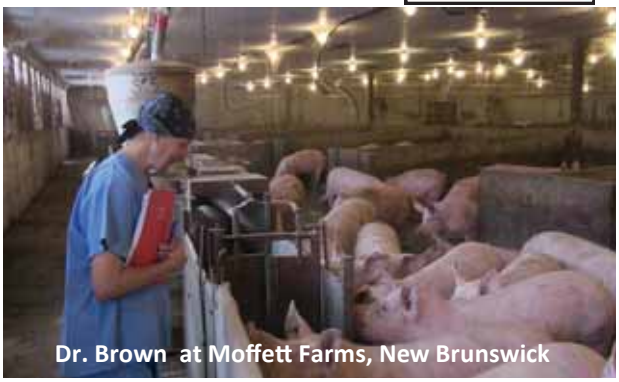
National Sow Housing Conversion Newsletter

Summer 2017 Vol. 1, Issue 4

National Sow Housing Conversion Project Update

This year marks the final year of the National Sow Housing Conversion Project: a four year project to document conversions for group sow housing and compile information on group housing systems and management for Canadian producers. It has been an exciting time, and I am sorry to see it come to an end. During these four years our project team has had the privilege of visiting 'early adopters' of group housing from across the country. It has been a great pleasure getting to know some of these innovative and enthusiastic producers, and sharing their stories in this newsletter and on our project website: www.groupsowhousing.com.



Dr. Brown at Moffett Farms, New Brunswick

Our first issue featured the farm of John Van Engelen. John and his family own and operate Hog-Tied Farms Ltd., a 250 sow, farrow-to-finish herd located in Thedford, Ontario. John has been a leader in innovative pork production, with continuous barn improvements over the years. In addition to completing the transition to group sow housing with ESF feeders and automated heat detection, John has installed a state-of-the-art ventilation and heat recovery system, autosort finishing, lift crates in farrowing and wireless internet. John is a frequent speaker at industry events and this September he will join the NSHCP team in western Canada to speak about his farm and share his knowledge and enthusiasm. Please join us for seminars on Sept. 12th at the Victoria Inn in Winnipeg, MB, or at the Travelodge in Strathmore, AB, on the 13th.

Our feature story in this issue highlights renovations done by Hylife to their Rosco barn, a 3,000 sow farrow-to-wean facility in La Broquerie, Manitoba. The Rosco renovation is the largest renovation we have documented, and we were thoroughly impressed by the professional job done by HyLife. The entire renovation was done over a 5 month span, with full coordination between barn staff and construction crews, all while maintaining production and biosecurity. The finished result is a barn to be proud of!

This issue also features an article on enrichment, another 'new area' for pork producers that raises a lot of questions. As noted in the article, enrichment can take many forms but always has the same goal of reducing negative behavior (eg aggression or tail biting), increasing positive behavior and improving the lives of animals. For group housed sows, enrichment is another tool for promoting harmony during group formation, providing a common social activity during gestation, and is also helpful for keeping boss sows occupied, rather than harassing their pen-mates.

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While the NSHCP will conclude in December 2017, our work is not finished. Many farms are still considering the transition to group housing. Our plan going forward is to maintain the project website until 2024, when it is anticipated that most producers will have either completed transition to groups, or identified an alternative plan for providing 'greater freedom of movement' to sows. In any case, our project team will still be available to help with planning renovations or advice on sow management going forward.

In the meantime, please join us if you can for sow housing seminars in Manitoba and Alberta in September, or Drummondville, QC, in October!

Dr. Jennifer Brown and the NSCHP team

Producer Comments on Group Housing

Over the past two years the NSHCP project team has visited Alberta, Saskatchewan, Manitoba, Ontario, Quebec and New Brunswick and toured 14 barns looking at many different types of group housing systems. Below are some producer comments to common questions asked during these visits.

There are roughly 72 different variations for group sow housing. How did you choose your final housing system?

- Lots of research, reading, and going to trade shows.
- Talking to other producers who had the same system.
- Touring barns when possible.
- Attending meetings on group sow housing.
- Talking to equipment suppliers and other industry stakeholders.


Dedicated training system was a requirement

What requirements were most important when choosing your group housing system?

