



Information for an Industry on the Move

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What is in the near future for Michigan's Pork Industry: No more gestation stalls as of April 1, 2020

Dale Rozeboom, Beth Ferry, Janice Swanson, Madonna Benjamin

This article considers enforcement of Act No. 117, Public Acts of 2009 and how farmers should be prepared for transparency about their breeding herd facilities and management.

Nearly 10 years have passed since Act No. 117, Public Acts of 2009 was signed with a provision that it would become effective 10-years later, on April 1, 2020. Because of that legislation, after that date, "a farm owner or operator shall not tether or confine any covered animal on a farm for all or the majority of any day, in a manner that prevents such animal from doing any of the following: lying down, standing up, fully extending its limbs, and turning around freely."

Exemptions include sows undergoing individual treatment. According to Pork Quality Assurance Plus® and Common Swine Industry Audit (CSIA), treatment of an animal may include whether the sow has been identified by caretakers and are receiving attention and treatment. The farm's veterinarian can help to develop a treatment plan that includes isolating sick or lame sows in a stall. Another exemption to Act No. 117, allows sows to be held in stalls pre-farrowing for up to 7 days before their expected date of giving birth.

As the enactment date of this legislation nears, there are several questions for Michigan's pork industry. Are Michigan pork farmers, able to comply with this law by April 1, 2020? In the past 10 years, have all gestation facilities been converted to housing systems that allow for the criteria set forth in Act No. 117 to be met? If not, what does that mean for farming operations that may be out of compliance?

There are actions set forth by this legislation which are accompanied by penalties. The law states that the Michigan Department of Agriculture and Rural Development (MDARD) or the attorney general "may bring a civil action to restrain, by temporary or permanent injunction, any act or practice in violation of this section.

The action may be brought in the circuit court for the county where the defendant resides or conducts business. The court may issue a temporary or permanent injunction and issue other equitable orders or judgments.” Meaning a judge could suspend your ability to house sows in stalls which violate the law.

Dr. Jim Kober, Assistant State Veterinarian in charge of the swine program says that “MDARD’s role in verification will be a combination of looking at SOP’s and production records, discussions with farm personnel (including the herd veterinarian), and possible site inspections.” MDARD will follow-up on information submitted to them about sow farms that are not complying with this law. According to Act 117, if a third-party audit is required, the farm will be responsible for the audit costs.

If comments are made to local Animal Control officials, will they respond? At this time, it appears unlikely that animal control officers will respond to informants as they are not defined in Act 117 as having authority as a regulatory agency in these types of situations.


The most prominent enforcers of this bill may be the packers, processors, and retail chains, who will need appropriate organization and documentation to sell pork products into states that have passed a ban on the sale of pork from breeding animals “raised confined in a noncomplying manner” (California Proposition 12). Like other industries, appropriate organization and documentation of production practices and facilities will be required of the product chain. Traceability is being based on production practices. Enforcement will fall on the shoulders of the marketers so they can continue to sell pork products into states that have passed a ban on sale of pork from breeding animals “raised confined in a noncomplying manner.”

Enforcement will follow a corporate policy commitment to market in as many locations or states as profitable. California has passed such a law for meat and eggs. It states that all pork sold within their states be from the “immediate offspring of breeding pigs” housed in areas with 24 or more square feet of usable floor space where they can lie down, stand up, turn around, and fully extend their limbs, freely. Massachusetts, Washington, Oregon and very recently, Michigan, will have similar restrictions for the sale of eggs from cage-free systems, only. The market chain in each state will need to make sure that all farmers, within and out-of-state, whose eggs are sold in these states, follow each states legislation regarding production approaches.

Our industry audit programs PQAPlus and CSIA may provide packers, processors and retailers with the knowledge that some farms are not in compliance with Act 117. The possibility exists that housing pregnant females in stalls may be considered a “willful act of abuse” in states where the conventional gestation stall is banned. Act 117 will most assuredly increase the importance of these two auditing programs. If packers, processors, and retailers are not able to use industry audit programs, or choose not to use them, then the other possibility is that they would develop or strengthen their own auditing programs. We know that some have kept their own auditing programs even with the agreement to use the CSIA.

