

OPTIONS FOR SUCCESSFUL GROUP-HOUSING OF SOWS



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EXPLORE YOUR OPTIONS

Many options exist as successful alternatives to stall housing for gestating sows. The choice of the most appropriate system depends on many factors. The goal should be to combine the advantages of individual sow feeding and the attention afforded by stalls with the benefits of group housing that are important for sow well-being while avoiding the drawbacks.

- Important considerations for group housing selection include:
- Feeding method/system.
- Type of groups static or dynamic.
- The method and timing of introducing sows into groups.
- Space allowance per animal.
- Type and condition of flooring.
- Ventilation.
- The configuration and layout of the pen space.
- Breed of sows suited for group systems.
- Personnel available.

Overall, the choice of a successful system will achieve the desired "balance" in meeting the behavioural/welfare needs of the sow as well as the management needs for high biological performance, labour efficiency, and economic and environmental viability.

FEEDING METHOD/SYSTEM

There are several options with varying degrees of control over individualized sow feeding:



The subsequent chapters of the guide provide an overview of options based on feeding system with advantages and limitations for each system. Systems presented are organized in order from *LEAST to MOST individualized feeding*.

The feeding method/system is often considered the core upon which the rest of the system is designed. However, it is only one part of an integrated whole.

TYPE OF GROUPS – STATIC OR DYNAMIC

- Static groups are those in which sows are introduced into the group only once, or over a short period of time (e.g. a week), then remain as one group throughout gestation. Sows removed from static groups for more than a day cannot normally be reintroduced or replaced; the space would therefore be wasted for the remainder of gestation. If a sow is to be reincorporated back into the group pen, housing it in a recovery pen that has fence-line contact with the group, e.g., separated only by spindle fencing, throughout its entire recovery, may allow successful reintegration into the group.
- Dynamic groups are those in which groups of sows are introduced into the larger group at intervals (e.g. weekly or biweekly) and sows are removed from the group to farrow. Therefore, the animals making up the group change regularly and management can be more challenging than with static groups. Large groups of more than 40 animals are essential for dynamic systems, with groups of 100+ animals often recommended. Newly-introduced subgroups should make up 10-25% of the total group. If a sow has been removed from a group, it can usually be reintroduced when the next subgroup is introduced.

Whenever new animals are mixed together, aggressive or antagonistic behaviour can be expected. The use of static groups limits mixing to only once during gestation and is the preferred option, if possible. However, it is possible to manage dynamic groups so that aggressive and agonistic behaviours are minimized. Whatever the choice, timely establishment of stable social groups that allow for the well-being of all animals in the groups is important for success of the system.

THE METHOD AND TIMING OF INTRODUCING SOWS INTO GROUPS

The goal is to minimize aggression/fighting and not compromise reproductive performance. Mixing sows together should occur at one of three times:



Indications are that by day 35 of pregnancy sows fight less when mixed than if they are mixed at weaning or in the week after breeding. Keeping sows in breeding stalls for approximately 28-35 days until they are confirmed pregnant ensures implantation has safely occurred. If not possible, move sows into groups immediately after breeding, once they are past estrus.

SPACE ALLOWANCE PER ANIMAL

Space allowance per animal Depending on the system, a minimum unobstructed floor area of 1.8 m² (19 ft²) per sow and 1.4 m² (15 ft²) per gilt is recommended on slatted floors. Greater space per animal is recommended for solid floor systems and for group sizes with fewer than 40 animals. Optimal space per animal results in better welfare, as well as access to feed and water with limited competition.

TYPE AND CONDITION OF FLOORING

Type and condition of flooring. Floors need to provide good traction without causing injuries. Slatted flooring should be free of sharp edges and breaks. Solid slat widths of 12.7 cm (5 in) with gaps no wider than 1.9 cm (0.75 in) can provide ease of walking, yet maintain cleanliness. Claw injuries, hoof lesions and lameness become serious welfare and health issues when flooring is not appropriate for sows. Proper drainage and management of bedding material, if used, are important for animal comfort and good air quality. Solid concrete should slope 2-3° towards the slats or gutter to ensure proper drainage; steeper slopes can cause slipping.

VENTILATION

Ventilation plays a key role in maintaining pen cleanliness. Drafts in lying areas during colder seasons discourage sows from resting there and can result in those areas being used for dunging. Therefore, inlets should be directed to drop air primarily over slatted flooring to encourage dunging over the slats. Conversely, adjusting inlets to drop air into lying areas in hot weather can encourage sows to use them appropriately.

