

Animal Waste From Factory Farms Poses Health Risk

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✓ Fact Checked

May 16, 2023

STORY AT-A-GLANCE

- › Communities near hog CAFOs have higher mortality rates from anemia, kidney disease, tuberculosis and septicemia, as well as higher infant mortality, likely due to exposure to hog waste
- › CAFO animal waste is made all the worse by the fact that these animals are routinely fed antibiotics, which promotes drug-resistant bacteria
- › Drug-resistant pathogens are not only found on meat, they can also spread from CAFO feedlots into the environment via the air, spreading far and wide by wind
- › Manure from industrial agriculture is the primary source of nitrogen and phosphorus in waterways. Resulting damage includes algae overgrowth that depletes the water of oxygen, killing fish and other marine life
- › Slaughterhouses are another source of nitrogen pollution, and three-quarters of U.S. meat processing plants that discharge wastewater into local waterways have violated the pollution limits of their federal Clean Water Act permits

Editor's Note: This article is a reprint. It was originally published October 30, 2018.

Concentrated animal feeding operations (CAFOs) – gigantic factory farms that hold many thousands of animals in a warehouse-style setting – are an environmental disaster in more ways than one, and when hurricanes hit, this fact becomes acutely obvious when animal waste, collected in massive “lagoons,” overflow, contaminating both land, water and residential homes.

Even under the best circumstances, the lagoons may leak, seeping millions of gallons of waste a year into neighboring soil and groundwater.¹ Add in a formidable force like a hurricane and the potential for leakage, overflow and runoff is virtually guaranteed.

Environmental contamination from overflowing animal waste is bad enough in and of itself, but CAFO waste is made all the worse by the fact that these animals are routinely fed antibiotics, which promotes antibiotic-resistant bacteria.

These drug-resistant pathogens are then spread through the environment in a variety of ways. Storms drive contaminated water across large areas, wind spread airborne pathogens, and other foods are contaminated by using the waste as fertilizer.

Hog Waste Poses Risks to Public Health

Vice News highlighted some of the problems associated with North Carolina's CAFO hog waste in a recent article, noting:²

"The waste-filled lagoons have created a constant source of environmental pollution during hurricanes, which frequent North Carolina's coast. Lagoons overflowed or breached in 1996 during Hurricane Fran, in 1998 during Hurricane Bonnie, in 1999 during Hurricane Floyd, in 2016 during Hurricane Matthew, and just last month during Hurricane Florence – 33 overflowed."

Hurricanes, which hit North Carolina with regularity, clearly compound the environmental problems associated with hog CAFOs, but it's an inescapable issue for residents year-round.

When the lagoons are emptied by spraying the liquid waste onto fields, nearby residents are quite literally showered with liquefied feces, and several studies^{3,4,5} have noted the health dangers of living near these CAFOs. A North Carolina swine farm nuisance lawsuit⁶ even presents evidence of hog DNA collected from the walls in residential homes.

Many find the stench unbearable and the air hard to breathe. Most recently, a study⁷ published in the North Carolina Medical Journal found communities near hog CAFOs have higher mortality rates from anemia, kidney disease, tuberculosis and septicemia, as well as higher infant mortality. According to the authors:

“Although not establishing causality with exposures from hog CAFOs, our findings support the need for future studies to determine factors that influence these outcomes, as well as the need to improve screening and diagnostic strategies for these diseases in North Carolina communities adjacent to hog CAFOs.”

As noted in the featured article,⁸ more than 20 nuisance lawsuits have been filed against the industry, arguing the stench and contamination from hog waste is reducing residents' quality of life. So far, the first three cases were won by the plaintiffs, who were awarded \$2.5 million,⁹ \$25 million¹⁰ and \$473 million¹¹ in punitive damages respectively.

Antibiotic-Resistant Pathogens Are a CAFO Scourge

American livestock farmers use nearly 30 million pounds of antibiotics each year in the raising of their animals.^{12,13} Most of these are raised in CAFOs, where overcrowding, lack of sanitation, stress and an unnatural diet make the animals prone to illness. Antibiotics are routinely added to their feed to combat disease.

Antibiotics also have the side effect of promoting growth, making the animals grow fatter faster, which is another reason for the drugs' use. This agricultural use accounts for about 80% of all antibiotics used in the U.S.,¹⁴ making it a significant source of continuous low-dose exposure via your diet.

