

National Sow Housing Conversion Project

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SUMMARY

The use of stall housing for gestating sows has been criticised for being restrictive and limiting sows' ability to perform normal behaviours. As well, increasing numbers of food retailers and supermarket chains have announced plans to develop a gestation 'stall-free' pork supply chain. Consequently, the swine industry is under pressure to convert existing gestation stall housing to group systems. However, there are concerns within the industry around the costs of conversion and management of sows in groups. Within the Canadian industry there is relatively little knowledge and experience in this area. The National Sow Housing Conversion Project (NSHCP) is intended to provide the necessary information to facilitate the successful conversion of Canada's sow barns to group housing. The project brings together industry and scientific expertise to produce a comprehensive national strategy involving demonstration farms and technology transfer to support Canadian swine producers. This report describes the project, which will follow four barns through the conversion process, and collect information from an additional ten barns that are already managing sows in groups. Information collected will be in the form of questionnaires, interviews, photos, videos, and economic data. Project results will be made available to producers through presentations, newsletters, and a website offering scientific and practical information on group housing and the conversion process.

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INTRODUCTION

In 2007 the largest pork producers in the USA and Canada pledged to transition their gestation sow housing to group systems over the next 10 years. In 2013, EU countries implemented a ban on the use of sow gestation stalls after 4 weeks gestation. More recently, many North American food retailers, including Tim Hortons, Burger King

and McDonalds, and the supermarket chains Safeway, Costco and Walmart announced plans to develop a gestation stall-free pork supply chain. These trends and recent changes to the Code of Practice have placed Canadian producers under pressure to convert existing gestation stall systems to group housing. With over 60% of Canadian pork going to export markets, the future strength of the industry depends on maintaining and increasing access to global markets.

However, there are concerns surrounding the conversion from stalls to group housing. The process requires a large capital investment, there is a variety of systems available, and the 'right' system will vary depending on capital available, herd size, barn layout and management style. Within the Canadian industry there is relatively little knowledge or experience on the management of sows in group housing. Group housing systems are categorised primarily according to the feeding system used, with 'competitive' and 'non-competitive' systems being the two main categories. Most group systems require more space and different management skills than stall housing, but overall labour inputs are reported to be similar. Without proper support and advice during this transition, there is the potential for substantial losses in herd productivity, a decline in sow welfare and an overall reduction in the Canadian breeding herd as producers make this change. The National Sow Housing Conversion Project (NSHCP) brings together industry and scientific expertise to produce a comprehensive national strategy, involving demonstration farms and technology transfer, to support and inform Canadian pork producers in this conversion.

MATERIAL AND METHODS

The NSHCP is a descriptive project with the practical aim of generating information that will increase producer's confidence when considering and implementing group sow housing. This is being achieved through five key activities:

1) Development of information resources on group sow housing

Factsheets and articles have been developed based on research and extension work describing the pros and cons of different group housing systems and principles that promote ease-of-management, sow productivity and welfare. These materials are distributed at producer meetings, through provincial pork organisations and are available at PSC's website.

2) Development of barn conversion plans

Four barn sites are being identified across the country that are in the process of converting to groups. The NSHCP will work with these producers to develop conversion plans aided by the University or Manitoba's Swine Housing Conversion Design Utility (SHCDU), a computer software program designed to model different group housing systems and estimate sow numbers and conversion costs.

Once the sites are confirmed, the conversion is documented through questionnaires, interviews, farm visits, photos, and videos taken before, during, and after the transition. In addition producers are asked to provide production and cost data. Initially, an external viewing gallery was planned for each site to allow other producers to securely view the conversion, but due to the increase in biosecurity risk from PEDv this plan been revised. Instead, videos and a dedicated project website will be used to provide barn videos and a virtual tour of each site.

In addition to the four barn conversions, up to ten other barns that are already managing sows in group housing will be documented across the country. Less intensive data will be collected from these sites, including questionnaires, interviews, photos, videos, and barn visits. These additional sites will be used to demonstrate a wider variety of system designs, and highlight the necessity of developing a system that works with the individual barn design, budget, and management style.

3) Technology transfer: disseminating barn conversion information

Communicating the results to producers interested in converting to group housing is one of the main goals of the NSHCP. Results are being presented through workshops and producer meetings, a bi-annual newsletter, and the development of a website that will contain the full documentation of the four conversions, details of the 10 additional sites, general, web links and contact information for further information and advice.

4) Refining the University of Manitoba barn conversion computer model

Two pilot sites were used as case studies for testing the Swine Housing Conversion Design Utility (SHCDU). Over the course of the project, numerous improvements have been made to the SHCDU based on limitations that were identified through the use of these case studies.

5) Development of a national working group

The National Sow Housing Working Group (NSHWG) was formed, consisting of producer groups, industry representatives and scientists from across Canada. The goal of the NSHWG is advise and coordinate the long term NSHCP. Having a national working group to coordinate future projects will ensure that producers across the country have access to similar information and the best possible advice regarding barn conversions.

RESULTS AND DISCUSSION

Funding for this four year project was secured in 2014. Currently primary and secondary sites are being identified and documented. Producers are being informed of the project through presentations at producer meetings via provincial pork board members, and through word of mouth. Currently two primary sites have been approved in Ontario, and three potential sites have been identified in Quebec and Manitoba. Five secondary sites have been approved.

Three factsheets are available discussing the pros and cons of different group housing options.

The factsheets are available on the internet at: <http://www.prairieswine.com/national-sow-housing-conversion-project-2/> and cover: a) Competitive feeding Systems; b) Free Access Stalls; and c) Electronic Sow Feeders. Seven articles reviewing scientific information on group sow housing and management are also available. The articles make up PSC's 'Science of Ethology' series, and can be found by searching 'Science of Ethology' using PSC's Pork Insight search engine, located at: <http://www.prairieswine.com/pork-insight/>

Based on data from the University of Manitoba, CDPQ and NSHCP, cost estimates for barn renovations range from approximately \$300 to over \$1,000 per sow, depending on the system selected, condition of existing facilities and availability of labour on-farm. Investment in flooring, pits and penning are the most costly items. Renovation costs per sow also depend to a large extent on the number of sows that can be accommodated. On a cost per square foot basis, competitive feeding systems such as floor feeding or short stalls are the least expensive option. This is due to the ability to re-use existing feed lines and stall fronts. However, the longer term costs such as increased management inputs and potential for production losses due to competitive feeding should be considered. Transition costs, such as the transfer of sows to another site during the renovation period, are not included in most estimates, and have been estimated at an additional \$75-100/sow.

Some areas for improvement and cost saving have been suggested. If existing floors and pits can be used, this can result in significant cost savings, however, flooring can also have a great impact on sow lameness and productivity in groups. Existing stall flooring is generally unsuitable for loose housing. While slat and gap widths have not been studied scientifically, the general recommendation of having gap widths no greater than 20 mm and slates no smaller than has gained wide acceptance in the EU and with ESF manufacturers.

A bi-annual newsletter and a website will be used to help communicate the results of the project to producers. Currently, the website content is being developed and the domain name www.groupsowhousing.com has been secured. The first NSHCP newsletter has been produced and was available to producers at the Saskatchewan Pork Symposium. It remains available by request or as a digital version at www.prairieswine.com, future versions will be available as a hard copy or online, and a mailing has been assembled for future editions. The newsletter also mentions the need for more participating barns, and may be able to help reach a wider audience. The working group remains active, and met most recently during the Banff Pork Seminar in January 2015.

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