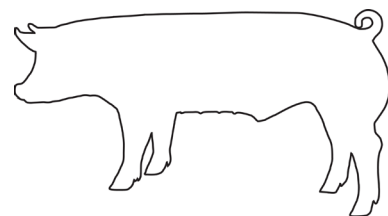




# MSU Pork Quarterly



Vol. 19 No.2

*"Information for an Industry on the Move"*

September 2014

## Day-to-Day Management of Group Housed Gestating Sows

Beth Ferry,  
Extension Educator  
Cassopolis, Michigan  
franzeli@msu.edu

Ronald O. Bates  
State Swine Specialist  
Michigan State University  
batesr@msu.edu

### Introduction

Pork producers in multiple states, including Michigan have legislative or regulatory mandates to house gestating sows such that they can turn around freely without impediment, lie down, stand up and fully extend their limbs. In addition many food companies have made statements that would ultimately cause their suppliers to comply with a similar mandate. The implementation of this mandate will cause producers to house sows in groups during gestation. The change from housing sows in stalls to group housing is not just simply changing the penning. There are critical sow care and welfare, productivity and financial considerations to evaluate. Pork producers that make this change must evaluate how their animal management and employee training program will

change, what productivity differences may occur and how the initial capital costs as well as any changes in cost of production will ultimately affect their farm business. Companion articles discussing different aspects of group sow housing for gestating sows can be found in previous editions of the *Pork Quarterly*. This article will discuss day to day management of sows in groups.

Within any type of pork production facility, independent of design, the development of daily routines are key to maintaining proper animal care. The primary daily care needs for sows will be the same, regardless if they are housed in stalls or in pens. However the methods used to provide daily care for group housed sows must be adjusted to provide effective care efficiently. As stockpersons transition

### In This Issue...

Day-to-Day Management of Group Housed Gestating Sows.....	1
Measuring Manure Depth in the PED Era.....	4
Sign up for the Latest News for Agriculture .....	6

This newsletter is edited by:  
Ronald Bates, MSU Extension Swine Specialist  
(517) 432-1387 batesr@msu.edu  
& Megan Sprague, Michigan Pork Producers  
Association, Program Director



from stall to group housing systems, management should provide training to improve the skill and competency of farm staff.

### **Developing a Daily Plan**

Prior to the farm staff entering the barn to start the work day, it is essential that they are prepared. The more time spent in the barns observing the animals, the more stockpersons will be able to better manage sows that may need help when housed in pens. Stockpersons should enter the barn with the needed equipment and supplies to complete routine tasks as they occur. A checklist of responsibilities and needed materials will help stockpersons organize for the day and negate the need to go back and forth from the barn to storage and supply areas.

Traditionally, swine farms hire and train stockpersons to become task-oriented people, who focus on completing singular tasks throughout the day and the succession of these singular tasks to complete the work day. When working with sows housed in groups it is important for stockpeople to focus on multiple tasks at one time and be aware of what is happening in the barn as a whole as well as in each pen. Improving observation skills is a challenging task, however, once accomplished will improve the overall efficiencies on the farm.

As stockpersons complete their daily routine, they should incorporate their observation skills into every task that takes place on the farm. Group housing systems can increase the possibility of injury or lameness for the sow. Every time stockpeople are around the sows, they should be evaluating them for soundness and health status. This should happen at every interaction with sows, including feeding, heat checking, pressure washing, etc. Also, as stockpersons are walking through the barn from one location to another they should be observing sows in pens as they pass by. It is important that the farm staff be able to identify issues that may arise and take care

of those issues, as they complete their duties. For example, in Electronic Sow Feeding (ESF) systems, during the initial training period when the training gates are in use, stockpersons should regularly check to see if sows are moving through the feed station. It is imperative that each female be trained to use the feed station. Therefore as stockpeople are walking through the barns, they need to recognize that sows may need assistance and training to enter into the feed station. Stockpeople need to take the time when they first notice this situation and complete the task so that every sow has an opportunity to consume her feed allotment within a feed cycle. Stockpersons must be able to observe and respond to issues as they arise to make group housing successful.

The daily work routine will be different based on the group housing system used. Production staff and farm management should develop a workable outline that highlights the important areas to be evaluated each day. Over time this can be updated and changed to accommodate the particular nuances experienced on the farm. For example, stockpersons working in ESF systems will have to be aware of monitoring the radio frequency identification tags used for sows in operation of the feed station. This will include daily monitoring of feed consumed and re-tagging sows as necessary, as well as managing the feed system and training animals to use the feed system. Other group housing systems will have their unique features that must be evaluated daily. Another example would be sows housed in non-gated feeding stalls, sometimes called short stalls or stanchions. If sows are hesitant to feed when the feed is dropped the sow may be becoming lame, or there may be bullying problems in the pen and management interventions may be needed.

