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Assessment of Pork Producer Educational Needs for Adoption of Group Sow Housing

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Abstract: *Pork producers in Michigan and several other states are mandated through regulation or legislation to house gestating sows in groups. Focus groups with Michigan pork producers were completed to determine their educational needs to transition from individual housing to group sow housing. Pork producers indicated that their strategic education needs were: retrofitting existing facilities, feeding systems, employee training, new construction, genetics, and production scheduling. Regarding implementation, producers indicated that education would be needed on defining a sow group, stockperson training, medical care, and feeding and watering. Depending on the topic, producers indicated different educational media preferences for program delivery.*

Introduction

Housing sows in individual stalls on commercial farms has become a topic of general concern worldwide. The American Veterinary Medical Association released their comprehensive review of

research that compared the performance and welfare of sows housed individually in stalls or in groups and found neither method had documentable differences for animal welfare (Sow Housing Task Force, 2005). Yet the use of individual stalls to house sows has continued to come under increasing scrutiny from consumers (Tonsor, Wolf, & Olynk, 2009). The European Union (EU) has disallowed the use of individual stalls for sows after 4 weeks of pregnancy (Council Directive 2001/88/EC), and all member states must be in compliance by January 1, 2013. In the United States, several states (Florida, Arizona, California) have passed ballot initiatives to ban housing sows in individual stalls for defined portions of gestation, while other states (Oregon, Colorado, Maine) have passed negotiated legislation that accomplished a similar outcome.

In the fall of 2009, Michigan also passed legislation (Public Act 117) that amended the Animal Industries Act (Michigan Public Act 488 of 1988) to disallow housing gestating sows in individual stalls. Within the legislation, sows that have been confirmed pregnant must be able to turn around freely, lie down, stand up, and fully extend their limbs. Sows can be housed in stalls for up to 7 days before their expected farrowing date, through farrowing and lactation, and after weaning until they are confirmed pregnant. Housing gestating sows in stalls is allowable for veterinary examination, testing, or treatment as directed by a veterinarian. This legislation became effective March 31, 2010, and producers must comply with the legislation by April 1, 2020.

Though it may seem that Michigan pork producers have an extended period of time to decide how best to comply with this legislative mandate, the 10-year compliance horizon will pass quickly. For example, among the 13 EU nations that must comply with the EU regulation on sow housing, the percentage of sows in group housing within a country ranged from 20 to 70% when there were 30 months remaining to meet the compliance mandate by the 2013 target (Martin, 2010). The purpose of the study reported here was to develop an understanding of the educational needs among Michigan pork producers and begin to create the educational resources pork producers will need to transition into group housing of sows.

Methods

Focus groups were completed in February and March 2010 at three locations in Michigan. Guidelines used to form each focus group were developed as suggested by Gamon (1992). Each location was chosen to be close to sow farms, but the geographical area would not overlap with one of the other locations chosen. Pork producers near the location of each focus group were invited to attend through a written invitation followed by telephone call from a Michigan State University Extension (MSUE) Pork Team member. The Michigan Pork Producers Association pork producer database was used to generate mailing lists for the written invitations. Producers were asked to register in advance, but no registration fees were collected. In addition, producers were asked that, if possible, one management person and one animal technician represent their farm at the focus group. Across the three focus groups, 27 males and three females attended.

At each focus group, a general introduction of the topic was given, which was then followed by three interactive sessions. One MSUE Pork Team member took notes, while another acted as the moderator for each session and was familiar with participants in attendance. This was done to increase familiarity and to improve communication among participants.

In Session I, participants were asked to finish the following statement, "*When my farm changes to group housing for gestating sows I will need more information/education about...*" with topics that would finish this statement from a Strategic or Whole-Farm point of view. This tactic was used to approach the issue of what information would be needed for a farm to change their infrastructure to adopt group sow housing. Participants were provided an initial listing of topics (Figure 1) to consider. Participants could keep, modify, delete, or add to the list of items that would complete the statement.

Figure 1.

Initial Ideas for Consideration by Michigan Pork Producers for the Question, "*When my farm changes to group housing for gestating sows I will need more information/education about...*" When Considering a Strategic or Whole-Farm Point of View



1. Characterization of Different Group Housing Options
2. Retrofit Options – Characterization and Concerns
3. Retrofit Cost Comparisons
4. New Construction Options/Costs
5. Employee Training – Managing Gestating Sows in Groups

For Session II, participants were asked to consider the same statement as discussed in Session I. However, participants were asked to consider this statement from a tactical or day-to-day implementation point of view. As in Session I, participants could keep, modify, delete or add to the initial list of items (Figure 2) that would complete the statement.

Figure 2.

