1184: Soil moisture monitoring in grazing systems assists decision-making

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Introduction

In 2013, the Barossa Improved Grazing Group commenced a project to monitor soil moisture in grazing systems. This was the first time a farming systems group in Australia has used soil moisture monitoring to assist grazing management decisions.

Results and Discussion

Automatic weather stations were established at three representative pasture paddocks in the Barossa region. The measurement of soil moisture between 15-85cm allowed *plant available water* (the total amount of water that can be accessed by the plants) to be estimated for each pasture paddock. Significant differences in plant available water were determined:

- Flaxman Valley - 112mm of water
- Keyneton - 47mm of water
- Koonunga - 75mm of water

To illustrate the *rate of water use* at each site, available soil water capacity was graphed from the point of soil saturation in July, until near depletion in November 2014 (Figure 1).

The rapid use of water after August reflected the very dry spring in the Barossa region in 2014, with plant available water nearly depleted by October.

Coupled with the dry outlook for the remainder of spring, this data gave local producers solid evidence on which to evaluate their livestock numbers and possibly sell them (while also promoting natural resource management outcomes by destocking before groundcover levels are compromised).

Alternatively if producers wanted to maintain their stock numbers, the data provided an 'early signal' to seek agistment or purchase supplementary feed.

Key Issues

- An understanding of *plant available water* and *rate of water use* can help grazing management decisions.
- In the future, actual soil moisture measurements could be linked with climate forecasts to model pasture growth, therefore improving feed budgeting and stocking rate decisions.

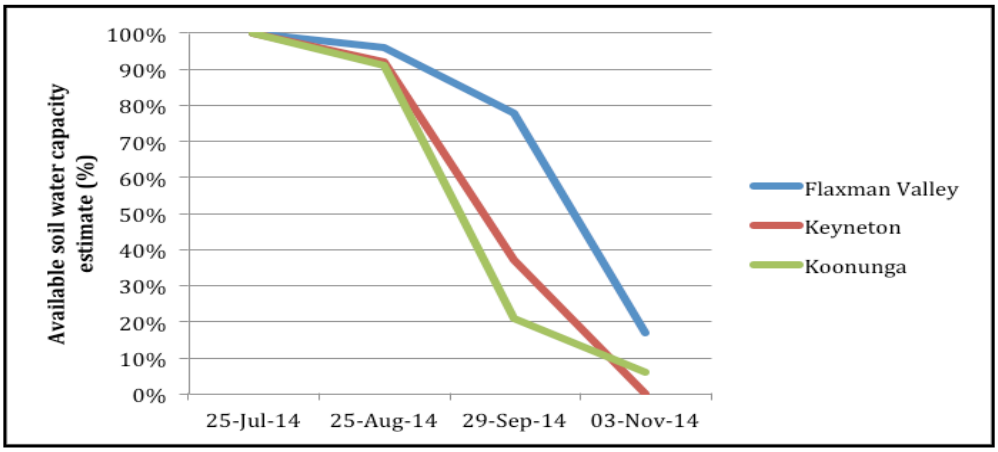

Figure 1. Change in soil water capacity in three Barossa pasture paddocks

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