

National Sow Housing Conversion Newsletter

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NSHCP News

With improved profit margins and recognition of the new requirements in the Code of Practice for the Care and Handling of Pigs, Canadian producers across the country are showing increasing interest in group sow housing. Quebec is leading the way with new builds and barn conversions (see Provincial Updates), led by integrators and individual producers. Ontario has also seen a number of conversions implemented by individual producers, including the farms of John Van Engelen (Hog-Tied Farms Ltd.) and Adam Schlegel (Schlegelhome Farms Inc.). Barn conversions at these two sites are being documented as part of the NSHCP. Several Maple Leaf production sites in Manitoba have converted and others are in the process of conversion. There is less construction ongoing in Saskatchewan and Alberta, due to the presence of larger sow herds and the high cost of conversions. In these provinces, conversions and new builds for group housing have been led primarily by Hutterite colonies.



The majority of barn renovations have installed ESF (Electronic Sow Feeding) systems. These systems offer advantages such as individual feed control, automated sorting and heat detection, which can result in savings on feed and labour. ESF systems also allow for efficient use of floor space through the use of large group pens, with groups from 60 to over 300 sows per pen. Many of these designs have been able to maintain existing herd numbers while providing 20 sq ft per sow through efficient pen layout and use of alleys. ESF systems include designs from European suppliers Big Dutchman, Nedap, Schauer, and Weda, as well as Canadian suppliers CanArm and JYGA.

Speaking at the London Swine Conference in April 2015, Dr. Tom Parsons, University of Pennsylvania, emphasized that proper planning and timing are two keys to successful barn renovations. Starting the planning process early, even if you don't plan to proceed immediately with renovations, will help in the equipment selection and decision making process. By planning well in advance, you will be ready to move when the timing is right, e.g., based on financing or hog markets. This approach worked well for Alberta producer Wim van Wijk (featured in this edition's Producer Profile).

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Making barn renovation examples and information available to producers is a key objective of the NSHCP. The development of the project website, www.groupshousing.com, is central to this objective. The website is currently under development, and will present details on 4 barn renovations and examples of 10 existing group housing operations across Canada. Information will be provided on the different types of feeding systems, grouping practices and training of sows for ESF. The site will also provide contact information for advice and support for producers on group housing renovation and management practices. The website is currently undergoing final revisions in preparation for launch in January 2016.



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Producer Profile: Wim van Wijk, Horst Farms

Wim van Wijk is the owner and operator of Horst Farms, a 275 sow farrow-to-finish farm located near Red Deer, Alberta. Van Wijk made the transition to group sow housing in 2014 and gave a presentation on his experiences with implementing ESF at Prairie Swine Centre's Spring Meeting in April 2015. With 40 producers and industry representatives in attendance, van Wijk presented photos and described his experience with the transition to group sow housing. In 2013 he was considering a herd depopulation to address a disease problem and decided that this was a good opportunity to move to groups. The timing could not have been better, as the transition was completed in time to realize strong market prices just as the herd was returning to production.



The renovation was completed over an 8 week period, with van Wijk doing most of the work himself. The main breeding room was converted into one large ESF pen capable of holding 168 sows, equipped with 3 Nedap feeders and a sorting area. ESF was selected in order to take advantage of individual feeding, with the aim of reducing feed costs and maintaining even body condition. The slatted floors were replaced with new slatted floors that had a gap width of 20 mm to give better footing, and concrete pads were poured in bedroom areas for added sow comfort and to encourage sows to lie away from the alleyways. The renovation was done at a reasonable price, with construction costs for renovating the 95 ft x 39 ft gestation barn being just over \$250 per sow. This includes only the material costs for the renovation (ESF equipment, feed lines, concrete, slats and plastic penning) and excludes any labour cost.

The sows are mixed after breeding, and batch farrowed every 3 weeks. Overall, van Wijk is pleased with the conversion, saying, "Production levels have improved, with increased pigs born alive, and easier farrowing." In addition, the sows are easier to move; before the renovation it took two people to move sows to farrowing, and now it only takes one. "Sows are walking much easier from gestation to farrowing, and they are a lot calmer."

PSC Spring Meetings Highlight Code of Practice and Transition to Groups

The new Code of Practice for the Care and Handling of Pigs and group sow housing were two subjects highlighted in the Prairie Swine Centre's spring meetings. The meetings were held last March and April in Swift Current (SK), Red Deer, Lethbridge (AB), Niverville and Portage la Prairie (MB) in collaboration with Elanco. Over 200 producers and industry representatives attended the events.

Kase van Ittersum, a Calgary-based agricultural engineer, spoke at the Lethbridge and Swift Current meetings, providing farm examples from several barns that have installed group housing with ESF units. Van Ittersum emphasized how well-designed ESF systems consider sow behaviour, and are designed to deliver individual feeding that is more targeted towards the individual sow's needs than can be achieved with stalls. These systems combine large sow groups with multiple ESF units, and typically use dynamic mixing.

