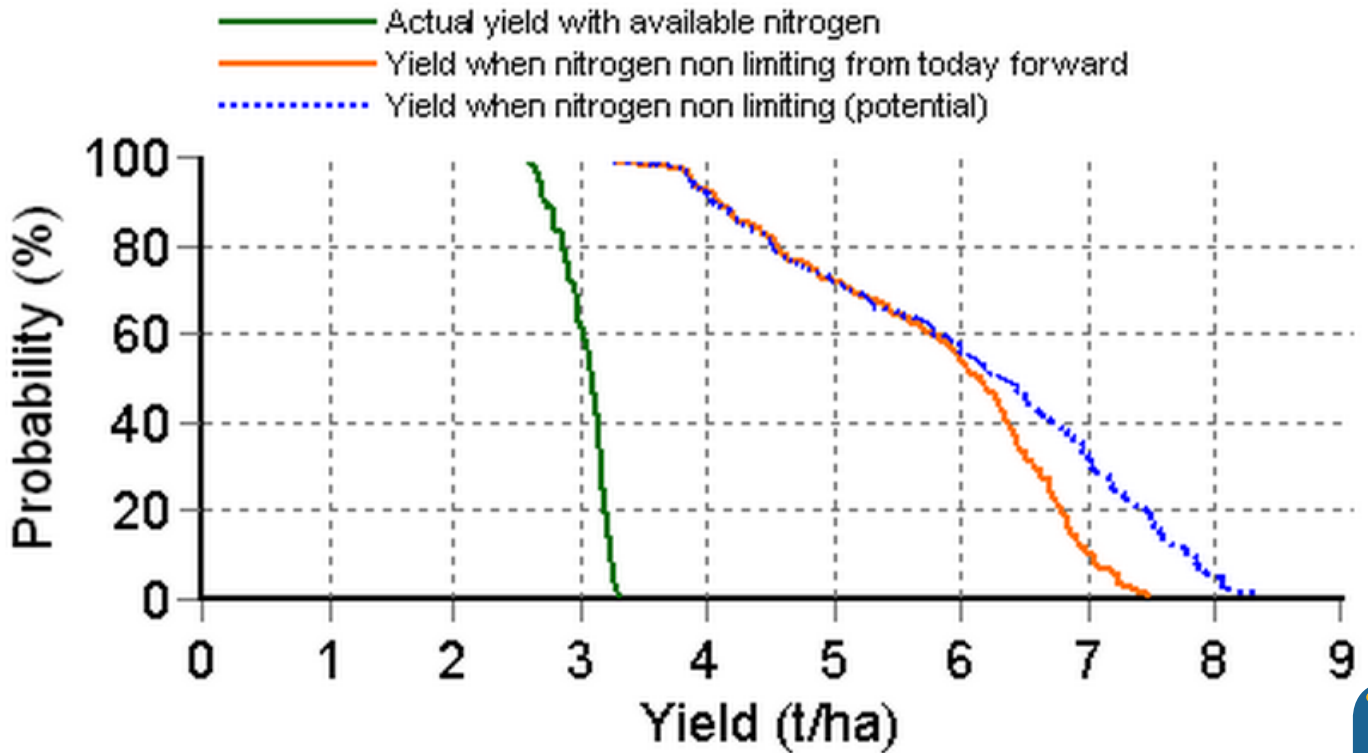
This paddock has not recieved urea this year. Look for opportunities to apply more nitrogen immediately because the later nitrogen is applied in the growing season, the more it contributes to protein over yield. With the crop approaching flag leaf time is running out to contribute to yield.

PROBE

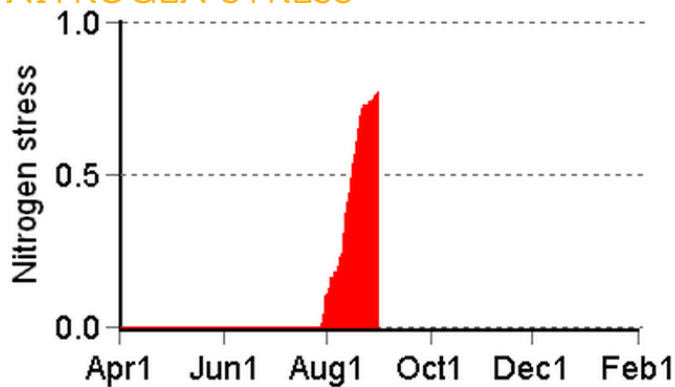




GRAIN YIELD OUTCOME



NITROGEN STRESS

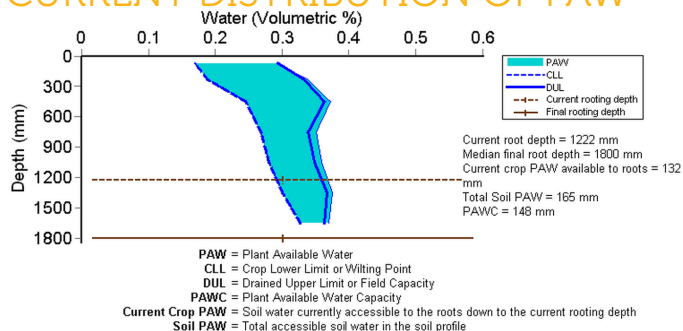


NITROGEN BUDGET

Initial N status @ 05-Apr	120 kg/ha
N mineralisation since 05-Apr	0 kg/ha
N tie up since 05-Apr	28 kg/ha
N applications	12-May: 6 kg/ha
Total N in plant	80 kg/ha
De-nitrification since 05-Apr	3 kg/ha
Leaching	0 kg/ha
Current N status:	16 kg/ha

Median N mineralisation to maturity = 0 kg/ha
 Median N tie up to maturity = 2 kg/ha

CURRENT DISTRIBUTION OF PAW





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FarmLinkResearch

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