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# Soil moisture and weather station paddock report

4 October 2017

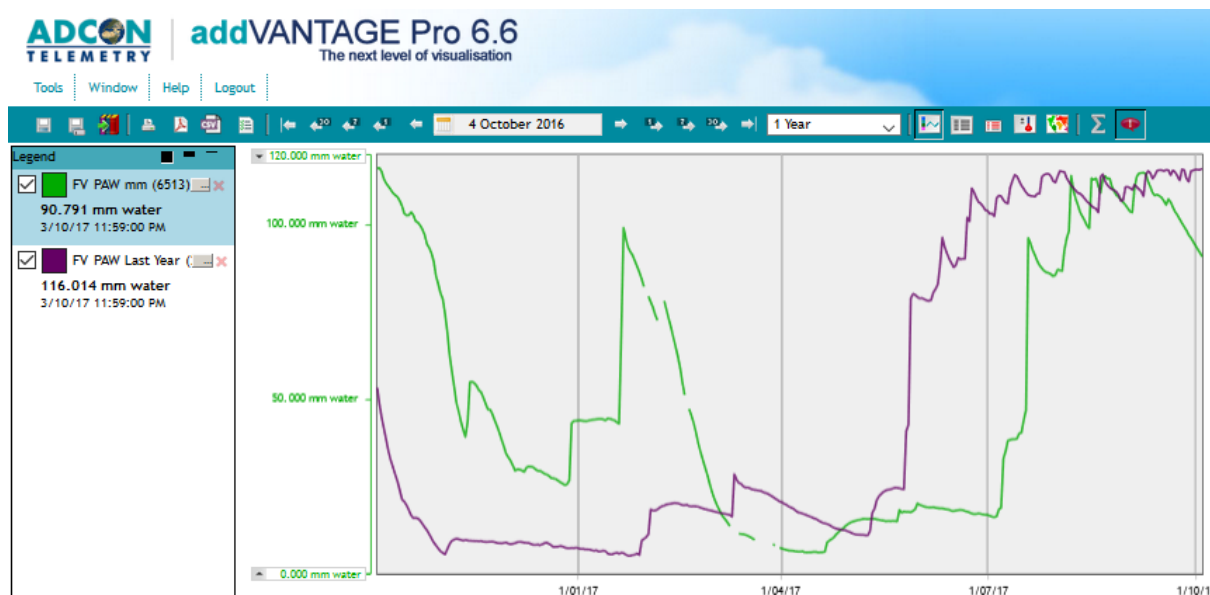
As part of BIGG's soil moisture monitoring in grazing systems project, soil moisture and weather stations have been operating in three local pasture paddocks since 2013. Below is a 'monthly report' outlining the soil moisture status of these paddocks located at Flaxman Valley, Keyneton and Koonunga.

As expected at this time of year, soil moisture is declining with the estimated soil water capacity at each site currently being:

- Flaxman Valley- 80%
- Keyneton- 60%
- Koonunga- 50%

Please contact Brett Nietschke ([brett.nietschke@biggroup.org.au](mailto:brett.nietschke@biggroup.org.au)) if you have any feedback about the report or if you would like alternative information included in future reports.

## FLAXMAN VALLEY (EVANS)



Growing season rainfall (Apr-Oct):

**347mm**

Estimated available soil water capacity:

**80%**Soil type: **Sandy loam over clay**Pasture type: **Phalaris/ryegrass/clover based pasture****Current pasture status***(see photos below)*Composition: Phalaris 40%, Ryegrass 45%, Clover 10%, Broadleaf weeds (dock) - 5%Estimated Feed on Offer: 2400 kg DM/ha**Paddock and grazing management**

There has been no grazing in the paddock for the last month. 57 ewes and lambs at foot last grazed the paddock until 1/9/17 to a FOO (Feed on Offer) of 1500 kg DM/ha. 60kg/ha of urea was applied to the paddock in late June to boost pasture production.