Many farms are also moving towards earlier grouping of sows. In the past, sows have typically been mixed at 4 to 5 weeks of gestation, after pregnancy is confirmed. However, many sites are now moving towards mixing sows shortly after insemination (e.g. within 4 days of breeding). This reduces the need of stalls for breeding and early gestation sows, and gives more room for group gestation pens. Van Ittersum reported that many producers using the newer designs of ESF pens are achieving production levels at or above 30 pig/sow/year, demonstrating that moving to groups can be achieved without compromising production.

Producer and NSHCP participant Wim van Wijk spoke at the Red Deer meeting, where he described his experiences renovating his 275 sow herd to ESF (see previous article). Maple Leaf Farms representatives Neil Booth and Steve Davies spoke at the two Manitoba meetings where they described Maple Leaf's decision-making process around the selection of a group housing system, and the experience gained during their first renovation.

ESF Training for Gilts

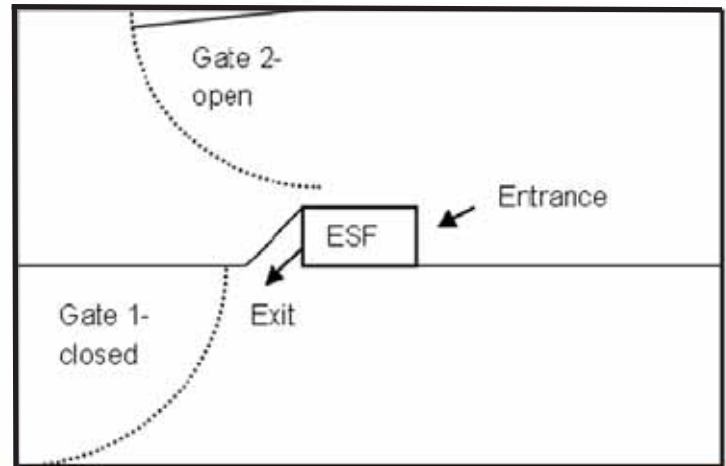
The training of gilts (and initial training of sows) is one aspect of ESF systems that can be overlooked. The sow herd and gilt replacements must be initially trained before being put into ESF systems. Training should not be ignored; if it is farms will require increased labour to push animals through the feeder, there will be a higher incidence of returns to estrus and the ESF will not function as designed.

One to two weeks should be allowed for gilt training, depending on the system design. The stockperson(s) in charge should be those with the best animal handling skills. It is essential the stockperson be patient and that gilts do not have a negative experience with ESF.

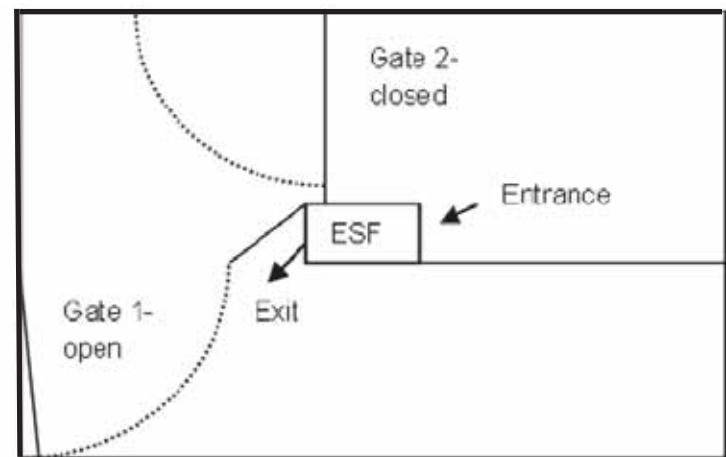
A separate ESF pen should be used to train the gilts. The ESF should ideally be smaller to match the gilt size, and only 30-40 gilts should be kept in the pen rather than filling it to the maximum ESF capacity. Initially, the entrance gates can be tied open and the exit can be left partially open as well. As the gilts become used to the feeder, the gates can be gradually shut. Pen dividers should be used to keep track of the gilts using the system and to reduce the amount of space on the entrance side to encourage entry into the feeder.

A less costly training alternative is a pen divided by separated entrance and exit gates, similar to the ESF gates. Feed is on one side and water on the other, so gilts must pass through the gates to access both. To begin, the gates are left partially open to encourage gilts to pass through. As the gilts become accustomed to the gates, the gates can be closed as in the actual ESF operation.

