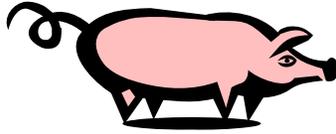


# ***PigTales***

## **Environmental Management FAQs for Pork Producers**



*Topics addressed in this issue include:*

- ***Matua grass***
- ***Hog Composting***
- ***Vermicomposting***
- ***Beaver management program***
- ***Pesticide usage***
- ***Hard pan***
- ***Permit and regulation information***

*Because pork producers raised questions about various environmental topics during site visits, DPPEA developed PigTales to answer those questions, and provide facts and information to pilot participants. Feel free to let us know if you have any questions or comments about the information below. Contact Jamie Ragan at (919) 715-6519 or [jamie.ragan@ncmail.net](mailto:jamie.ragan@ncmail.net).*

### **\*\*\*\*\* MATUA GRASS \*\*\*\*\***

*[A current pilot farmer is using Matua prairiegrass to land-apply his hog waste. He has found it very effective.]*

#### **Q. What is Matua prairiegrass?**

**A.** According to the Virginia Cooperative Extension, Matua is “a cool-season, short-lived perennial, bunch grass.” It is erect-growing, typically two to three feet tall and it is somewhat similar in appearance to Orchardgrass. Leaves are light green to green and are rolled in the bud. Seed heads are produced throughout the growing season unlike most cool-season grasses.



#### **Q. What are the advantages of Matua?**

**A.** Matua is a forage crop that could stretch the grazing season by providing additional high quality feed in early spring, midsummer and late fall when the productivity of typical cool-season forages is low, and would provide livestock producers with lower feed costs and increased animal performance. The ability of Matua prairiegrass to grow at cool temperatures makes it ideal forage for early spring and late fall grazing.

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### Q. In what conditions does Matua do best?

A. Matua is well adapted to well-drained, high-fertility soils, with a pH of 6.0-7.0. Generally, soils that support good alfalfa stands are good choices for Matua prairiegrass. It produces in warm summer conditions with adequate moisture. It grows well in sandy, drier soils that often limit other grass species. Responds well to nitrogen fertility (**hog waste application**). It is fairly winter-hardy with good early spring and fall production with some growth during mild winters. Prolific re-seeding results in perennial stands.

### Q. What is the best management practice for Matua?

A. Matua is palatable at all stages of growth, and, unlike many grasses, exhibits less decline of feed value as the plant matures. Matua can be grown with legumes such as ladino or red clover if legumes are used at very low seeding rates. However, due to its less competitive nature, the stand density of Matua will decline rapidly if the stand is managed by the growth stage of legumes instead of the Matua.

Matua is sensitive to intensive grazing that utilizes frequent and/or close (below 3 inches) grazing. When soil moisture is not limiting growth, about 30-40 days of regrowth is needed before harvest. Matua production and persistence are maximized with a 40- to 50-day rest period between harvests. It will not withstand overgrazing, especially when it is under stress of excessively wet or dry conditions.

Matua survived rates of nitrogen greater than 1000 lbs./acre; however, the nitrogen recovery efficiencies were unacceptable when annual applications were above 250 to 400 lbs./acre (Texas Tech greenhouse research).

*A complete listing of information on Matua prairiegrass can be found at:  
<http://www.ext.vt.edu/pubs/forage/424-700/424-700.html>. All the above information was taken from this page.*

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\*\*\*\*\* **HOG COMPOSTING** \*\*\*\*\*

**Q. Is it possible to compost hogs?**

**A.** Traditional mortality disposal methods on hog farms include burial, on-farm incineration and transport to rendering plants. Mortality composting was initially developed as a means of disposing of dead birds on poultry farms. More recently, composting has become an accepted method of dead swine disposal in some states. For producers willing to learn the principles of composting and who can provide adequate management, composting is an effective method of dead swine disposal that is safe, biosecure, and environmentally sound. Refer to: <http://www.ext.vt.edu/pubs/swine/414-020/414-020.html> to obtain more information about hog composting.