**Narrative**

Since we last prepared a soil moisture report, we have added two extra data views: firstly a comparison of the plant available water (PAW) between this year (*green line on graph*) and last year (*purple line on graph*); and secondly a

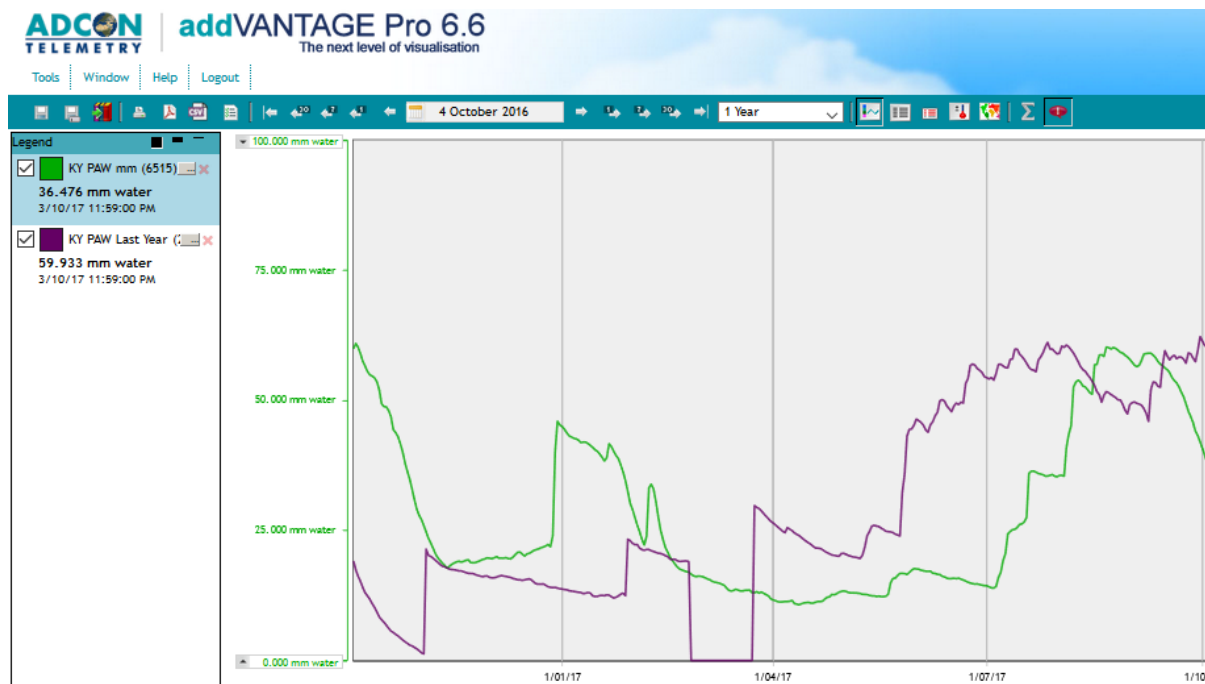
calculation of the percentage of soil moisture deficit. When the profile is full, the deficit is 0% and when the profile is dry, the deficit is 100%.

Although the profile at this site filled this year, compared to 2016, it did so later in the year and began to draw down earlier. This is a reflection of the rain pattern with the rain coming later and in lesser quantity.

As a consequence, the profile has gone from full in late August, to a 20% deficit this week. For the pasture on this site to return to optimum yield, we will need plenty of late spring rain. Without that the paddock will be in moisture stress by early to mid summer.



## KEYNETON (KEYNES)



Growing season rainfall (Apr-Oct):

**297mm**

Estimated available soil water capacity:

**60%**

Soil type: **Red loam over clay**

Pasture type: **Annual grass and sub-clover based pasture, including some phalaris**

### Current pasture status

(see photo below)

Composition: Annual grasses 70% (predominately silver grass), Clover 20%, Phalaris 10%

Estimated Feed on Offer: 1000 kg DM/ha

### Paddock and grazing management

The paddock was last grazed between 26/7-17/8/17 by 240 ewes and lambs at foot (stocking rate of 4 DSE/ha).

