NOT QUITE

Gypsum Blocks,
A Growers’ Best Friend.

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Gypsum Blocks

They may look like nothing more than marshmallows on strings, but gypsum Blocks can be a grower’s best friend when it comes to finding out what’s going on below the surface of fields. They are not much more high tech than they look. Made of gypsum, cast around two stainless steel electrodes: they work according to the theory of conduction. The gypsum block has been around since the 1940’s, making it one of the oldest methods of soil moisture measurements. At about $6 per block, it is also one of the cheapest methods of soil moisture measurement. And because the grower can read the gypsum block manually with a hand-held reader (about $150, and a one time purchase), the cost per measurement point remains the lowest in the industry.

Digital Soil Moisture Tester

Gypsum blocks aren't perfect, but they are practical and reliable.

One of their failings is that they have traditionally been a manually read device, limiting the number of readings available to one or two per site per week. They can be used to effectively monitor or directly measure soil water content. It is extremely simple and is well worth the investment of time and labor. The cost of keeping track of soil water on your own or by using a service can be paid back through the benefits of effective water management. Included among these benefits are energy savings, water savings, water quality improvement, and quite often improved crop quality and yields.

Gypsum blocks require little maintenance and can be left in the soil under freezing conditions. Being made of gypsum, the blocks will slowly dissolve, requiring replacement. The rate of dissolution is dependent upon soil pH and soil water conditions. Gypsum blocks are best suited for use in finer-textured soils, but will work in other textures too. High soil salinity affects the electrical resistivity of the soil solution, although the gypsum buffers this effect to a certain degree.

irrigations. The 2 and 3-foot depths are the ones you need to watch for in most crops.
Irrigation Scheduling:

The Gypsum Block system is a valuable tool in monitoring the soil moisture available to the plants. This system eliminates guesswork so that irrigation can be effectively scheduled according to plants' requirements, decreasing the potential for over irrigation, under irrigation, and deep percolation. In order to set irrigation scheduling for your field you can use the block data to decide the extent to which you will allow the root zone to dry out between

Simple Operation:

The blocks are buried in representative areas in the field to monitor soil moisture changes in the area of active root growth. They are buried at one or more levels, depending on the crop and the depth of the root zone. When the blocks' lead wires are connected to the meter, an indication of the available soil moisture is immediately obtained on the meter display. The meter readings can be converted into terms of available soil moisture or soil moisture tension by referring to calibration curves, which are part of the operating instructions.

Testing the Blocks at a field site
Installing Gypsum Blocks:

1. The Gypsum blocks should be thoroughly soaked in a pail of water before installing. Soaking removes air from the blocks and insures accurate soil moisture reading.

2. A soil probe, cup auger, posthole digger or tile spade is used to bore a hole to the desired depth.

3. The soil should be set aside as it is remove from the hole. When filling in the hole the soil will be added so as to approximate the original soil profile.

4. Hold on to the wire lead on the gypsum block and push the block into the hole with the soil probe or ½ inch diameter conduit, setting it firmly in the bottom.

5. Fill in the hole with soil, 3 or 4 inches at a time, tapping the soil lightly to firm the soil until the desired level for the next gypsum block is reached. Repeat steps 4 and 5 until all gypsum blocks are installed.

6. Mark the leads by tying one knot in the lead of the shallowest block, 2 knots in the next depth and so on until all leads are marked. Set a stake and fasten the wire leads around it.

Gypsum blocks should be installed as soon as possible to allow time for plant roots to grow around the blocks. Blocks installed late in the growing season may not provide accurate readings. Gypsum blocks should be located in a representative area of the field. Don’t place blocks in low or high areas of the field. Blocks should be placed at least 20 ft. from wheel tracks.