Hazardous Chemicals from Animal Waste Discovered in Groundwater

COLLEGE STATION – Within the last several years scientists have found that groundwater quality in the United States could be in jeopardy because of chemicals produced by animal waste from Concentrated Animal Feeding Operations (CAFOs). Under certain circumstances these chemicals have the potential to run off into water sources and end up in drinking water. Soil Scientist Dr. Ariel Szogi from the USDA Agricultural Research Service said that if farmers do not begin proper management of waste that comes from their livestock facilities, then U.S. groundwater quality could be in serious danger.

CAFOs hold hundreds or even thousands of animals in a confined area where their primary purpose is to be grown and sent to slaughter as quickly as possible. According to the Economic Research Service (ERS)
between 1987 and 1997 the total number of animals in a feeding operation increased by 10 percent, while the actual number of facilities decreased by more than half. This means that more animals are being jammed together in a smaller area causing an increased manure build up. It has been found that manure from CAFOs has a tendency to leak into the ground because of poorly lined holding tanks or because of an overflow, which causes harmful chemicals to run off into groundwater.

According to Szogi, “animal waste contains many nutrients that can be potentially hazardous to humans if consumed in large amounts.” Some of these nutrients include arsenic, Nitrogen, Phosphorous, and various pathogens. “The worst part of all this” said Szogi, “is that nobody would even know they were drinking contaminated water.”

Most of these chemicals are not harmful unless exposure exceeds the amount that the human body can use for basic management. Arsenic is a toxin and a known carcinogen. Nitrogen and phosphorus in surface water will increase algae growth in rivers and streams, degrading aquatic life. Excess intake of nitrogen has also been found to be the cause of Blue Baby Syndrome in infants under a year of age. Other harmful effects have been attributed to prolonged exposure to organic matter and pathogens which can cause cancer and birth defects.

Government officials and concerned scientists are working hard to find solutions to prevent harmful chemicals from getting into drinking water.
For instance, the Environmental Protection Agency (EPA) has partnered with the National Pollutant Discharge Elimination System (NPDES) in attempts to set waste management regulations for CAFOs. In 2003 the EPA also revised the Clean Water Act in hopes of reducing the amount of animal waste nutrients running off into surface and groundwater. Much work and research is still needed to be done. Szogi said, “we cannot simply reduce the amount of animals in CAFOs because of the large demand for the meat and other economic products that come from those facilities. New waste management techniques will be the most important factor in preventing groundwater contamination but so far no one solution has been found.”

-End-