WEATHER OR NOT

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THE RIDE TO THE END

At the start of September, many soil water 'buckets' were full to overflowing giving crops significant yield potential. Since then, springtime has thrown up a range of challenges - as it invariably does - but crops are still in a position to return a decent harvest. The challenge is to preserve yield potential for conversion to the silo.

September activity:

- Stripe rust has been detected in susceptible to moderately susceptible cereal varieties
- We've had some frost events with canola starting to show signs of limited damage
- Insect activity has increased with reports of cereal and green peach aphids throughout the district
- The sclerotina threat in canola has subsided with the warmer weather

The focus now turns to the final stages of the journey to the silo and, given much of the rest of Australia is experiencing drought conditions, it is worth spending time on your grain marketing strategy to optimize profits.

Crops have high biomass so there's the fear that a warmer than average finish will induce haying off. It will be a 'wait and see' scenario but Yield Prophet is still indicating good yields with excellent soil moisture at many sites. Cool night-time temperatures over September have taken the edge off and have slowed crop growth. Canola varieties and some short season wheat are approaching ripening.

Actions:

- Monitor your crops for insect pressure (both pests and beneficials) and act if you reach threshold levels
- Consider your grain marketing options – grain prices are improving but how far will they go? If you can make good profits from a particular price, perhaps it is better to take it rather than pick the top of the market.
- Gear up for harvest – get your machines, storage and strategy ready
- Consider disease rating including adult plant resistance (APR) of your cereal varieties and applying fungicide to cereals if necessary
- Look after yourself – long hours at work, on the header, in the truck or anywhere in between will take its toll on your health. Eat good food, drink plenty of water, get rest when you can and enjoy social activities when the job is done!

In this edition, you will see some interesting grain yield reports. Some crops are getting to the point where water and nitrogen are no longer utilized and we see the merging of lines for actual and potential predictions. Others are showing a considerable gap between the likely yield from nitrogen applied and the potential if nitrogen was unlimited. Remember that the results at either end of the Grain Yield Outcome curves are extreme and their occurrence is rare ie. they are based on the highest and lowest simulated yields from 100 years of data. Don't be confused by the inclusion of these extremes in Yield Prophet, they serve a useful purpose for ground truthing and even grain marketing. Factors such as frost, disease, weed infestation, chemical damage etc. are NOT incorporated into the Yield Prophet simulation.

Many crops have exhausted nitrogen reserves but have excellent moisture reserves.

SEASONAL OUTLOOK

The 2015 outlook October to December from the Bureau of Meteorology says El Nino is well and truly established but the record warm Indian Ocean 'is taking the edge off' in some regions of Australia. Eastern Australia is expected to receive average to slightly below average rainfall for the rest of the year and temperatures look to be average or slightly above average for the same period. Visit www.bom.gov.au/climate/ahead for more details.

NOTES

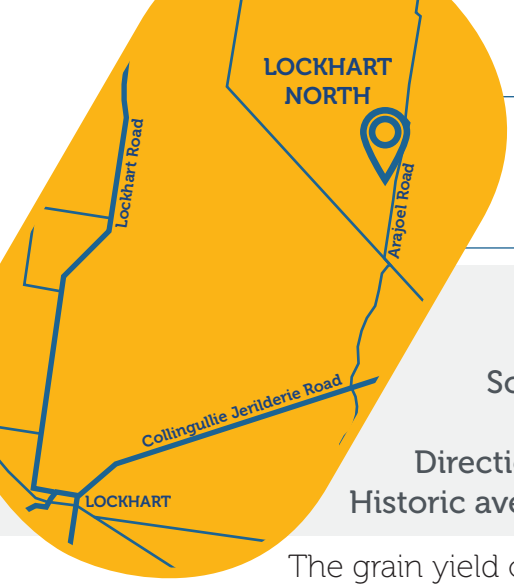
The Dirnaseer site was the only one to get a nitrogen application since the last newsletter.

The reports in the newsletter were generated on the 30th of September 2015.

To view the full Weather or Not reports online, go to: www.yieldprophet.com.au in the user login area,
Username: farmlink
Password: farmlink

To view each paddock, select from the 'Select Grower' dropdown menu. The information provided is in Read-Only format.

To use Yield Prophet on your farm, contact the Birchip Cropping Group on 03 5492 2787.



LOCKHART NORTH (PROBE 0)

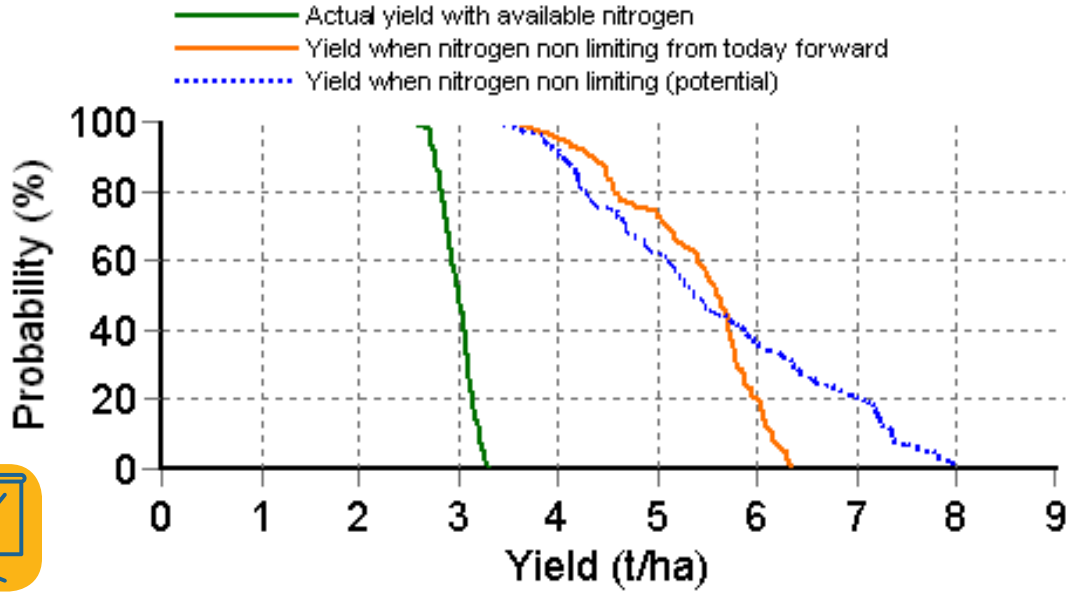
Crop type: wheat
Cultivar: Suntop
Sowing date: 12 May 2015
Soil type: sandy clay loam over light clay
Directional guide: -35.1036 | 146.8754
Historic average yield: wheat - 2.43t/ha

The grain yield outcome graph for this Suntop wheat crop is also showing some interesting results. This crop has utilized the excellent soil moisture conditions from rainfall in August and still has 102 mm available. The soil moisture sensors show the crop is accessing water down to 78 cm.

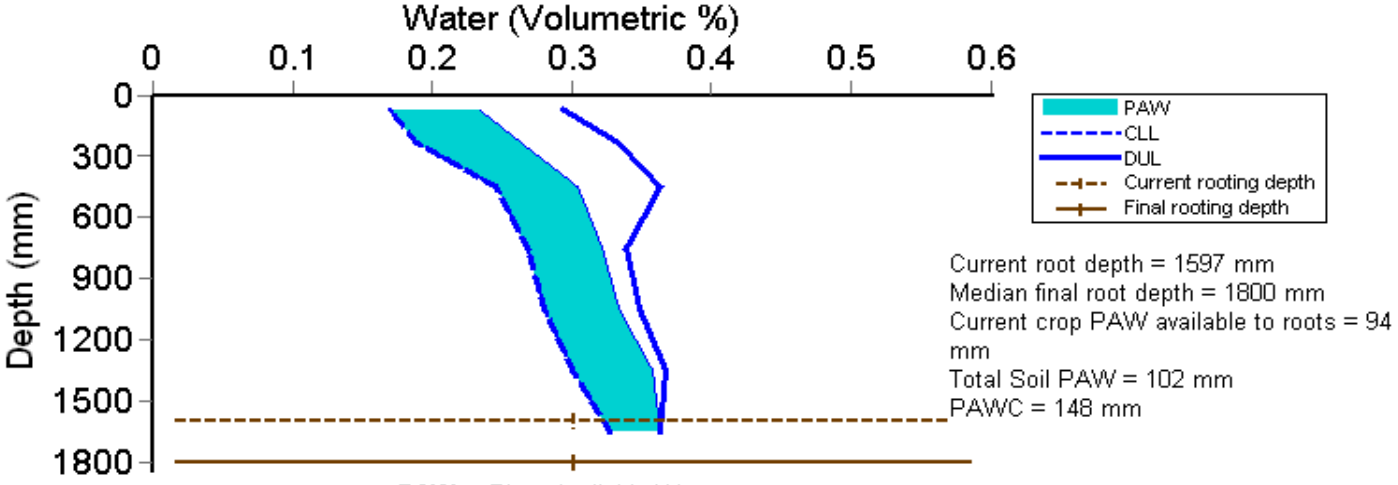
The gap between the 'actual yield with available nitrogen' curve and the 'yield with nitrogen non limiting' curves indicates that this crop had excellent yield potential, however given it is flowering, the opportunity to apply more nitrogen has passed. There is still 11 kg/ha nitrogen in the soil profile and there is a 50% probability of receiving a 3t/ha yield.

The Suntop variety is resistant to moderately resistant to stripe rust. Monitor the canopy for disease pressure and apply fungicide if required.