- It had to be "user friendly" for staff.
- Easy to service, operate, and repair.
- Would work well in my current production system (i.e. static vs dynamic groups) and be able to sort individual sows.
- Could house the same number of sows in the same space.
- Allowed for herd expansion, if required.

If you had to do it again, what would you do differently?

- Cull out the older sows. They did not train to the system very well; younger sows and gilts are easier to train and work with.
- Ask more questions about the training system and allow for more time in the initial training period.
- Design, purchase and install a training system at the same time as the main system.
- Use water nipples instead of water bowls
- Put in more waterers
- Put in water bowls

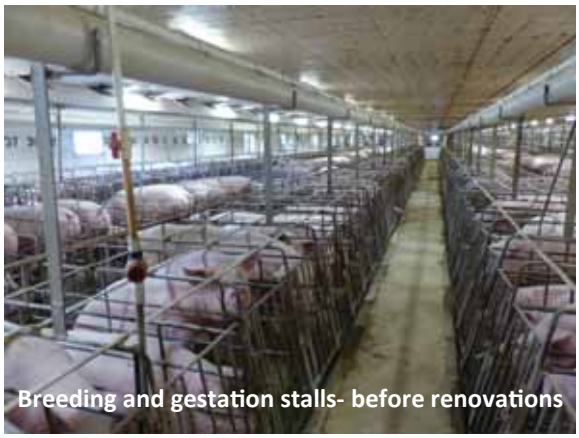

Placement, type and number of waterers varied

What benefits have you seen from going to group sow housing?

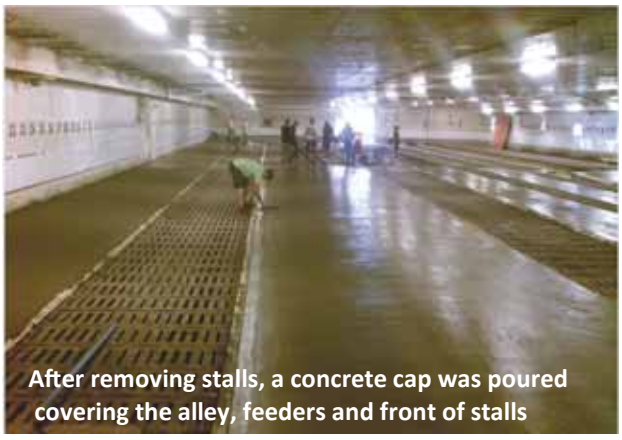
- The heat RF detection/ boar pen has reduced the time spent on heat detection.
- Sows are quiet when you walk in the pens, they are easier to move and work with.
- Gilts are more aggressive and cause more problems the older parity sows.
- The gestation barn is a lot calmer, quieter.
- The staff like the new work environment.

Producer Profile: Rosco Barn - HyLife

HyLife is headquartered in La Broquerie, Manitoba and is the largest hog production company in Canada and among the top 15 in North America. In the fall of 2016, Richard Taillefer, Michelle Martel and the the Hylife staff embarked on their first major project with group housing, converting a 3000 sow farrow-to-wean gestation barn to an ESF operation using the Jyga Gestal 3G system. The Rosco farm is a prototype for the other sow barns in HyLife's production system, serving as a learning experience and example for future barn conversions.


Breeding and gestation stalls- before renovations

The expectations were high and the challenges with this conversion were many. The number one goal was to provide their staff with a safe work environment while maintaining a high standard of animal welfare for the sows in the loose housing system. The company wanted a feeding system that was easy to use and easy to maintain. Additional goals included designing a loose housing system that would maintain the same number of sows while giving sows ample space, maintaining the production of weaner pigs during the conversion, and keeping biosecurity protocols in place during the course of renovations. Travel to European farms and interviewing several ESF manufacturers, along with staff meetings and input, was all part of the research and planning process done by HyLife before deciding on a final system and barn design.