**Q. What are the advantages/disadvantages to composting hogs versus other disposal methods?**

**A.** The Virginia Cooperative Extension generated the following table. More information regarding this topic can be accessed at: <http://www.ext.vt.edu/pubs/swine/414-020/414-020.html>.

Method	Advantage (+) or Disadvantage (-)
Burial	(+) Prompt burial gets dead stock out of public view. (+) Prompt burial coverage prevents odor, flies, and scavengers. (-) Poor or delayed coverage can result in odor, flies, and scavengers. (-) Burial pits can collect rainwater. (-) Depending on burial location, groundwater could be contaminated. (-) Virginia regulations require permits for the burial of waste materials including animals. (-) Burial pits can be difficult to dig in winter.
Incineration	(+) Prompt incineration gets dead stock out of public view. (+) Modern incinerators reduce carcasses to ash and are biosecure. (-) Older, less efficient incinerators may generate smoke and odor. (-) Modern incinerators have large capital costs and fuel requirements of one to two gallons per hour. (-) Virginia law requires that incinerators be equipped with an "afterburner" for pollution control. (-) Virginia law requires a separate Department of Environmental Quality Permit for on-farm incinerators.
Rendering	(+) Rendering converts animal mortality to useful by-products. (+) Prompt transport to rendering plants removes dead stock from the farm. (-) Storage of dead hogs in "dead boxes" or other methods prior to hauling can cause odor and attract flies and scavengers. (-) There are only a few rendering plants in Virginia that process dead stock. (-) Some rendering plants charge fees for accepting carcasses. (-) Vehicles and personnel traveling to and from the farm and rendering plant can compromise biosecurity.
Composting	(+) Proper composting generates minimal odor, fly, or scavenger problems. (+) Prompt composting gets dead stock out of public view. (+) Proper composting has low potential for pollution and produces a final product that can improve soil tilth and fertility. (+) On-farm composting is considered biosecure. (-) A readily available supply of carbon-rich bulking material such as sawdust, cotton-gin trash, or other suitable material is required. (-) Some initial capital cost is necessary for construction of composting facilities. (-) Poorly managed compost units (inadequate bulking material, delayed carcass coverage, etc.) will result in odors and attract flies and scavengers.

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## **Environmental Management FAQs for Pork Producers**

### **Q. What are the principles behind composting hogs?**

**A.** According to the Virginia Cooperative Extension, "When composting swine mortality, the dead animals, which are nitrogen-rich, are fully covered with and allowed to react with carbon-rich materials such as sawdust, cotton-gin trash, chopped cornstalks, or other similar material. Naturally occurring bacteria in the mixture then cause the conversion of these components into humic acids, bacterial biomass, and compost. During the process, carbon dioxide, water vapor, and heat are generated as by-products. In mortality composting, it is essential that each carcass, large or small, be fully covered and surrounded with the bulking agent to allow for the complete interaction of the carbon- and nitrogen-rich materials and to absorb the moisture and odors released by the carcass. The bulking agent also serves as an insulator to retain the heat and moisture that is generated during the composting process.



The bacteria involved in the composting process are aerobic, meaning they require oxygen. They are also thermophilic, meaning they thrive in warmer temperatures. Since the bacteria do the work of reducing dead swine to compost, it is important to understand their requirements. In fact, the compost pile and the resident bacteria can be considered a "living" organism that must be cared for if it is to process swine mortality successfully. "

### **\*\*\*\*\* VERMICOMPOSTING\*\*\*\*\***



### **Q. What is Vermicomposting?**

**A.** A mechanical separator made of a screen and press is used to separate solid and liquid portions of wastewater from swine buildings. Solids are then placed in long beds that are stocked with red worms. The worms use the manure as a food source. The beds are covered by greenhouses, which can be closed in the winter and opened in the summer. The worms that grow in the manure may be harvested, while the substance left by the worms (called castings) may be used as a soil amendment.

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Castings have nutrient value, while they also appear to contain a substance that promotes plant root growth. These castings can be sold as organic fertilizer.

The above information was taken from:

<http://www.ces.ncsu.edu/depts/agcomm/writing/edp8.htm>.