Currently, Proposition 12 in California addressed the offspring of pregnant swine only. It does not address clearly, pork harvested from the sows, themselves. If retailers in a state decide that all incoming products, like sausage, must be acquired from sows that were not housed in gestation stalls, we do not know how sow buying stations and sow packers will be impacted. A sow processor with a facility in Michigan, can at times, buy animals for harvest from multiple states. As some states do not have gestating sow-housing laws, individual sow identification related back to a premise ID will be required to keep track of sow origination.

Other records that likely will need to be kept, will be those associated with timing of ‘confirmation of pregnancy’ or ‘preg-checking.’ Act 117 governs the housing of “any confirmed pregnant sow.” The confirmation of pregnancy (days post-breeding or post-service) will vary from farm to farm. The confirmation and documentation of when a female is officially known to be pregnant will be a critical enforcement obligation. Printed reports of pregnancy confirmation generated by herd management software programs may be documentation requested in a MDARD investigation.

Some . . . many . . . most . . . swine producers in the state have made the changes to their facilities and confining/housing gestating sows according to the requirements of Act 117. They are ready to share with MDARD, packer, buying station, processor and retailer that they meet all requirements. These producers are poised to grasp the share of the domestic market that regulates sow housing. For those that may not have changed all their gestating sow housing, there is a risk for complaint-driven enforcement by public stakeholders and undercover activists. 

Sampling Oral and Processing Fluids to Identify Disease in Pigs

Monitoring your herd for diseases has been simplified by new tests using oral and processing fluids. These sampling techniques are inexpensive, easy to do and can be applied to individual pigs (as a diagnostic) or pens/litters (for herd surveillance).

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Dave Thompson, MSU Extension Pork Team

Successful farmers know the importance of protecting their herds from disease. They know that preventing disease by purchasing healthy animals, using pig flow, appropriate nutrition, vaccines and practicing sound biosecurity is more cost-effective than treatment. But keeping animals disease-free is not always possible. Recent guidelines restricting use of feed-grade antibiotics have added to this challenge, as have concerns over the potential for outbreak of a foreign animal disease such as African Swine Fever. In this context, the next line of defense against disease transfer is early detection before infection spreads to pigs within the farm or other farms.

Traditional methods for disease detection required collection of blood or other tissues, was stressful for animals and required considerable technical skill, time and expense. Fortunately, new methods have been introduced that allow detection of several important diseases, at the herd or individual pig level, by sampling oral fluids (collected from the mouth) or processing

fluids (fluids derived from testicles or docked tails). Both oral and processing fluids are well-suited for identifying disease earlier. Both methods require little time or skill and involve no additional (or minimal/stress-free) handling, so animal performance is not adversely affected.

Oral fluid. Oral fluid consists of a mixture of saliva and oral mucosal transudate (antibodies and other proteins that enter the mouth by crossing blood capillaries lining the mucosa). Chewing stimulates oral fluids production. These fluids can be collected when pigs chew on a cotton rope suspended at pig shoulder height in the pen, typically for 20-30 min, and is processed using a simple 4-step procedure (Prickett et al., 2008). This approach is well suited for conducting surveillance in barns whereby the ropes are a novelty for most of the pigs in the pen and oral fluids are a pooled sample of multiple pigs. However, pigs raised outside, on straw, or in smaller groups may have other distractions and may not be sufficiently curious about suspended ropes. For these pigs there are a few other options: a) train the pigs to chew using attractants such as smeared peanut butter on the rope 2-3 days ahead of sampling, b) use segments of a cotton mop (which pigs typically find more interesting than a single rope) or, for an individual pig sample, c) fashion a cotton rope into a “harness” that passes through the back of the



Figure 1 Cutting a cotton mop into 4 segments for collecting oral fluid from pigs in a pen. Photo courtesy of Dr. Renee Coyer



Figure 2: Oral sampling from an individual pig using a cotton rope “harness”

pig's mouth and loops behind the ears (Fig. 2). Oral fluids can be used either for individual pig sampling or to reflect the pen infection rate. Swine diseases for which oral or processing fluid-based assays have been developed include PRRS, SIV-A, PCV-2, M.hyo, stomach worm and others (Bjstrom-Kraft, et al., 2018) (Figure 3).


