

# Importance of Nutrition in Group Housing Systems

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You've heard many times by now that, if properly managed, various group housing systems can yield equivalent production and welfare to gestation stalls. However, as you also likely understand, getting there requires learning about and honing many management factors – including feed.

“Conversion to group-housing does involve management challenges, but also opportunities to hone stockmanship and implement protocols that optimize sow performance,” notes Dr. Hyatt Frobose, the swine nutrition specialist and USA business director for JYGA Technologies, a Quebec-based firm that produces GESTAL precision feeding systems for lactating and group-housed gestating sows. “In addition, new opportunities exist to reduce feed cost, minimize aggression and increase performance through the use of new technologies.”

Let's examine the various factors affecting feeding sows in group housing.



## Amount of feed

We know feed requirements differ for different pig stages. Target maternal body weight gain is about 35 kg during first pregnancy. “Many sow weight gain-fetal development simulation models have been developed and applied with good success,” Frobose notes. “However, leaner lines of pigs require these models to be adjusted. Feed amount adjustments must also be made in group housing situations due to an increased activity level in comparison to stalls, how far sows must travel to eat and drink, sow size, environmental temperature and health status.”

Overfeeding is to be avoided in group housing (and in other types of housing) as it leads to wasted feed and decreased productivity in subsequent lactation. “Overfeeding occurs when

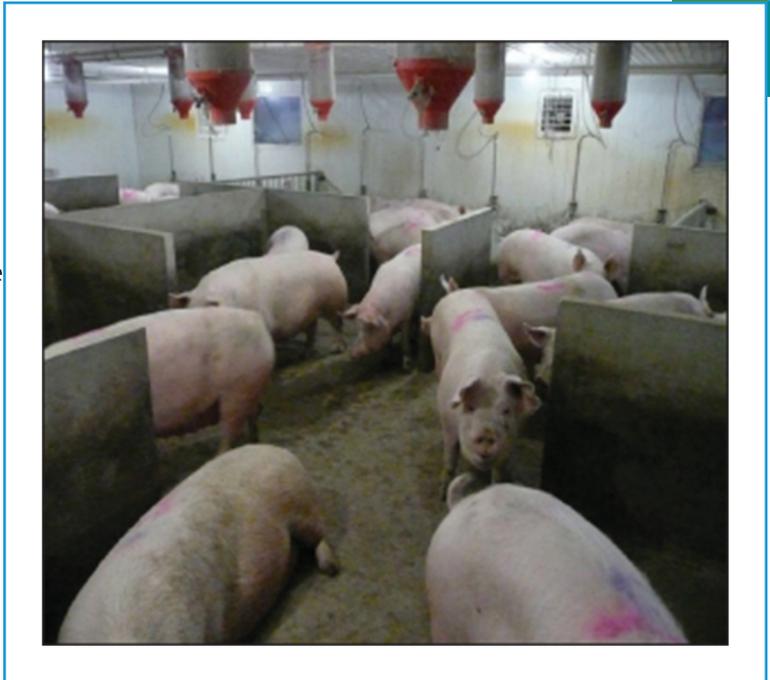
we overfeed the whole pen to try and help thin sows gain weight, and in failure to calibrate box drops or ESF,” Frobose notes. “I recommend ensuring that feed systems are being calibrated by matching up this task with other monthly duties. You should also ensure your staff understand Body Condition Scoring.” Frobose adds that precision feeding systems now have the ability to alter the sow diet on a daily basis to match evolving requirements, but that each farmer must look at ROI individually. He also sees much opportunity to capture feed savings through group-housing sows by parity and feeding the older sows a less expensive diet that more closely matches their requirements.

## Curbing aggression

In group housing, feeding systems strongly affect aggression levels. Floor and short stall systems are competitive systems where sows are in competition for feed and gain feed by fighting. Alternatively, gated stall and ESF systems are non-competitive (sows cannot gain feed by fighting, but rather are set up to compete for entry to feeding space and feeding is individual). “From a sow nutrition standpoint,” Frobose notes, “the research is clear that non-competitive systems result in less variation in body condition and more efficient feed utilization across the herd.”

Aggression can also be reduced by helping sows feel satiated through increasing feed bulk density. “The good news is that gestating sows are the best at digesting fibre, and that often less-expensive by-products such as soybean hulls, wheat middlings, beet pulp can be used,” says Frobose. “These are fermentable fibre sources that sows are able to convert to energy.” Despite their benefits however, high-fibre ingredients do offer challenges, and Frobose recommends regular sampling and analysis of by-products (and feed as well) for nutrient and mycotoxin content. He also advises adding flow agents or bin vibrators if feed bridging is common.

Enrichment materials such as wood blocks also provide avenues for reducing aggression in group housing; their capacity to be chewed on over time provides more satisfaction and less boredom than other types of enrichments.



### Future directions

In terms of other aspects of feed that relate to group housing, Frobose notes that there are some areas of research that may provide insight in future, but that cost-effectiveness of providing various additives on a commercial scale would have to be closely examined.

As of yet, he notes that pig nutrition research has not justified the use of feed additives as a way to reduce mixing aggression. The use of odor-masking agents could be researched further as well. Frobose adds that in one study, Omega-3 fatty acids (6 g/kg fish oil) given in early gestation have been shown to increase NBA (number born alive) by 0.9 piglets, with the embryo survival increase being largest in older sows.

On some other additive notes, research has found that supplemental folate and B12 fed during first 30 to 60 days of pregnancy may reduce early pregnancy loss. Betaine may help calm pigs during heat stress events. Trace minerals may help with prevention of feet and leg issues in group housing.

“These are things that are being examined but go well beyond the basics of sound feed management in group housing,” Frobose concludes. “Focus on ensuring the right amount of good quality food, including fibre, is being given in an appropriate way. For proper weight gain and maintenance, sows need good nutrition delivered in a group environment where stress and aggression is minimized.”

<http://www.prairieswine.com/successfully-converting-to-group-sow-housing/>

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