

Avian flu outbreak raises a disturbing question

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If it's true that you are what you eat, then most beef-eating Americans consist of a smattering of poultry feathers, urine, feces, wood chips and chicken saliva, among other food items.

As epidemiologists scramble to figure out how dairy cows throughout the Midwest became infected with a strain of highly pathogenic avian flu—a disease that has decimated hundreds of millions of wild and farmed birds, as well as tens of thousands of mammals across the planet—they're looking at a standard "recycling" practice employed by thousands of farmers across the country: The feeding of animal waste and parts to livestock raised for human consumption.

"It seems ghoulish, but it is a perfectly legal and common practice for chicken litter—the material that accumulates on the floor of chicken growing facilities—to be fed to cattle," said Michael Hansen, a senior scientist with Consumers Union.

It is still unclear how the cows were infected—whether by contact with birds, or via feed made from litter waste—but litter has been associated with previous outbreaks of disease, including botulism.

Poultry litter causing the bovine cases of avian flu is considered "very unlikely, though not impossible" wrote Veronika Pfaeffle, in a joint statement from the U.S. Department of Agriculture and the Food and Drug Administration.

Poultry litter consists of manure, feathers, spilled feed and bedding material that accumulate on the floors of the buildings that house chickens and turkeys. It can contain [disease-causing bacteria](#), viruses (including H5N1), antibiotics, toxic heavy metals, pesticides and even foreign objects such as dead rodents, birds, rocks, nails and glass.

It is typically mixed with hay or corn to make it palatable to livestock.

California bans the feeding of [poultry litter](#) to lactating dairy cows. However, it is legal to sell it as feed to beef and other cattle.

"It is a premium product used to help recycle waste into a sustainable product," said Anja Raudabaugh, CEO of Western United Dairies. She said that although she could not make informed comments about its use outside of the state, "there is very little of it used here in California."

California's animal feed law—which applies to commercially sold feeds—requires that animal waste products sold for feed must contain no residues of pathogens, metals, pesticides or antibiotics.

The Department of Food and Agriculture's Feed Program "inspects every California facility manufacturing dried poultry litter and reviews firms' treatment verification records onsite," said Steve Lyle, department spokesman.

However, it is unclear whether there are regulations addressing the private exchange or production of poultry litter or other animal waste for feed. Or how widespread the practice of feeding poultry waste to cattle is in the state or around the country.

It "was a common practice throughout the U.S. for many years," said Lyle. "It is not a very common practice in California anymore."

According to Michael Payne, a researcher and outreach coordinator at the Western Institute of Food Safety and Security at UC Davis, there was at least one commercial processor of poultry litter in the state—Imperial Western Products, based in Coachella. That company was bought in 2022 by Arkansas' Denali Water Solutions—which has had recent legal run-ins with environmental authorities in Missouri and Alabama over its handling of animal waste.

It is unclear whether Imperial still produces feed from litter. An operator at the company directed calls to "corporate," or Denali Water Solutions, which is owned by TPG Growth, a private equity firm. Denali did not

provide comments for this story before publication.

The federal government does not regulate poultry litter in animal feed, and in many states—including Missouri, Alabama and Arkansas— there are no requirements or regulations regarding contamination or processing.

"The FDA may take regulatory action if it becomes aware of food safety concerns with poultry litter products intended for use in animal food in interstate commerce," Pfaeffle said in the statement from both the USDA and FDA.

An online guide from the University of Missouri notes there are "no federal or Missouri regulations governing the use of poultry litter as a feed." However, the guide's authors urge users to employ "common sense."

"Poultry litter should not be fed to dairy cattle or beef cattle less than 21 days before slaughter," the guide notes, citing concerns about "residues of certain pharmaceuticals."

Most other developed nations—including Canada, the United Kingdom and the countries within the European Union—have banned the practice. The FDA considered doing so in the U.S. in the mid-2000s.

For cattle farmers, the waste—which includes calcium, zinc and other minerals and vitamins—provides a cheap form of protein feed. For poultry farmers, the exchange allows them to divert the litter away from a landfill or from being burned.

In the 1980s, concerns about bovine spongiform encephalopathy—or [mad cow disease](#)—took hold across Europe, when cases of the incurable and invariably fatal neurodegenerative disease of cattle began to appear.

The disease, which is caused by folded proteins known as prions, can transfer to people who eat the meat of infected cattle. In people, the disease is fatal and called Creutzfeldt-Jakob disease.

Just as cattle are fed poultry waste, chickens are often provided feeds that consist of cattle waste and renderings—creating a potential route for prions to re-enter the food supply. However, because the FDA mandates the removal of all tissues shown to carry the prions—such as brains and spinal cords—from poultry diets, the risk is reduced.

However, other more common pathogens are also found in poultry litter. In one 2019 study of litter used on farm fields as fertilizer, researchers found that every sample tested from U.S. broiler chickens carried *E. coli* strains resistant to more than seven antibiotics—including amoxicillin, ceftiofur, tetracycline, and sulfonamide.

It is unclear if the litter was heat treated before it was applied.

Raudabaugh said all poultry litter feed in California is kiln heated and exposed to temperatures that can kill bacteria, such as *E. coli*, and viruses, including H5N1.

"Firms are sampling and analyzing finished product for *Salmonella* regularly," said Lyle, the state's food and agriculture spokesman.

He noted that poultry is regularly tested for bird flu and that poultry waste from a flock infected with bird flu "cannot leave the premises until it has met CDFA requirements for ensuring the virus has been eliminated," he said. "The premises is also tested and the quarantine is not released until the premises tests negative for highly pathogenic avian influenza."

Lyle said cattle herds with "symptoms consistent" with bird flu

infections "can be tested at the California Animal Health and Food Safety Laboratory in consultation with the CDFA Animal Health Branch."

He added that no symptomatic herds have been identified, "although one herd that lost pregnancies was tested and was negative" for the virus.

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