Processing fluid. Processing fluid provides another simple and efficient method of sampling for disease. Rather than discarding tissues during processing (castration and tail docking), the testicles and tails from littermates are placed in a clean bucket and the fluids are filtered through cheesecloth into a plastic bag. The contents are transferred into a sterile tube and shipped on ice to a veterinary diagnostic lab (Lopez et al., 2017). Typically, the process is repeated for 5-6 litters within a barn. Processing fluids are an important sample to be assayed to determine disease in piglets early and help to identify if infection is in the sow barns, before the pigs are weaned. Processing fluid testing has detected PRRS, PCV-2 and other diseases with high reliability (Lopez et al., 2017). The major disadvantage of using processing fluid for disease surveillance, relative to oral fluid, is that it can be collected at only a single timepoint (i.e., at processing) per animal.

Role of your veterinarian. Your veterinarian will provide advice regarding which tests to conduct (diseases to test for, number of litters to test and whether PCR or ELISA should be used). Samples you collect are typically shipped by your veterinarian to a veterinary diagnostic laboratory for assays (PCR or ELISA) that determine either the presence of the bacteria or virus or confirmation that the animal has been exposed (Figure 3). Test results are typically available directly to your veterinarian within 2-3 days for follow-up.

Trends in oral and processing fluids diagnostics. What's next for oral and processing fluids testing? Based on recent reports, oral fluid and processing

fluid are rapidly becoming the most important tools for detecting disease in pigs, already outpacing blood sample testing (Zimmerman, 2019). This is probably driven in part by the ease of collection and relatively low cost provided by these forms of diagnostic testing. Leveraging the full diagnostic power of oral fluid and processing fluid testing will require additional research to determine the optimal number of animals to sample, frequency of sampling, and how to design sampling protocols that are random yet also account for spatial patterns that typically characterize spread of disease within a barn (Zimmerman, 2019).

References

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Tissue	Detectable Diseases*	Vet Diagnostic Labs/Links	Cost per Sample
Oral Fluid	PRRS, PCV-2,3 PEDV, SIV-A, PPV, Classical Swine Fever Virus, FMD, Senecavirus A, Rotavirus, M.hyo, Lawsonia, Actinobacillus, Erysipelothrix, Haemophilus, Ascaris**	Iowa State U. https://vetmed.iastate.edu/vdl/diagnostic_tests/ U. Minn. https://www.vdl.umn.edu/ S. Dakota State U. https://www.sdstate.edu/veterinary-biomedical-sciences/animal-disease-research-and-diagnostic-laboratory	\$10-40 (PRRS-\$25) + \$10 processing fee
Processing Fluid	PRRS, PCV-2,3, PEDV***, Seneca Virus***, M.hyo***	Iowa State U., U. Minn., S. Dakota State U.	\$25-35 + \$10 processing fee

*This list is incomplete and expanding steadily for oral fluid and processing fluid diagnostics. Tests are PCR or ELISA based.
**In the configuration used at ISU, a variation on egg/larval stage detection is used.
***These assays are currently in experimental stages and not fully validated, but will typically be conducted upon request.

Figure 3: Oral fluid and Processing fluid options for health surveillance in pigs

Pest Control

With the fall and winter season coming to fruition, an increase of rodents and pests make their way into livestock facilities. Learn how to look for evidence of rodents and pests in your facilities and how they may affect your livestock.

Elizabeth Ferry and Casey Zangaro, MSU Extension Pork Team

As fall and winter season come to fruition, so does the increased potential of rodents and pests coming into livestock facilities. Although minor infestations of rats and mice may not be worrisome for many, as it is common on farms, it is important to understand that even the slightest infestation can affect your bottom line. Pests can have many impacts on your daily operations. Examples of these are the rodent consumption of feed which does add up to feed losses and potentially contaminated feed, the potential for spreading disease to or within a facility, and issues with building maintenance as rodents tend to undermine building foundations, concrete slabs, electrical wiring, and infiltration openings throughout the facility. These factors, along with others, ultimately affects the economic viability of any swine operation and if a rodent control program is not implemented the facility is at risk for a major infestation.

Keeping up-to-date on the rodent control process is an on-going awareness and building a rodent control plan takes many steps. Farms should consider developing Standard Operating Procedures for the sites which will help bring consistency as the steps of the plan are completed and will meet the requirements of various assessment programs.