After removing stalls, a concrete cap was poured covering the alley, feeders and front of stalls

Rosco staff experimented with some smaller projects, removing some stalls and creating a small number of group pens with shoulder stalls to see how the sows would co-mingle, and if the floor/slats and ventilation would be an issue when sows were more active. These initial projects were successful and gave barn staff experience on what to expect when managing groups. Many barn conversions are done using depopulation and repopulation (Depop-Repop) to allow construction crews full access to the barn, without any biosecurity risk. Once the construction is completed the barn is disinfected and the new herd is introduced. However, depop-repop renovations are costly as the operation will have major production and economic losses while the barn is under renovation.

HyLife's plan was to avoid depopulation and keep pig production flowing while the barn was renovated. This was accomplished partly by luck: an empty 900 head sow barn near the facility was used to accommodate 800 bred sows (4th and 5th parity animals), making room in the barn for renovations to proceed. The renovation schedule then progressed in 3 stages, with sows shifted from room to room as the work progressed. At the offsite barn the weaned pigs continued to flow through the HyLife's production system, and to maintain biosecurity the sows were then culled rather than returning them to Rosco. New replacement gilts were brought in as the renovations were completed, bringing herd numbers back up to 3000 by the end of the project. The renovations were done in three main gestation areas. Before each area was renovated, a secure wall was erected to act as the biosecurity barrier between the barn and construction areas.


A finished group pen, ready for sows

Producer Profile: Rosco Barn - HyLife con't

It took a lot planning and reconfiguration of feed lines and other services but the system worked smoothly: construction crews were able to work in one section of the barn, while sows carried on being fed and bred in the other. When the renovation was complete the area was washed and disinfected and sows and gilts were introduced into the newly completed section of the barn. This process was repeated 3 times and over approximately five months, and has worked extremely well.

January 2017: first sow groups using the Gestal feeders

The gestation area being renovated was 403' long X 134' wide. It had partial and fully slatted flooring. A total of 1,680 stalls were converted to 15 pens of 48 sows and 20 pens of 48 sows. Another 1,064 stalls and pen places were kept for weaning and breeding. Each new group pen contains three Gestal feeders positioned midway along the alley wall of the pen. The pen layout includes a raised solid middle section that runs the entire length of the pen, with the solid area sloped toward the slatted floors on either side.

Sows prefer to lie on the solid flooring area

There are several partition walls located around the back and side of the pen that act as barriers, forming multiple 'bedroom' areas and giving sows a place to lie or escape from aggressive sows. Each pen of 48 sows is a static group for that gestation, and a small isolation pen can be made in one corner by installing a spindle gate, if needed. Keeping a lame or injured sow in the pen, but isolated from the group means that it is easy to remove them and also helps to minimize aggression when the sow recovers and is re-introduced to the group.

The gestation pens also include several walk-through partitions, so staff can easily walk the length of the barn, or enter any group pen, without having to open a gate or climb over a pen wall.

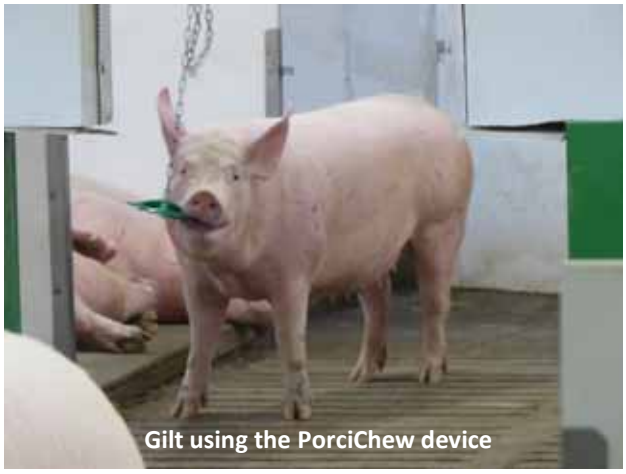
Some sections of the floor were capped with new concrete. The solid floors were sloped towards the slats with a one inch lip left above the existing slatted floor.

The ventilation system and inlets were not changed.

The first group of over 700 gilts and sows was trained to the Gestal feeders without any major issues. The computer readout showed that a majority of sows entered the feeder within the first day of it being in operation. Staff only had to show a small percentage of animals how to access the feeder. This was done by dropping feed in front of the sow as they helped to guide/coax her into the feeder. Once in the feeder, the end gate closes and the gilt receives a small amount of feed and can back out of the stall on their own. For most sows and gilts that needing coaxing to enter the feeding stalls, very few needed any help to use the feeder on the following day.

