

Waste Not Want Not: Conserving Moisture

Significant rain fell in November in all the major cropping regions of Australia (Figure 1). While this is very inconvenient for farmers trying to harvest crops, and in some cases has raised the risk of pre-harvest germination, it does have the potential to carry stored soil moisture over into the 2010 season. Growers will be able to conserve the moisture only through retaining soil cover and controlling weeds.

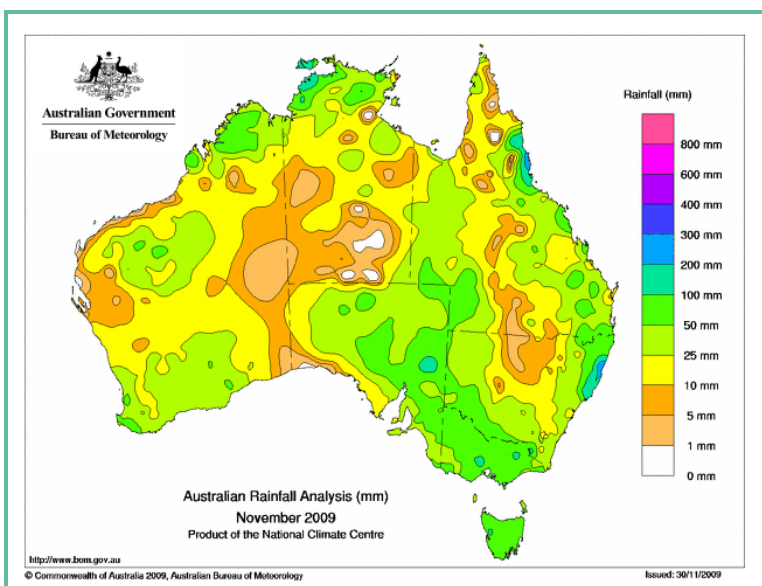


Figure 1: Australian November rainfall (Source: BOM)

Yield Prophet's **Fallow Monitoring Report** can help you by providing extra information about the status of your soil resources and their location in the soil profile.

The 'available soil water chart' shows variations in daily stored soil moisture. In Figure 2, an example from Birchip, day 1 is the first day after harvest (9 November) where the soil moisture levels were negative (-2mm). It is evident from the chart that soil moisture slowly declined over the next 13 days until a rainfall event occurred. Soil moisture continued to decline, from a new level, until three consecutive days of rainfall occurred. This chart uses rainfall, evaporation, deep drainage and run-off simulations to determine soil moisture.

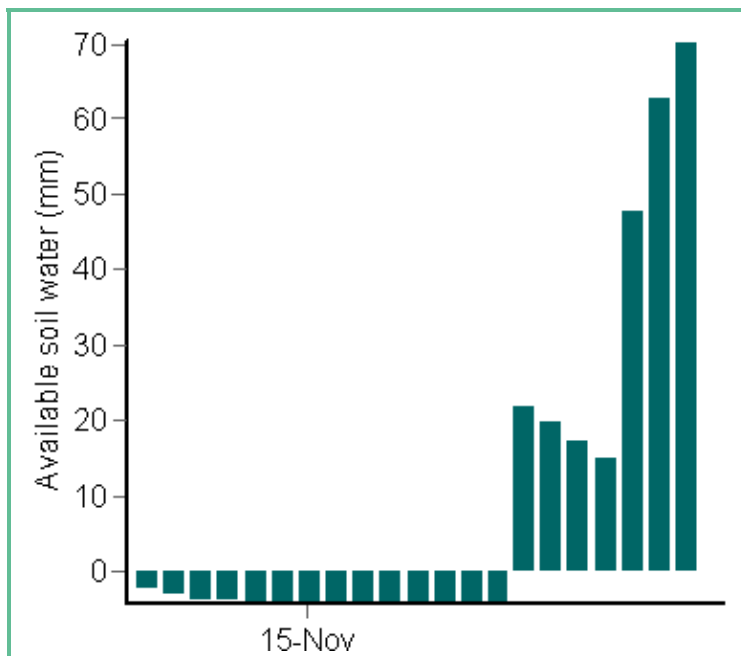


Figure 2: Fallow available soil water from harvest (9 November) to 30 November

The numerical breakdown of these components is shown in Figure 3 in the water budget.