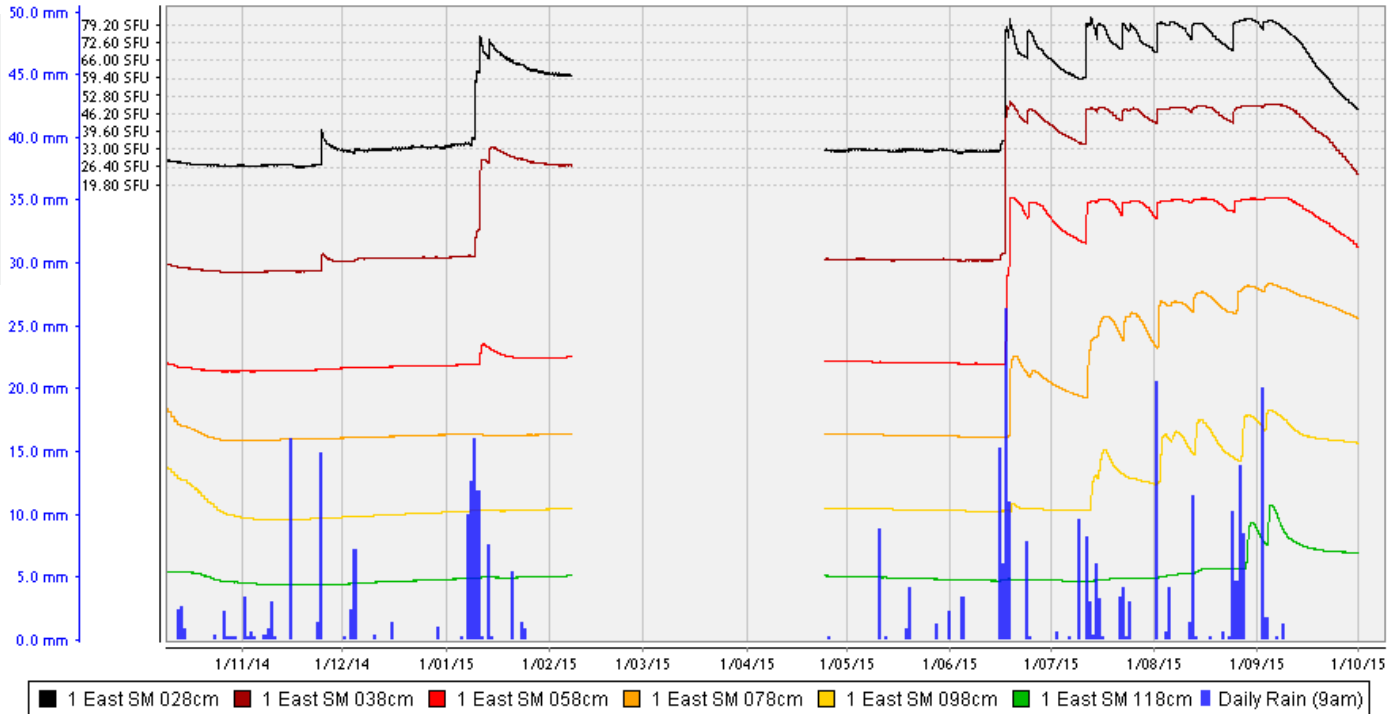
GRAIN YIELD OUTCOME



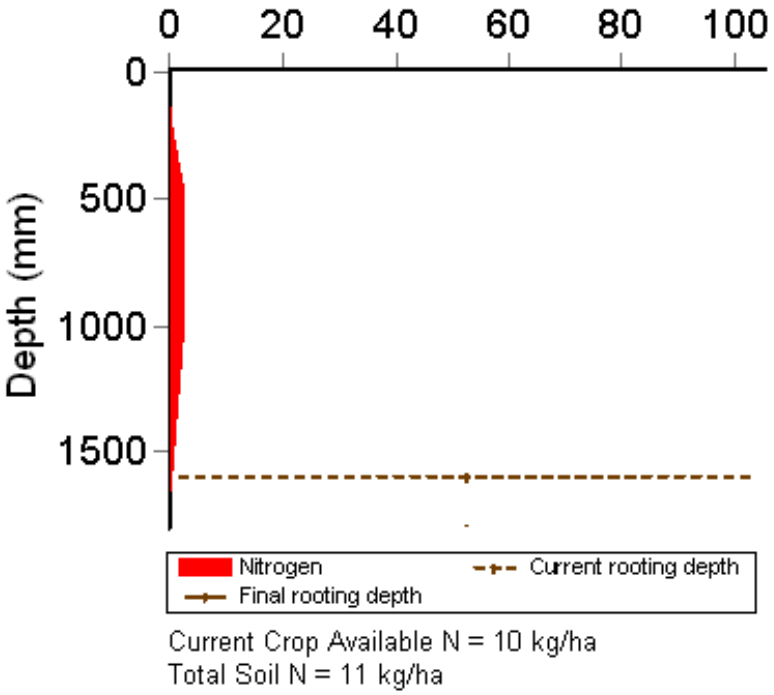
CURRENT DISTRIBUTION OF PAW



SOIL MOISTURE PROBE



CURRENT N DISTRIBUTION



Current Crop Available N = 10 kg/ha
Total Soil N = 11 kg/ha

ARIAH PARK NW (PROBE 1)

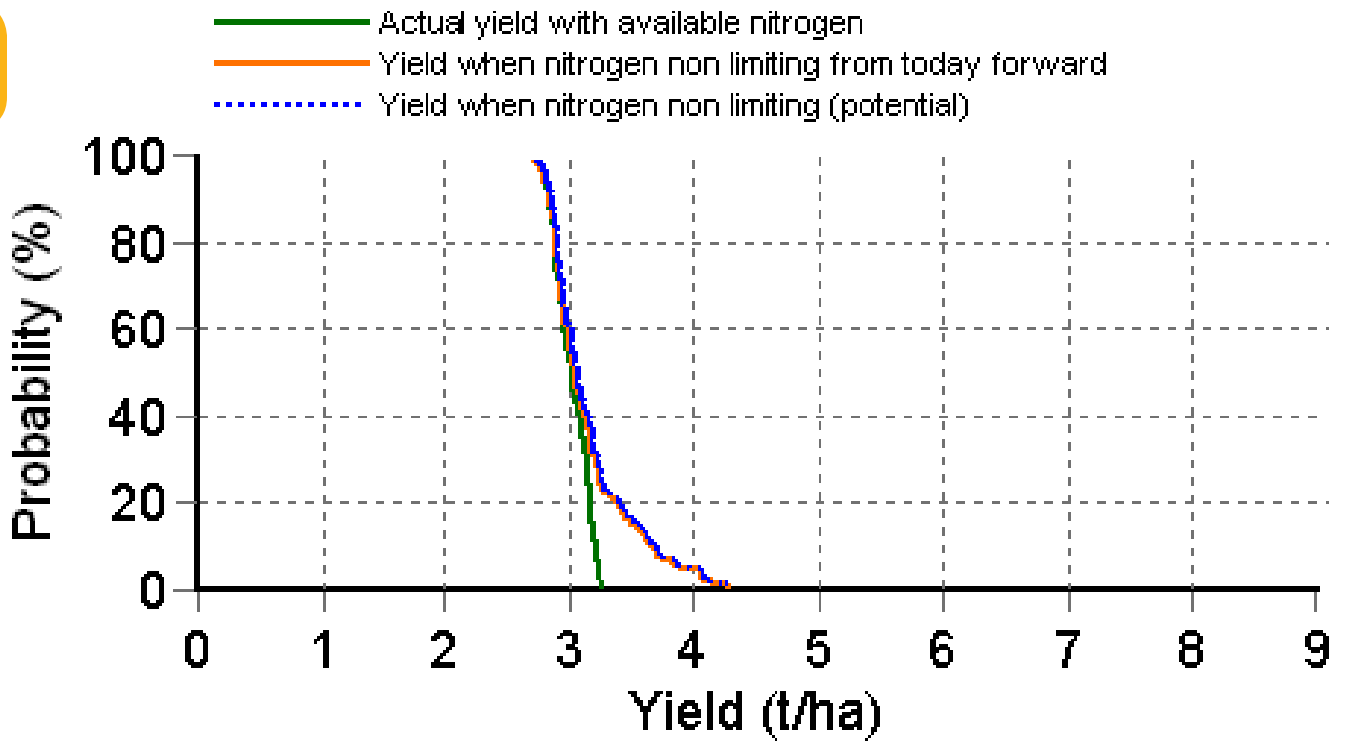
Crop type: canola
Cultivar: Stingray
Sowing date: 20 April 2015
Soil type: sandy clay
Directional guide: -34.2482 | 147.1984
Historic average yield: 1.2 t/ha

The yield potential hasn't altered much since the last report however this canola crop has grown vigorously over the past two months to the point where most of its moisture and nitrogen reserves have been exhausted.

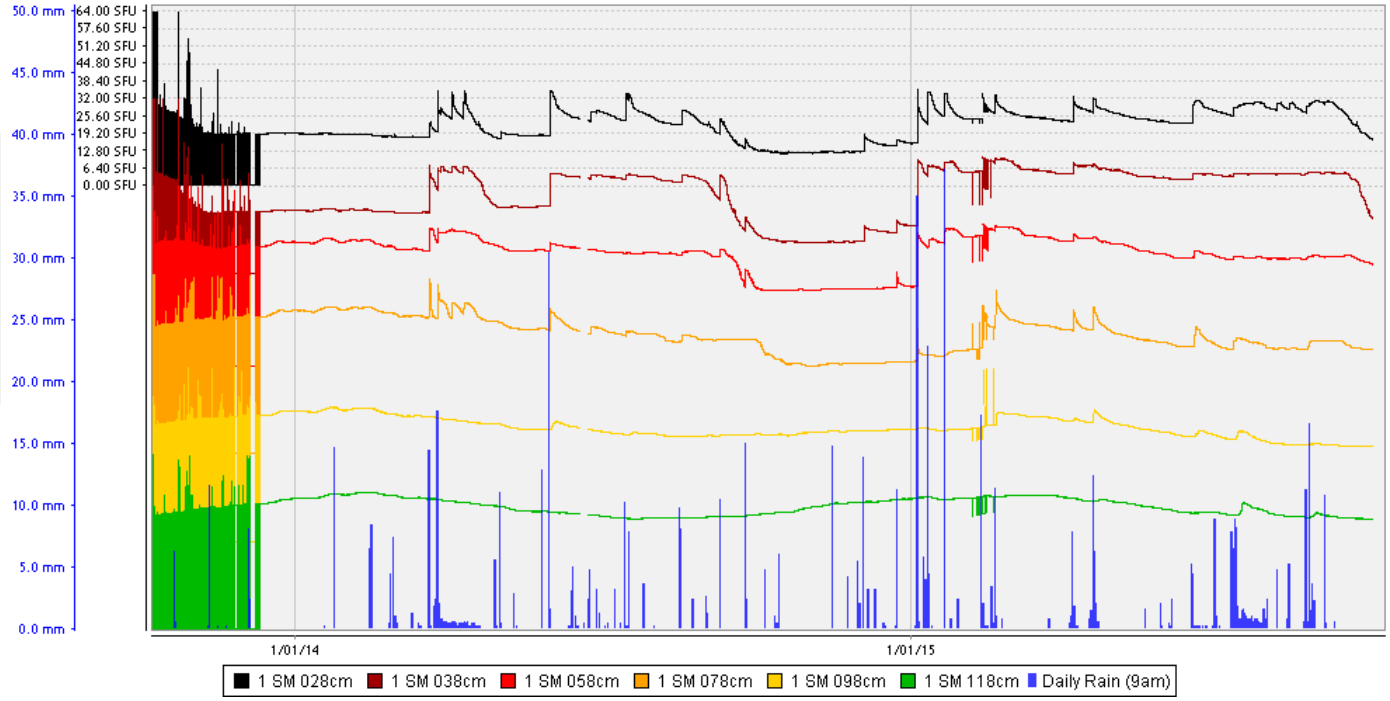
Soil water levels have dropped considerably from 111 mm to 30 mm in the past month and nitrogen is down to 1 kg/ha N. The crop is at the podding growth stage were N supply is required but not at excessive levels otherwise it could stimulate growth prompting the plant to generate protein at the expense of oil content.

Soil moisture probe information shows good soil moisture recharge after rain received at late August/early September, then the considerable draw down from mid-September onwards as the crop grows. There is still good moisture at depth and roots could be accessing this down to 1 metre or further.

