



Leading the way: global pig producers say no to sow stalls

The global business case for group sow housing with enrichment

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Cover: A fibre dispenser – part of Betagro’s group housing system – encourages pregnant sows to move more freely and socialise as they feed. Photo: Betagro Group, Thailand

Ending confinement: good for business, good for animals

Confining sows during gestation is now considered unacceptable by consumers in many parts of the world. This is because confinement to stalls deprives sows of the ability to move freely, turn around and express natural behaviour. Sows suffer acute psychological and physical stress in confinement.

Consequently, supermarkets including Safeway, Costco and Whole Foods, multiple fast food companies, hotel chains like Marriott and food service companies like Sodexo have committed to sow-stall-free global supply chains.

Investing in welfare

Farm animal welfare is important to investors too. In 2016, an 18-strong institutional investor group, responsible for more than US\$3trillion in assets, agreed to focus on the links between farm animal welfare practices and investment opportunities and risks.

The International Finance Corporation has also taken a clear stand. It only invests in enriched group sow housing.

And the Business Benchmark for Farm Animal Welfare cannot be overlooked. Founded in 2012 and supported by World Animal Protection, it offers a respected annual ranking for the world's biggest food companies regarding animal welfare policy and performance.

Showcasing success

To meet consumer and supplier demand for higher welfare products some of world's biggest pig producers are successfully swapping sow stalls for enriched group sow housing. They are rapidly finding that keeping sows in social groups, using comfortable floors and offering enrichment is hugely beneficial to both the animals and their businesses.

This report documents the stories of leading producers from some of the world's biggest pig production markets: Thailand, China, Brazil, North America, and Europe. They reveal their successes in their own words, while the production data provided proves the business case for change on a large scale. As BRF's vice president of quality, Fabrício da Silva Delgado says: "Today you cannot produce without animal welfare".

Why enriched group sow housing?

World Animal Protection has developed a comprehensive Global Pig Welfare Framework that outlines our position on unacceptable, acceptable and good pig welfare practice in indoor systems. We are asking pig producers to publicly commit to systems that allow for better pig welfare. A copy of the Global Pig Welfare Framework can be provided upon request.

Sow stalls are unacceptable within our framework. Stalls prohibit movement and natural behaviour. Millions of sows worldwide cannot turn around, move, rest comfortably or interact with each other; they are denied a life worth living. But, stalls are not only bad for sow welfare they can negatively affect production too.

Sows kept in stalls exhibit abnormal stereotypic behaviour – repetitive abnormal behaviour – such as sham chewing. This is due to stress and frustration caused by restricted feeding, and prevention of their natural foraging behaviour, combined with living in a barren environment.

Affecting health and production

It is well established that sows kept in stalls exhibit a range of abnormal behaviours particularly due to the stress and frustration caused by confinement prohibiting their natural foraging behaviour, which is further compounded by restricted feeding, and living in a barren, uncomfortable environment. A key example of abnormal behaviours are oral stereotypies which can cause tooth damage that impacts feeding and nutrition, which in turn affects a sow's ability to reproduce. Oral stereotypies (particularly sham/vacuum chewing where sows resort to repetitively chewing when their mouths are empty) are up to five times more frequent in stall-housed sows than in bedded group housed sows¹.

Sows in stalls have higher levels of leg weakness and lameness because of their inactive lives. Producers often don't detect these weaknesses, and the pain and suffering caused because the sows are immobile. Body lesions, including shoulder injuries, and urinary and vaginal infections are also common.

The chronic stress caused by their confinement reduces their immunity, predisposing sows to disease, increased antibiotic use and early culling. These health and welfare problems have an often hidden but important negative impact on production.

Satisfying basic needs

Enriched group sow housing has many benefits over confinement in sow stalls. It allows the animals to satisfy their basic needs to move, socialise, forage, root and explore.

It also helps reduce rates of repetitive abnormal behaviours (stereotypies), chronic hunger, body lesions and lameness, and the negative effects on production. Avoiding confinement, and providing edible enrichment (e.g. straw, other edible fibre sources) allows natural foraging behaviour, satiates hunger and has been shown to prevent or reduce stomach ulceration and improve pork tenderness. Technological solutions enabling individualised feeding makes enriched group sow housing an optimal production and welfare choice.