In order to provide a complete evaluation of the animals and the facility, it is essential that the farm staff enter the pens to complete their observa-

tions. This will allow them to correctly assess the soundness of each animal and examine the area for equipment problems or failures. Pass through gating (Figure 1) is very convenient for people to move in and out of pens, thus reducing the hesitation of stockpeople to enter pens and evaluate sows.



*Figure 1. An example of a pass through gate for sow pens.*

### Evaluating Sows

Difficulty in walking and moving around is a common culling reason for sows. These issues are often associated with lameness. This can take the form of short stridedness, inability to put equal weight on all feet or limping, stiffness, etc. These conditions can ultimately lead to a sow's unwillingness or inability to stand or walk. There are many reasons this will occur and can include injury; poor nutritional status; poor environmental conditions; infectious and non-infectious disease; and poor conformation. Lameness is especially a concern among group housed sows. Research suggests that lameness is consistently associated with an increased risk of removal among group housed sows (Jensen et al., 2010).

Farm staff training should include understanding what situations can lead to lameness and to determine what is considered "normal" when animals are standing and moving. In addition staff should be challenged to identify sows that are in the early

stages of changes in stance and movement. For example, sows that may have a wound which could lead to a joint infection should be identified early and treated. Animals that may be just beginning to change the distribution in their weight on their feet (i.e. beginning to carry a foot, limp or "paw" the floor with one foot, etc ) should be identified, examined and treated. In addition sows that may begin to lay away from the group when they had previously been lying with the group may be starting to suffer a health condition that should be examined.

### Conclusion

The expected outcomes for the daily routine when managing gestating sows is the same regardless of if they are housed individually in stalls or group pens. Sows should be evaluated daily and care and changes in feed allocation should occur as needed. However, the daily routine will change when gestating sows are housed in groups compared to stalls. More attention must be paid to changes in health status that would include lameness, injury, condition and disease status. In addition, sow-to-sow interactions such as bullying and fighting could be more of an issue than in the past. Stockpersons will have to evaluate sows more closely, and be ready to remedy problems that occur either through changes in management or medical treatment.

### Literature Cited

Jensen TB, Bonde MK, Kongsted AG, Toft, N, Sorensen, JT. The interrelationships between clinical signs and their effect on involuntary culling among pregnant sows in group-housing systems. *Animal*. 2010; 4:1922-1928.

## Measuring Manure Depth in the PED Era<sup>a</sup>

*The Porcine Endemic Diarrhea virus stays viable in stored manure for extended periods of time. In barns that have experienced a PED outbreak producers should avoid bringing stored manure back up to surface where it could infect PED susceptible pigs.*

Jerry May  
MSU Extension Educator  
Ithaca, Michigan  
mayg@msu.edu

Madonna Benjamin  
Extension Swine Veterinarian  
Michigan State University  
gemus@cvm.msu.edu

The Porcine Endemic Diarrhea (PED) virus continues to impact the US pork industry. Farms that have avoided the virus continue to implement intensive precautions to keep PED out of their herd. Farms that have already experienced the ravages of the virus are taking steps to prevent reinfection. PED is spread through oral fecal contact and requires exposure to only a small amount of fecal material to cause infection. Adding to the complications of preventing PED reinfections is the virus's ability to stay viable in stored manure. Research conducted by Goyal at the University of Minnesota and reported by the National Pork Board has confirmed that the PED virus may stay viable in manure stored at 40° F (4° C) greater than 28 days. Therefore, stored manure with viable virus, if brought to the floor surface could re-infect susceptible pigs with PED.

In Michigan, large livestock farms (CAFOs), who are covered under the MI Department of Environmental Quality (M-DEQ) National Pollution Discharge Elimination System (NPDES) permit, are required to monitor and weekly record manure depth in each of the farm's manure storage structures. In addition all livestock farms, regardless of size, should record the amount of manure removed when spreading manure. Prior to PED, using a stick to measure manure depth in deep pitted barns, was of small risk to infect pigs with a virus or bacteria. Currently, in this era of PED, there is a risk the small amount of manure brought up on the measuring stick may re-infect the pigs.

One option to avoid re-contamination in a barn

previously infected with PED, is to "stick and measure" manure depth outside of the barn using the manure pump out ports. However, there remains the risk of contaminating the periphery of the site and vectors such as personnel or rodents tracking manure virus particles back into the barn and exposing the pigs.

As any 8 year old boy will attest, a better alternative to the stick is a "laser" (Figure 1).



*Figure 1. An example of a electronic laser to measure free-board in a hog barn pit.*

By aiming the laser's beam down through the slat opening, a laser measure will determine the freeboard between the manure surface and the top of the slats. Dependable laser measures can be purchased for \$80.00 to \$125.00 either online or at local hardware stores. A quick field trial using the

laser method demonstrated it was easier than the stick and accurate despite the presence of dust and cobwebs.