THE CONFIGURATION AND LAYOUT OF THE PEN SPACE

Important considerations include:

- The layout should allow for distinct and readily accessible areas for feeding, drinking, dunging and resting.
- Animals must have adequate space to rest in a clean, dry area with a separate area for dunging so that these areas are not perceived as limited and thus defendable.
- Water drinkers should be situated close to the feeding area and over slatted flooring. Drinking areas tend to be used for dunging. In large pens, other waterers should be accessible away from the feeding area too.
- Solid lying areas separate from slatted dunging areas are ideal, unless bedding is used. Solid pen dividers within lying areas encourage sows to lie against them and also allow for escape and avoidance of aggressive encounters.
- Pen dividers or escape routes can help animals avoid unwanted encounters and lead to a more readily settled group.
- Areas where sows may need to pass each other (such as aisle-ways or entry- ways to feeding areas) should be at least 3 m (10 ft) wide. This provides sufficient space for subordinate animals to pass, even when a dominant sow lies across the path.
- Step-through gates between adjacent pens allow stockpersons to easily move between pens to observe and attend to animals without having to open gates or jump over penning.

BREED OF SOWS SUITED FOR GROUP SYSTEMS

The breed of sows may be important as some may be better suited for group systems. However, published research on genotype differences in group housing conditions is currently lacking. Evaluating sow temperament and conformation is very important when selecting new and replacement breeding stock for groups.

PERSONNEL AVAILABLE

This includes stockperson and management skills, as well as the number of skilled people available. While all systems require good animal care, some require more or specialized labour for routine activities such as feeding, pen-cleaning, handling animals, or computer monitoring. Stockpersons' husbandry skills remain the most important factor to ensure animal well-being in all housing systems.



FLOOR FEEDING

This is a simple system in which feed is dispensed onto the floor, usually via feed drops. Group sizes are generally smaller (e.g. 6 to 25 per pen) and must be static (no adding of animals once established). Sows are generally grouped according to parity, body size and/or feed requirement. The feed should be dispensed evenly over a large area, which can be accomplished through the use of multiple drop feeders. Social management is particularly important for success with this system.



RECOMMENDATIONS

- Solid lying areas separate from slatted dunging areas are ideal.
- Solid pen dividers can provide some protection while sows eat, increase wall area for sows to lie against, and allow for escape and avoidance of aggressive encounters.
- Allow 1.4 m² (15 ft²) feeding space per sow and spread feed evenly over wide area.
- Feeding animals several times per day (three to eight times) may help decrease occurrence and intensity of aggressive encounters.
- Sows must be kept in static groups.

- Group sows according to size/parity.
- Keep sows in breeding stalls for approximately 28-35 days until they are confirmed pregnant and implantation has safely occurred before forming groups. It is important for sows to recover to a good body condition after weaning and breeding before placing them in a competitive feeding environment.



Figure 1. An example of a pen designed for floor feeding. For a capacity of up to 30 sows.





- All animals in a pen can feed at the same time.
- Sows have the freedom to move around and choose their location in the pen.
- No training is required for this feeding system.
- Construction of this system is inexpensive, the design is fairly simple, and conversions can often be accommodated.

LIMITATIONS

- This system does not allow for individualized feeding of sows.
- More feed is generally required to try to control overall body condition of all animals in the group and feed wastage tends be higher.
- Aggression from competition at feeding can be intense, resulting in injuries and distress.
- Body condition can be variable due to limited access to feed by less dominant sows.
- Sows must be kept in static groups; therefore a removed sow cannot be replaced and her space is wasted for the remainder of gestation.
- Reduced appetite due to disease or injury may be more difficult to detect.

- Performance may be reduced especially if sows are crowded, remixed, body condition becomes too variable, or animals are not kept in stalls for at least 28 days post-mating.
- Solid floors are required for the feeding area; therefore, floor feeding is not suitable for fully-slatted floor systems.
- Grouping by size and parity, especially in smaller groupings, is important for feeding management and stability of social structure.



NON-GATED STALLS & SHOULDER BARRIERS

The feeding stalls in this system can vary in length from as short as a shoulder barrier to as long as a full-length stall. They allow sows to eat together, but separate them from sight and head/shoulder or body contact while eating. Feed is either dumped as a single drop or



delivered as a trickle at a set rate. For the more commonly used trickle feeding or "biological fixation" system, feed is to be dropped at a rate that will keep all sows busy, thereby, making it less likely they will leave their stalls to try to steal feed from other sows.