Enriched group sow housing offers improved sow longevity, improved health and reproductive performance, improved resilience to disease and reduced antibiotic use. It also reduces the risk of zoonotic disease, improves pork quality, and stock worker job satisfaction. Importantly it can also result in higher prices for higher welfare products.

Key features of enriched group sow housing are outlined in Table 4 on page 18.

Leading producers

Our business case profiles the leading producers in Thailand, China and Brazil that we have worked with to introduce or expand enriched group sow housing in the business as well as examples from North America and Europe.

Introducing this system requires time, investment in staff learning and a strong, baseline understanding of pig behaviour and welfare among workers. However enriched group sow housing results in reduced labour costs, improved worker morale and animal welfare and production benefits.

¹Broom D M, Mendl M T and Zanella A J. 1995. A comparison of the welfare of sows in different housing conditions. *Animal Science* 61: 369–385. Reduced stereotypies and more positive behaviours were also seen in early mixed group housing versus stalled systems throughout pregnancy on a commercial farm in Brazil. (World Animal Protection 2015 case study).

Focus on: Thailand

Betagro Group (Betagro) is one of the first producers in Asia Pacific to commit to phasing out both sow stalls and farrowing crates. Betagro is a vertically integrated food producing company and among the top 20 global pig producers. It produces 2.4 million pigs for consumption annually.

In September 2017, the company committed to transform all company sow housing to enriched group systems and free farrowing by 2027.

Betagro's CEO Vanus Toepaisitphongse knows the company's business passion to create 'quality for life' includes good 'quality of life' for the animals involved, and that higher welfare is a key part of a sustainable business.

Improving quality of life

"I recognise the link between happy animals and food quality, and believe good animal welfare is an integral part of the journey to sustainable food for a sustainable future. Over the last five years we've had positive results with crate free systems. By the end of 2027, we aim to have replaced all company farms with the new systems across the country."

Enriched group systems and free farrowing produce stronger, less stressed sows, fewer stillborn piglets and better mothers whose piglets are more robust and heavier at weaning.

Betagro started with static group housing where only one breeding group of sows is kept in a pen. With more experience it is moving to larger dynamic groups of pigs with more than one breeding group housed in a pen together at the same time. Betagro is also reducing the time that sows are kept in stalls for a maximum of seven days following insemination, a significantly shorter period than the 28 days allowable under the European Council Directive 2008/120/EC. Betagro currently keeps 18% of company sows in enriched group housing. This indicates the commercial viability of these systems in Thailand.

"The sows in our farms should have a good quality of life. When they are able to move freely, they will have less stress, are able to eat more and produce healthy piglets which reduces disease risks and antibiotic use," says Rawat Chantong, vice president of livestock production and key designer of Betagro's sow systems.

Betagro supports staff innovation and development. More than 300 of their staff have been trained in animal welfare allowing them to support company farms or contract farms to implement new systems.

The Betagro example highlights that the time is right for other Thai producers to follow their example and progress to enriched group sow housing.

Spotlight on free farrowing

To replace farrowing crates, Betagro worked within the same pen area to design a system where sows can move and mother their piglets. One version has optional temporary sow holding for the first few days, or for any examination or treatment. The system has an essential warm creep area for piglets, baffle bars for careful sow lowering plus nesting material (readily available chewable mats) in the days before farrowing.

Nesting behaviour helps trigger farrowing and the pen enables better piglet colostrum uptake, immunity, weaning weight and piglet adaptability. The nesting material can be broken up/chewed by the sows allowing them to fulfil their nesting instinct. This material also allows the pens to be easily cleaned and staff welcome its use too. Staff report that once familiar with the system, many sows can farrow with the gates of pens remaining open. Consequently, Betagro is implementing open farrowing pens, as shown.

Staff say: "Sows recover more quickly after giving birth and have more freedom and their babies are in good health. Sows love the nesting mats."

Above-right: Farrowing pens and nesting mats at Betagro. Photo: Betagro Group, Thailand

Right: Staff report much healthier sows and heavier piglets. Photo: Betagro Group, Thailand



Focus on: China

Zhejiang Qinglian Food Company Ltd (Qinglian) became the first Chinese company to commit to ending the use of sow stalls in October 2017. It announced it would do so by 2025. Qinglian is a vertically integrated business with more than 1,200 retailer outlets in China. Its pig unit breeds from 10,000 sows which produce 200,000 pigs annually. Group sow housing system was first used in 2015.