For more information about the Rosco Barn - HyLife conversion, please visit: http://groupsowhousing.com/

Group Sow Housing - Enrichment


Gilt using the PorciChew device

INTRODUCTION

The revised Code of Practice for the Care and Handling of Pigs[1] includes several changes that impact production practices on Canadian farms, including requirements related to sow housing, pain control at processing, and the provision of enrichment to pigs at all stages. While the use of enrichment has received less attention than sow housing or pain control, multiple studies have shown that providing appropriate enrichments can result in significant benefits to pigs.

Because pigs are highly motivated to explore their environment, providing enrichment gives them something to root and interact with in the pen environment, and can reduce the manipulation of pen mates. Enrichment benefits that have been found include reduced fear responses, reduced aggression and vices, and improved growth. There are multiple enrichment options that can be used, including group housing, alternative feed types, pen objects, pen design, or human interaction. Many of these enrichments can be produced on-farm and implemented at low to no-cost to producers.


A hanging barrel provides chopped straw to 4 pens

This article highlights the features of effective enrichment, the benefits of providing enrichment at different stages of production, and suggests some practical enrichments that can be tried on-farm.

ENRICHMENT BENEFITS

The goals of enrichment include increasing the range and number of normal behaviours, preventing or reducing the severity of abnormal behaviours, increasing the positive use of pen space, and increasing pigs' ability to cope with physiological challenges.

Effective enrichment at weaning has been shown to change pigs' behavior at later growth stages. Pigs given enrichment before weaning showed significantly less tail biting during the grower-finisher period, and also showed greater interest in objects in their environment[2]. There is also a genetic component to enrichment, with some breeds showing greater benefits. Gilts with higher genotypic production traits showed higher levels of biting behavior, and enrichment using burlap sacks reduced this behavior by 50%[3].

Pigs are highly motivated to root and explore their environment. Without some outlet for this behavior, they are more likely to direct exploration towards pen mates. They are also more likely to show fear and excitation when introduced to a new environment. Studies by Temple Grandin[4] showed that pigs given enrichment were more willing to walk down a chute, and to interact with an unfamiliar person. Enrichment has also been used to reduce mixing stress, with pigs given enrichment showing greater exploration of the environment and reduced aggression compared to unenriched control groups. Enriched pigs have also shown better performance in tests of learning and intelligence[5].

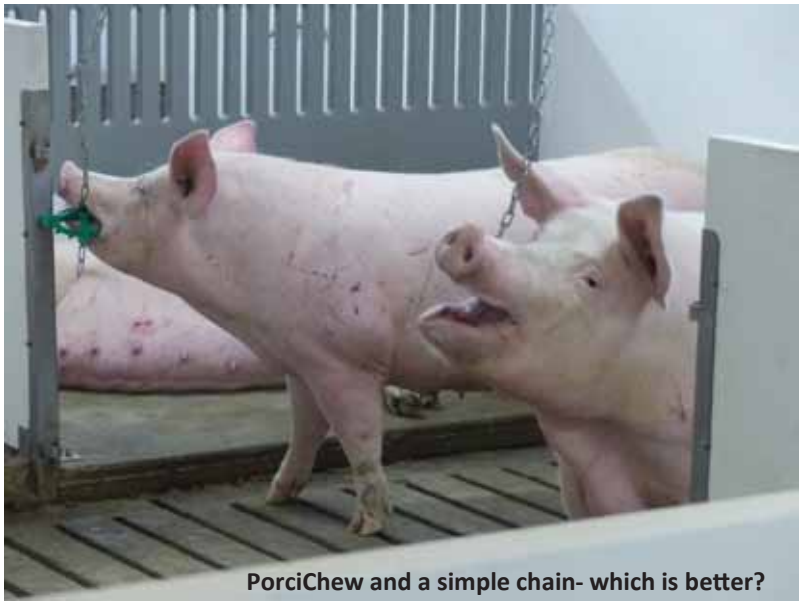

Wood on a chain provides an inexpensive enrichment device

ENRICHMENT OPTIONS

A number of options for enrichment objects are available, many of which can be produced on-farm at low cost. In general, enrichments should be safe for pigs, easily cleaned, and soft or malleable as pigs prefer materials they can bite or chew.

