

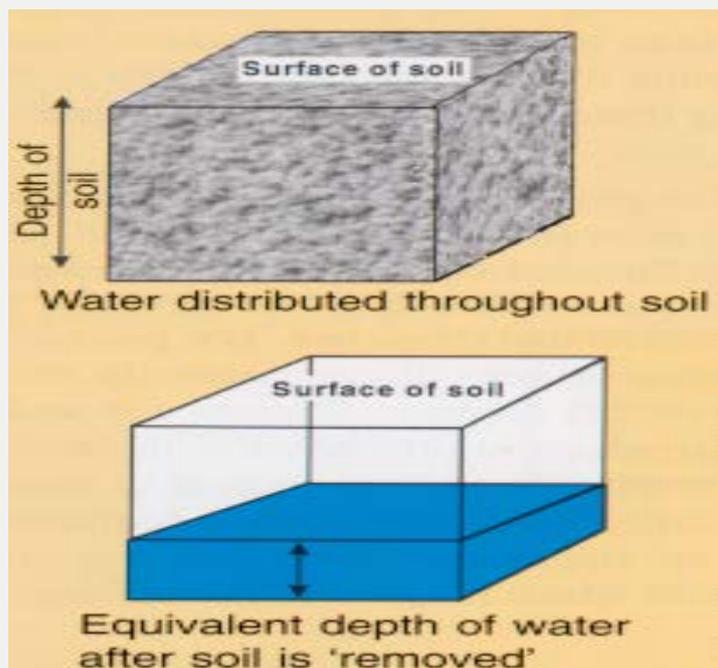
# Water for Profit

## HOW MUCH WATER IS IN MY SOIL?



### Introduction

Soil water can be considered in the same terms as rainfall (i.e. as millimetres of water). This can be explained by visualising a block of soil which contains an amount of water. If the water flowed into a single layer after removing all of the soil particles, the volumetric water content could be reported as the equivalent depth of water (in millimetres) remaining.



Using this concept:

$$100 \text{ mm} = 100 \text{ L/m}^2 = 1 \text{ ML/ha}$$

### Calculating the volume of water in your soil

If you have a measure of the volumetric moisture content at any point in time, then the volume of water in the crop root zone can be calculated simply by multiplying the volumetric moisture content by the depth of the root zone. For example, if the volumetric moisture content is 35 per cent and the root zone is 300 mm deep then:

$$\text{Volume of water} = 0.35 * 300 \text{ mm} = 105 \text{ mm}$$

Note that only a small proportion of this water is likely to be available to the plant.

### Calculating the volume of Readily Available Water (RAW)

Calculation of the volume of water in the root zone that is readily available to the crop requires a measurement of the volumetric moisture content at field capacity (i.e. when the soil is fully wetted) and at the first signs of crop stress. The RAW is then calculated as the difference between these two measures multiplied by the rooting depth. For example, if the volumetric moisture measured (i.e. by a calibrated capacitance probe) at field capacity is 43 per cent and the measurement at the onset of crop stress is 36 per cent over a rooting depth of 300 mm then:

$$\text{Volume of water} = (0.43 - 0.36) * 300 \text{ mm} = 21 \text{ mm}$$

Hence, in this case the crop will only be able to use 21 mm of water before becoming stressed and this should be the maximum amount of water you should be attempting to apply if you water at the onset of stress.

For more details contact Growcom on 07 3620 3844.

*Disclaimer: This information is provided as a reference tool only. Seek professional advice for irrigation specifics.*

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