Mr Jin, vice president of Zhejiang Qinglian Food Company Ltd saw a market edge for the company and higher quality pork for its consumers.

“With the improvement of the quality of our lives, more and more consumers begin to care about how the pork on their plates is produced. They prefer food that is not only safe and tasty but also with higher welfare standard. The demand of the consumers is in accordance with Qinglian’s mission, which is providing the best food for society.”

Pioneering group housing

Huide Yao, President of Guangdong DEXING Food Company Ltd (DEXING) also ensures his leading pig production company is ahead of the game. The company is a pioneer of group sow housing systems in China.

DEXING has been farming pigs since 1996 and first trialled group sow housing in 2007. It breeds from 10,000 sows which are mostly housed in groups for most of their pregnancies. The company uses a mixing pen for sows post-weaning, to give sows time to familiarise themselves with one another. This gives sows more space and minimises aggression in the group pens.

A 2005 visit to farming systems overseas convinced Mr Yao of the possibility of raising sows in groups in China.

“When I visited farms abroad, I saw sows live freely in groups for the first time. Later I learnt that keeping sows healthy is the key to the success of pig farms.”

Spotlight on lameness, good pen use and rope enrichment

Addressing sharp floors reduced lameness by two thirds on DEXING’s Nordic farm (below). Now 72% of the company’s sows have partitioned, dry, solid flooring areas for resting.



Below-left: Partitioned resting areas reduce agitation and create calmer social groups.
Below: Sows occupy themselves with a rope enrichment activity.



Focus on: China

After trialling enriched group sow housing, the company is convinced that its sows are healthier and can produce healthier piglets. Mr Yao explains this model has led to many benefits for animals, for business and for staff.

“We now focus on details and keep a strong sense of responsibility to our pigs. Higher welfare farming will fundamentally promote the quality and safety of our pork products”.

With advice from World Animal Protection, Qinglian and DEXING started to expand their enriched group housing, scaling up in 2016.

They have found that sows are happier and healthier and producing more robust piglets. Qinglian has now committed to replacing gestation stalls with enriched group housing for all pregnant sows by 2025. They are also providing growing pigs more room to move, comfortable flooring and effective enrichment.

Mr Jin: “We now focus on higher welfare production. By implementing group sow housing including enrichment and partitions, the quality of the pork is improved. As a result, our brand pork is priced 8 RMB/kg higher than other pork with great benefits to our company.”

Both companies also found improving animal welfare was good for their staff. While staff members were initially reluctant to change the way they worked and the training time involved, they were soon convinced when they saw the benefits and reduced labour.

“From then on, our staff started to embrace the group housing system and monitor sows better.”

These Chinese producers continue their animal welfare journey with sows, focusing also on welfare improvements for growing pigs and ultimately looking to free farrowing. A recent survey confirms their decisions:

83% of surveyed Chinese consumers said they wanted sows to be given freedom to move (preferring group housing to stalls) and more than 75% said they would be willing to pay more for this. (China tier 1 city consumer survey commissioned by World Animal Protection in 2016).

Spotlight on group management

Introducing partitions to clearly mark and encourage resting areas means that groups of sows are more stable, calm and less prone to fighting. When Qinglian added partitions with solid flooring for resting areas, sow use of resting areas doubled (from 32% to 62% of sows).

Below: Sows rest calmly inside their partitioned housing at a Qinglian farm.



Table 1: Averaged whole of production cycle herd data from DEXING and Qinglian

(NM = not measured)

Indicators / Averages	DEXING group housing	DEXING stalls only	Qinglian group housing	Qinglian stalls only
Farrowing rate (%)	91%	92%	93.25%	92.05%
Gestation (days)	116	115	114.98	114
Total live born (per litter)	11.0	10.7	12.61	12.33
Total litter weight (kg)	17.0	NM	16.28	14.2
Average piglet weight at birth (kg)	1.55	NM	1.29	1.15
Mummified (%)	0.1%	0.6%	0.58%	0.5%
Stillborn (%)	1.3%	3.3%	2.2%	3.4%
Heat repetition (%)	1.4%	2.1%	4.8%	5.3%
Live piglets born per sow per year	25.2	24.6	27.3	26.3
Sow culling rate (%)	35%	38-40%	NM	NM

Spotlight on enrichment

Initially both companies found it challenging to source enrichment materials that pigs could safely chew, manipulate and eat. Jute sacks, rope and provision of edible fibre in suitable racks/baskets allowed for good and consistent enrichment. This also reduced oral stereotypies.