However, while low-dose antibiotic exposure is a health risk, a far more significant concern is the antibiotic-resistant bacteria CAFO meats may harbor. As revealed by a recent analysis of food testing done by the Food and Drug Administration (FDA) in 2015, 83% of meats sold in U.S. supermarkets are contaminated with enterococcus faecalis,

i.e., fecal bacteria. A high percentage are also contaminated with antibiotic-resistant bacteria.^{15,16}

- 79% of ground turkey samples were contaminated with drug-resistant enterococcus faecalis; 73% of the salmonella found on ground turkey was antibiotic-resistant salmonella
- 71% of pork chops were contaminated with drug-resistant enterococcus faecalis
- 62% of ground beef samples were contaminated with drug-resistant enterococcus faecalis
- 36% of chicken breasts, legs, thighs and wings were contaminated with drug-resistant enterococcus faecalis; 1 in 5 strains of salmonella was resistant to amoxicillin, a type of penicillin, which as a class is designated as “critically important” in human medicine

Drug-Resistant Bacteria From Feedlots Go Airborne

Antibiotic-resistant bacteria are not just in the meat, however. Researchers have found drug-resistant pathogens can also spread from CAFO feedlots into the environment via the air, spreading far and wide by wind.^{17,18,19,20}

Between August and December 2012, Phil Smith, an associate professor of terrestrial ecotoxicology at Texas Tech and his colleague, Greg Mayer, an associate professor of molecular toxicology, collected air samples from 10 commercial cattle yards within a 200-mile radius of Lubbock, Texas. Texas Monthly reported the findings, saying:²¹

“... Downwind, they found antibiotics – specifically tetracycline – present at significantly higher levels than in the upwind samples. Yet as they dug deeper, they discovered something even more worrisome. Along with the antibiotics, they found another hitchhiker: remnants of bacteria that had acquired a gene that made them resistant to tetracycline.”

'The tetracycline resistance was 400,000 percent more prevalent downwind than upwind,' said Smith. At some of the locations, there was tetracycline resistance in 100 percent of the samples. 'That was really the wow moment,' said Mayer.'

The pair explain that the drug-resistant genes are contained in the fecal matter. When it dries, it allows the genes to spread by winds over great distances. The study estimates that the amount of potentially contaminated dust particles released by cattle yards in Colorado, Kansas, Nebraska, Oklahoma and Texas exceeds 46,000 pounds (21,000 kg) per day.

So not only can you be exposed to antibiotic-resistant bacteria via water and contaminated meat, depending on where you live, simply breathing could be a route of exposure as well.

Smith also notes that microbes are "promiscuous with their genetic information," and can share their genetic information across species.²² What this means is that microbes that have not been directly exposed to antibiotics may still develop resistance, simply by coming into contact with drug-resistant bacteria.

The fact that this mingling may occur just about anywhere — even out in nature — is troubling, as it implies there's virtually no way to stop the progression of resistance. It simply cannot be confined.

Cattle Industry Tries to Kill the Story

As reported by Texas Monthly,²³ the findings caused quite the headache for the Texas Cattle Feeders Association. Its president and CEO, Ross Wilson, said the idea that antibiotic-resistant bacteria were airborne was "a big accusation" based on "a superficial, initial set of science."

"They found genetic material. That does not mean that there's any organism that is out there that is going to transfer that potential resistance," Wilson said.

“And if people expect us to sit idly by and not defend our members when some are alleging this is our fault, it’s not happening.”

Mayer and Smith agree there are unanswered questions, such as “What is the consequence of the bacteria’s gene sequence when it lands?” and “Can it cause an infection in humans?” Texas Monthly continues:

“If the bacteria are dead ... then what Smith and Mayer found was naked DNA, which is released by bacteria after their cell walls have decomposed. When these pieces of DNA fall out of the wind, they can be picked up by bacteria on the ground, in a process known as transformation.

If live bacteria downwind of the feed yard absorbed the DNA found in Smith and Mayer’s samples, they could acquire antibiotic resistance, though the process is much less efficient than conjugation. Smith and Mayer don’t know if the bacteria they detected downwind of the feedlots were dead or alive.

Nor do they know at what concentrations the bacteria might be found as they move farther away from the feedlots. But they had demonstrated that antibiotic resistance could be spread on the wind.”

Disturbed by comments made by Smith and Mayer during the media storm that followed the publication of their findings, Wilson called the duo for a meeting, in which he asked them to dial back the media attention. According to Texas Monthly:

“The incident upset Smith and Mayer, who have both grown weary of the controversy their research has sparked. ‘This is like nothing I have ever experienced in science before. And it’s not that we haven’t done cooler things, better things, more technical things,’ said Mayer.

‘It’s just that there isn’t a big industry that cares about it.’ Smith put it another way. ‘They would like nothing more than for us to zip our mouths, put our instruments away, and never do another study,’ he said ... ‘I just don’t like to be bullied’ ...”

Slaughterhouse Wastewater Is Destroying Rivers Across US

According to the U.S. Environmental Protection Agency, manure from industrial agriculture is the primary source of nitrogen and phosphorus in waterways.²⁴ The resulting damage includes algae overgrowth that depletes the water of oxygen, killing fish and other marine life. (Such risks are again magnified if large quantities of waste enter waterways following hurricane-driven flooding or overflow.)