Initial PAW status @ 9-Nov	-2 mm
Rainfall since 9-Nov	90 mm
Irrigation to date	: mm
	: mm
	: mm
	: mm
	: mm
Evaporation since 9-Nov	20 mm
Transpiration since 9-Nov	0 mm
Deep drainage since 9-Nov	0 mm
Run-off since 9-Nov	0 mm
Current PAW status:	70 mm

Figure 3: Fallow water budget from harvest (9 November) to 30 November

It is important to recognise that of the 90mm of rainfall that occurred at this site, 20mm has evaporated. While this matches with our intuition, quantifying it can help in formulating decisions about stubble retention, spraying and cultivation.

Providing further quantification, the 'current distribution of plant available water chart' (Figure 4) shows where the soil moisture is situated in the profile. This chart is very useful in demonstrating how much we can potentially preserve by controlling summer weeds.

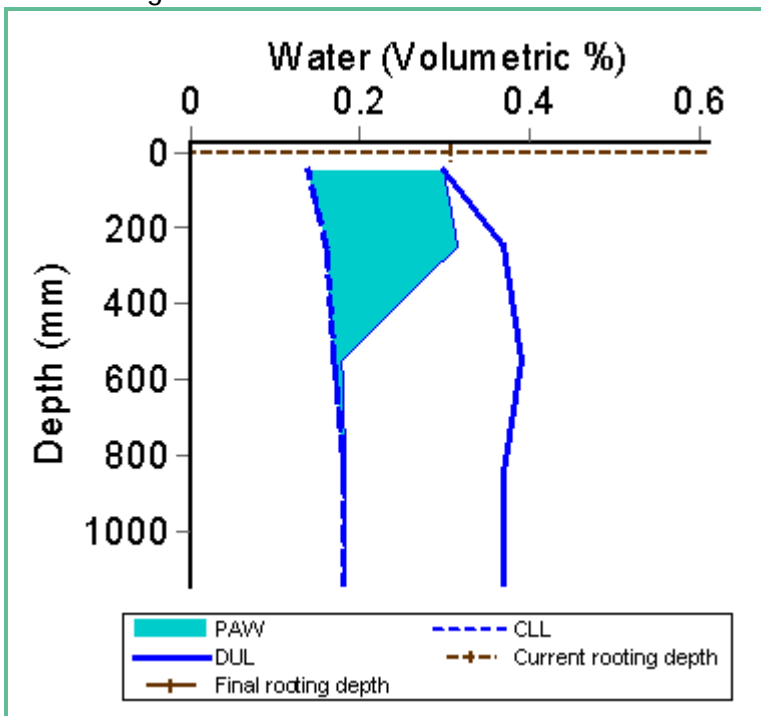


Figure 4: Current distribution of plant available water at (30 November)

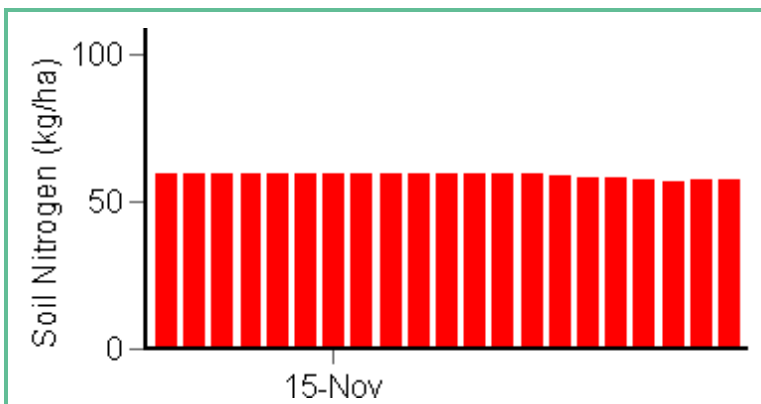


Figure 5: Fallow available soil nitrogen from harvest (9 November) to 30 November

Under 'normal' summer conditions, you would expect to lose the majority of the moisture in the top 30cm through evaporation. This is where soil type becomes important. Assuming the same amount of rainfall, soils with a low water holding

capacity (e.g. sand) will have deeper infiltration compared to a soil with high water holding capacity (e.g. clay) and will have a greater soil moisture carryover into 2010.