Below-left: DEXING provides jute sacks near drinkers for enrichment.

Below: Fresh grass in hanging baskets at a Qinglian farm.



Focus on: Brazil

Brazil has some of the world's largest pig producers and they lead the way in converting to large scale enriched group sow housing.

BRF is Brazil's largest pig producer and one of the world's top 10. It has publicly committed to housing sows in groups in all farms across the business by 2026.

BRF's vice president of quality, Fabrício da Silva Delgado says:

"Our commitment in the company is to raise this process and philosophy still further in the company's present and future, addressing it as an on-going and evolving practice. Animal welfare is part of BRF's pig and pork production mission to 'produce affordable, healthy, reliable pork products with respect for the animals, people and environment'.

"We do not simply wish to jump on the bandwagon of modern pig breeding. We wish to be pioneers in a new model for large-scale breeding taking into consideration the principles of animal welfare in its essence."

Guilherme Brandt, agricultural manager for the pork chain says:

"I have worked in pig and pork production for 30 years. I spent my first five to 10 years planning, optimizing and encouraging the adoption of a new technique that we helped to introduce, disseminate and excel in: artificial insemination. Now the challenge for the next 10 years will be to change our production model, and allow access to collective housing. Our schedule has been very well planned, and we are carrying it out strictly.

"Brazil is going to change its way of raising pigs and producing pork, and we will be part of a new generation in the pig and pork chain. I believe in the new system because it allows animals better to express their group behaviour and their physiology."

Moving to group housing

BRF keeps 25% of its 400,000 sows (2017) in group housing and is continuing to implement group sow housing on contract farms and company-owned farms.

"New farms (or projects) are called 'AWF Farms'. They have collective gestation, nurseries to guarantee a greater age at weaning, and other details of the construction aiming to enhance animal welfare. In the case of farms already in production, we assess each circumstance individually, taking size, the existing structure and production model into consideration."

Contract farmers are supported by other farmers that have made the move to group sow housing.

Mr Brandt ultimately reinforces the principle that 'welfare rests upon a MINDSET of respect for, and suitable handling of, the animals'. He says the company understands that it takes time for new systems to be embedded and reach optimal performance.

"Our expectation is that we will maintain our output rates, but the animals will be calmer."

Below: BRF continue to pioneer new improvements in living conditions for farmed sows.



Reducing stereotyped behaviours

Edilson Caldas, BRF veterinarian and pig specialist reports: "Sows are now much calmer and more docile. There has been a significant reduction in stereotyped behaviours (bar biting, sham chewing) compared to farms with stalls. In facilities that have collective gestation, females can express their natural behaviour (forming groups, moving around, rooting and lying in whatever position they prefer).

"Their characteristics of exploring have become more obvious. Employees on farms report it has become easier to observe oestrus and apply vaccines."

Mr Caldas also notes: "Environmental enrichment (using straw, fibre in racks, ropes) favours the expression of the animals' natural behaviour and reduces harmful social interactions such as fighting, tail biting, and biting of the vulva."

He acknowledges that change takes time.

"The employees have welcomed collective gestation and environmental enrichment, and I believe that successful welfare outcomes such as improved behaviour are leading to positive responses in technical yield indicators on farms in the very near future."

Adopting early mixing

BRF and other producers (Seara of JBS and Muinça farm) are also starting to adopt early mixing, where sows are returned to their stable group directly after insemination.

This approach demonstrates group management and production benefits over systems with 42 days in stalls (then group housing) and stalled systems on the same farm. Muinça farm was the first to introduce group housing in Brazil. See Table 2 (next page).

BRF are aware of the consumer survey² conducted in Brazil and key Latin American markets.

"We are still developing products with an animal welfare appeal in pig and pork production, but we believe that in the very near future we will be able to pioneer the sale of products with the 'AWF' advantage in Brazil," says Edilson Caldas, Veterinarian, Pig and Pork Specialist.

Below: Group housed sows exhibit more natural behaviours than those living in stalls.



²World Animal Protection commissioned a survey of consumer perceptions on animal welfare across Brazil, Chile, Colombia and Mexico in 2016 (including pigs and pork). The survey demonstrated strong linkages of animal welfare with quality and sustainability, and willingness to pay for welfare. Survey available on request.

