Soil Water Field Trip

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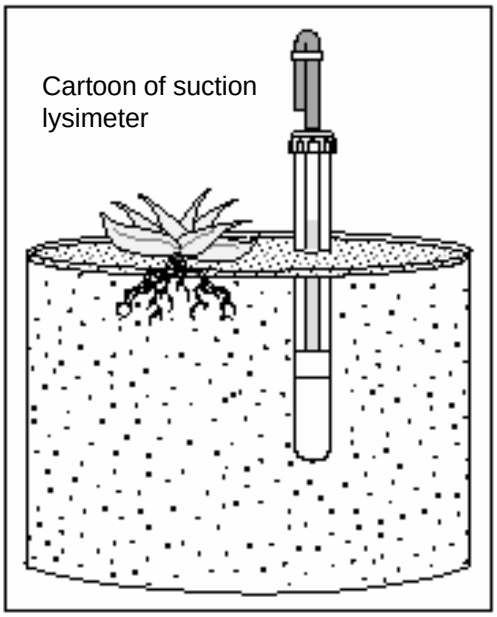
Introduction:
Investigation of the vadose (unsaturated) zone is an essential part of many environmental monitoring programs. Soil water samplers, or suction lysimeters, remove samples of soil pore water at the desired depth of installation beneath the ground surface with minimal disturbance of the soil. Lysimeters are closed tubular devices with a porous ceramic filter element at one end and a sample collection tube. They operate by establishing continuity between the soil pores and those in the porous element of the lysimeter. An equilibrium will be established between the water in the soil pores, the filter media (soil backfill or silica sand surrounding the porous cup) and the porous ceramic cup. Application of a vacuum to the inside of the lysimeter will cause the pore water to flow from the soil pores through the filter media, the porous ceramic cup into the lysimeter body. The soil pore water can then be extracted from the collection tube and taken to the lab for chemical analysis.

- Implications for agriculture, groundwater studies, soil chemistry, leaching of harmful contaminants
- Yields samples of soil pore water
- Install at any depth in the unsaturated zone
- Designed for long term use in one location.



Resources:

•Schuchman, P., 2001, The Fate of Nitrogenous Fertilizer Applied to Differing Turfgrass Systems [Masters thesis]: Stony Brook, SUNY Stony Brook. http://pbisotopes.ess.sunysb.edu/reports/schuchman/index.htm

•*Lysimeters for Purchase*

Soil Moisture http://www.soilmoisture.com/PDF%20Files/sws.pdf

Campbell Monoflex http://www.campbellmfg.com/monoflex/product_manuals/_pdfs/manual_lysimeter.PDF

•*Construct you own lysimeter*

http://www.llansadwrn-wx.co.uk/evap/lysim.html#cons