

# Guidelines for group-housing pregnant sows

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This Primefact provides pig owners with general guidelines to consider when designing and managing pregnant sows in groups.

## What are the options?

The options for housing pregnant sows in groups revolve around the type of feeding system used. The most common systems are:

- Floor feeding
- Liquid trough feeding
- Electronic feeding stations (EFS)
- Free access feeding stalls

The suitability of each system within an existing farm will depend on cost (capital and operating), productivity of the system (pigs born/sow/year, culling rates), the producer's ability to manage the new system and building compatibility with existing housing.

The aims of any group housing system are to control the feed intake of individual sows, provide low levels of aggression during feeding and reduce aggression around re-grouping of sows.

## What things affect these outcomes?

There are advantages and disadvantages of all systems. The success of each will depend on:

- Quality of husbandry – skilled and motivated stockpersons are key for early detection and appropriate treatment of sows that are sick or injured.
- Space allowance. The Model Code of Practice for the Welfare of Animals (Pigs) states that each sow must have at least 1.4 m<sup>2</sup> of floor space if housed in groups. The optimal space allowance to reduce the risks of injuries, skin abrasions and vulva bites has not been determined, but there should be adequate space for sows to access feed and water without competition, to rest in a clean, dry area as a group and a separate area for dunging.
- Quality of space. Areas where sows may commingle should be at least 3 m wide, to allow sows to pass each other.

- Pen divides. Solid pen divides encourage sows to lie against them. An enclosed solid area with enough space for each sow to lie separated from a slatted dunging area is ideal.
- Group size. Having too many sows for each feeding station does not allow all sows enough time to access their daily feed ration. Recommendations are:
  - Gilts: maximum of 30 per station; Sows: maximum of 50 sows where there is only 1 feeder in the pen; Sows: maximum of 65 where there is more than 1 feeder in the pen.
  - Use of bedding. Studies conducted in Europe suggest that adding straw (approx. 200 g/sow/day) reduces culling rates in sows housed in EFS systems compared to no-straw housing. Bedding is likely to be more advantageous in cold conditions than when it is warm.
  - Mixing unfamiliar sows. It is best to keep sows in stable groups. If sows must be mixed, do it after 4 weeks gestation (after implantation of embryos) to minimize risks of pregnancy loss.
  - Allow an extra 5% of total gestation space to house sick or compromised sows. Ensure in hospital pens that about 2/3 of the flooring has a solid, soft cover. Sows with foot and/or leg problems will benefit from being placed in recovery pens with dirt/compacted clay flooring.

The advantages and disadvantages of each of the main group housing systems are summarized below.

## Floor feeding

### Advantages

- Lowest capital cost (requires only pen/yard with solid flooring area).
- Simple, low maintenance.
- Allows simultaneous feeding of all sows.

## Disadvantages

- It is impossible to individually feed sows a specified ration.
- Competition at feeding can result in physical stress and injury.
- Dominant sows may prevent low-ranking sows from eating, resulting in variable body condition among groups of sows.
- It is difficult to detect reduced appetite as an early sign of illness in sows.
- Litter size in sows housed in small groups immediately post-mating may be lower than in sows housed in stalls for the first 4 weeks gestation.

## Hints

- Move sows into floor-fed systems 4 weeks after mating.
- Group sizes of 12-15 sows per pen.
- Group sows according to body conditions.
- No re-grouping of sows.
- Feed only once daily.
- Spread feed over the pen floor to allow low-ranking sows access (1.3 m<sup>2</sup> feeding space per sow).



Floor feeding. Photo courtesy of Lisbeth Ulrich Hansen, Pig Research Centre in Denmark.

## Liquid trough feeding

### Advantages

- Low capital cost, simple, low maintenance.
- Allows simultaneous feeding of all sows.

### Disadvantages

- As for floor feeding.

## Hints

- Move sows into trough-fed systems 4 weeks after mating.
- Group sizes of 12-15 sows per pen.
- Group sows according to body conditions.
- Allow 50 cm trough space per sow.
- Feed once daily.