Focus on: Brazil

Table 2: Muinça farm production data from three different sow management systems

Groups / Rates	Group housing (post insemination)	Group housing after 42 days in stalls	Sow stalls only
Gestation days	116.68	116.78	116.96
Total born	16.01	15.80	15.51
Total live born	14.44	14.15	13.76
Mummified (%)	0.39	0.42	0.47
Litter weight (kg)	19.51	19.49	19.38
Ave live weight at birth (kg)	1.36	1.40	1.43
Heat repetition (%)	3.78	3.50	4.30
Abortions (%)	1.34	1.63	1.30
Farrowing rate (%)	92.94	92.23	91.12

Supplying higher welfare

BRF brand 'Sadia' supplies the higher welfare brand 'Jamie Oliver' which is independently certified.

JBS is also one of the world's top 20 pig producers. It has publicly committed to transition to group housing systems for sows across its entire supply chain by 2025.

Similarly to BRF, JBS and its processing company Seara, are conscious of rising consumer concern for animal welfare.

Paulo Roberto Pelissaro, Animal Health Corporate Specialist says:

"Consumers are increasingly attentive to the animal-raising system. For this reason the approach must meet the demands of the market. Beyond this, the approach has to do with respect - pure and simple - for the animals at every stage of the raising process.

Seara believes that animal welfare principles enable farms to perform better from a husbandry standpoint, producing quality products that meet the demands of our consumers.

Seara now has 45% of its breeding sows in collective gestation.

Seara recommends group gestation because it sees it as an opportunity - within a handling viewpoint - to improve technical and operational indicators".

The company has observed improved quantity and quality of piglets and has found farmers receptive to change.

Focus on: North America

Although some major production companies are lagging, much of North America is switching from gestation stalls to group sow housing.

This shift is primarily consumer driven in the USA, along with state-based laws in 10 states: Florida; Arizona; Oregon; California; Maine; Rhode Island; Massachusetts; Colorado; Michigan and Ohio.

Following an announcement by McDonald's that it would only source pork from farmers that do not use sow stalls by 2022, more than 60 food companies have followed with gestation crate elimination policies³.

Canada has mandatory changes. From 2014, producers replacing or updating gestation facilities must replace stalls with group housing from 28 days post-breeding. There must be complete conversion by 2024, and sows must be provided with enrichment to enhance the social and physical environment⁴.

Phasing out gestation stalls

Large US-based production companies including Smithfield, Cargill (acquired by JBS USA in 2015), Tyson, Clemens and Hormel have publicly pledged to phase out gestation crates⁵. Smithfield publicly announced in January 2018 that all company farms are now group housing.

Clemens Food Group completed the transition of company-owned farms to Free to Roam[®] in 2017, moving sows into groups 7-10 days post-breeding⁶. This system was developed based on sound science, veterinary expertise and agricultural experience from the US, Canada and Europe (Shields et al., 2017).

Canadian Maple Leaf Foods (MLF) was the first large-scale Canadian production company to commit to phase out gestation stalls⁷.

Economists show the cost of new build group gestation systems can be less⁸ than, or similar to new stall systems⁹. While additional production costs in the US may be outweighed by consumer willingness to pay¹⁰.

Spotlight on Maple Leaf Foods

MLF began the transition in 2013, converting two barns totalling 1,250 sows. By 2015, they had converted for 14,500 sows, increasing to 33,000 in 2017. MLF has since acquired another 33,000 sows, and has embarked on an accelerated program to group house them by 2021. Significant research, investment and experience enabled MLF to implement a group housing system for optimal sow welfare. They use an Electronic Sow Feeder (ESF) system, grouping sows 4-7 days post-breeding, also using the ESF system to confirm pregnancy.

Greg Douglas, vice president of animal care at MLF states: "We're trying to have a programme that's comprehensive for training, for oversight, and aligned with what society is expecting of us as a company... open housing is absolutely critical and it really helps me align my values of caring for animals and making sure we look through their eyes in providing care and animal health and welfare." MLF is conducting pilot enrichment initiatives to promote activity and reduce boredom in sows and growing pigs as a priority.

Below: A MLF group housing farm, which uses an ESF system.
Photo: Maple Leaf Foods.



