

Legislative Analysis



ALLOW DISPOSAL OF DEAD ANIMALS IN METHANE DIGESTERS

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House Bill 4905 without amendment

Sponsor: Rep. Arlan Meekhof

Committee: Agriculture

First Analysis (3-11-08)

BRIEF SUMMARY: The bill would amend the Bodies of Dead Animals Act (BODA), Public Act 239 of 1982, to allow the disposal of dead animals in methane (anaerobic) digesters.

FISCAL IMPACT: The bill has no apparent fiscal impact on state or local government.

THE APPARENT PROBLEM:

The proper disposal of the bodies of dead animals is an ongoing need for livestock and poultry operations, and other businesses involving animals. Livestock and poultry operations will always have a certain number of routine "mortalities," and, at times, whole herds must be destroyed to control or eradicate a disease. In addition, sometimes a natural disaster such as a flood, or manmade disasters (such as the accidental introduction of PBBs into cattle feed in the 1970s), creates the need to dispose of a large number of animal carcasses in a short period of time. In short, the proper disposal of animal carcasses is important ongoing public health and environmental issue. This bill would allow an additional method for dealing with routine mortalities on farms.

Current disposal methods for dead animals include rendering, burial, landfilling, incineration, and composting. Rendering turns animal carcasses into other products, typically animal feed for pets. The emergence of bovine spongiform encephalopathy (BSE or mad cow disease), and similar diseases, however, has led to restrictions on the use of rendered products in the United States, and rendering facilities have decreased in number. Incineration can be costly and can adversely affect air quality. Burial can be difficult, especially during the winter months in Michigan, and has the potential to contaminate groundwater. (In November 2007, a Michigan farm was found to have violated Michigan law by burying 4,100 hogs within 200 feet of a groundwater well.) Disposal of carcasses in landfills presents other challenges. In light of these challenges, composting of carcasses is becoming more common. In 2005, the Bodies of Dead Animals Act was amended to allow farms to use additional methods to compost carcasses. Whereas carcass composting previously had to be done in specified structures, the 2005 amendments allowed farmers more options including windrow, static pile, in-vessel composting. As required by the 2005 amendments, the Department of Agriculture has released proposed regulations pertaining to carcass composting.

House Bill 4905 would add methane digesters, also called anaerobic digesters or biodigesters, to the list of permissible active composting methods subject to regulation by the Department of Agriculture. (Although the bill categorizes methane digestion as a

form of active composting, some say that anaerobic digestion is a wholly different process than active composting, and that it should be categorized or defined differently in the bill. It is, by definition, not a form of "aerobic composting"; it may be a form of "anaerobic composting.") Methane digesters are currently being used in a few locations in Michigan primarily to process large quantities of manure, bedding, and food wastes, but not as a method of carcass disposal.

A methane digester is an enclosed tank that excludes oxygen, through which organic materials, often manure, are passed and broken down by naturally occurring bacteria and enzymes. The resulting gases, including methane and others, can be converted to heat and electricity for use or sale to the grid or a utility. The liquid byproduct is usually filtered in some fashion to separate solids from the liquid. The leftover liquid may be used as a water source for irrigation or reused in the digester's operation. The separated solids may be used or sold as "value-added products" such as animal bedding or fertilizer. Michigan State University is developing products such as deck lumber made from an odorless composite of plastic and manure processed by anaerobic digestion.

The bill's proponent is a dead animal hauler/renderer who currently collects animals from a number of farms and disposes them in landfills. This business is considering construction of a methane digester to process and reduce the quantity of carcass materials disposed of in landfills. By grinding carcasses and processing them in a methane digester, he intends to reduce the material he takes to landfills by as much as 90 to 95 percent, and reduce (but not eliminate) disease pathogens contained in the carcass material. He testified that the resulting byproducts might have to undergo additional treatment following processing in the digester to destroy persistent pathogens not killed in the digester before further disposal.

The Department of Agriculture would be required under the bill to promulgate administrative rules concerning the use of methane digesters for carcass disposal. In addition, the department testified that it is already developing a program to educate and certify operators and managers of methane digesters.

A key consideration for legislators and/or regulators should this method be approved would be to minimize or prevent the spread of pathogens from diseased animals to other animals or to humans given that the digester operator would collect dead animals from many different herds and farms. It is thought that methane digestion (even those using the highest heat) may kill or deactivate most, but not all, pathogens. Of particular concern would be heat resistant pathogens, the prions thought to cause a family of fatal neurological diseases known transmissible spongiform encephalies, so named because of the sponge-like holes they cause in animal or human brains. It is not thought that any form of anaerobic digestion destroys or inactivates prions. Alkaline hydrolysis and incineration at extraordinarily high heat are the only known methods of disposing of prions.

THE CONTENT OF THE BILL:

The bill would amend Public Act 239 of 1982 to allow the disposal of dead animals in methane digesters.

The act was previously amended by Public Act 66 of 2005 to permit the disposal of dead animals by active composting methods. The bill would explicitly specify methane digesters as one of the composting methods for which the Department of Agriculture must promulgate rules. "**Methane digester**" would mean a system designed to facilitate the production of methane from anaerobic microbial digestion of animal or food waste, including dead animals.

"**Dead animals**" currently means restaurant grease as well as the bodies, body parts, and other materials from slaughtered animals or animals that have died from any other cause and which are not intended for human food. The term does not include finished products processed by approved methods. The bill would not change the existing definition of "dead animals."

