

Soil Moisture Monitoring What's New?

Larry Schwankl

UC Cooperative Extension

559-646-6569

ljschwankl@ucanr.edu

Web site: <http://ucanr.org/schwankl>

Soil Moisture Monitoring

- What are we doing with soil moisture monitoring?



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 - Not a bad assumption as long as the soil moisture monitoring is accurately reflecting what the tree is experiencing.
 - **Biggest limitation of all soil moisture monitoring is locating instruments at sites which are representative.**

Even a bigger challenge when using drippers and microsprinklers since soil moisture can change significantly in just a short distance.

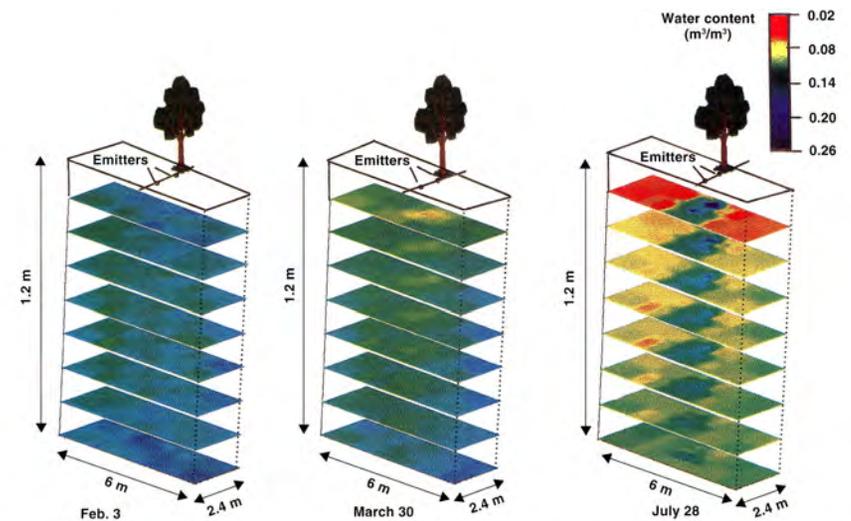


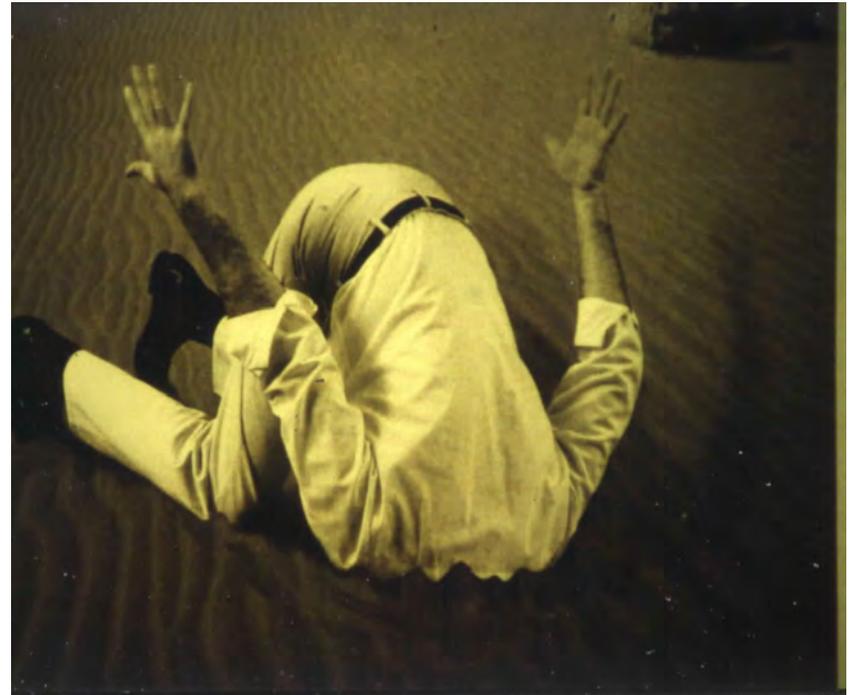
Fig. 1. Soil moisture distribution around an almond tree for 3 days in 1995: Feb. 3, soil moisture profile refilled by winter rains; March 30, soil moisture profile just before beginning irrigations; and July 28, soil moisture profile typical of that under surface drip irrigation during the growing season.