If you would like more information about Vermicomposting, contact Brian Rosa with DPPEA at (919) 715-6524.

### **\*\*\*\*\* BEAVER MANAGEMENT PROGRAM\*\*\*\*\***



#### **Q. What is the N.C. Beaver Management Assistance Program?**

**A.** To address some of the common problems associated with beavers, in 1992 the North Carolina legislature created the Beaver Damage Control Advisory Board with the charge to develop, implement, and oversee a program to manage beaver damage on public and private lands. The nine-member advisory board, composed of representatives from state and federal agencies and the private sector, established the Beaver Management Assistance Program. A major goal of the BMAP is to educate the public and participating landholders about the best strategies for managing beaver damage including the pros and cons of removing beaver or using pond levelers, exclusion, or other non-lethal techniques. Wildlife specialists conduct programs and workshops on beaver damage management and beaver ecology for civic and professional organizations, schools, landholder groups and others. When beaver damage is intolerable, wildlife specialists alleviate the damage by removing the offending animals and their dams using humane and environmentally acceptable methods or by using pond levelers, exclusion or other non-lethal techniques.

#### **Q. Who is eligible to participate in the BMAP and will I receive any cost sharing to participate?**

**A.** The BMAP assists the DOT, city and county governments, soil and water conservation districts, private landholders and others with beaver problems. The program is run by USDA Wildlife Services through a cooperative agreement with the North Carolina Wildlife Resources Commission. Funding comes from state, county, federal and private sources.

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Participants in the program pay a small cost share fee for services. This cost share fee is \$15/visit for up to 20 visits in a year. There are no charges for travel time. There is also a \$75 charge for dam removal. Wildlife specialists have been averaging 10 visits over a 30-day period to resolve a nuisance beaver problem. There is no charge for the initial visit, usually lasting about four hours. During this visit the wildlife specialist discusses with the landholder the positive and negative impacts of beaver, and recommends the best course of action. If damage management activities are recommended, time and costs are estimated and the wildlife specialist begins work. Landholders wishing to conduct their own work are provided individualized training at no cost.

### **Q. Does my county participate in the BMAP?**

**A.** All counties are eligible to participate in the program through an annual cost share assessment of \$4,000 per county. Presently, 40 counties participate in the program. Individuals residing in these counties may obtain assistance with beaver damage by contacting their county Cooperative Extension or Soil and Water Conservation District office. Statewide assistance with beaver damage problems is also provided to the DOT. All requests for assistance receive an immediate response, but due to current workloads, the start of direct assistance activities may vary.

To determine if your county is participating in this program, contact your local Soil and Water Conservation Service.

### **Q. How do I find out more information about the BMAP?**

For additional information about the Beaver Management Assistance Program, please call or write the USDA Wildlife Services at 6213-E Angus Drive, Raleigh, N.C. 27617, (919)-786-4480, or the N.C. Wildlife Resources Commission, Division of Wildlife Management at 512 N. Salisbury Street, Raleigh, NC 27604-1188, (919) 733-7291.

All information above was obtained from:

[http://216.27.49.98/pg06\\_CoexistingWildlife/pg6b2.htm#contact](http://216.27.49.98/pg06_CoexistingWildlife/pg6b2.htm#contact).

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## Environmental Management FAQs for Pork Producers

### \*\*\*\*\* PESTICIDE USAGE INFORMATION\*\*\*\*\*

#### Q. Can others spray under my pesticide license?

A. If an individual has either a private or commercial pesticide application license, they may allow others to work under their license, however the individual who holds the license is responsible in the event of a problem.

#### Q. What is the one of the best methods for roach control?

A. Roaches are very common on sow farms. Tempo Powder can be used, usually applied with a backpack sprayer. It can be dangerous to humans in the powdered form, therefore the applicator must wear a facemask and cover all skin. Boric acid may also be used, applied with a blower. When applying the pesticide of choice, **it is important to get in the little crevices, behind the tin, in the attic; any location that roaches may hide.** It is also good to treat the entire farm at once; including office, pump houses, barns - otherwise the pests just move to the area not sprayed. If it is a contract farm, the serviceperson can order the supplies for your farm.

