Creating a Calibration Curve - Watermark Meter

Lab Guide

Task

To create a calibration curve

What You Need

- ❑ Pen or pencil
- ❑ Graph paper or appropriate spreadsheet graphing software
- ❑ Soil Moisture Sensor Calibration Data from your science notebook with 15 or more pairs of readings for each depth for which you are developing a calibration curve
- ❑ Calculator or computer

In the Lab

1. Plot all the pairs of readings for a single depth with soil water content on the Y-axis and the corresponding soil moisture meter readings on the X-axis. This can be done using a spreadsheet program.
2. Draw or calculate the *best-fit natural logarithmic curve* through your data points.

   $$\text{Soil Water Content} = a \ln(\text{Soil Moisture Reading}) + b$$

   Your data should span a broad range of soil moistures. This will be your calibration curve, which you will use to convert your meter readings to soil water content values.

   Note: If you have any questions about creating your calibration curve or if you need any assistance with the curve, contact your local partner/country coordinator or ask for help from an appropriate soil scientist or soil trainer.
3. Save an electronic copy of the data from your science notebook. If you get meter readings either higher or lower than any of the readings on your data sheet (while taking soil moisture measurements), take a gravimetric sample, and use the values you measure for this sample to extend your calibration curve.

Example of a Soil Moisture Sensor Calibration Curve for a Watermark Meter