Soil Moisture Monitoring

- **So why then do we do soil moisture monitoring?**

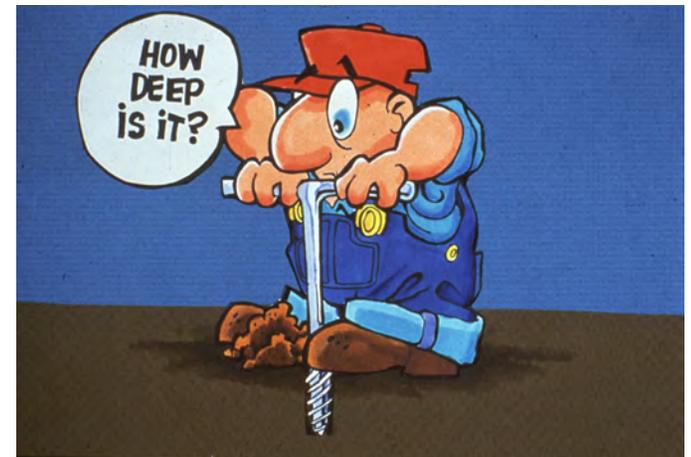
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 - It is still an excellent way of determining the level of soil moisture and this tells us the level of water available to the tree.
 - **It can give you info. on where your irrigation water is going. Is it staying in the root zone? Going below the root zone? Are you irrigating too little? Irrigating too much?**



Soil Moisture Monitoring

- **What is “old” and what is “new”?**
 - **Instruments**
 - **Services**

Soil Moisture Monitoring - Instruments

- Tensiometers and “old-fashioned” soil moisture blocks are still out there and they still work very well. Don't forget them just because they aren't new!

Watermark Block



Tensiometer



Soil Moisture Monitoring - Instruments

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- **Many new soil moisture monitoring instruments are based on a dielectric constant principle.**

Dielectric Constant Devices

- Dielectric constant is a measure of the ability of a material to establish an electric field.
- The dielectric constant for soil is much different than for water.



Soil Moisture Monitoring - Instruments

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- Many new soil moisture monitoring instruments are based on a dielectric constant principle.
 - **These devices lend themselves well to being automated and logging (storing) data.**

Note: “old-fashioned” soil moisture blocks can do this too.

Soil Moisture Monitoring - Services

- **This is where the most changes have been made.**
- **Services range from:**

“You do everything”

to

“They do everything”

Soil Moisture Monitoring - Services

- This is where the most changes have been made.
- **Lots of changes in how info. is collected in the field and delivered to you. Including remote retrieval and info. being made available to you on your own protected web page.**

Soil Moisture Monitoring - Services

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- Lots of changes in how info. is collected in the field and delivered to you. Including remote retrieval and info. being made available to you on your own protected web page.
- **The more and fancier the services you get, often the more it costs.**

Soil Moisture Monitoring - Services

- **So, what do you do?**

Soil Moisture Monitoring - Services

- So, what do you do?
 - Decide what you want. Self-serve? Full serve?



Soil Moisture Monitoring - Services

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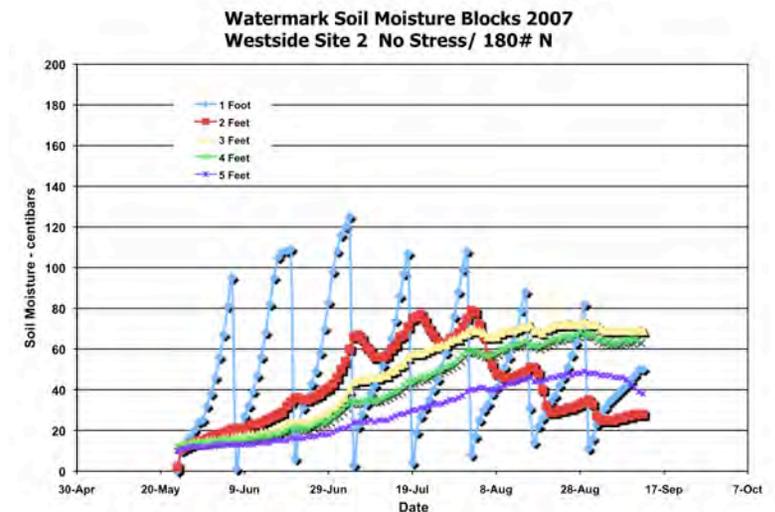
■ **How do you want the info. delivered? You can get it as a paper report all the way to an archived web page you can access while you're in Tahiti.**

Soil Moisture Monitoring - Services

■ So, what do you do?

■ **Decide what you want. Self-serve? Full serve?**

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- **Pay special attention to the graphics software they use to present the soil moisture info. to you.**



Soil Moisture Monitoring - Services

■ So, what do you do?

■ **Decide what you want. Self-serve? Full serve?**

- How do you want the info. delivered? You can get it as weekly paper report all the way to archived web page you can access while you're in Tahiti.
- Pay special attention to the graphics software they use to present the soil moisture info. to you.
- **Do you just want soil moisture info., or do you want expertise?**



Soil Moisture Monitoring

- **Things to watch out for:**
 - **Just because you get soil moisture information provided to 4 decimal places doesn't mean it is accurate. Watch your trees!**

Soil Moisture Monitoring

■ Things to watch out for:

- Just because you get soil moisture information provided to 4 decimal places doesn't mean it is accurate. Watch your trees!
- Don't get overwhelmed with soil moisture data. It is hard to keep up during the season – in time to do anything about your irrigations. Getting info. in a good visual / graphic form is often very useful.

Questions?

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For copy of Powerpoint presentation, go to:

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