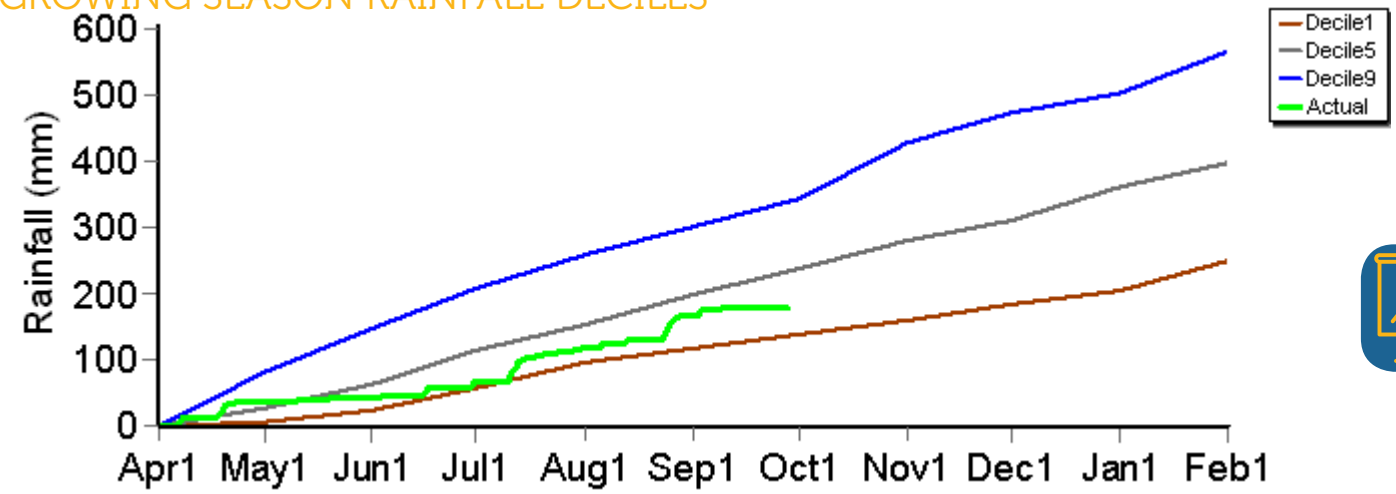
GRAIN YIELD OUTCOME



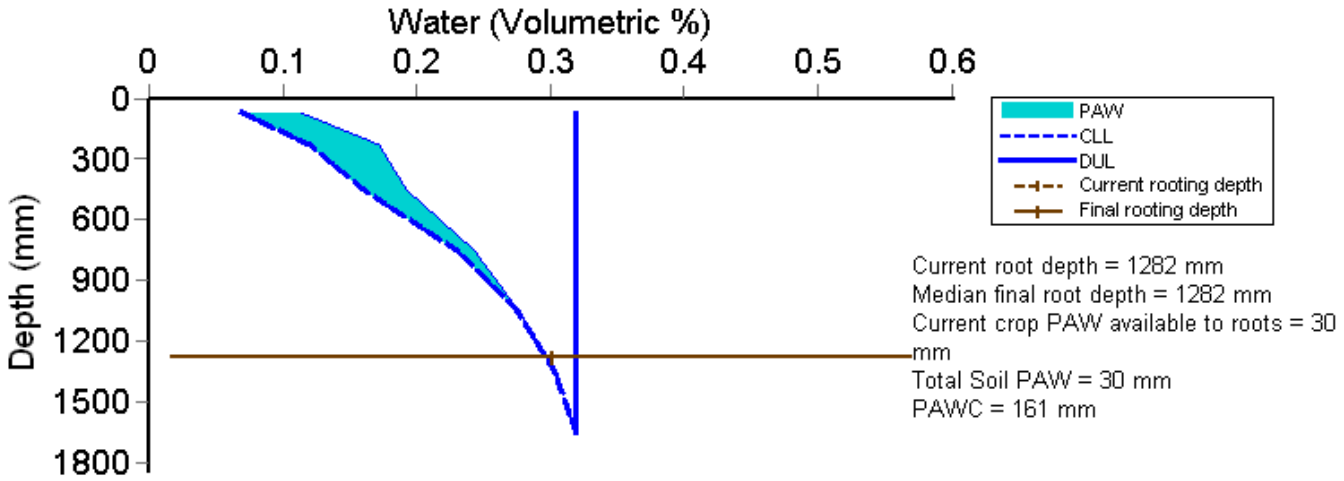
SOIL MOISTURE PROBE

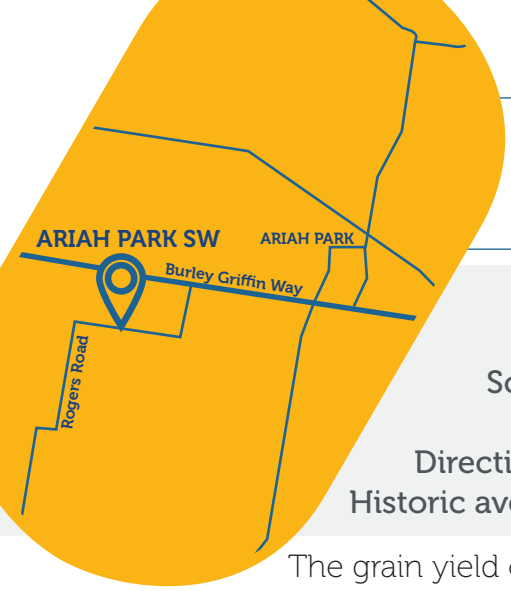


GROWING SEASON RAINFALL DECILES



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

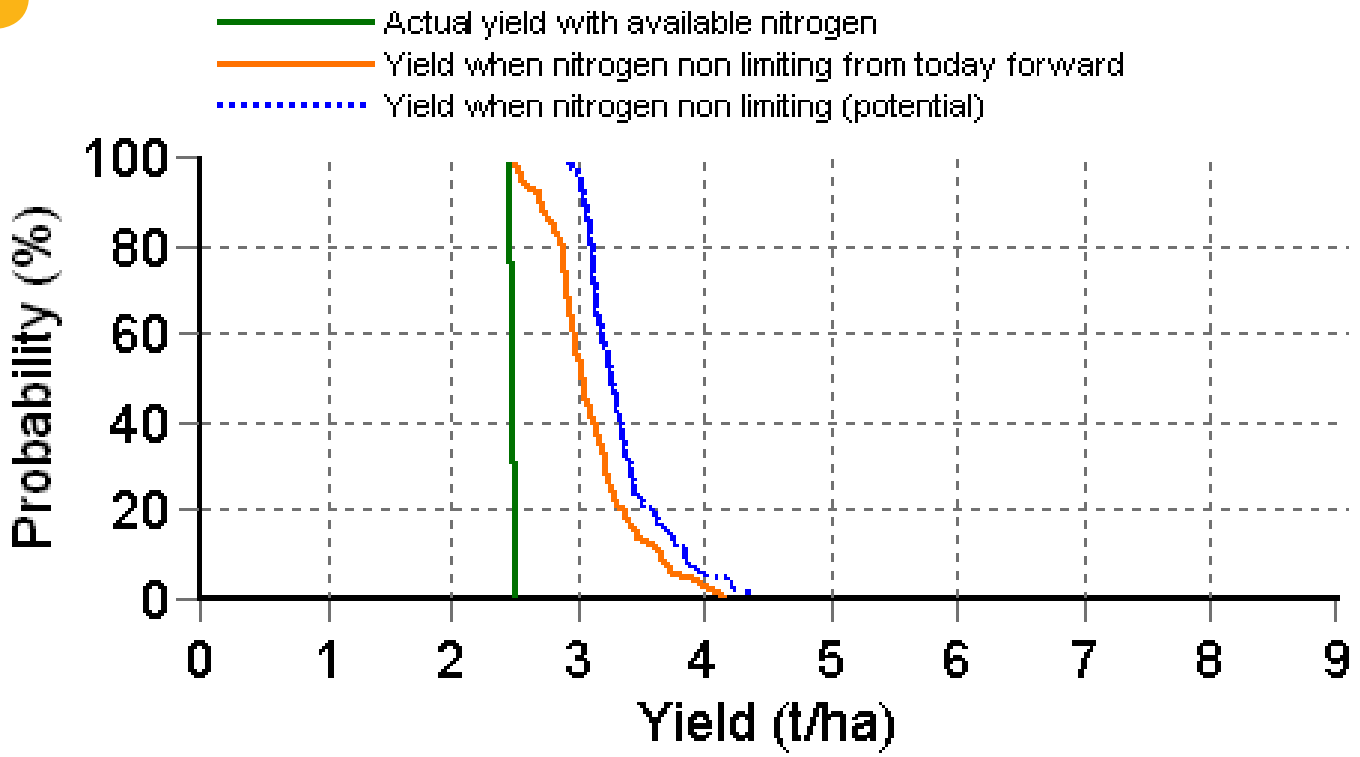
The grain yield outcome graph is indicating there is still a 100% probability of getting a 2.4 t/ha canola crop with the available nitrogen. Given the crop is at podding and no rain is forecast, there is little opportunity to apply more nitrogen so this yield is likely.

As per the last report, there is no nitrogen left in the profile and soil water levels have been drawn down from 128 mm to 51 mm reflecting the rapid growth of the canola crop at this time.