### \*\*\*\*\* HARD PAN IN PASTURES\*\*\*\*\*

#### Q. What is a hard pan?

A. A hard pan is a hard soil layer, compacted and roughly horizontal. Hard pans restrict root growth and make it difficult for water, air, other gases, plus soil organisms to move up and down. Tilling or plowing to a particular depth can cause hard pans.

A hard pan can occur at any depth. If it is closer to the surface, thicker and/or harder, the pan is more likely to cause severe problems. The more severe the problems, the more likely dealing with pan will produce benefits.

The above information was obtained from:

<http://www.organicexchange.com.au/all/fw100197.htm>

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### Q. What are the benefits for dealing with a hard pan?

A. According to <http://www.organicexchange.com.au/all/fc910251.htm>, the benefits include:

- Better growth of plants, particularly tap-rooted and other deep rooted plants
- Better soil aeration
- Better infiltration of rain and irrigation
- Improved root penetration and deeper rooting leading to greater drought resistance and longer growing seasons where soil moisture is a limiting factor and
- Nutrient trapping (when done across a slope or across the prevailing wind direction the slots can trap soil, organic matter and nutrients).



### Q. What is the best way to deal with a hard pan in a pasture?

A. According to a Columbus County extension agent, rippers or chisel plows are generally used to penetrate the hard pan and tear it apart. To not completely rework the pasture, rippers with press wheels are available that should not disturb the crop as much as completely ripping the pasture. In addition, some aerators are made that may help break up the hard pan. Contact your local extension agent or SWCD technician for more information.

*For additional information and to view study results regarding whether or not soil aeration of pastureland is actually beneficially for your farm, please refer to:*

<http://www.noble.org/Ag/Soils/SoilAeration/Index.htm>

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## **Environmental Management FAQs for Pork Producers**

\*\*\*\*\* **PERMIT/REGULATION INFORMATION** \*\*\*\*\*

### **Q. Where can I find current permit and regulation information?**

**A.** The N.C. administrative code for the animal waste rules can be found at:  
<http://h2o.enr.state.nc.us/tacu/awrules.html>.

The current General Permit can be found at:  
[http://h2o.enr.state.nc.us/ndpu/documents/NDSwinePermit04\\_signed.pdf](http://h2o.enr.state.nc.us/ndpu/documents/NDSwinePermit04_signed.pdf).

The current NPDES Permit can be found at:  
[http://h2o.enr.state.nc.us/ndpu/Swine\\_NPDES\\_GP.pdf](http://h2o.enr.state.nc.us/ndpu/Swine_NPDES_GP.pdf).

Refer to <http://h2o.enr.state.nc.us/ndpu/animals.html> for a complete listing of animal confinement operation permit information.

To view the N.C. General Statute 106-403 (NCGS) Disposition of Dead Domesticated Animals, please refer to:  
[http://www.ncga.state.nc.us/Statutes/GeneralStatutes/HTML/BySection/Chapter\\_106/GS\\_106-403.html](http://www.ncga.state.nc.us/Statutes/GeneralStatutes/HTML/BySection/Chapter_106/GS_106-403.html).



### **GENERAL SUGGESTIONS FROM PILOT FARMERS:**

- When cleaning houses between deliveries, do not leave sprinklers on in the house for hours at a time. Instead, wet down the area for 30 minutes. After letting the house soak, go back in and scrub the walls and floors. This has been found to be as effective on some farms as leaving the water running for 6-12 hours. In addition, there are measurable savings from water use reduction, energy use reduction and less loading of the lagoon.
  - If you are interested in receiving a Standard Operating Procedure or work instruction on this method, please let us know.

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### GRANT REIMBURSEMENT IDEAS GENERATED BY PILOT FARMERS:

*DPPEA prior approval is still required **before** any purchases are made.*

- Cylinoids to reduce water usage
- Hot water wash equipment
- Back up irrigation pump
- Fire extinguishers