Group Sow Housing - Enrichment (con't)

Enrichment objects should be suspended to avoid fouling, but should be hung close to floor height as many pigs like to manipulate them while lying. Novelty is also an important factor, as pigs will become bored with the same enrichment, especially if it is soiled. Ideally a variety of objects should be used, which are periodically cleaned and rotated around the room. Many enrichment ideas can be found on the internet; for example, try by searching 'active pigs' on YouTube.



PorciChew and a simple chain- which is better?

Sows: Finding suitable enrichments for stall-housed sows can be a challenge, as less research has been done on sows compared to finisher pigs. For sows in groups, recommended enrichments are similar to those used for finisher pigs, including wood on chains, chains, hoses or PVC pipe as well as commercially available devices. However, because sows are mature animals and are feed restricted they are generally less interested in exploring their environment and more interested in consumable materials such as hay, straw, or high fibre feeds.

While straw is known to be a preferred enrichment for pigs, it can be difficult to provide in fully slatted systems. On partial slats, a small quantity of straw can be provided on solid areas, or in a rack or hopper, and will generally be consumed without affecting the pits. A small amount of high fibre feed can be provided, either on the floor or in a hopper, and can reduce aggression and increase satiety (feeling full) in restricted fed sows.

Sows explore multiple enrichments as part of an SIP demonstration project

Grow-finish: The economic benefits of enrichment are most evident in grow-finish pigs, as proper enrichment can reduce tail biting and other negative behaviours which can result in culling or death losses in market pigs. Thus, the majority of research on enrichment has been done in grower-finisher pigs. For finisher pigs, sections of chain, wood mounted in a holder or on a chain, and short sections of PVC pipe have been used successfully. Finisher pigs are very active and can be more destructive, so the enrichments must be robust enough to withstand prolonged investigation/chewing. Destructible enrichments such as wood are more attractive, but must be maintained and replaced as needed. While balls and rubber tires have been tried in the past, these are generally not suitable. Balls and other objects placed on the floor soon become soiled and provide little long term interest to pigs, and tires can pose a health risk due to steel belting or pigs being trapped in them.

Piglets: Enrichments for nursery pigs can include a variety of rubber toys, cotton rope or PVC pipe, and can be left loose in the pen or suspended above the floor. At this stage objects such as dog chew toys can be used, and will last for years with periodic cleaning. Similar enrichments can be used in the farrowing crate and by encouraging pigs to explore their environment it can potentially reduce weaning stress and improve feed consumption at weaning.

Group Sow Housing - Enrichment (con't)

SUMMARY

In conclusion, enrichment is much more than just giving toys to pigs. Providing enrichment need not be costly or time-consuming, and there is overwhelming evidence that both the welfare of pigs and production efficiency can be improved by this practice.

As Canadian producers begin to implement enrichment, they will find new and innovative ways of meeting this new requirement. If you find something that works for you and your animals, please share your ideas with us.

References

1) National Farm Animal care Council, 2014. Code of Practice for the Care and Handling of Pigs. Canadian Pork Council.
2) Telkänranta, H., M.B.M. Bracke, and A. Valros, 2014. Fresh wood resuces tail and ear biting and increases exploratory behavior in finishing pigs. Appl Anim Behav Sci, 161: 51-59.
3) Ursinus, W.W, C.G. Van Reenen, B. Kemp, and J.E. Bolhuis, 2014. Tail biting behaviour and tail damage in pigs and the relationship with general behaviour: Predicting the inevitable? Appl Anim Behav Sci, 156: 22-36.

Provincial Sow Housing Updates

The restructuring of the Quebec swine sector to improve herd health is on-going. Well-located production sites (isolated) are being turned into farrow-to-wean facilities. However, low pig prices have delayed several projects.