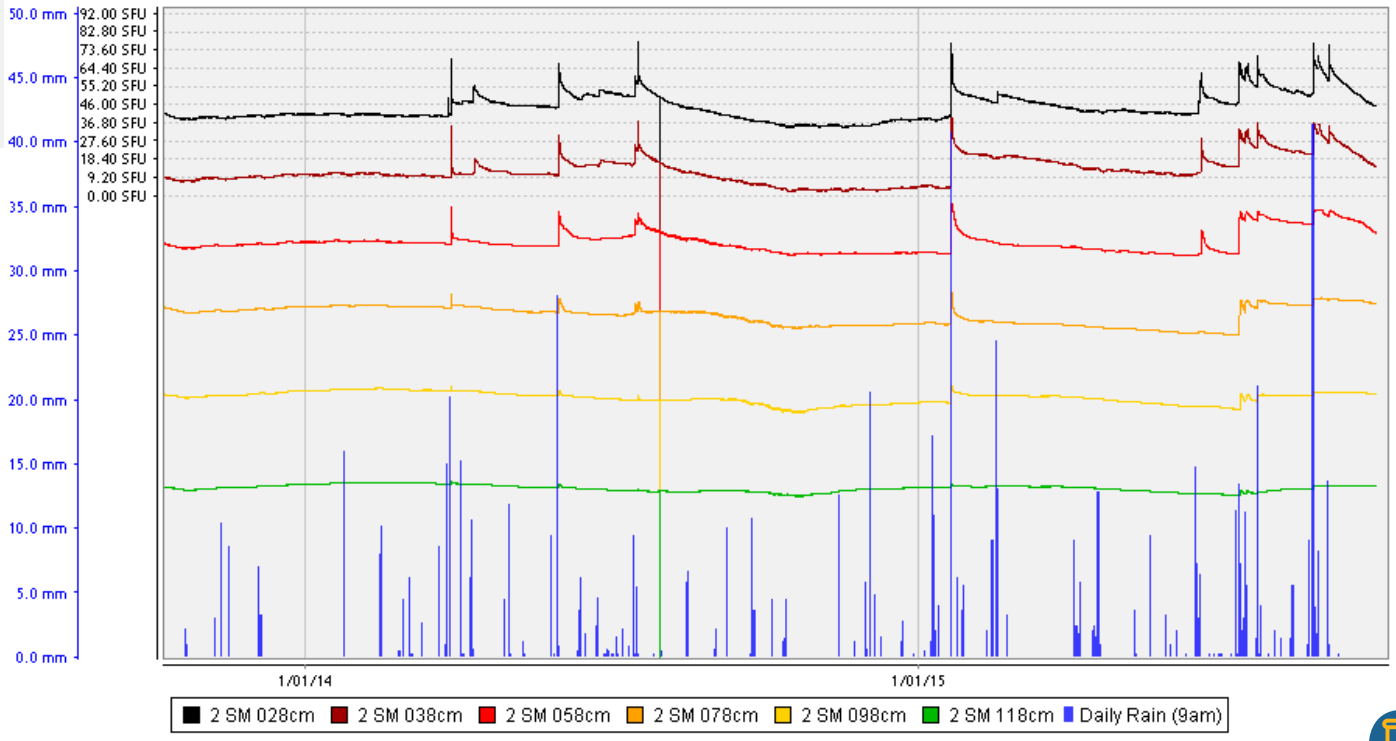
The soil moisture probe graph shows the rainfall received in late August and early September registering at sensors down to 58 cm. This moisture was taken up quickly by the crop because the 28cm, 38cm and 58cm sensors are dropping. The sensors from 78 cm and lower are remaining constant and roots should be at this depth and even lower.

A hail storm caused some damage on this crop at the start of September however the extent of the damage hasn't yet been assessed.

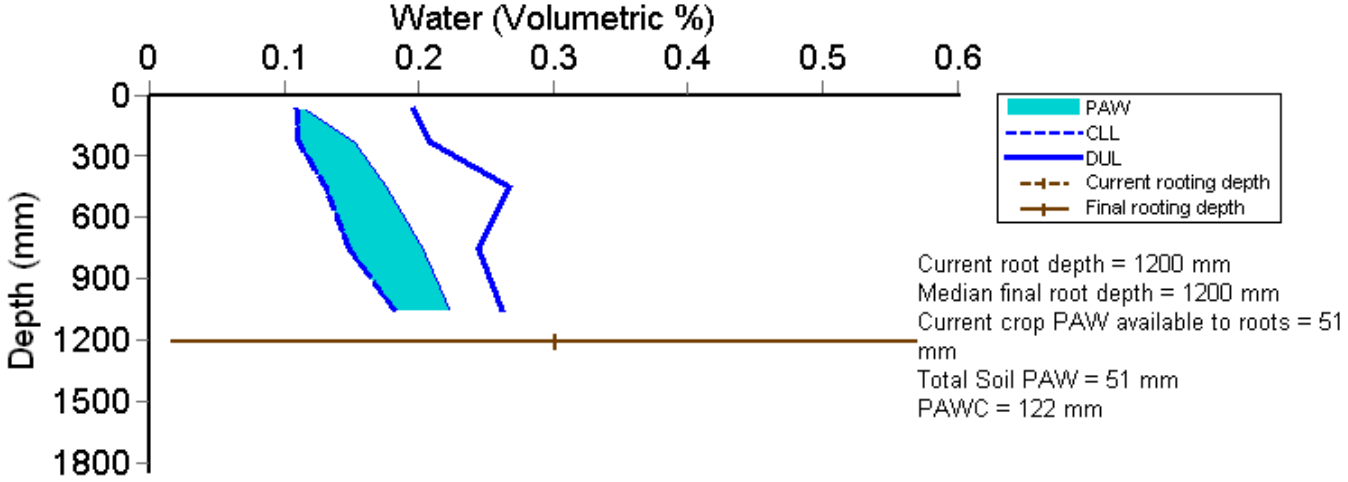
GRAIN YIELD OUTCOME



SOIL MOISTURE PROBE



CURRENT DISTRIBUTION OF PAW



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

This report shows one of the more interesting graphs in this edition.

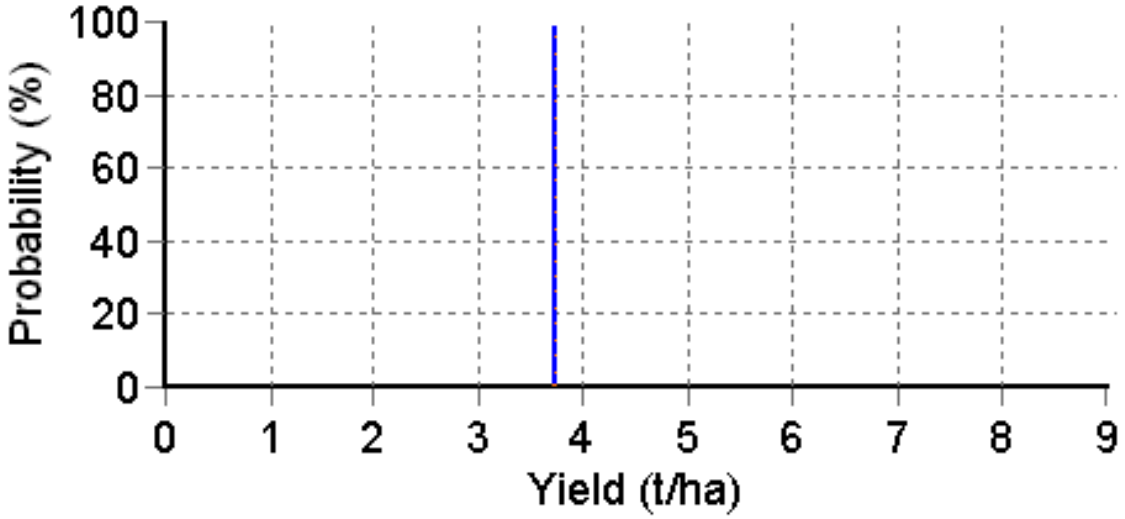
The vertical line in the grain yield outcome graph suggests the crop has advanced to a point where there is enough moisture and nitrogen in the profile to reach its yield potential. There's a total 113 mm of plant available water and 51 kg/ha of nitrogen (110 kg/ha urea equivalent) available to the crop.

Therefore, more rainfall or nitrogen won't make a difference and approximately 3.7 t/ha yield is expected.

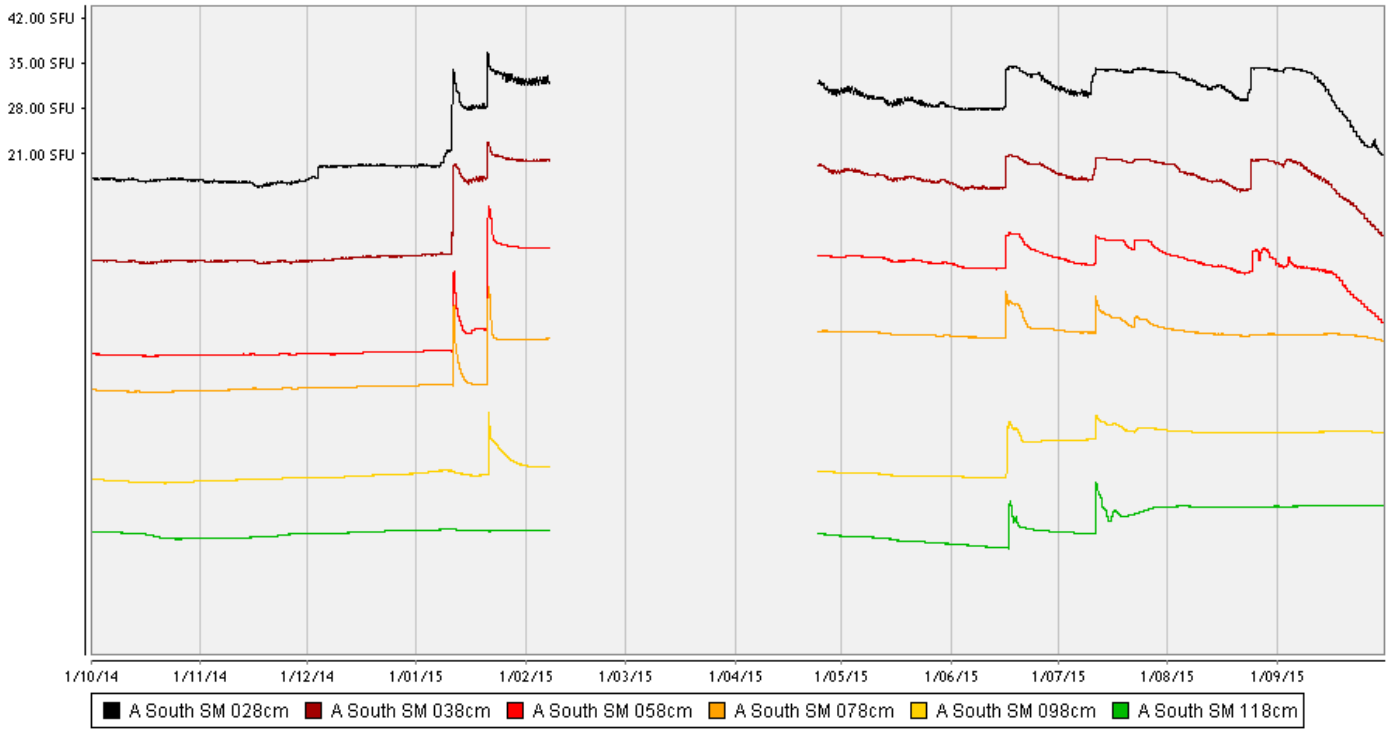
The soil moisture probes are showing moisture levels have dropped considerably at the 28cm, 38cm and 58 cm sensors but are not registering usage any deeper. Roots are likely to be able to access in moisture down to this depth with no indication of sub-soil constraints in the soil test results.

This crop was sown on the 19th of May and Condo wheat is a fast maturing variety and has therefore reached this point before some of the other paddocks in this newsletter. This crop isn't showing any signs of rust yet despite its moderately resistant/moderately susceptible rating to stripe rust.