Initial Ideas for Consideration by Michigan Pork Producers for the Question, *"When my farm changes to group housing for gestating sows I will need more information/education about..."* When Considering a Tactical or Implementation Point of View

1. Sow Behavior in Groups
2. Consequences of Mixing Sows
3. Sow Handling
4. Feeding Practices for Sows in Groups
5. Medical Care and Observation of Sows in Groups
6. Pen and Facility Requirements for Group Housed Sows

For Sessions I and II, moderators did not influence the responses provided by the participants and encouraged them to create new or alternative topics not initially provided. Once the lists of items were completed within each session, participants were asked to designate which items were of most importance to them. This was done by placing an adhesive dot by the item of their choice. Participants were given five dots that they could use as they chose to. After the completion of each session, MSUE Pork Team members tallied the number of responses to each of the topics listed and reported back to the participants the listing of topics and the number of responses for each, including only those topics that received at least one vote.

Session III focused on potential educational delivery tools. Participants were asked to consider the type of educational media that would be preferable for each of the reported topics in Sessions I and II. Participants were provided a list of possible educational delivery tools (Figure 3), and they were asked if they wanted to modify, delete, or add to the list of items. Once the list was completed, each participant was given three adhesive dots for each topic and asked to use the adhesive dots to designate three tools for each of the topics that would be a preferable means for educational delivery of this topic.

Figure 3.

Initial Delivery Tools Considered by Michigan Pork Producers for Delivery of Group Sow Housing Educational Programs

1. Face to face workshop – common location
2. Face to face workshop – on farm
3. One on one – on farm
4. Internet based workshops, seminars, webinars
5. Teleconference with pre-mailed PowerPoint slides
6. Professional pre-recorded CDs/DVDs
7. Hardcopy (printed) media (bulletins, factsheets, etc) available to order
8. Internet bulletin board with downloads of – factsheets and bulletins

9. Internet bulletin board with downloads of – spreadsheet calculators
10. Internet bulletin board with downloads of – videos of management practices (e.g., YouTube type video)

Results and Discussion

Participants in each focus group were not given any results from any other focus groups. After completion of all three focus groups, results were aggregated across focus groups. Topics had to be ranked at more than one of the focus group sessions to be included. Figure 4 lists those educational topics that producers indicated were of highest priority for improving their strategic planning. Subcategories for each priority were those provided by participants to further describe their needs within each category. Producers indicated that their highest priority was for information regarding what options were available to retrofit existing facilities and what feeding systems to consider. Yet there were strong opinions regarding need for further information on all of the ranked topics.

Figure 4.
Strategic Planning Information Needs by Michigan Pork Producers for Group Sow Housing^a

Rank	Topic
1	Retrofit Options <ol style="list-style-type: none"> a. Characterization & Comparisons b. Cost Comparisons c. Characterization of Different Group Housing Options d. New Technology
2	Feeding Systems <ol style="list-style-type: none"> a. Methods b. Equipment/Technology c. Cost Comparisons
3	Employee Training <ol style="list-style-type: none"> a. Managing Sows in Groups b. Managing Body Condition Score c. Minimizing Aggression d. Handling Pregnant Sows e. Assessing Employee Skill Level & Adaptability
4	New Construction <ol style="list-style-type: none"> a. Cost Comparisons & Option b. Regulations c. Comparison between Retrofit Options and New Construction
5	Genetics <ol style="list-style-type: none"> a. Durability b. Productivity c. Temperament d. Breeds/Lines by Group/Pen Size
6	Production Scheduling

	<ul style="list-style-type: none"> a. Sow Flow by Stage of Gestation b. Phase Segregation – by Stage of Gestation
<p>^aRankings were determined through aggregation of results across focus groups.</p>	

In Figure 5, the highest ranked topics pertaining to informational needs for tactical/implementation planning are listed. Defining sow groups and how to form them ranked highest, while Employee training ranked second. For both strategic and tactical planning, Employee/Stockperson training and education were areas of concern. This suggests that pork producers were concerned about the effect of this change on their employees. Successful implementation of group sow housing will require that employees understand how group housing can be implemented to maintain historical productivity and appreciate that their daily routine and skills will change to successfully implement group sow housing.