Slaughterhouses are another surprising source of nitrogen pollution. A recent report²⁵ published by the Environmental Integrity Project found that 3 in 4 American meat processing plants that discharge nitrogen waste into local waterways have violated the pollution limits of their federal Clean Water Act permits at least once between January 1, 2016, and June 30, 2018.

One-third of them had 10 or more violations. FB Purnell Sausage Co. in Simpsonville, Kentucky, had a record 109 permit violations over this time period. Of the 98 processing plants reviewed, the JBS USA pork processing plant in Beardstown, Illinois, was identified as the No. 1 polluter, discharging 1,848 pounds of nitrogen per day into the Illinois River.

That's equal to the raw sewage created by a town of 79,000 residents. On average, each slaughterhouse released 331 pounds of total nitrogen per day into local waterways in 2017. As noted in the report:

"While meatpacking is obviously cleaner today than it was more than a hundred years ago, slaughterhouse waste contaminates too many rivers and streams in rural America with pathogens, oxygen-depleting pollutants like nitrogen and phosphorus, and other contaminants like sulfates and chlorides.

When released into waterways in high concentrations, these pollutants drive excess algae growth, feed "dead zones" that suffocate aquatic life and turn waterways into bacteria-laden public health hazards ...

Slaughterhouses dispose of wastewater in three ways, typically after some treatment: piping it directly into waterways, spraying it on land or sending it to a nearby town or county sewage treatment plant. Sixty-five of the 98 plants we studied slaughter poultry; 15 process beef; 9, hogs; and the rest other meat.”

Tyson Foods had the greatest number of plants with violations – 26 in all – followed by Pilgrims’ Pride, which had seven plants in violation, and Sanderson Farms with six plants. According to the report, “Large pollution loads and frequent permit violations are impairing streams and rivers. Fifty-nine of the 98 plants discharge to waterways that are impaired by one or more pollutants found in slaughterhouse wastewater.”

The report also notes that enforcement of pollution limits and penalties for violations are rare. During the time period reviewed, 18 plants had more than 100 violations per day, yet eight of them paid no fines at all.

Buy Organic and Grass Fed

What can be done about all of these problems? From an individual standpoint, one of the most proactive things you can do to promote change is to vote with your wallet by buying organic (or even better, biodynamic) grass fed meats and animal products.

Livestock is an important part of [regenerative agriculture](#), and when raised and integrated properly, the waste from the animals goes straight back into and feeds the ecological cycle rather than becoming a source of pollution.

While many grocery stores now carry organic foods, it’s preferable to source yours from local growers whenever possible, as many organic foods sold in grocery stores are imported.²⁶ If you live in the U.S., the following organizations can help you locate farm-fresh foods:

[Demeter USA](#) – [Demeter-USA.org](#) provides a directory of certified Biodynamic farms and brands. This directory can also be found on [BiodynamicFood.org](#).

American Grassfed Association – The goal of the American Grassfed Association is to promote the grass fed industry through government relations, research, concept marketing and public education.

Their website also allows you to search for AGA approved producers certified according to strict standards that include being raised on a diet of 100% forage; raised on pasture and never confined to a feedlot; never treated with antibiotics or hormones; and born and raised on American family farms.

EatWild.com – EatWild.com provides lists of farmers known to produce raw dairy products as well as grass fed beef and other farm-fresh produce (although not all are certified organic). Here you can also find information about local farmers markets, as well as local stores and restaurants that sell grass fed products.

Weston A. Price Foundation – Weston A. Price has local chapters in most states, and many of them are connected with buying clubs in which you can easily purchase organic foods, including grass fed raw dairy products like milk and butter.

Grassfed Exchange – The Grassfed Exchange has a listing of producers selling organic and grass fed meats across the U.S.

Local Harvest – This website will help you find farmers markets, family farms and other sources of sustainably grown food in your area where you can buy produce, grass fed meats and many other goodies.

Farmers Markets – A national listing of farmers markets.

Eat Well Guide: Wholesome Food from Healthy Animals – The Eat Well Guide is a free online directory of sustainably raised meat, poultry, dairy and eggs from farms, stores, restaurants, inns, hotels and online outlets in the United States and Canada.

Community Involved in Sustaining Agriculture (CISA) – CISA is dedicated to sustaining agriculture and promoting the products of small farms.

The Cornucopia Institute — The Cornucopia Institute maintains web-based tools rating all certified organic brands of eggs, dairy products and other commodities, based on their ethical sourcing and authentic farming practices separating CAFO "organic" production from authentic organic practices.

RealMilk.com — If you're still unsure of where to find raw milk, check out Raw-Milk-Facts.com and RealMilk.com. They can tell you what the status is for legality in your state, and provide a listing of raw dairy farms in your area. The Farm to Consumer Legal Defense Fund²⁷ also provides a state-by-state review of raw milk laws.²⁸ California residents can also find raw milk retailers using the store locator available at www.OrganicPastures.com.

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