The feeding stalls may be part of the pen or in a separate area serving as 'cafeteria' stalls for several pens. Social management is particularly important for success with this system. Sows are usually grouped by size/parity and body condition.

RECOMMENDATIONS

- Short stalls generally work best with static groups and smaller group sizes (6 to 12, although some groups may be as large as 25 sows or more).
- Group sows according to size/parity and, where possible, eating speed.
- In trickle feeding systems, feed rate should be adjusted to the eating speed of the slowest animals in order to minimize aggression and feed stealing from other animals.
- Feeding rate should be adjusted regularly as eating rates may vary between winter and summer, as well as stage of pregnancy.
- Keep sows in breeding stalls for approximately 28-35 days until they are confirmed pregnant and implantation has safely occurred before forming groups. It is important for sows to recover to a good body condition after weaning and breeding before placing them in a competitive feeding environment.



Figure 2. An example of a pen designed for the use of shoulder stalls. For a capacity of up to 20 sows.





Figure 3. An example of a feeding system using 'cafeteria stalls' for several group pens. For a capacity of up to 90 sows.

ADVANTAGES

- All animals in a pen can feed at the same time.
- Some protection from feeding-related aggression is provided with a correctly-adjusted trickle system.
- Sows have the freedom to move around and choose their location in the pen.
- No training is required for the feeding system.
- Liquid feeding can be used with this system.
- The system can be used in a central feeding area for several pens, therefore, decreasing overall costs and space required for feeding stalls. However, more labour and time may be required for feeding.

- The system has a lower cost than the use of free-access stalls.
- If using shoulder barriers or shorter stalls, the system requires less overall space than free-access or full-length stall systems.
- Conversions in existing barns to shoulder barriers or short stalls are easier than to the free-access or full-length stall systems which require more space.

LIMITATIONS

- Individualized rationing or top-dressing is very difficult as any sow can enter any stall; extra feed to one sow may attract other sows and encourage displacement and aggression.
- Body condition can be variable.
- Aggression and feed stealing from other animals can still occur; there is a greater likelihood of aggressive encounters associated with feeding as compared to feeding in full-length stalls. Longer stalls tend to decrease the frequency of these encounters, but do not altogether eliminate them. However, longer stalls also increase the amount of overall floor space required in the pen.
- Slower eating sows are disadvantaged and risk displacement by faster eating sows.

- Sows may become frustrated with the feeding rate and start moving to other stalls resulting in aggression and displacement of some sows.
- If using a single-drop system, rather than a trickle system, the likelihood of aggression and feed stealing increases greatly.
- Grouping by size and parity, especially in smaller groupings, is important for feeding management and stability of social structure.
- Sows must be kept in static groups; therefore a removed sow cannot be replaced and her space is wasted for the remainder of gestation.



FREE-ACCESS / GATED STALLS

In the free-access/gated stall system, sows are fed in full-length stalls and have access to a communal loafing area. The stalls are equipped with gates that can close behind the sow – either manually or by the sow as she enters the feeder (walk-in-lock-in) – which protects them from being displaced during feeding. Both types can be locked manually for various husbandry procedures. Sows can enter any unoccupied stall at any time.

The loafing area may assume various configurations: a simple "I" shape with the group area behind one or two rows of stalls; a "T" shape, where there is a loafing area extending to either side of the alley at the end of two rows of stalls or an "L" shape where there is an open area at the end of a single row of stalls. While a solid floor in the "T" or "L" loafing area may be preferred by sows, slatted floors can also be used.



RECOMMENDATIONS

- The free area outside the stalls should allow at least 1.3 m² (14 ft²) per sow and 0.95 m² (10.2 ft²) per gilt.
- This system generally works best with static groups and smaller group sizes (5-25 sows). However, it can also work with larger group sizes and possibly be managed using dynamic groups as is the case with some Swedish systems which use narrow stalls for feeding only.
- The animals should be grouped according to size/parity.
- The "T" and "L" designs of walk-in-lock-in systems may encourage more time in the loafing area and more usage of the free space than the "I" configuration.
- A space of at least 3 m (10 ft) is advised between the back of two rows of stalls.



Figure 4. An example of a free-access stall system with a 'T' configuration. For a capacity of up to 40 sows.



Figure 5. An example of a free-access stall system with an 'L' configuration. For a capacity of up to 45 sows.



