

# Researchers reveal that organic agriculture can pollute groundwater

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Researchers from Ben-Gurion University of the Negev (BGU), using specialized monitoring technology, have determined that intensive organic agriculture in greenhouses in Israel can cause significant pollution from nitrate leaching into groundwater.

Public demand has led to the rapid development of organic farming in recent years to provide healthy food products that are free of chemical additives and to reduce industrial and [groundwater pollution](#) worldwide. But, according to the paper published in *Journal Hydrology and Earth System Sciences*, intensive organic matter using composted manure prior to planting resulted in significantly higher groundwater pollution rates compared with liquid fertilization techniques.

The study used Vadose Zone Monitoring System technology developed at BGU and commercialized by Sensoil Innovations Ltd. to compare the water quality across the entire unsaturated zone under organic and conventional greenhouses in Israel. The system is designed to monitor liquid, gas and soil hydraulic properties and allows real time continuous tracking of water in deep sections of the vadose zone, from land surface to groundwater. It is currently being used in more than 25 commercial and research sites in the United States, Israel, Spain, Namibia, and South Africa.

While groundwater pollution is usually attributed to a large array of chemicals, high nitrate concentration in aquifer water is the main cause for drinking-water well shutdowns. The down leaching of nitrates under

intensive [organic farming](#) is due to nutrient release from the compost to the soil during the early stages of the growing season. In this stage, nutrient uptake capacity of the young plants is very low and down leaching of nitrates to the deeper parts of the vadose zone and groundwater is unavoidable.

Provided by American Associates, Ben-Gurion University of the Negev

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