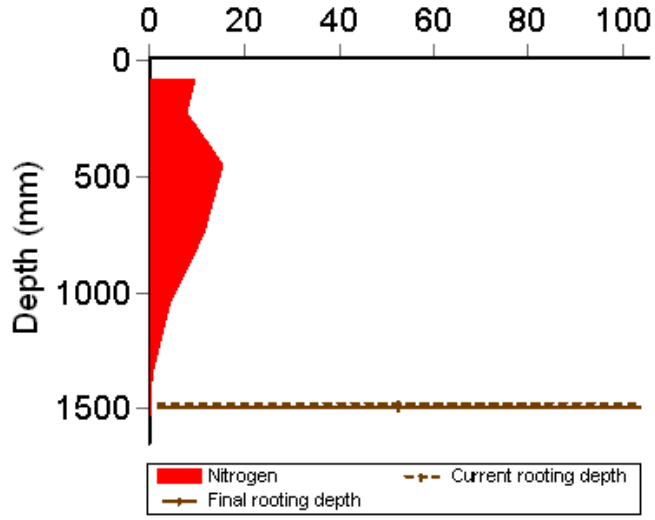
GRAIN YIELD OUTCOME



SOIL MOISTURE PROBE

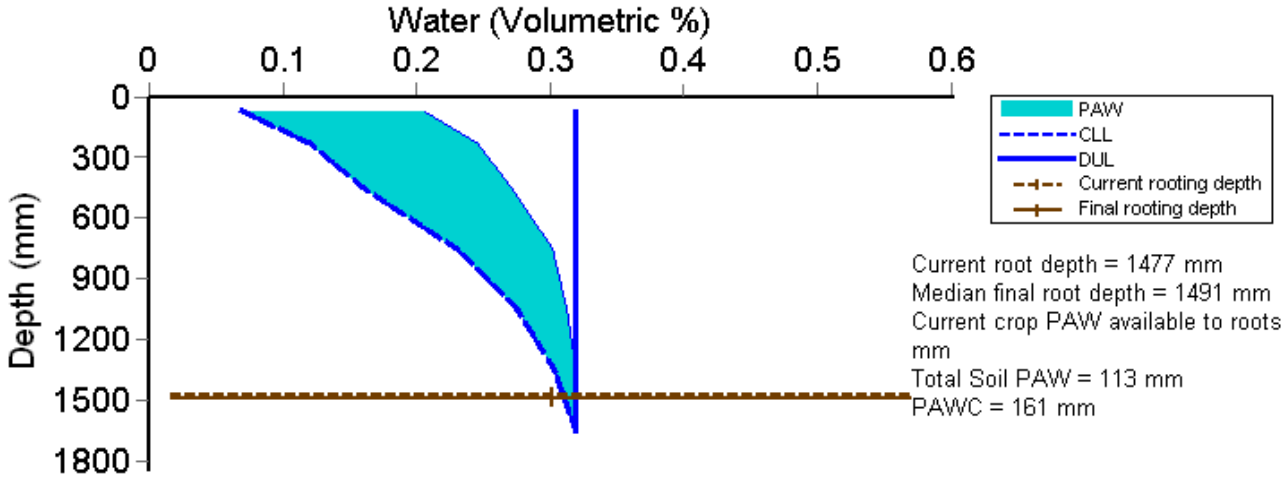


CURRENT DISTRIBUTION OF SOIL NITROGEN



Current Crop Available N = 51 kg/ha
Total Soil N = 51 kg/ha

CURRENT DISTRIBUTION OF PAW



Current root depth = 1477 mm
Median final root depth = 1491 mm
Current crop PAW available to roots = 112 mm
Total Soil PAW = 113 mm
PAWC = 161 mm

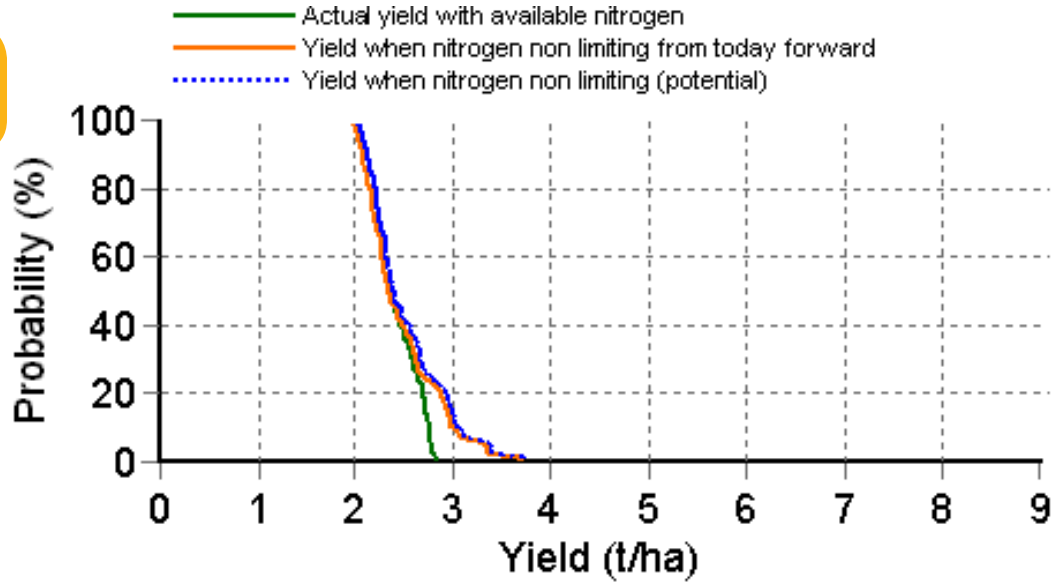
GREENETHORPE WEST (PROBE 0)

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

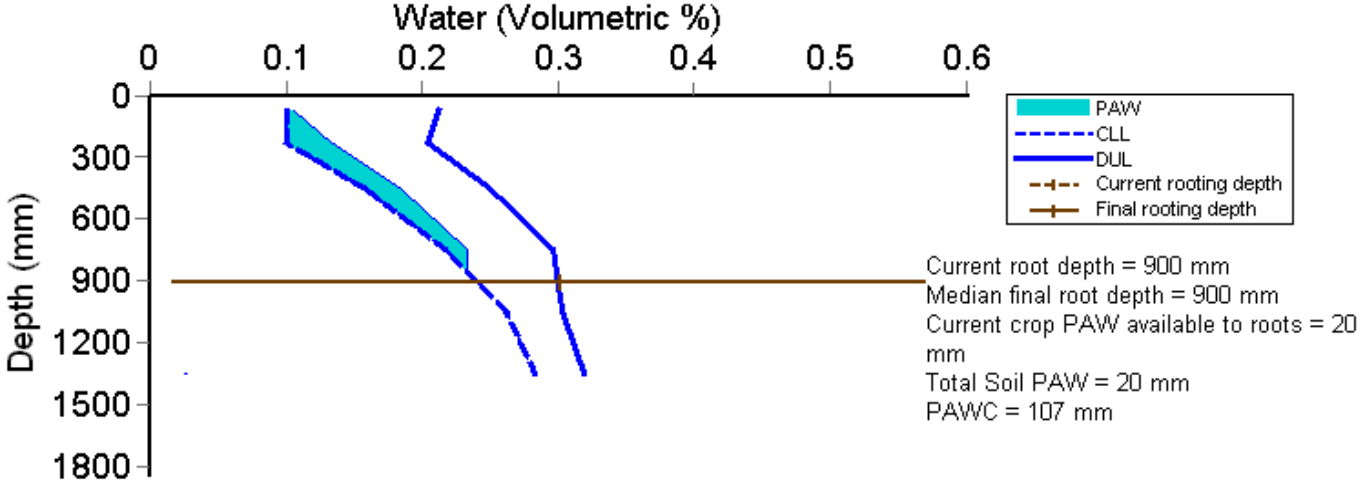
Yield potential has dropped only slightly since last month by an average of 0.2t/ha or so. Yield Prophet is predicting a 50% probability of getting a 2.3 t/ha canola crop. Crop water use has been high since the start of September with soil moisture dropping from 102 mm to 20 mm. The good rains in late August and early September have been well utilized with the soil moisture sensors showing considerable draw down at the 28cm, 38cm and 58cm sensor depths.

This crop is getting to the end of flowering and it most likely has adequate nitrogen (4kg/ha available and 56 kg/ha total soil N) and water to achieve the yield potential.

