

## 5 Guidelines for feeding group-housed sows

Date: 2014-08-13

By Ioannis Mavromichalis, Ph.D.

**A new housing system for gestating sows requires a new look into ways their feed is formulated and fed to them.**



Martin Malchev | Dreamstime.com

**Gestating sows must be maintained in groups as required by new European Union laws.**

Effective January 1, 2014, [all gestating sows in the European Union](#) were supposed to be housed in groups; individual gestation stalls are no longer allowed, although practical implementation is still below 100 percent. Among many management changes, nutritionists must also review the gestation feed to ensure animals continue to be healthy, productive and profitable. To this end, there are five major points that should be considered carefully in reevaluating a modern gestation nutrition program.

### 1. Feed allowance

A sow that is free to move around and interact with other animals in the group will spend invariably more energy than an animal housed individually. Depending on animal temperament, housing conditions, and overall management, the extra feed energy required may be as high as 10-20 percent. However, in Spain, where the majority of gestating sows are already overfed, this extra physical activity will probably help them attain a better (leaner) physical condition. If this is the case, then feed allowance should not be increased in overfed sows. In any case, daily feed allowance should be monitored closely and adjusted periodically to accommodate seasonal changes in weather conditions and desired body weight score. This practice will ensure sows are neither too thin nor too fat when they enter the farrowing room. Here it should be mentioned that group-housed sows are able to control their ambient temperature much better than individually-housed sows, especially if straw is used as bedding material. This can lead to savings in the supplemental heat and (or) feed during the winter months.

### 2. Fiber concentration

Group-housed sows that feel hungry will frequently be more aggressive and restless. This leads to further energy expenditure and, more importantly, to increased risk for abortions due to fighting and over-activity. To enhance the feeling of satiety and reduce hunger, without over-feeding the sows, it is important to reevaluate the amount of crude fiber in the gestating diet. Depending on feeding systems, and available ingredients and their prices, diets for gestating sows may contain up to 20 percent crude fiber, although levels about 9-12 percent are more common.

Even more important than crude fiber concentration is the physical size of the fiber particles; with coarsely ground material being more suitable for the purpose of increasing gut fill and reducing hunger. Finally, the balance between fermentable and total fiber is of equal significance, as fermentable fiber provides a constant level of energy throughout the day, helping towards reducing hunger. To this end, it is important to reformulate diets using a system based on net energy, especially one that takes into account fermentable fiber assigning higher values to ingredients used in diets for gestating sows.

### 3. Macro-Minerals

Group-housed sows will have a higher culling rate due to leg problems unless a stronger skeleton is developed early in life and sustained throughout the productive period. Current gestation feed formulas have been developed assuming sows will have limited freedom during gestation. But, group-housed sows require higher levels of calcium, phosphorus and magnesium to ensure better bone development and life-long condition of their skeletal structure. In addition, metabolic acidosis should be minimized to ensure minimal calcium leakage from bones. Feeds that contain high levels of sulfuric compounds should be avoided as these are likely to induce acidosis; such ingredients are for example those from the starch and ethanol industry, including maize gluten feed or maize distiller's grains (depending on the process).

### Phytase merits renewed thinking for group-housed sows

### 4. Phytase



Braendan Yong | Dreamstime.com

Gestating sow stalls, like these pictured, are no longer allowed in the European Union. With this management change, nutritionists must review the gestation feed to ensure animals continue to be healthy, productive and profitable.

The role of the enzyme phytase merits renewed thinking for group-housed sows. On the one hand, phytase helps in improving calcium and phosphorus digestibility in common ingredients, but on the other hand, research has indicated that it does not always allow for maximal bone development. Perhaps, this is an issue mostly for young developing gilts that receive typical growing diets instead of a specialist gilt developing diet. Nevertheless, it definitely needs some further thinking to ensure gilts enter their productive phase with the best possible skeleton system, even if this requires a higher phytase dosage or additional inorganic phosphate salts.

## 5. Hoof integrity

With a higher moving frequency, and depending on genetics and floor type, it is possible to observe a [higher incidence of hoof lesions](#) that frequently lead to premature culling. Thus, reevaluating the levels of biotin (vitamin) and zinc (trace mineral) in a modern gestation feed is very important to ensure these micro-nutrients will be adequate under the new housing conditions. There are some reports indicating that organic zinc might further improve hoof condition, but whether this is an effect of higher zinc digestibility or some other metabolic interaction is still unclear, but certainly the case of organic zinc will often enter discussions on group-housed sows, and as such it merits monitoring to verify if it really works or not according to supplier claims.

## Feeding systems

Currently, there are a great number of feeding systems, among which the most common include the following:

- Feeding in individual stalls with free access or locked down entrance
- Feeding in electronic individual feeders based on an on-demand system
- Feeding on the floor controlling only the average amount of feed per sow
- Feeding ad libitum in feeding stations like those used in fattening pigs

Variations exist on whether the feed is constantly available throughout the whole day or delivered only at specific times and (or) amounts. In any system, the desired result is always to ensure sows are fed according to optimal body condition, avoiding the thin-sow syndrome or over-fat sows. With most feeding systems, small adaptations to manufacturer's guidelines are needed to accommodate the genetics, general facilities, and personal management style in each farm. Currently, there is not a single system that is problem-free, but certain systems are definitely more expensive than others.

Feed formulations must be adapted according to the feeding system used in each farm. For example, a [diet for group-housed sows](#) that are fed using an electronic on-demand system must be rich in fermentable fiber to ensure hunger is under control, but there is no need to be high in crude fiber. In contrast, a diet for sows fed ad libitum, in typical feeders like those used for fattening pigs, in addition to the same levels of fermentable fiber, must also contain a high amount of non-fermentable (and accordingly less expensive) fiber to limit the amount of feed sows eat every day.

In closing, it must be emphasized that daily feed intake, either restricted by the feeding system or by adjustments in feed composition (fiber), must be measured, monitored and adjusted frequently. Based on actual feed intake records, a qualified nutritionist can then refine the levels of protein, amino acids, vitamins and all minerals to ensure a high reproductive performance and a long productive life for group-housed sows. In short, using the old gestation formulas in group-housed sows is more likely to create many new problems that are easy to avoid with frequent readjustment and close monitoring of feed composition and daily allowance of feed.

[http://www.wattagnet.com/5\\_Guidelines\\_for\\_feeding\\_group-housed\\_sows.html](http://www.wattagnet.com/5_Guidelines_for_feeding_group-housed_sows.html)