



**MICHIGAN SOYBEAN
PROMOTION COMMITTEE**

a new release



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Michigan farmer is hog wild about recycling

Dave Cheney is a fifth-generation farmer near Mason, Michigan, and a major recycler. What Cheney, recycles, however, is a little unconventional.

Each year, Cheney raises and sells 5,000 hogs, which are born to sows on his farm. They are processed in the Midwest, where the other white meat then is served up as pork chops, spareribs, ham, bacon, and more on dinner tables throughout the region. Cheney is certified as part of the Pork Quality Assurance-Plus program, which ensures he follows good hog well-being and farming practices. Unfortunately, even with Cheney's top-notch care, some of those animals die on the farm. And all of them produce manure.

That leaves Cheney Farms with two byproducts, hog carcasses and manure. Instead of treating them as waste, he turns them into fertilizer—the ultimate recycling project.

Cheney is a bit of a pioneer among Michigan farmers, even though his Centennial Farm has been in the family since his great great grandfather first farmed the land in 1861. He learned the family craft at his father's side as a boy, then studied livestock production at Michigan State University. Cheney earned his certificate in 1984 from the MSU Institute of Agricultural Technology. From there, Cheney set foot into something that looks different from his father's hog farming. "We've been a leader," he said, "as the first farm in Michigan to compost dead animals." Other farmers had been composting dead birds. Composting of deceased chickens and turkeys began on poultry farms in the 1980s, and was later expanded to larger farm animals.

According to Dale Rozeboom, MSU associate professor of animal science, the normal cycle of life means that on-farm mortality for pigs is 0.5 percent to 15 percent of animals. State law allows for these animals to be buried, burned, rendered, or composted. It's the work of Rozeboom, with Cheney and two other farmers, that led to formally legalizing the composting of large animal carcasses in Michigan, which recycles their nutrients back into the soil. Poultry composting was already allowed under the state Bodies of Dead Animals Act.

"Cheneys were great to work with," Rozeboom said. "They were very interested in collaborating with MSU to investigate something that could have an impact on swine producers—and all livestock producers. And it did."

Once purely a matter of dead animal disposal, "Now we see it, in reality, as a recycling of nutrients," Rozeboom said.

"I had read an article about composting animals," Cheney explained. "I called my Extension agent and Dale Rozeboom at MSU."

In 1996 Rozeboom, Cheney, and others began a pilot project to develop a livestock or large animal carcass-composting system. Cheney's farm and two others became the demonstration-research sites and their expired hogs were the subjects. Composting simply speeds up the normal decaying process that happens to bodies.

They poured concrete, put up four walls, and made four bins inside a barn. They added sawdust, mixed and turned the compost, monitored the temperature and other variables, and discovered which practices were best for making good compost while controlling odor and pests.

Creating compost from hog carcasses requires a proper balance of several components: a suitable bulking agent (in Cheney's case, sawdust), moisture, particle size, the carbon-nitrogen ratio, oxygen, retention time, and pile shape and depth.

At Cheney Farms, the composting process takes about three months for soft tissues. Bones take longer to decompose, especially larger ones from older animals. So when loading the spreader, Cheney takes the time to collect these bones, put them back into a new batch, and compost them until they crumble easily. Mortality compost is spread on the fields, recycled as an organic fertilizer. Crops benefit from the balanced nutrients in the compost, especially nitrogen, and the soil benefits from its organic matter. Soil tests help Cheney determine which fields can benefit most from the compost and when it should be applied.

Crops also benefit from another recycled fertilizer that Cheney spreads—the pigs' manure.

"Manure is number-one because there's a lot of volume," he said. "Using it to our full advantage is key."

For Cheney, that means applying manure to the fields that need the fertilizer and in ways that make sure the crops get to use the nutrients. "We test soil every year so we know what's happening out there," he explained. "We have a good look at fertility, long term and short term. We follow recommendations and utilize manure efficiently." Efficient use includes broadcasting the fertilizer and incorporating it into the soil as soon as it's dry.

Just as the soil is tested, the compost and manure are tested annually for nutrient content. That helps Cheney develop the farm's overall fertility program.

The cycle continues as soybeans grown on farm fields throughout Michigan are, in turn, fed to Cheney's hogs. Soybean meal—what's left after most of the oil is extracted from the soybean—is an excellent source of protein. "It's a real common staple of pork production," Cheney said.

He feeds soybean meal that is 48 percent protein, purchased from a Michigan processor. His hogs also eat about half of the corn he grows on his farm. He sells the remainder of his 1,700 acres of crops through a local grain elevator.

That elevator is one of the local businesses supported by farmers such as Cheney, which in turn provides jobs for workers in Mason, a small city just south of Lansing.

Cheney sees his role as important to Michigan's floundering economy. "Livestock puts a lot of money into our state," he said.

Cheney has a direct impact on Michigan's economy by providing full-time jobs for two employees. That's on top of the income the farm provides for his own family, including his wife, Laura, and three children.

“Most people don’t realize how much agriculture is out here,” Cheney said. “Ag around Mason flies under the radar, but most area farms have two or three employees.”

Cheney serves as president of the Michigan Pork Producers Association and has been recognized for his efforts to conserve the environment with excellent farm practices. He earned the first-ever Michigan Farm Bureau Proactive Leadership in Ecology Management Award. He achieved verification of his farm in the voluntarily Michigan Agriculture Environmental Assurance program—one of the first 50 farms in the state to do so. Cheney follows a field conservation plan and a certified comprehensive nutrient management plan. He completed Farm*A*Syst to protect the water near his farm. Drainage ponds, sod waterways, and filter strips further protect area waterways. He even researched how bio-filters could control odors from hog barns through a grant from the Michigan Agricultural Stewardship Association.

Of the pork he produces, Cheney said, “Consumers can have confidence that it’s going to be good for the family.” It’s clear that Cheney’s emphasis on conservation, composting, and recycling fertilizer is also good for the environment.

The Michigan Soybean Promotion Committee works to enhance the profitability of Michigan’s soybean producers through investment of soybean checkoff funds. MSPC works to build markets for soybeans through educational programs, promotion of biodiesel and other new soybean uses, and funding agronomic research. MSPC is led by a board of farmers elected to direct the investment of soybean checkoff funds on behalf of the more than 10,000 Michigan soybean farmers. For information about soybean checkoff results, call (989) 652-3294 or visit www.michigansoybean.org. To learn more about good stewardship practices and the connection between crop production and animal agriculture, visit www.animalag.org.