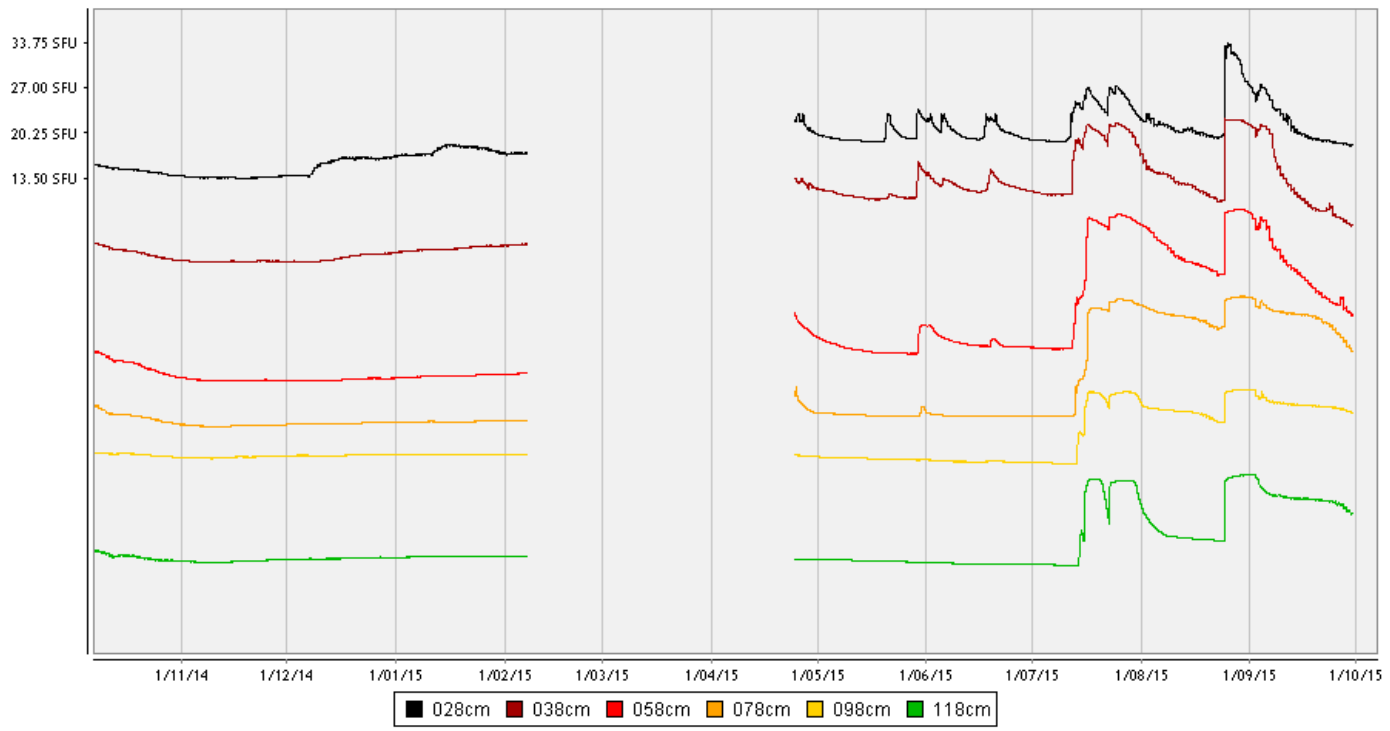
GRAIN YIELD OUTCOME



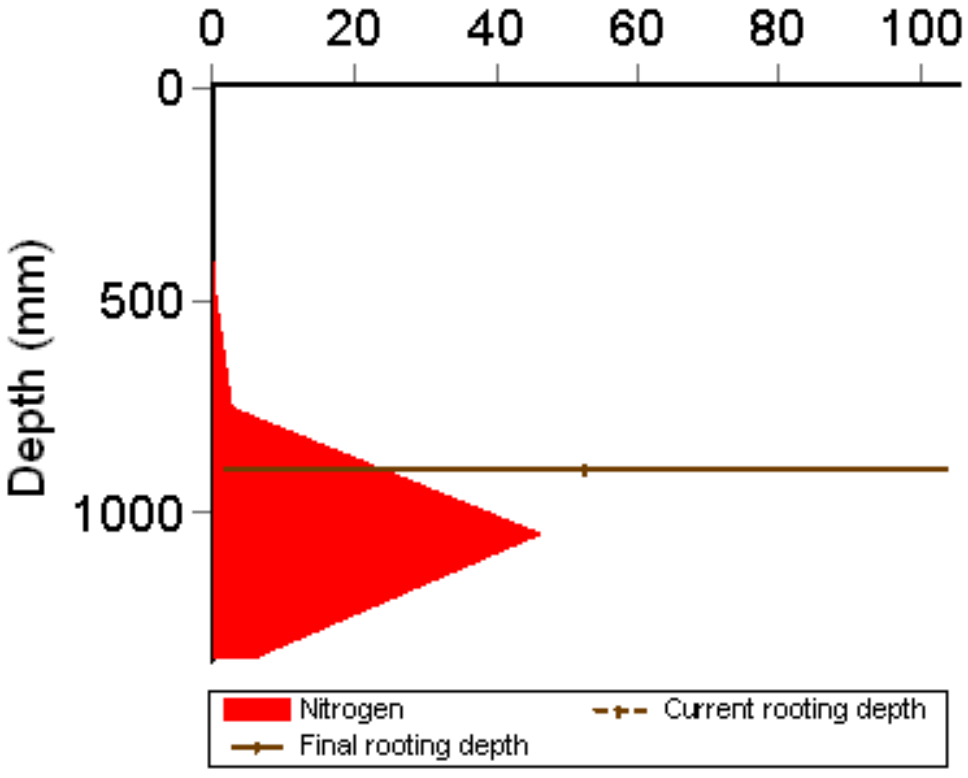
CURRENT DISTRIBUTION OF PAW



SOIL MOISTURE PROBE



CURRENT DISTRIBUTION OF SOIL NITROGEN



Current Crop Available N = 4 kg/ha
Total Soil N = 56 kg/ha

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.

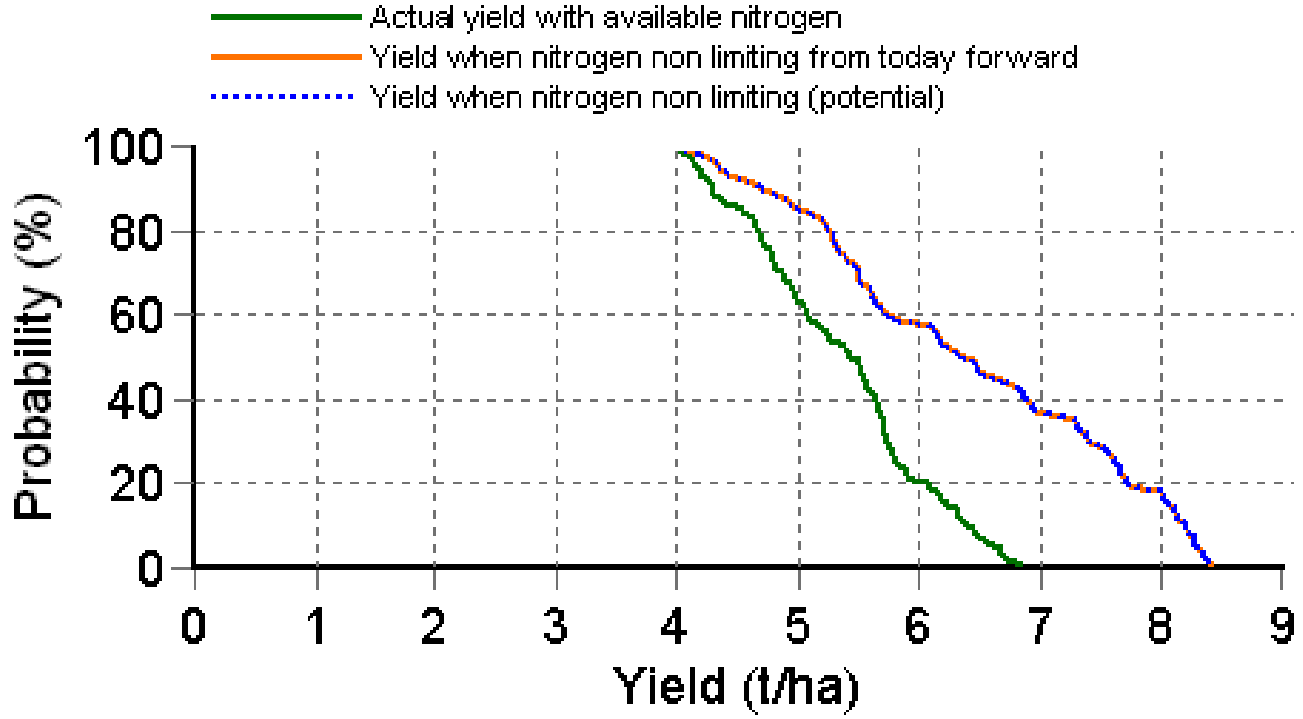
The current distribution of plant available water (PAW) is showing a full profile with 201 mm plant available water. This paddock registered 58 mm of rain in late August and a total of 76.6 mm for the month. This is reflected in the soil moisture probes where an increase in soil moisture is still registering right down to 118 cm in the profile.

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

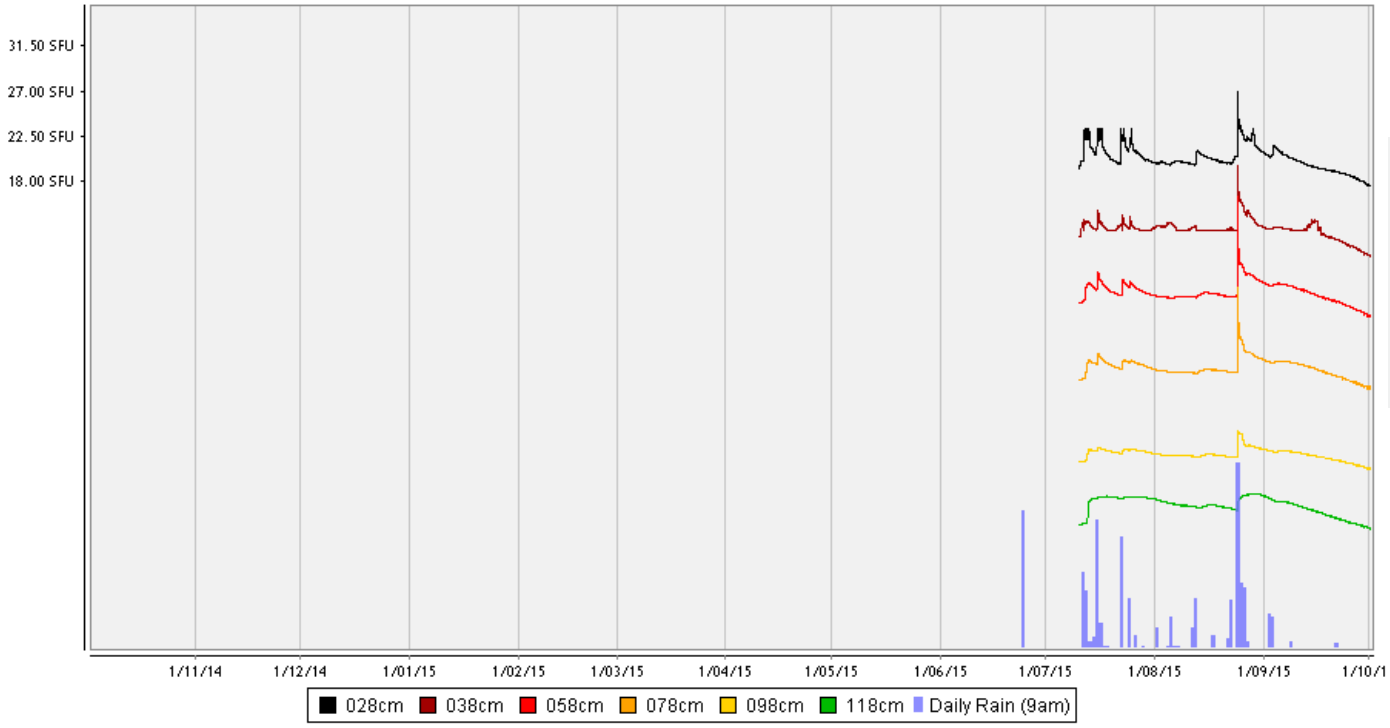
The yield report is showing a 100% probability of 4 t/ha with available nitrogen. The growing season is currently at decile 7. If this continues to the end of the season, the crop has a potential of above 6t/ha with the current available nitrogen. Yield Prophet is still showing a potential benefit from 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.