Figure 5.
Tactical/Implementation Informational Needs by Michigan Producers for Group Sow Housing^a

Rank	Topic
1	Defining a Sow Group <ul style="list-style-type: none"> a. Large Pen vs. Small Pen b. Group Size, Pen Configuration, Square Footage/Sow, Sow Size (Body Condition Score & Weight) c. Forming New Sow Groups – Mixing and Sorting
2	Stockperson Training <ul style="list-style-type: none"> a. Sow Behavior & Observation b. Stockperson Adaptability to Change c. Learning New Technologies and Equipment Maintenance d. Finding Non-Pregnant or Open Sows e. Sow Handling
3	Medical Care <ul style="list-style-type: none"> a. Sow Assessment and & Medical Treatment in Groups b. Vaccinations
4	Feeding & Watering Technologies in Groups <ul style="list-style-type: none"> a. Feed Form – Bulkiness etc b. Calibration – Allotment per Sow c. Water Delivery
<p>^a Rankings were determined through aggregation of results across focus groups.</p>	

Table 1 provides producer preferences for different educational delivery methods for each topic related to strategic decision-making. At each of the focus groups, participants included using email as a means for information transfer. Producer preferences for different educational delivery methods were somewhat dispersed across the different strategic topics, but some interesting patterns emerged. Producers showed preference for Internet-based methods and consistently wanted on-demand access to information that could be accessed from an Internet

bulletin board containing information and tools. This is consistent with recent reports that farmers use a wide array of technology in both their business and private life (Guenther & Swan, 2011).

Yet producers continued to want some educational offerings through more traditional methods (Face to face – common location, Face to face – on-farm, One on one – on-farm). This was particularly true for Employee Training, with 37% indicating a preference for these traditional methods of educational program delivery. In addition, participants indicated that the use of distance educational methods (Internet-Based Workshops, Teleconference with PowerPoint™ slides, Pre-recorded CDs/DVDs) was an acceptable method for informational delivery and technology transfer. This suggests that pork producers are adapting to advanced methods of communication and will utilize a variety of communication media to acquire the information they need for decision-making.

Table 1.
Preferences (Response %) of Educational Methods by Strategic Informational Topic for Michigan Pork Producers

	Retrofit Options	Feeding Systems	Employee Training	New Construction	Genetics	Production Scheduling
Face to Face Common Location	12	15	17	9	8	13
Face to Face On-Farm	5	7	11	0	0	4
One on One On-Farm	8	9	9	11	8	4
Internet Based Workshop	13	12	11	13	13	11
Teleconference with PowerPoint	5	6	4	6	4	6
Pre-Recorded CDs/DVDs	10	11	12	6	4	6
Hardcopy Media	13	9	13	11	11	11
Internet Bulletin Board Downloads of Factsheets	12	13	5	21	25	21
Internet Bulletin Board Downloads of Spreadsheet Calculators	9	8	2	11	6	6
Internet Bulletin Board Downloads of Videos	3	4	9	4	4	11
Email Listserv	10	6	7	8	17	7

Table 2 contains participant preferences for different educational delivery methods for ranked topics pertaining to tactical/implementation planning. For the topics of, Defining a Sow Group and Stockperson Training, producers indicated they would prefer traditional educational methods (Face to face common location, Face to face, on-farm, One on one on-farm) over that of an Internet bulletin board of resources and tools. This is similar to the finding that farmers preferred more traditional methods of learning methods (Franz, Piercy, Donaldson, Westbrook, & Robert, 2010). However, for the topics of Medical Care and Feeding and Watering, distance education methods (Internet based workshops, Teleconference with PowerPoint slides, Pre-recorded CDs/DVDs) and an Internet bulletin board with on-demand information and tools along with traditional educational methods were all ranked similarly. This indicates that pork producers do value different educational options differently depending on the topic and how the information may be used.

Table 2.
Preferences (Response %) of Educational Methods by Tactical Informational Topic by Michigan Pork Producers

	Defining a Sow Group	Stockperson Training	Medical Care	Feeding and Watering
Face to Face Common Location	14	16	13	13
Face to Face On-Farm	8	11	7	4
One on One On-Farm	8	14	3	8
Internet based Workshop	8	8	10	11
Teleconference with PowerPoint slides	10	8	7	5
Pre-recorded CDs/DVDs	6	11	7	6
Printed Hardcopy	10	10	18	13
Internet Bulletin Board with Factsheet Downloads	16	9	16	16
Internet Bulletin Board with Spreadsheet Calculators	7	2	2	11
Internet Bulletin Board of Videos	7	7	9	4
Email Listserv	6	4	8	10

These focus groups provided critical insight into the educational needs of pork producers as they consider their options for changing a key phase of their production system. In addition, other livestock industries may consider how the results obtained in the study reported here may be applicable to their circumstances. The results from these focus groups will be used to develop an educational curriculum to address the needs pork producers will have as they transition from individual to group sow housing. Furthermore, pork producers indicated their preferred methods of delivery of educational programs regarding both strategic and tactical implementation planning. These preferences will be used to develop educational delivery methods that meet the need of Michigan pork producers as they implement management practices to meet future legislated requirements for group sow housing in gestation.

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