The first step to a comprehensive rodent control plan is to develop methods for decreasing the rodent population around a facility. There are various building design suggestions and operational recommendations that will help control the rodent population at a facility. Some of these include:

- Maintain a 19-inch barrier of stone or crushed concrete surrounding the site
- Complete routine inspections for signs of rodent infestations
- Keep trash and feed cleaned up around the facility
- Complete regular outdoor maintenance before

and after extreme weather

- Maintain baffles around cables and pipes
- Utilize kick plates on the lower edge of the doors
- Place flaps or crushed wire mesh on inlets

Another one of the major components of a rodent control plan is to develop methods of observation for increased signs of rodent populations. Along with routine baiting, employees and farm staff should be making observations about rodent activity and be ready to respond to increases in activity. It is important to understand that rodents are not active around daytime, but will be noticed more around dusk and nighttime. Although many times you will not see rodent movement throughout the day, employees should be trained to look for sign of rodents on the farm. These signs include:

- Vocalization or Squeaking
- Gnawing on wires and fabrics
- Droppings around walls, behind walls, and near food supply
- Burrow patterns around the outside of the facility
- Smudge marks in the dust on pipes and rafters

Special care should be taken when making observations in common places where evidence of rodents is typically seen:

- Doorways
- Feed bins or loose feed
- Near walls and or cracks around the facility
- Windows or ledges
- Areas of vegetation adjacent to or around facility

Another step to developing a rodent control program is to design a process for routine pest control and

baiting at your facility. A common control practice is to have rodent boxes with rodent bait inside. Boxes should be placed around major rodent pathways and near doorways. Rotating rodent baits is also a good practice, as well as continually checking and replacing bait when necessary.

The active ingredients in rodenticides vary from product-to-product and can be classified in 3 different ways; acute, sub-acute and chronic. Acute rodenticides are fast acting and normally are effective within 24 hours. Sub-acute rodenticides cause death after several days. The lethal dose of the rodenticide may be consumed early on and feeding of this bait may continue until death. Chronic rodenticides are slow acting and cause death as early as 2-3 days or on average from 5-7 days.

Understanding what ways you will be using rodenticides, preventing, control or eradication, will help you decide what product best fits your need.

When considering your bait products, you should also think about the different forms that bait is available in, these include; meals, cut or whole grain, pellets, wax blocks, edible lards/pastes/gels, contact gels or foams and gases. Particulate-based baits have been noted to be more palatable to rodents, compared to wax blocks. Whereas wax blocks are better in adverse conditions and areas like sewers and drainage pipes. What types of rodents and the damage you are dealing with may dictate what bait formation you choose?

In summary, rodents can be a major economic threat to swine facilities if not routinely monitored. It is important to be constant in your rodent control measures, such as knowing and observing for signs of increased populations, checking and changing out rodent baits, removing of dead pests around facility, and regularly documenting all these practices. This, in return, should reduce the health and hazard risks for both the animals and employees on site. 🐷

OBSERVING PEST POPULATIONS

IN

LIVESTOCK FACILITIES

SIGNS OF RODENT INFILTRATION

PLACES TO OBSERVE FOR EVIDENCE OF RODENTS



Squeaking



Doorways

Gnawing on wires and fabrics

Feed bins or around loose feed

Dropping around walls, behind walls and near food supplies

Near wells and cracks around the facility

Smudge marks on pipes and rafters

Windows or ledges around the facility

Burrow patterns around the outside of the facility

Areas of vegetation adjacent to or around the facility


New Draft CAFO Permit Released

Erica Rogers, MSU Extension
Reviewed by Sarah Fronczak

Recently, the new draft CAFO General Permit was released from the Michigan Department of Environment, Great Lakes, and Energy (EGLE). Many producers have been waiting to see what requirements and regulations the permit holds that differ from the old permit. Changes were made regarding the land application of CAFO waste, Comprehensive Nutrient Management Plans (CNMPs), the manifest of CAFO waste, storage structures, the magnitude of rainfall events, monitoring of discharges, and prohibitions in general. Below are a few such changes:

- No incorporation of waste is required within 24 hours on cover crops, but will be required on wheat stubble (unless applied on a no-till field)
- CNMPs are required to be written and developed by a CNMP provider not just approved
- The generator of CAFO waste must now have a recent soil test (within the last three years) from the recipient before manifesting the waste
- A value for residual solids must now be included within a storage volume design
- The land application of CAFO waste between January, February, and March 1st-19th is now prohibited (land application may be allowed, weather permitting, between March 20th-31st once the department has been notified)
- Likewise, the manifestation of CAFO waste between January, February, and March is prohibited

More changes and related documents can be found on EGLE's website at <https://miwaters.deq.state.mi.us/miwaters/external/publicnotice/info/-2412838348379967584/documents>.

Michigan State University Extension is committed to helping farmers navigate these permit changes moving forward and is available to answer questions that may come up along the way. For assistance please feel free to contact Erica Rogers or Sarah Fronczak (Environmental Management Educators). 

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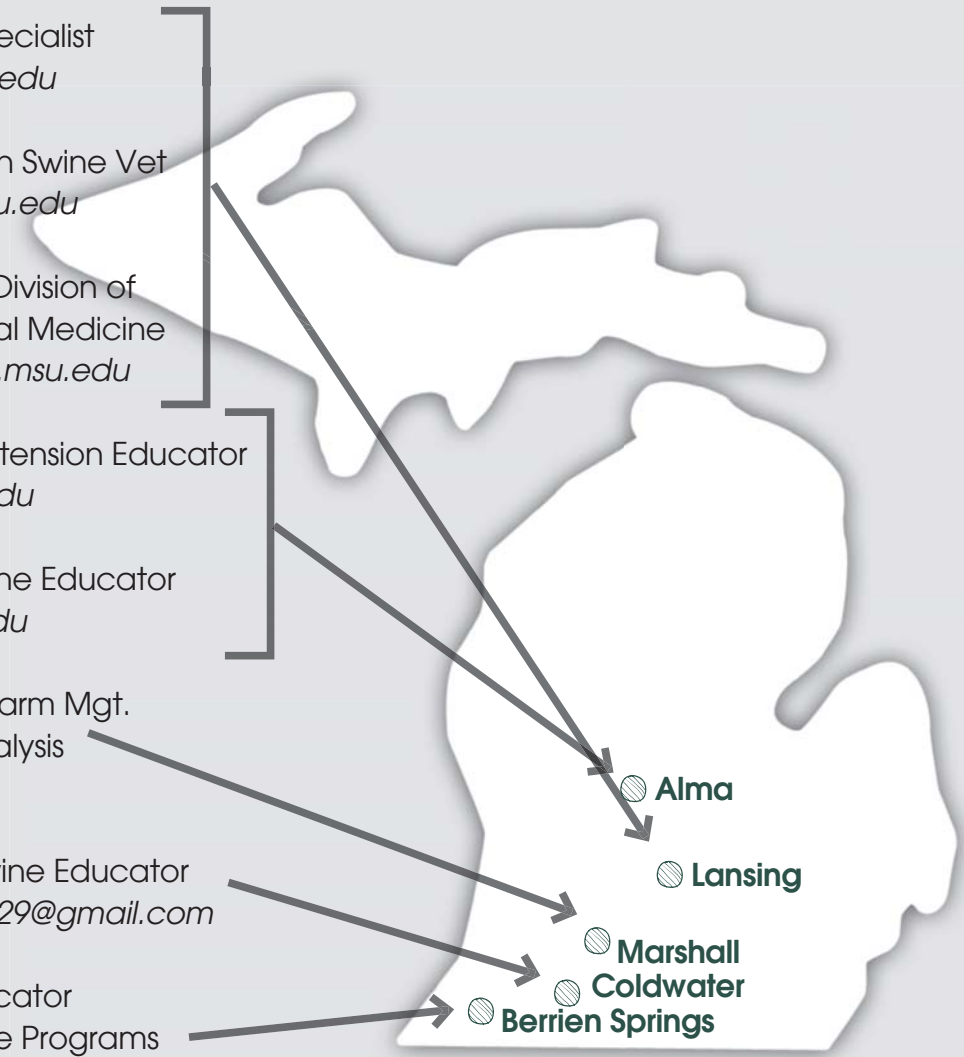
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