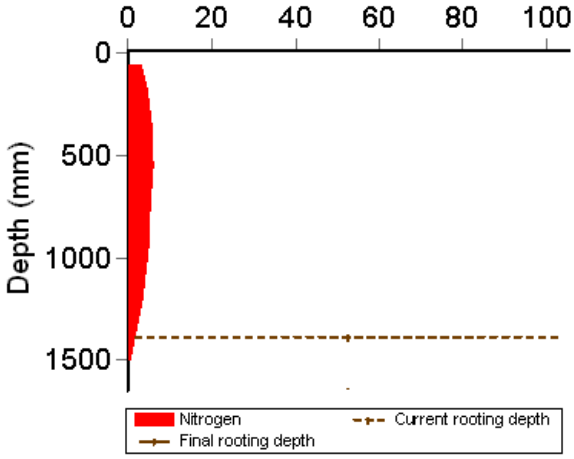
GRAIN YIELD OUTCOME



SOIL MOISTURE PROBE

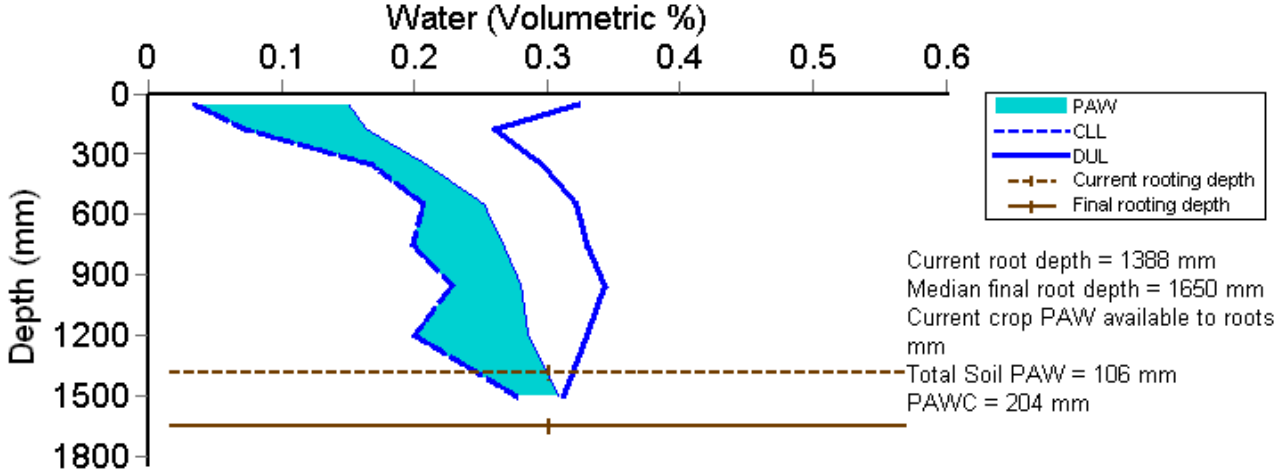


CURRENT DISTRIBUTION OF SOIL NITROGEN



Current Crop Available N = 35 kg/ha
Total Soil N = 35 kg/ha

CURRENT DISTRIBUTION OF PAW



Current root depth = 1388 mm
Median final root depth = 1650 mm
Current crop PAW available to roots = 97 mm
Total Soil PAW = 106 mm
PAWC = 204 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

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

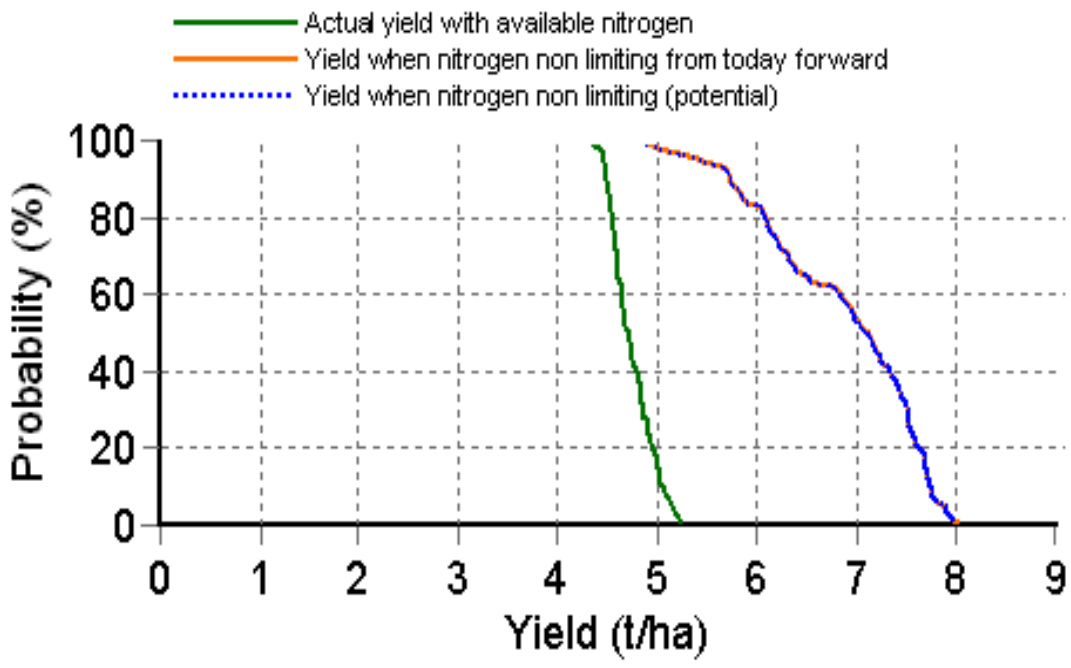
Yield Prophet is indicating this crop had significant yield potential. The gap between the 'actual yield with available nitrogen' curve and the 'yield with nitrogen non limiting' curves amounts to 2 t/ha at the 50% probability point however this is due to the simulation of excellent soil moisture and available nitrogen conditions and the likelihood of getting a 7 t/ha wheat crop is low given other factors may come into play.

There is a 50 % probability of receiving a 4.6 t/ha yield and given there is 105 mm of plant available water and 16 kg/ha N available to the crop, this wheat crop is in a good position to achieve this.

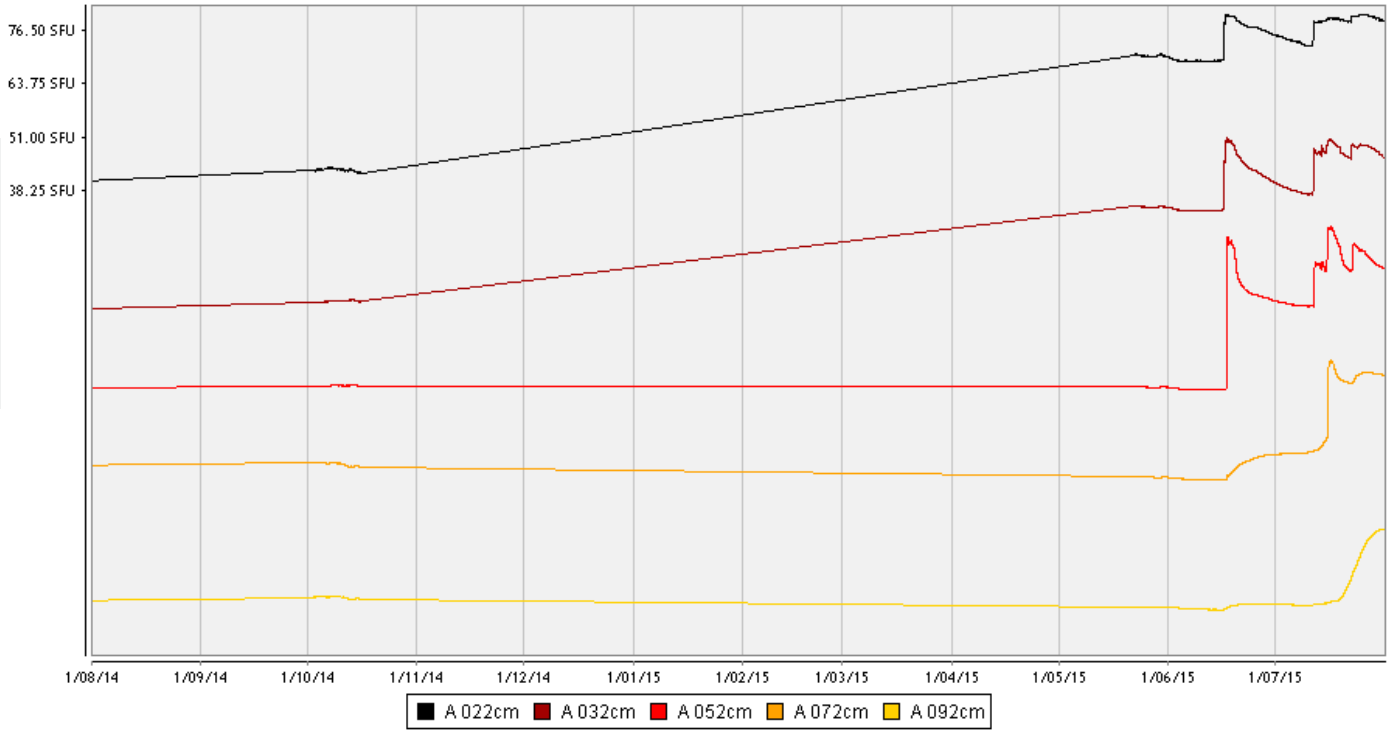
The soil moisture probes are showing excellent moisture levels to 92 cm and levels in the 22cm, 32cm and 52cms gradually decreasing due to the rapid growth of the crop over August and September. The roots don't appear to be accessing moisture at depth yet.

Spitfire wheat is rated moderately resistant to stripe rust with Adult Plant Resistance. It is also at the flowering stage so monitor this crop for disease and insect pressure.

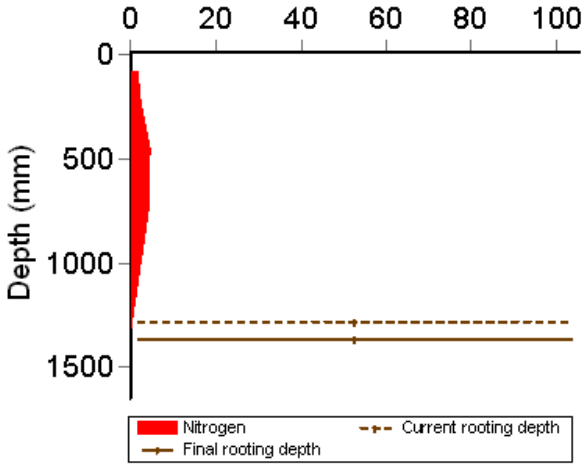
GRAIN YIELD OUTCOME



SOIL MOISTURE PROBE

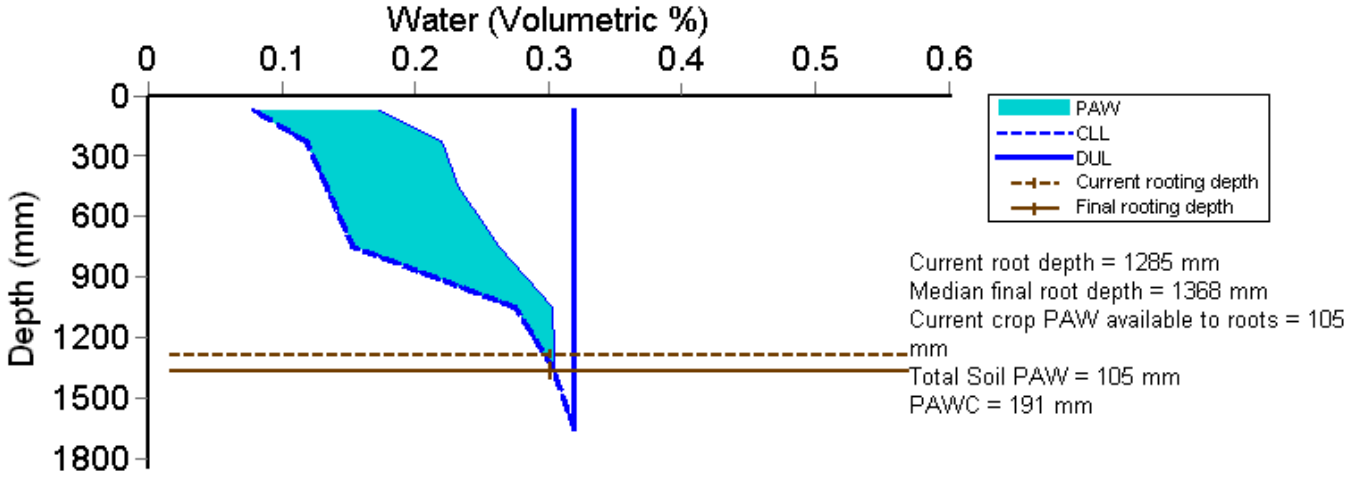


CURRENT DISTRIBUTION OF SOIL NITROGEN



Current Crop Available N = 16 kg/ha
Total Soil N = 16 kg/ha

CURRENT DISTRIBUTION OF PAW



Current root depth = 1285 mm
Median final root depth = 1368 mm
Current crop PAW available to roots = 105 mm
Total Soil PAW = 105 mm
PAWC = 191 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