Currently, "**active composting**" means the accelerated decomposition of organic materials leading primarily to the production of carbon dioxide, water, heat, and compost. The bill would add **methane** to the list of the primary products resulting from active composting.

The act requires the department to promulgate administrative rules on a variety of topics relating to the transportation and disposal of dead animals. The bill would add "methane digesters" to the list of active composting methods for which the department must promulgate rules.

BACKGROUND INFORMATION:

The Proper Disposal of Animal Carcasses in Michigan, An Industry Guide to the Bodies of Dead Animals Act, a pamphlet published by the Michigan Department of Agriculture, is available online at http://michigan.gov/documents/MDA_BODA_80099_7.pdf

The Department of Agriculture proposed new administrative rules concerning the bodies of dead animals on June 25, 2005. Among other things, the new administrative rules adopt by reference the following standards:

- The Natural Resources Conservation Service, 635 Wastewater Treatment Strip Conservation Practice Standard.
- The Generally Accepted Agricultural Management Practices for Nutrient Management.
- The Natural Resources Conservation Service 313 Waste Storage Facility Conservation Practice Standard.

- Michigan Animal Tissue Composting Operational Standards, Michigan State University and Natural Resources Conservation Service, Sept. 2006.

Other states' regulations concerning carcass disposal collected by Biosecurity Resource Center for Animal Health Emergencies may be found at www.biosecuritycenter

Sources of additional information:

The National Biosecurity Resource Center for Animal Health Emergencies' website offers information on state regulations regarding carcass disposal and for reporting of animal diseases. See www.biosecuritycenter

Carcass Disposal: A Comprehensive Review, 2007, National Agricultural Biosecurity Center Consortium, (See, in particular, Chapter 7, "Anaerobic Digestion.")

Larson, Jean, *Disposal of Dead Production Animals Bibliography*, 1988-2006, revised November, 2006, USDA, <http://www.nal.usda.gov/awic/pubs/carcass.htm>

Langwith, Jacqueline, *Methane Digesters*, Legislative Brief, January 2007, Legislative Service Bureau (LSB), Research Division, available online to legislators and staff.

A Consumer's Guide to Energy Efficiency and Renewable Energy, Economics and Benefits of Anaerobic Digestion,
http://www.eere.energy.gov/consumer/your_workplace/farms_ranches/index.cfm/mytopic=30005?print

ARGUMENTS:

For:

Processing dead animals in anaerobic digesters could provide environmental advantages, such as a reduction in the amount of carcass materials sent to landfills. Currently, large numbers of carcasses are disposed of in landfills at least in some areas. Committee testimony indicated that if carcasses were processed by anaerobic digestion before disposal in a landfill, the quantity of carcass material sent to landfills could possibly be reduced by as much as 90 to 95 percent.

In addition, to the extent that the methane gas created by the breakdown of the carcasses is captured and used to generate heat or electricity, the use of anaerobic digestion to process dead animals may reduce greenhouse gas emissions as well as provide a source of renewable energy. Some Michigan farmers who are currently using methane digesters to process manure use the heat and electricity generated on their farms or sell excess electricity.

Having a commercial methane digester in operation dedicated to processing a variety of types of carcasses (and with experience doing so) would expand available alternatives for carcass disposal in Michigan. As each available method of carcass disposal has pros and cons, it would be to Michigan's advantage to expand the number of alternatives, subject to regulation.

Given that construction of an anaerobic digester is very expensive, owners must know that disposal of dead animals by anaerobic digestion would be permissible under state law before making such a large investment. The bill would encourage investment in this promising technology.

Against:

Very limited research has been done about anaerobic digestion as a method of carcass disposal, particularly for large animals, beyond limited research concerning the processing of poultry carcasses. As written, the bill classifies "methane digesters" as a method of composting, although some would say that anaerobic digestion is not a method of composting. Nevertheless, under current Michigan law, composting is only an approved method for the normal natural daily mortality intrinsic to an animal operation under common ownership or management. Any time the normal natural daily mortality in an animal production unit increases for any reason, the increase must be reported to the director of the Department of Agriculture, and the animals associated with that increase in mortality must not be composted without permission of the director. To the extent that the bill is intended to allow the anaerobic processing of animals from different animal operations *not* under common ownership or management, it raises concerns.

To the extent carcasses and animal parts collected from many different herds, farms, and species are combined in a single methane digester, it may be important to regulate the use of the resulting water and byproducts to avoid the spread of pathogens. For example, when carcasses are composted, the resulting "fertilizer" is limited to use on the farm where the dead animals came from. If a commercial methane digester processed animals from different herds, species, and farms, reuse of the water and byproducts may need tight regulation.

Response:

Although the bill would authorize the use of anaerobic digestion for carcass disposal, it also calls for the Department of Agriculture to issue rules concerning this method of carcass disposal. The department's rules could address how to minimize the spread of pathogens from the processing of carcasses using anaerobic digestion

POSITIONS:

The Department of Agriculture testified in support of the bill. (8-22-07)

The Michigan Farm Bureau indicated support for the bill. (8-22-07)

Julian Vail, LLC, Lansing, Michigan, indicated support for the bill. (8-22-07)

Rest in Peace Farms, Holland, Michigan, testified in support of the bill. (8-22-07)

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■ This analysis was prepared by nonpartisan House staff for use by House members in their deliberations, and does not constitute an official statement of legislative intent.