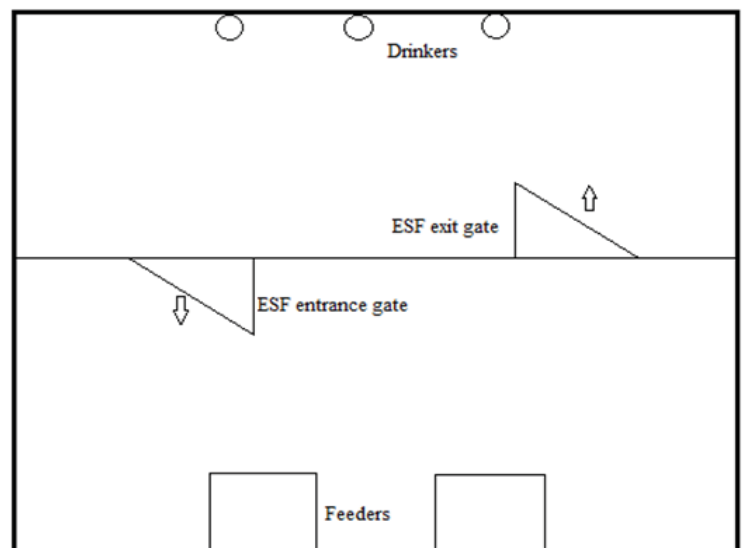
Along with learning to use the ESF system, gilts should learn to socialize before entering group pens. For gilts raised in groups, that may be sufficient. However, there is some benefit from placing gilts in a pen adjacent to the sow group they will be mixed with, especially if there are bars between pens to allow contact. Housing the gilts separately, or only with first parity sows may help to reduce aggression, and may benefit the more submissive animals.



Early in the day all gilts are moved to the entrance area, and gates positioned to give more room near the entrance.



As the day progresses, gilts move through the feeder to the exit side. Gates are adjusted to allow more space in the exit area, crowding animals on the entrance side.



Alternative training pen using just the gates from the ESF.

Research: Mixing Times for Sows

Currently, the most common management strategy for group housing in North America is to place sows in groups at 4-5 weeks after breeding. This avoids aggression during the implantation period, allows for individual feeding and observations during breeding and implantation, and allows pregnancy checking to be done in stalls. However, further reductions on stall use are possible and other mixing times may offer some different advantages. For example, mixing directly after weaning would reduce the amount of time sows spend in stalls, increase the amount of space available for gestation pens, and would allow the majority of aggressive encounters to occur before breeding.

The Prairie Swine Centre (PSC) recently concluded a study looking at different timing for mixing of group housed sows. The strategies tested included early mixing (EM: mixing at weaning), late mixing (LM: mixing at 5 weeks), and pre-socialization (PS: mixed 2 days, then stalled until mixing at 5 weeks after insemination). The pre-socialization treatment was tested as a way to reduce aggression when pregnant sows were regrouped. Each treatment used groups of 14 sows, fed in free-access stalls, with sows allowed into stalls only for feeding.

The results showed that there was little difference in production figures or the level of aggression among the different strategies. The conception rate was highest for early mixing, and lowest for the late mixing treatment, with pre-socialization in between. Early mixed sows also had fewer still-borns when compared to late mixing or pre-socialization (Table 1), which could reflect the increased fitness of sows from the additional time spent in groups. There were no significant differences in aggression between treatments, and the pre-socialized sows experienced aggression at both mixing times, so it did not show any advantage over the other treatments.



Free-access stalls at PSC: Sows were allowed into the stalls only for feeding

Table 1. Production characteristics of sows in three mixing treatments: Early Mixing (EM); Pre-Socialization (PS); and Late Mixing (LM).

Variable	Treatment			
	EM	PS	LM	P
Conception rate (%)	97.62	94.05	86.9	0.028
Total born	15.16	15.63	15.47	0.700
Born Alive	13.66	13.27	13.18	0.691
Still born	0.95 ^a	1.54 ^b	1.58 ^b	0.003
Mummies	0.47	0.44	0.53	0.766

Overall, the production figures among treatments were similar and indicate that the timing of group formation is flexible. Mixing at weaning can allow producers to reduce the amount of space taken up by stalls, and may be preferred for those wishing to decrease stall use. Mixing in the standard way at 5 weeks after breeding can allow for reduced labour at breeding, heat checks, pregnancy checks, daily health checks, and individualized feeding throughout the implantation period. Pre-socialization is not recommended due to sows experiencing initial mixing aggression twice, and the increased labour for stockpersons. Further studies to examine the effects of mixing after insemination are now underway at both PSC and the University of Manitoba.

The mixing at weaning study received international recognition as Dr. Jennifer Brown, research scientist at Prairie Swine Centre, was presented with an innovation award from the U.S. National Pork Board at the American Society of Animal Science Midwest meeting in Des Moines Iowa, in March 2015. The research was a collaboration between the Prairie Swine Centre and the University of Minnesota, and was supported by funding from the National Pork Board.

