

Greater Harmony Between Agriculture and the Environment

Maricopa Environmental Monitoring Site

Issue

As water moves through soil it dissolves soluble minerals and carries them in solution down to the water table. If contaminants are present they will be swept along as well. These may include pesticides in agricultural fields, or solid wastes at federal dump sites; either way, they eventually will reach the ground water, affecting water quality. Monitoring systems can help track the movement of these substances and assist government agencies in deciding what to do.

What has been done?

Soil scientists at The University of Arizona, have tested four different strategies for monitoring water and chemicals as they pass through the vadose, or unsaturated zone in soil.

The field site is a one-acre plot of bare ground criss-crossed with a very dense surface drip system set up in a grid for applying water and selected tracking chemicals. Various measuring tools were installed in different configurations throughout the field. These have been evaluated for effectiveness and practicality.

Impact

Governmental agencies are incorporating these monitoring methods into their repertoire of strategies for reducing contaminants in the environment. Representatives from the EPA, Department of Energy, the NRC and the Agricultural Research Service attended technology transfer meetings held on-site in Arizona and in Washington D.C. in 1998 and 1999 to learn more about these

strategies for monitoring contaminants in soil. In addition, tests on computer models using the data from this project are currently underway. These models will soon be used at sites in the U.S. where groundwater contamination is suspected.

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Contact

Peter Wierenga, professor and head
Department of Soil, Water and Environmental Sciences
The University of Arizona
Shantz Bldg. Rm 429
Tucson, AZ 85721
Tel.: (520) 621-7228 FAX: (520) 621-621-1647
Email: wierenga@ag.arizona.edu