

Recent Droughts, Farming, and Moisture Meters for Soil

As posted yesterday by [Elena Ugrin](#), a record breaking heat wave is sweeping across western Europe and is expected to spread through the entire continent by the end of the week.

Even in normal conditions, managing water use for irrigating crops is an enormous challenge for farmers. Too much or too little water can ruin a crop, spoil a harvest and waste months of careful preparation.



Not only in Europe, heavy rain and other extreme weather events are becoming more frequent. This can lead to floods and decreasing water quality, but also decreasing availability of water resources in some regions.

Weather predictions, according to the [European Commission](#) for Europe tell us that:

- Southern and central Europe are seeing more frequent heat waves, forest fires and droughts.
- The Mediterranean area is becoming drier, making it even more vulnerable to drought and wildfires.
- Northern Europe is getting significantly wetter, and winter floods could become common.

With water so scarce in many European counties at the moment, farmers have to be more careful than ever before with their irrigation efforts. Farmers need to know when they have “just enough” moisture in their soil to keep crops healthy to avoid wasting water.

Your crops need different levels of water depending on their stages of growth, the soil type, weather conditions and the variety. Plants need i.a. the right amount of water to grow successfully.

Monitoring the soil moisture available will assist you with making the right decisions.

The question is, how can farmers reliably measure the moisture content of their soil to determine the necessity of irrigation, and the amount of water that should be used?



Detecting Soil Moisture for Irrigation Control



A moisture meter for soil, sometimes referred to as a damp meter for soil, is a device that can give farmers a quantifiable reading of the moisture conditions deep in soil.

How do these devices work?

One example of a soil moisture meter would be [Delmhorst's KS-D1 meter](#). This meter uses special electrodes that are installed deep within the soil to get readings of moisture conditions underground.

The most common electrodes used for this are the GB-1 Gypsum Sensor Blocks. These blocks encase two stainless steel electrodes within a shell of gypsum. The gypsum material is hygroscopic, meaning that it absorbs or releases moisture until it reaches an equilibrium with its environment.

Using gypsum blocks to absorb moisture from the surrounding soil to measure moisture is important, as it tells farmers how much moisture can be absorbed from the surrounding soil, rather than just the actual moisture content of the soil itself. This is necessary information, as it tells you how much moisture your plants will be able to get from the soil.

Checking Soil Moisture with a Soil Meter

Naturally, before you can start checking the available moisture of your soil, you have to install the sensor blocks for the soil moisture testing device that you'll be using. Here's a summary of the process:

1. The first step is to prepare two holes at each testing site you'll be installing your gypsum sensor blocks into. How deep you dig the holes will depend on the active root zone of your crop. You can get a list of shallow and deep block depths to dig in the KS-D1 Owner's Manual. A 1" soil auger should be sufficient for this task.
2. Once you've dug both a shallow and a deep hole at your testing site, mix some soil and water to create a slurry mixture with a creamy consistency and pour 1 or 2 tablespoons of it into each hole.
3. Push a gypsum block into each hole, making sure that your slurry mixture completely covers the block. For especially deep holes, you can use a plastic or aluminum tube to push the block into place.
4. Back fill the hole, tamping the soil every so often as you go.

5. Fasten the leads of the electrodes to a stake so you can keep them clean and easy to locate. Use a colored tag or a knot so that you can ID which lead is for the shallow block and which one is for the deep block.

These sensor blocks should be given a day or two to acclimate and reach a steady equilibrium with the surrounding soil. Once the blocks are set, simply plug in your soil moisture meter and take a reading, you should get a result almost instantly.

To make sure that results are reliable, use multiple testing sites that are set apart by 20 feet or more so that you can check results for different areas of your crop.

Gypsum blocks work best in fine soils, such as loamy clay. Sandy soils make it difficult for the blocks to achieve equilibrium, potentially skewing reading results.

When you're looking to more accurately manage your irrigation water use to avoid waste, soil moisture meters are a must-have item!

To learn more about moisture meters, check out our free guide at the link below:



What Is The Key To High Quality Hay?
The Right Moisture Meter, of Course! [Get The Guide!](#)



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T : +31 73 6395080
E : i.bullens@delmhorst.eu
I : www.MoistureMetersDelmhorst.com