Provincial Sow Housing Updates



Quebec is the most active province in terms of implementing group sow housing, with two newly built barns and four retrofitted barns completed since January 1, 2015. The new builds are both free-access ESF systems, and hold 2100 and 2900 sows. Of the retrofitted barns, two are free-access ESF systems with 600 and 1200 sows, and the other two are shoulder stall systems both with 800 sows. A finishing unit was also converted to sow group housing using an ESF system, and a farrow-to-wean unit has been completed. There are also multiple barns under construction or in the process of renovating. A 300 sow farrow-to-finish barn is in the process of converting to a 1200 sow farrowing barn, and a farrowing unit is converting to group housing. There are also several new barns in the process of being built (fermesboreales.coop/en/home); each of these will house approximately 2400 sows, with group gestation. In addition to barn construction, two workshops on sow housing were held in Quebec on February 25-26, 2015 with approximately 130 people at each event and strong participation from producers and industry alike .



Ontario producers who attended the 2015 London Swine Conference (April 1 & 2) heard presentations on group sow housing by Dr. Tom Parsons, Pennsylvania State University . His presentation on barn renovations and management tips for groups is at

www.londonswineconference.ca/proceedings/2015/LSCProceedings2015.pdf (page 64)

The breakout session had producer Tim Stam of Stam Farms talk about their 600 sows group housed on straw with 11 ESF units in a naturally ventilated gestation barn. The new (2014) naturally ventilated barn has straw pack on solid floors, 3 pens for P3+ sows with 6 ESF units and 2 pens for P1 – P2 sows and 5 ESF units. The large pens are designed to allow the use of a skid-steer for clean out. The ESF units are on slats and have an under slat barn scraper. The system also has boar pens with RFID heat detection.

In September, the Shakespeare Swine Seminar, sponsored by Ontario Pork and the Ontario Ministry of Agriculture, Food and Rural Affairs had Dr. Larry Coleman and Steve Horton present on “Loose housing and high sow productivity: can they co-exist”. The speakers manage a large operation in Nebraska and talked about their experience and results when they started up a new 5500 head ESF barn in an operation that had always run stall barn facilities. The take home message to the 140 in attendance was with proper planning and management you can have high sow productivity. Since July 2013, conception rate was approximately 97% for gilts and 96% for sows with a combined farrowing rate of approximately 95%. Litter size has stayed consistent with an overall productivity rate of 34-35 pigs / sow/year.

Ontario has seen some building activity this past year. Builders indicate that several operations are looking at converting to loose sow housing either by renovating or building new facilities.



Manitoba has seen Maple Leaf Agri-Farms continue to convert barns this past year. The company is planning to have all their barns equipped with group sow housing. One Hutterite colony has replaced an existing barn with a new structure and ESF units. Equipment suppliers report that producers are making enquiries, looking at different options and planning for the time when they replace or renovate existing facilities.



Saskatchewan and **Alberta** are seeing an increase of interest in group sow housing, but actual barn renovations are few. Over the past year, several speakers have presented information on group housing, including sessions at the Sask. Pork Symposium, Banff Pork Seminar and Prairie Swine Centre’s Spring Meetings. The session speakers included Jennifer Brown (PSC), Kase van Ittersum (CAWI Canada), Christian Blais (Isoporc, Gene-Alliance) and Wim van Wijk (Horst Farms), and were well attended. The Matador Colony near Swift Current, SK, completed construction on a new 600 sow farrow-to-wean facility in the spring of 2015.

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.



The specifics: We're looking for producers in Alberta or Saskatchewan who are planning to convert their barn to group housing, but have not yet begun the process. We will be documenting the conversion process and sharing the information with other producers. If interested please contact:

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

Group Sow Housing on the Web

The NSHCP website providing resources on group sow housing will be launched in early 2016. The website: www.groupsowhousing.com, will feature project farms with producer profiles, barn layouts, conversion plans and detailed information on the construction process and costs, as well as presenting factsheets and resources on group sow housing. Videos of the operations and interviews with barn owners and managers will provide first-hand information on how they have implemented loose housing. Links to a wide range of resources will be included to keep Canadian producers up-to-date on housing innovations around the world.

Web resources: Some good website resources on group sow housing can be found at:

Centre de développement du porc du Québec inc.: www.cdpq.ca/specialized-reports/sows-in-group-housing.aspx

Ontario Pork: www.ontariopork.on.ca/ProductionStandards/AnimalCareResources.aspx

Manitoba Pork: www.manitobapork.com/manitobas-pork-industry/animal-care/tools-for-group-housing/

Australian Pork: www.australianpork.com.au/latest-news/successful-group-housing-systems-for-dry-sows-workshop/

Subscription: The NSHCP newsletter is a periodical publication and covers updates on the NSHCP and provides resources for further information on group sow housing.

To receive regular copies electronically or by mail, please contact:

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