A laser measure is an excellent device for all sizes of swine farms to use when calculating the manure application rate needed as part of the record keeping requirements when hauling manure. Simply measure the depth of the manure before starting to haul then measure again when done. Once the depth of manure removed is known it is easy to determine the number of gallons removed and the manure application rate per acre. To calculate gallons per acre convert all dimension to feet (pit length, pit width and depth of manure removed) then multiply length x width x depth which equals cubic feet of manure removed; cubic feet of manure removed x gallons per cubic foot (7.48) = total gallons removed; total gallons removed ÷ number of acres spread = gallons per acre.

Many farms that have experienced PED outbreaks are continuously implementing intensified biosecurity measures to help protect their herd from infection. Until more is understood concerning the virus's extended viability, these sites may find it advisable to use precaution and assume viable virus remains in the manure. On these sites it is best to avoid exposing pigs to stored manure as a step to prevent reinfection. In the PED era the "stick and measure" method may be obsolete.

<sup>a</sup>This was originally published in the August 18, 2014 MSUE News [http://msue.anr.msu.edu/news/measuring\\_manure\\_depth\\_in\\_the\\_pedv\\_era](http://msue.anr.msu.edu/news/measuring_manure_depth_in_the_pedv_era)

#### Literature Cited

Goyal, S., Updated 1/21/2014, Environmental Stability of PEDv, Available: <http://www.pork.org/filelibrary/Goyal%2013-215%201-21-14.pdf>

**Mark your calendars!**

### Health Champions Meetings

*(See page 16)*

October 22nd in Mt. Pleasant

October 23rd in Allegan

November 1st in East Lansing

### MSUE Winter Meetings

January -Details Coming Soon!

### Green and White Swine Show

January 30th - 31st

### 2015 Michigan Pork Producers Symposium

February 19th

### 2015 MPPA State-Wide Informational Meetings

March



All comments and suggestions should be directed to:

**1. Jerry May, Educator**

Site selection, Environment  
(989) 875-5233, mayg@anr.msu.edu

**2. Ron Bates, State Swine Specialist**

Michigan State University  
(517) 432-1387, batesr@msu.edu

**3. Dale Rozeboom, Extension Specialist**

Michigan State University  
(517) 355-8398, rozeboom@msu.edu

**4. Roger Betz, Southwest District Farm Mgt.**

Finance, Cash Flow, Business Analysis  
(269) 781-0784, betz@msu.edu

**5. Tom Guthrie, South Central Pork Educator**

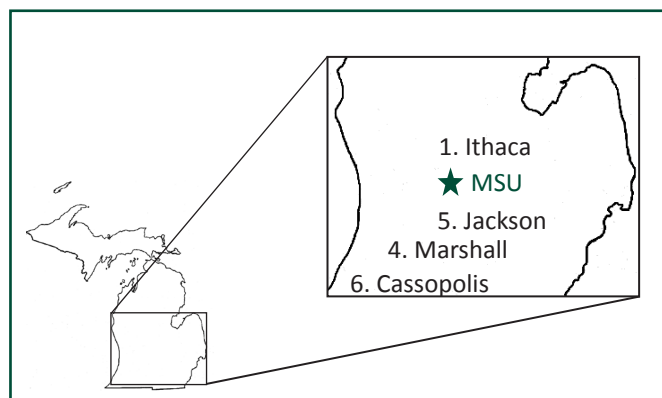
Nutrition and Management  
(517) 788-4292, guthri19@msu.edu

**6. Beth Ferry, Southwest Pork Educator**

Management, Quality Assurance Programs  
(269) 445-4438, franzeli@msu.edu

**7. Madonna Gemus-Benjamin, Extension Swine Vet**

Michigan State University  
(517) 614-8875, gemus@cvm.msu.edu



**MICHIGAN STATE**  
**UNIVERSITY**

## Extension

### ***Sign Up for the Latest News for Agriculture***

Want to stay updated on various MSU Extension topics? Sign up for news digests online!

Since March 2011, Michigan State University Extension (MSUE) experts have published the latest research and education in one convenient online location. Now you can get that same timely information delivered right to your email inbox.

Visit [bit.ly/MSUENews](http://bit.ly/MSUENews), and follow the prompts to get customized email digests. Digests are electronic newsletters of recent articles published on the MSU Extension website. You can unsubscribe or change your areas of interest anytime. The digests contain information on categories including agriculture, business, community, family, food and health, lawn and garden, 4-H and youth, and natural resources. Each category has multiple subcategories, so subscribers can narrow down their choices to fit their specific interests.

***To check out the categories and sign up for MSUE News digests, visit [msue.msu.edu/about](http://msue.msu.edu/about)***