³ <http://www.humanesociety.org/assets/pdfs/farm/gestation-crate-policies.pdf>

⁴ <http://www.nfacc.ca/codes-of-practice/pigs>

⁵ Shields S, Shapiro P and Rowan A. 2017. A decade of progress toward ending the intensive confinement of farm animals in the united states. *Animals* 7(5): 1-2

⁶ <http://www.cfgsustainability.com/animal-welfare/at-the-farm.aspx>

⁷ <http://www.mapleleafsustainability.ca/#!scene=5>

⁸ Blackwell T, Kains F, and Wilson R. 2003. Global pork trade and the design of pens for dry sows. 22nd Centralia Swine Research Update, Kirkton Ontario, 29 January, pp. 121-4.

⁹ http://www.hsi.org/assets/pdfs/hsi-fa-white-papers/economics_of_alternatives_to.pdf

¹⁰ Seibert L and Norwood FB. 2011. Production costs and animal welfare for four stylized hog production systems. *Journal of Applied Animal Welfare Science* 14:1-17.

Focus on: North America

At the 2013 Banff Pork Seminar, Dr Tom Parsons shared his experience, which at that time was based on feeding more than 70,000 sows with electronic sow feeders (ESFs) on 40 farms in 11 states.

Parsons stated: "...ESF barns are matching or exceeding the performance of a similar stalled barn. Both [ESF] barns utilize a pre-implantation system. This supports the notion that pre-implantation group constitution is not necessarily a barrier to good production"¹¹.

Measuring performance

Performance data over a one-year period from three production systems with stalls, and at least one ESF farm, were presented at the 2017 American Association of Swine Veterinarians meeting. The aim was to make a more appropriate comparison of systems with equivalent nutrition, genetics and management¹².

These data demonstrate ESF systems can achieve similar performance to stalls, even after a short period of operation, and with various grouping strategies (Table 3).

Table 3: Comparison of performance data in three production systems with ESF

(NM = not measured)

Production measure	ESF farm A ⁱ	Total system A	ESF farm B ⁱⁱ	Total system B	ESF farm C ⁱⁱⁱ	Total system C
Inventory	6,045	21,302	2,707	27,323	2,693	12,591
Total born	14.9	14.3	13.71	13.38	14.3	14.2
Live born	13.9	13.2	12.38	12.35	13.2	13.4
Farrowing rate	88.5	89.1	83.0 [∞]	90.4	87.1	89.4
Weaned per litter	11.2	11.7	10.98	10.89	11.4	11.6
Litters per year	2.52	2.00	2.35	2.42	2.48	2.48
PSY	29.1	27.2	24.86	25.57	28.6	28.7
Feed per sow (gest)	5.31	5.43	NM	NM	5.06	5.49
Feed cost per pig	11.32	13.45	NM	NM	9.82	9.53

ⁱ ESF A: Populated in 2014, gilts/sows are moved into static groups after pregnancy confirmed; 80 per pen, 20 sq ft per sow, and one feeder. Gilts/small parity 1 sows are grouped together, and separately from older/larger sows.

ⁱⁱ ESF B: Populated in 2013, gilts/sows moved into groups after pregnancy confirmed, sows are in static flow and gilts/parity 1 in dynamic groups. One feeder per pen of 80, with 20 sq ft per gilts/sows. [∞]An unrelated semen quality issue led to a low farrowing rate on this ESF farm.

ⁱⁱⁱESF C: Populated in 2012, gilts/sows are grouped following breeding, most pens have 80 per pen with one feeder at 20 sq ft per sow and static flow, with a few pens of three feeders with dynamic flow.

¹¹ Parsons T. 2013. Lessons learned from a decade of transitioning sow farms from stalls to pens. *Advances in Animal Production, Banff Pork Seminar 24*: 91-100.

¹² Schoening J. 2017. Electronic sow feeding (ESF) vs. the gestation stall: Three head to head comparisons of performance. *48th Annual Meeting of the American Association of Swine Veterinarians (February 25-28, 2017) pp. 195-197*

Producers embarking on the transition have also shared their experiences, including Kevin Stuckey (Cooper Farms, Ohio) at the 2017 Banff Pork Seminar¹³.

“The need to stay ahead of the consumer’s desires was a strength of the processing division. So, the concept of sows being raised in pens versus individual stalls wasn’t as dramatic to our owners; it seemed natural,” said Mr Stuckey.