From October 2015 to October 2016 more than 16,000 sows were newly housed in groups. There were 2 farms with a total of 4,000 sows that are doing new construction and 17 farms with a total of 12,000 sows doing renovations. Of the 20,000 sow spaces being renovated approximately 80 % are independent producers. The ventilation system in conversion barns has not been changed, but some operations have used deflectors to change the air pattern. The type of flooring being used is not of a standard size. Some producers have replaced floors while others have tried to cover the slats with flat metal but it does not always work as well. The sows can root it up. All renovations have done some work on the flooring.

Quebec is not tracking the costs of renovations because each project is different in what they have to do. i.e. breaking out and replacing concrete floors or just removing stalls. Tracking new barn costs is easier to do.

An important project under construction is Olymel's Ferme Boréal that has 5 farrowing barns with 2,400 sows (a total of 12,000 sows) using the free access ESF Maximus system and 5-week batch farrowing. The first farm has been in production since July 2016. The second farm was recently completed and populated in the spring 2017.

Future research projects for group housed sows will focus on optimizing livestock management and pen layouts with free access ESF systems. Another project will evaluate water wastage of different drinking systems and study the drinking behaviour of gestating sows housed in groups.

Ontario has been quite active in extension efforts over the past 8 – 10 years with presentations on group housing at most of the extension events. There have been two dedicated group sow housing seminars run in Ontario in the past 4 years. The first was in September of 2014 with about 50 attendees each day of the two day event. This meeting was targeted to introduce producers to group sow housing systems.

In September of 2016 OMAFRA, Ontario Pork, SIP and PSC put on a second event. Day one was for producers who already had group sow housing, and included key topics and a producer discussion panel to deal with issues of working operations. Day two was geared to producers thinking about group housing and looked at different feeding systems, conversions versus new builds and included a producer panel. The event included a small trade show with lots of exhibits. Over 274 producers and industry members attended the event. Speakers included Dr. Jennifer Brown, Murray Elliot and NSHCP producers John Van Engelen, Doug Ahrens, Geert Geene and Adam Schlegel.
For more information go the NSHCP website under Resources—Group Sow Housing Seminar

April 2017 London Swine Conference had a session on Retrofit for Loose Housing with speakers Drs. J. Brown, PSC and H. Frobose, JYGA Technologies. http://www.londonswineconference.ca/images/pdfs/Proceedings/LSCProceedings2017.pdf

Provincial Sow Housing Updates (Con't)

Ontario suppliers and builders say there has been lots of interest in group housing. This past year has seen several new builds and renovations, ranging from several 100 sow spaces to over 3000 spaces. This coming summer could see upward of 30,000 more spaces for group housing. A lot of these spaces are sow replacements and not new expansion.

In Ontario, veterinary clinics are often taking the lead on providing information on group sow housing for producers. One swine vet clinic in Ontario had a young producer day to discuss production issues. It was specifically for producers under the age of 30. Young producers spoke about the issues they are seeing on their family operations, and feedback from the event was very positive.

Manitoba: In Manitoba and Western Canada, interest in new builds and group housing renovations is increasing. Maple Leaf has approximately 20,000 sows spaces converted over to group housing. HyLife has converted one barn of 3000 sows (see Producer Profile in this issue), and has plans for additional renovations. Several Hutterite colonies have taken the plunge and built new barns with ESF, typically with herd sizes of 500 or greater.

Considering loose housing? We can help!

Are you thinking of converting your barn to a group housing system?

We can help you make the best choice for converting your present barn or designing a new barn.

What the NSHCP can do for you:

- Provide detailed advice about the group sow housing options that could work for your herd.
- Develop a personalized barn plan illustrating the layout options for implementing group sow housing within your existing barn footprint and sow herd size, or with a barn expansion.
- Provide assistance in seeking supplemental funding to assist in infrastructure costs for the conversion.

If interested please contact:
Dr. Jennifer Brown, Prairie Swine Centre – Tel: 306-667-7442, email: jennifer.brown@usask.ca

Doug Richards - NSHCProject@gmail.com

Subscription: The NSHCP newsletter is a periodical publication that covers updates on the NSHCP and provides resources and further information on group sow housing.
To receive regular copies electronically or by mail, please contact: Doug Richards, Project Coordinator at NSHCProject@gmail.com

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