The soil moisture details highlighted in Figure 2, Figure 3 and Figure 4 are repeated in the Fallow Monitoring Report for nitrogen. Figure 5, Figure 6 and Figure 7 show examples of these.

Initial N status @ 9-Nov	59 kg/ha
Mineralisation since 9-Nov	-1 kg/ha
N applications	: kg/ha
	: kg/ha
	: kg/ha
	: kg/ha
	: kg/ha
	: kg/ha
Total N in plant	0 kg/ha
De-nitrification since 9-Nov	0 kg/ha
Leaching	0 kg/ha
Current N status:	58 kg/ha

Figure 6: Fallow water budget from harvest (9 November) to 30 November

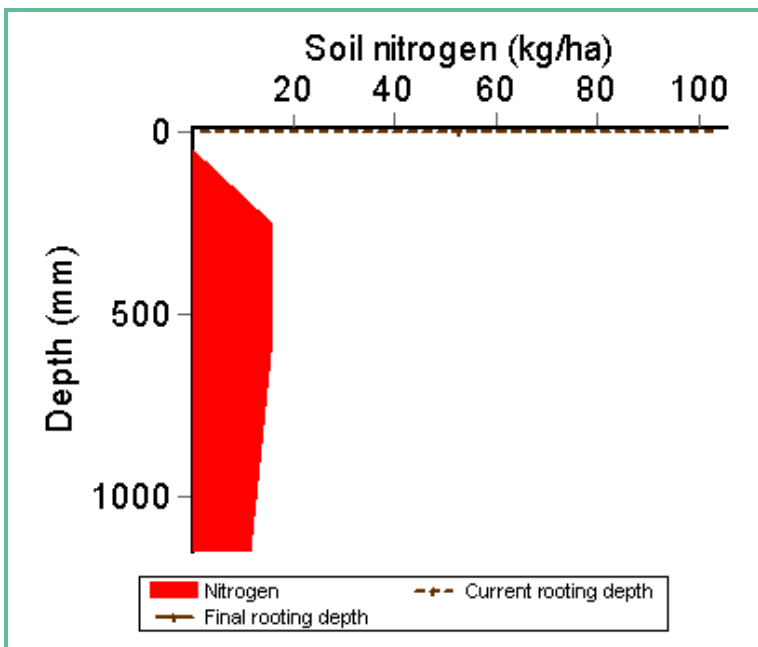


Figure 7: Current distribution of plant available water at (30 November)

Yield Prophet is a year-round tool and the team encourages subscribers to trial this report. You may be surprised by what you discover.

How do I generate a Fallow Monitoring Report?

You can generate a Fallow Monitoring Report in much the same way as you generate a crop report. First update your paddock details. Ensure that your rainfall page is up to date and all nitrogen and tillage applications are entered into the applications page. Once completed:

- click on 'My Reports'
- click on 'New Report'
- hold down the control key and click on the paddocks you want to report on
- select 'Fallow Monitoring Report' from the drop down menu
- Click on 'Next'
- Adjust the description if necessary and click 'Generate'.

The report will be returned within ten minutes and can be found in the 'View Reports' section of the site.

Harvest Results

Harvest is a very important time of the year for Yield Prophet. It is the time when we compare Yield Prophet simulations with paddock yields achieved.

When your harvest results are known, please enter this information into the 'Results' page in the 'My Paddocks' section of the website. Please note any external factors (e.g. frost, disease, insects, water logging, heat stress, weeds ...) that may have affected your crop's yield in the 'Additional Factors' window. This will help us with the final validation of results for 2009.

If your simulated yields do not match with your actual yields and you cannot account for the discrepancy, we encourage you to contact us so that we can work together to identify the problem. This process is very important as it enables us to identify problem areas and improve your simulations in future years.

Important Dates and Reminders

Summer December to Sowing: Use the out of season reports to monitor you soil resources.

February and March: Organise soil sampling and analysis for each paddock you wish to subscribe to Yield prophet in 2010 with your local soil sampling contractor or consultant. If you need any information about you soil sample requirements please contact Tim McClelland via the details at the bottom of the page.

March and April: Visit the Yield Prophet website and register your paddocks for 2010.

WA Growers: Tim McClelland and other Yield Prophet Representatives will be running a number of Yield Prophet workshops in WA early in the new year. If you would be interested in attending a workshop or you would like to discuss anything Yield Prophet related let us know and we will arrange a meeting.

For more information...

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