The company visited systems in the US, Canada and Europe, deciding that ESF would work due to the ability to individualise sow nutrition. In 2017, at the National Pork Board’s first pig welfare symposium, Tim Friedel (Thomas Livestock, Nebraska) mentioned the benefit of ESF in reducing feed waste. He explained how the low stress system resulted in happy, content sows.

At the same event, Seth Krantz, described how the ESF system at Tosh farms (Tennessee) changed their opinion from a stall-focus to group-housing. He emphasised that productivity is not a barrier to group housing sows.

Kevin Stuckey, Tim Friedel, and Seth Krantz all described how gestation staff enjoy working in the ESF systems. They explained how the staff preferred the openness, ability to see around the barn, quiet working conditions and increased positive contact with sows.

Below: The ESF system has enabled staff to share more positive interactions with the animals. Photo: Maple Leaf Foods



¹³ Stuckey K D. 2017. Electronic sow feeding experiences. *Advances in Pork Production, Banff Pork Seminar 28*: 165–175.

Focus on: Europe

The minimum EU welfare requirement, since January 2013 is for pregnant sows to be in group housing. This should include edible enrichment, partial solid floors and a limit in stalls for a maximum 28 days after service (Directive 2008/120/EC).

Because this decision was made in 2001, several countries and companies in Europe have since exceeded these requirements. They have demonstrated that a good level of sow welfare is feasible in commercial systems without gestation stalls.

The Netherlands stipulates a limit of five days in insemination stalls. These practices recognise significant benefits in maximising grouping and minimising aggression. This is done by either mixing directly after weaning with the additional benefit of heat synchrony or using the breed and release approach. This approach avoids mixing of sows during the high-risk period of between one and four weeks of pregnancy.

Agribenchmark¹³, based at the Thünen Institute of Farm Economics in Germany, produced a 2017 report reviewing the economics of higher welfare sow farms in Netherlands, Spain and Brazil. Wherever possible, data was obtained to compare group housing with stall systems.

The report concluded:

“These case studies showed that group sow housing systems are highly viable in terms of economics and productivity. Oft-cited perceptions of a negative impact on efficiency, higher operating costs or lower profits were not found. Obviously, investment costs are affected as the adoption of group housing implies several changes in the system, but changes such as electronic sow feeding could also increase efficiency.

“Overall, evidence from the case studies shows better productivity for group housing, with more piglets at better weights. In general, because of higher productivity and roughly similar/slightly lower feed costs and labour input across group housing systems, group sow housing offered a higher level of profitability. Developing experience in management of group sow housing takes time, and an effect of time since transition was seen: the more established group sow housing farms performed better.”

The report scientifically assessed welfare. It reiterated the importance of purpose-built facilities to optimise social interaction, choice of environment, inclusion of enrichment and reporting of welfare outcomes to assure consumers.

There is also an extensive body of scientific literature on the success factors, detail, welfare and production outcomes of group housing and enrichment. It includes European farmer and staff satisfaction and successful management of straw enrichment with slurry systems.

Complete and bedded group housing

Ten Have farm in the Netherlands implemented complete group housing before the 2013 EU requirement. They have also progressed to free farrowing. The farm started with smaller static groups of 30 and now use large dynamic groups of 220 dry sows, all with bedding, separate dunging area and liquid feeding.

This means they can rotate sows for breeding or farrowing with minimal aggression and group impact. Straw is topped up every other day (by an automated system) and dirty straw is removed three times per year. They have achieved reduced labour costs, feed waste, veterinary costs, antibiotic and water use and sow management time. The full case study with farm details and their learnings is available from World Animal Protection.

Note: automated heat detection and drafting for insemination can also be installed with electronic feeders.

Below: Separate bedding and dunging areas in Ten Have farm, Netherlands.



¹³ http://www.agribenchmark.org/fileadmin/Dateiablage/B-Pig/bp1701_grouphousing.pdf

Conclusion:

Acknowledging the global momentum for change

The global momentum towards higher welfare in pig production is clear. Ending close confinement of sows during gestation is a 'must do' for companies to remain in step with consumer sentiment. This is reflected in the strengthened procurement policies of leading retailers.

