

Water for Profit

POSITIONING OF SOIL-WATER MONITORING TOOLS



Scheduling tools come in many forms and they all have their benefits and drawbacks. Essentially they provide soil moisture information at a specific location within a field.

Introduction

In order to have confidence in any soil-water monitoring tool, whether it is a shovel, a tensiometer or a soil capacitance probe, you need to know if its installed location represents what is happening across the field.

Importance of position

In any field, the amount of water in the soil will vary depending on the evenness of the irrigation and the varying ability of the crop to extract the water. The positioning of scheduling tools in either a wet or dry area will greatly influence the interpretation of the soil moisture data.

For example, if irrigation scheduling was based on the soil moisture reading obtained at position one in Figure 1 (a wetter than average area) may result in under-watering of the rest of the field. However, monitoring based on a moisture sensor located at position two (a drier than average area) may result in over-watering the field.

Selecting an appropriate position

To select the appropriate position for scheduling equipment, it is necessary to know the shape of the wetting patterns, likely crop extraction patterns, and the amount of variation across the field.

Catch-cans can be used to measure the evenness or uniformity of wetting under sprinklers and for assessing the variations in discharge between sprinkler and drip emitters within a field.

Choosing a position

Step 1: Where there is a significant variation in the water applied across the field, the soil moisture sensors should be installed within the drier area of the field.

Step 2: Sensors should be positioned within the active root zone of the crop at a position which receives the average amount of the water applied.

High system uniformities can be achieved in well designed and maintained systems. Using the same sprinkler or drip emitters and ensuring minimal pressure variations throughout the system will reduce the potential for wet and dry areas in the field. Using appropriate sprinkler spacings is also important. A regular maintenance program is necessary and should involve all aspects of the system including pumps, filters, pipelines, nozzles, risers and emitters.

For more details contact Growcom on 07 3620 3844.

Figure 1: Position of tool and uniformity of water application

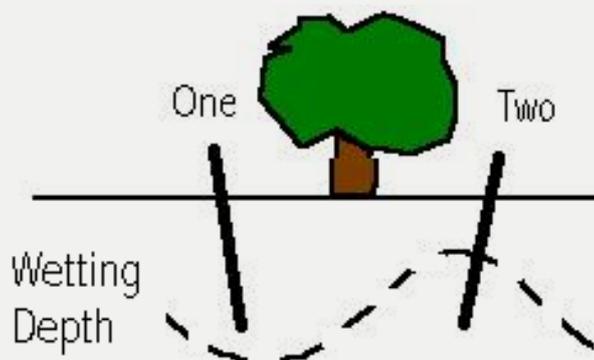


Figure 2: Catch-cans used to assess the wetting pattern



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

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