Liquid feeding in trough. Photo courtesy of Lisbeth Ulrich Hansen. Pig Research Centre in Denmark

## Electronic feeding stations

### Advantages

- Allows individual sows to have a set ration of feed, according to stage of pregnancy and body condition.
- Large degree of flexibility in managing dynamic groups of sows.
- Computer-assisted software systems are available to aid in managing pregnant sows.

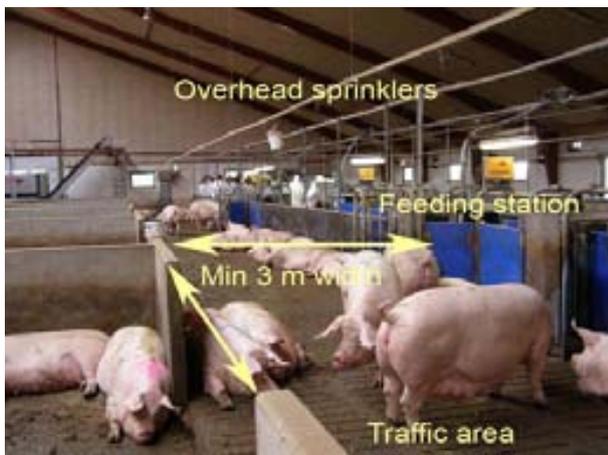
### Disadvantages

- EFS must be managed well to avoid problems developing.
- Feeding is not simultaneous. Poorly designed/managed EFS can result in aggression at entry and/or loitering in the feeder.
- Approx. 2% of sows will fail to adapt the system.

### Hints

- Seek advice from an expert on the selection and management of EFS.
- Gilts must learn to use EFS. Start training gilts to use the feeding stations at a size that they cannot turn around in the feeding station (100 kg+).

- Train gilts in a separate pen similar to the gestation pen. Use a training EFS with manual control of the entry gate, trough and feed. Train gilts in small (10-15 gilts), stable groups.
- Don't train gilts when they are on heat or when you are flush-feeding them. The training period should last around 3-4 weeks.
- Large (6 m x 4.5 m) nesting areas with added straw attracts the sow to the lying area. Adding straw also reduces the risks of early culling for sows in group housing.
- Start the 24 hour feeding cycle between the hours of 10 pm and 2 am. Behavioural studies have shown a decreased number of confrontations among sows around the feeding station when the feeding cycle starts at 10 pm – compared to starting at 4 am. It seems that sows would prefer to feed in the day time – therefore, starting feeding at night allows the more dominant sows to feed first and the less dominant sows access later on.
- Avoid changing group numbers. Each time more sows are added to the group it alters the equilibrium. Keep stable sow groups.
- Pay special attention to gilts and parity 1 sows – these are the animals at highest risk of injury and skin abrasions.



*Electronic feeding station. Photo courtesy of Lisbeth Ulrich Hansen. Pig Research Centre in Denmark.*

## Free access feeding stalls

### Advantages

- Technology-free – but the stalls can be expensive.
- Simultaneous feeding is possible, and sows do not need to compete for feed.

- If full-length stalls with ends that can be closed are used, sows are easily restrained for treatment or other management procedures.

### Disadvantages

- Individual feeder systems require the most floor space out of all the systems.
- Not possible to tailor feed rations to individual sows or stages of pregnancy unless feeding by hand.
- There can be aggression at feeding times unless the feeding stalls are fitted with rear gates.
- Partitions that only protect the head and shoulders of sows ("half stalls") may result in aggression and feed stealing.
- Gilts and low-ranking sows may stay in the stalls if the outside pen environment is threatening to them.

### Hints

- Divide sows into groups according to body condition.
- Design systems with lying areas away from the feeding/transit areas, with solid floors, straw and walls to attract sows. The lying area should allow approx. 0.6 m<sup>2</sup>/sow. Stall systems without lying areas can result in extensive dunging in the entire area outside of the stalls.
- Lock sows in the feeding stalls during the feeding time – but otherwise allow them to walk in and out freely with the backs of the stalls open.
- Allow a minimum of 3 m between the backs of sow stalls, to enable sows to pass each other without threat.



*Free access feeding stalls. Photo courtesy of Lisbeth Ulrich Hansen. Pig Research Centre in Denmark.*

## More information

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