The movement for change will not stop at enriched group sow housing. Sows are closely confined in farrowing crates from one week prior to farrowing until weaning. It is essential that industry continues to take steps towards implementing loose farrowing and lactation, following the steps taken by leading producers like Betagro, as outlined in this business case and others in Europe.

Growing pigs are raised in barren environments without enrichment and piglets are subjected to painful mutilations in the first week of their lives.

Leading producers should consider whether these practices are likely to align with consumer values and what steps they can take to improve pig welfare.

World Animal Protection encourages pig producers to publicly commit to a timeframe for a phasing out of sow stalls and implementation of enriched group sow housing across operations. We also encourage them to develop a transparent and comprehensive approach to addressing all aspects of the Pig Welfare Framework.

Conclusion

Table 4: Key features of enriched group sow housing

Key features	More detail	Animal welfare benefits	Production / economic benefits
Sows are housed in groups, in a house with good ventilation.	<p>Static groups of 40 to 50 sows with one Electronic Sow Feeder (ESF) if new to group sow housing.</p> <p>Gilts and early parity sows are kept together, trained to use a feeder. Older sows are kept together.</p> <p>Tubular skylights could be added to provide light without heat.</p>	<p>Sows have freedom to turn, move and exercise. Social interaction.</p> <p>A minimum of 3m² per sow is initially recommended – reduced fighting, improved resting.</p> <p>Natural light encourages activity and enrichment use, stimulates melatonin levels.</p>	<p>Equivalent or better productivity.</p> <p>Improved sow health, leg strength and farrowing performance.</p> <p>Marketing options for higher welfare, stall-free pork.</p> <p>Reduced electricity costs with natural light. Fans still required.</p>
Solid partitions and solid flooring in resting areas	<p>Solid partitions and solid flooring provide good resting areas. Each should be a minimum of 2 x 3m.</p> <p>Orientation and height of partitions is important so they do not obstruct ventilation.</p>	<p>Sows can rapidly form stable social sub-groups (usually four to six sows). Sows prefer to rest on solid flooring and against solid partitions.</p> <p>Partitions help diffuse fighting between sows, upon mixing. Good solid floors also reduce lameness.</p>	<p>Reduced aggression and related injuries – reduce energy wastage and stress related abortions/stillbirths.</p> <p>Clean dry resting areas reduces pen cleaning.</p> <p>Reduced stress, improved resting and reproductive performance</p>
Good pen design with suitable dunging, feeding, activity areas with drinkers	<p>Each ESF must be well maintained and feed available all day.</p> <p>The dunging area has a concrete slatted floor where drinkers are also located.</p> <p>Care to ensure the flooring is well drained, does not pool water and is cleaned daily so not slippery.</p>	<p>Avoids feed competition. Sows feel safe to eat their daily ration, and can choose to eat this all in one go or in several smaller feeds.</p> <p>Sows can eat, drink, interact with enrichment and toilet in separate areas.</p> <p>Dry, non-slip floors with suitable slats (if any) minimise foot lesions, injury and lameness.</p>	<p>Tailored individual sow feeding and monitoring. Potential to add heat detection to some systems.</p> <p>Reduced feed waste and labour. Comparably reduced cost vs stalled systems. Worker satisfaction.</p> <p>Assists rapid group stability and reduces disturbance to resting sows.</p> <p>Reduces the risk of injuries and lameness, and associated treatment costs or culling.</p>
Effective enrichment	<p>All groups of sows have daily access to enrichment</p> <p>Enrichment should be safe, chewable/destructible and ideally edible. A minimum of 300g fibrous enrichment per sow per day is recommended.</p> <p>Enrichment should be located in the activity area and regularly used.</p>	<p>Enrichment is important to satisfy exploration and chewing behaviours and relieve boredom.</p> <p>Edible enrichment provides gut fill, alleviates some hunger and prevents gastric ulcers. Straw bedding is optimal.</p>	<p>Reduces chronic stress and biting behaviours which are energy/feed costly.</p> <p>Improves immunity, reduces disease risks and use of antibiotics.</p> <p>Reduces feed competition and queuing for the ESF.</p>

World Animal Protection provided guidance to Qinglian, DEXING, Betagro and BRF to improve welfare practices. Welfare was assessed using Assurewel welfare outcomes; <http://www.assurewel.org/pig>. For further information, individual case studies or technical resources on sow housing and enrichment contact: KateBlaszak@worldanimalprotection.org or SarahIson@worldanimalprotection.org

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