



FACT SHEET:

Intensive Livestock Operations and Water

At one time, crop and livestock production were complementary enterprises on mixed family farms, with the number of animals kept in proportion to the number of acres that grew crops for the animals' food. As well, most of the nutrients originating from those animals were returned to the soil in the same area.

Today, most cattle, hogs and poultry are concentrated in large holdings (such as giant feedlots of 20,000 cattle or more, mega hog barns of 5,000 to 20,000 hogs or more, poultry batteries of 100,000 birds or more) on small land areas, and are raised under intensive conditions resembling manufacturing processes. The animals' feed is often grown far from these 'animal factories' and the manure is spread or sprayed onto fields and pastures as raw, untreated liquefied slurry in quantities that exceed the nutrient needs of crops.

Using hog manure as an example, the combination of the composition of the manure, the massive amount of manure produced, and the inexpensive way in which it is disposed, creates an enormous threat of pollution to both surface and ground water – the source of drinking water for most Canadians.

Composition of the manure

Compounds in hog manure, many of them toxic or pathogenic, may include: water, hog urine and feces, hormones, human waste, hog carcasses, cleaning chemicals, insecticides, weed seeds, volatile organic compounds, salts, nitrogen, phosphorus, potassium, calcium and manganese (common in all manures), metals (cadmium, zinc, nickel, lead, iron, manganese, boron and copper are added to hog food to promote growth and prevent disease), vaccines, subtherapeutic levels of antibiotics (to increase the growth and to keep the animals alive under the unnatural confined living conditions), antibiotic-resistant bacteria, parasites, and other bacterial and viral pathogens such as the now familiar *cryptosporidium*, *salmonella* and *e-coli*.

Quantity of manure

One 5,000-sow farrow-to-finish hog factory, producing 2,400 piglets per week, 52 weeks per year, uses 50-55 million gallons of drinking water per year. The animals will drink some of this water, but most of it will be used to flush the manure out of the barns into lagoons or holding pits beside the barns. 40 million gallons of liquid manure is produced per year, all needing to be spread or sprayed on nearby fields and pastures for disposal.

In Canada, there are more than 13 million cattle, 11 million pigs, half a million horses and mules, and close to a million sheep and goats. With the proliferation of industrial-sized livestock operations comes an unprecedented volume of animal waste. Although Canada spends billions of dollars to treat human sewage, the far greater volumes of animal manure produced on factory farms receive no treatment at all.

Manure Disposal

When liquid manure is spread or sprayed onto land, particularly around abandoned, uncapped wells, or if heavily incorporated into shallow or well-drained soils, groundwater is at risk for pollution. It can take nature from 10 to 10,000 years to cleanse or recharge aquifers after pollution or depletion.

Nitrogen pollution of water increases the nitrate content. Nitrates in drinking water cause methemoglobinemia, or "Blue Baby Disease", which results in digestive and respiratory problems and in severe cases, brain damage or death.

Liquid manure contains a higher proportion of phosphorus to nitrogen in relation to crops' ability to absorb these nutrients. When manure is applied at rates in excess of a crop's phosphorus requirements there is a build-up of soil phosphorus, which is susceptible to running off in heavy rain or spring snow melt, contaminating surface water.

Phosphorus pollution contributes to eutrophication — algae proliferation, death of fish, and surface

water degradation. There is a suspected link between blue-green algae toxins and Alzheimer's disease.

The long-term routine use of antibiotics in animal feed produces antibiotic resistant strains of bacteria in the animals' gut, "superbugs" which, along with traces of the antibiotics, pass through the animal into the manure to be spread on the surrounding fields, and may end up in drinking water supplies. If a superbug is making you sick, the search for an effective antibiotic against this illness could quickly become a critical issue. There is now worldwide recognition of the urgent need to ban the overuse of antibiotics and protect the ones that are still effective.

Solutions

Livestock production does not need to be damaging to water supplies or quality. Straw bedding, pastured, and hoop house hog production do not use liquid manure systems. These systems do not require routine antibiotics in the feed either.

"Learning to compost manure, reducing the water content and smell and killing germs is the way to start, before we build 20,000-hog farms," says Dr. David Schindler of the University of Alberta, Canada's best-known water pollution expert. He points out, "Pigs share eight to 10 of the most common bacteria and parasites that infect humans. If these were humans that were crapping all over the landscape, the whole population would be up in arms. With the same pathogens and the same nutrients coming out of hogs and cattle, why are we tolerating them?" **BFF**

- Fact Sheet author Elaine Hughes is an environmental activist from Archerwill, Saskatchewan, and a member of the Beyond Factory Farming Steering Committee

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<http://www.stopthehogs.com/pdf/water-sen-brochure.pdf>

Unnatural Law, Rethinking Canadian Environmental Law and Policy, by David R. Boyd, UBC Press, 2003

Organizations working on water and factory farming issues:

National Farmers Union

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