### Narrative

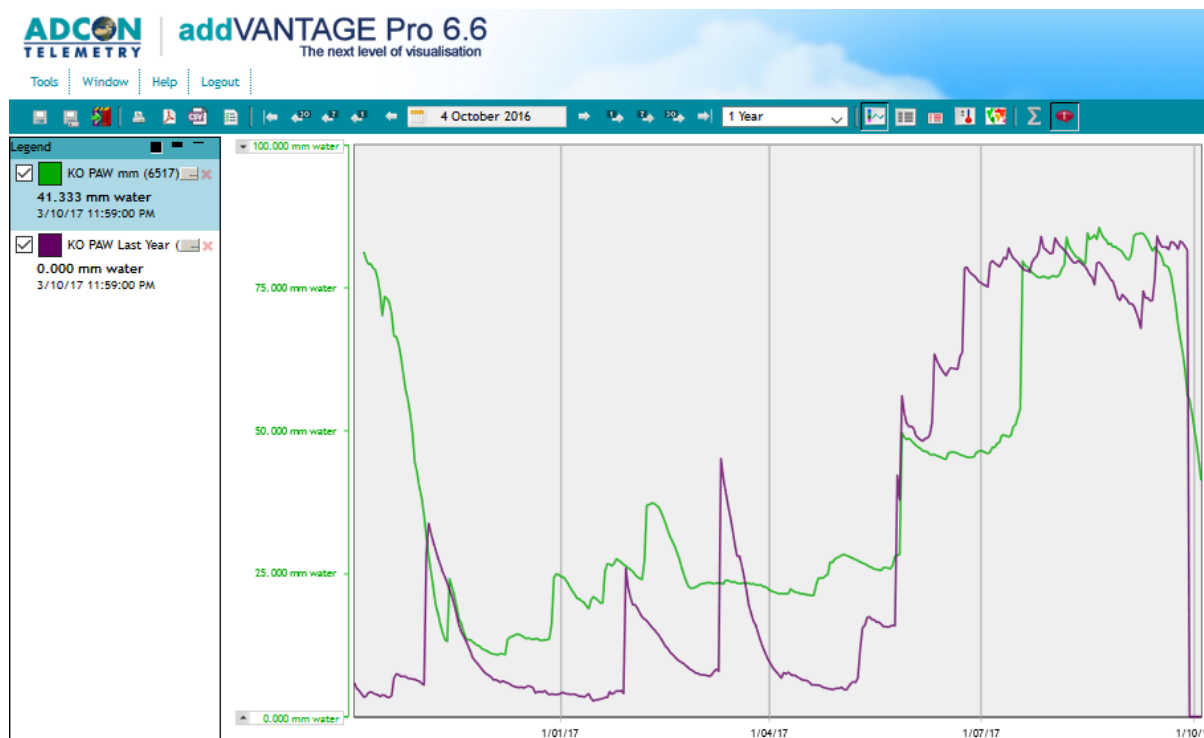
Like the Flaxman Valley site, Keyneton's rain came later in the season and stopped earlier than last year. Draw down of the profile commenced in September whereas last year it began in October. The profile at the site is already at 40% deficit.

Together with the low holding capacity of the profile, this site could present some serious management challenges as the season progresses.



## KOONUNGA (KLEINIGS)





Growing season rainfall (Apr-Oct):

**262mm**

Estimated available soil water capacity:

**50%**

Soil type: **Red brown earth**

Pasture type: **Oats / vetch**

**Current pasture  
status**

*(see photo below)*

Composition: Oats 80%, Vetch 15%, Trash 5%

Estimated Feed on Offer: 8800 kg DM/ha

**Paddock and  
grazing  
management**

On 24/2/17 the paddock was sprayed with glyphosate to control cereal volunteers with the aim of conserving soil moisture (*note green line on above graph at this timing which shows how water use decline was halted*).

There has been no grazing in the paddock since 4/6/17 when it was sown with oats and vetch. The paddock will soon be cut for hay.

## Narrative

The oats and vetch planted on the site are doing a terrific job at converting stored moisture to biomass. Plant Available Water has gone from 100% to 50% in the last couple of weeks.

At the current rate of draw down, the profile will be drained by the middle of the month. It will be interesting to see whether the crop turns before the moisture runs out (may be brought on by a patch of hot weather) or vice versa. In either case, at this stage the dry matter production yield is likely to be very similar.

Once the pasture is cut, moisture use will fall right off. Some late spring rain would be useful in helping the pasture recover after it is cut.



***Disclaimer: this report has been prepared by BIGG and TOIP Pty Ltd. It is for information only and any actions or decisions made by readers from it are at their sole discretion.***

## Your BIGG Contacts

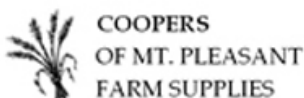
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