EE3140: Measurements and Instrumentation Laboratory

Automatic Soil Moisture Values

Experimental Setup

We conducted experiments to measure soil moisture levels using a soil moisture sensor. The sensor provides readings in millivolts (mV), which we converted to approximate soil moisture levels in the arduino.

Results

- In open air the soil moisture sensor measured approximately 600
- In a cup of water where the soil moisture sensor was completely immersed in water it measured about 270

Soil Type	Wet Condition	Ideal Condition	Dry Condition
Clayey	277	327	590
Normal	380	405	430
Sandy	273	311	350

Table 1: Soil Moisture Sensor Readings for Different Types of Soil

Conclusion

The results highlight distinct moisture retention capabilities among soil types, with loamy soil retaining the most moisture, followed by clayey and sandy soils. Despite these differences, all soils exhibit similar trends in response to watering and environmental conditions. Understanding these moisture characteristics is crucial for optimizing irrigation strategies and promoting healthy plant growth in agriculture.