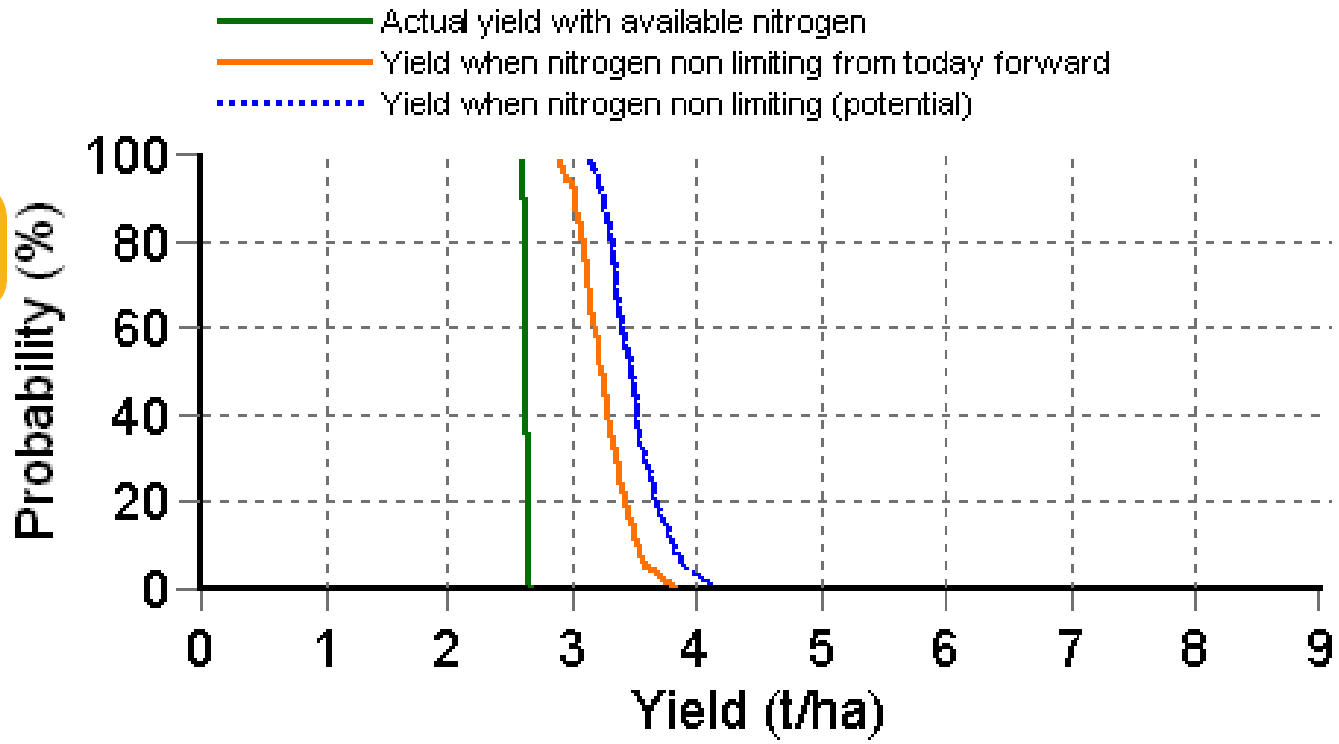
LOCKHART NORTH (PROBE 1)

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

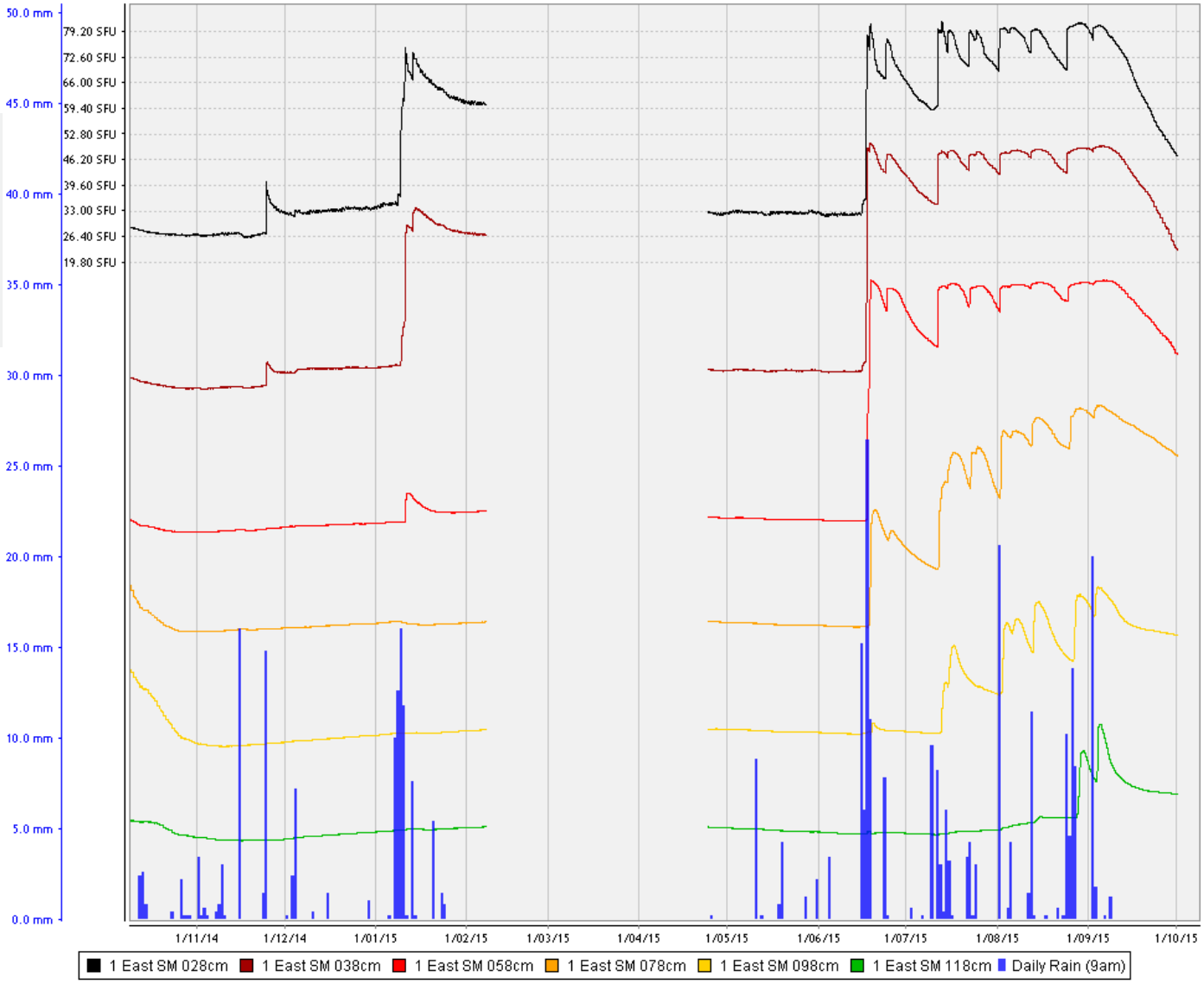
Yield Prophet suggests there is yield potential with the addition of nitrogen however it is reaching the seeding growth stage so additional N is unlikely to yield an economic response. The 'actual yield with available nitrogen' curve on the Grain Yield Outcome graph is nearly a straight line. Therefore a 2. 7t/ha is likely from this crop.

Soil moisture levels are good with total soil plant available water at 97 mm and the soil moisture sensors show the crop is accessing water down to 78 cm. Nitrogen reserves however, have been exhausted and given the late growth stage of the canola, it is most likely not required.

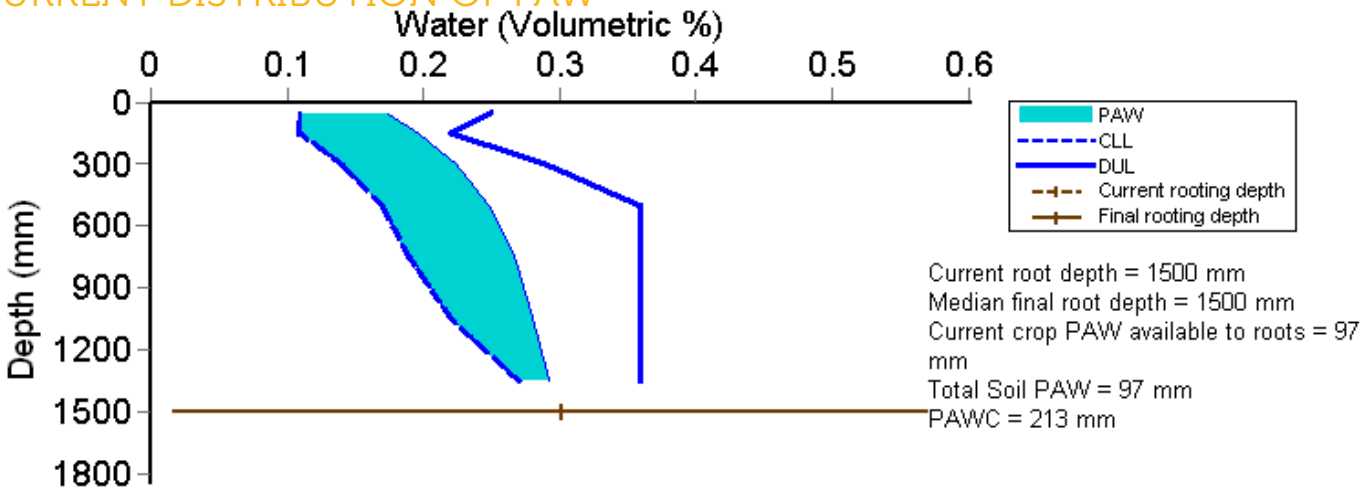
GRAIN YIELD OUTCOME



SOIL MOISTURE PROBE



CURRENT DISTRIBUTION OF PAW



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