Slatted flooring

Solid concrete floor



PVC fencing

Figure 6. An example of a free-access stall system with an 'l' configuration. For a capacity of up to 50 sows.

ADVANTAGES

- Protected feeding with the potential for individualized feeding (manual top-dressing) is possible.
- All animals in a pen can feed at the same time.
- Sows can eat at their own rate, without threat, if locked in.
- Competition for feed is reduced; low levels of aggression can be expected if back gate of feeding stalls is closed while the sows are eating.
- Sows have the freedom to move around and choose their location in the pen. In larger groups, they also have some control over choice of social partners.
- Little to no training to the feeding system is required. Gilts may require training to back up and exit walk-in-lock-in type stalls.
- Individual inspection of sows at feeding time is possible.
- Management of the free-access stall system most closely replicates the management of sows in conventional stall systems as compared to other group-housing systems.

- Liquid feeding can be used with this system.
- This system can also be used in a central feeding area for several group pens (i.e. cafeteria stalls) which lowers overall cost but requires more labour to move animals for feeding.
- Feeding stalls can be used to restrain animals for any necessary treatments, or to segregate individuals/problem sows for a short period of time.
- The stalls may be used for estrus detection and breeding, therefore eliminating the need for a separate breeding area and mixing of sows during gestation.
- Sows choose whether to spend time in a stall or in the open area with other sows.
- Various layout options are available.



LIMITATIONS

- Sow-specific rationing can be difficult and time consuming as any sow can enter any stall.
- Constructing this system can be expensive (as you must pay for the stall plus pen space).
- The system requires a large amount of floor space to accommodate both feeding stalls and group area; if shared loafing space is too small, aggressive encounters can be very intense, especially at mixing. If the system is also used for breeding, injuries can result from sows riding and being ridden at estrus, especially on slatted floors.
- Younger, smaller or more timid animals may remain in the stalls to avoid aggressive encounters with more dominant animals.
- It is sometimes difficult to encourage sows to use free area. Foraging material is a good motivator in this sense.

- Grouping by size and parity, especially in smaller groupings, is important for feeding management and stability of social structure.
- Sows are most commonly kept in static groups in this system; therefore a removed sow cannot be replaced and her space is wasted for the remainder of gestation.



ELECTRONIC SOW FEEDERS (ESF)

Electronic sow feeder (ESF) systems enable individualized sow feeding by computer-directed feed drop into a single enclosed feeding station. An electronic transponder attached to each sow's ear identifies individual animals and thereby allows unique rationing and management for each animal. The ESF provides isolation and protection while an animal is eating. Hand-held readers can be used to identify animals in the group pen and input information back to the central control computer. One standard, walk-through ESF station can readily accommodate 50 to 65 sows. Multiple ESF stations per pen can be used for larger groups of animals. Particular attention must be paid to the design of the feeding station and the pen layout.

RECOMMENDATIONS

- Feeding stations should be designed and placed to prevent sows from easily circling back to the entrance of the feeder from the exit.
- Placement of the feeder in a pen should ensure sows cannot get caught in blind corners. The in-gates should be freely accessible from both sides, i.e. full 180° access. See Figure 7.
- Designs which allow a sow to enter the ESF, even when she has consumed all her ration, may lower aggression at the ESF entrance.
- Feeder capacity should be strictly adhered to. Generally, this is in the range of 50 to 65 animals per ESF, depending on whether they are gilts or sows and how many feeders per pen. Over-stocking feeders will increase pressure on the system, reduce the time allowed for each animal to obtain its daily ration, and can result in increased aggression around the feeder. Considerable variation can exist in feeding time between animals; gilts tend to take longer to eat than sows.

- A feeding cycle that starts in the late afternoon or evening means that most of the animals should feed before mid-morning of the next day. Any animals not eating can be identified and checked promptly during the work-day. Evening cycles may also reduce sow aggression.
- A separation area can be utilized for removing animals from the group (e.g. repeats, sick, pre-farrow) and should provide 1.8 m² (19 ft²) per animal.
- A separate ESF area is required for training gilts and new animals to use the feeding station; this area should preferably contain one ESF and house a maximum of 30 gilts.
- Training of gilts and other new animals to the ESF stations is critical to the success of the system.
 Stockpersons that are conducting the training need to follow a carefully structured program and be patient with the animals to avoid creating any negative association with the feeders.
- Assurance of computer and equipment reliability and accessible technical support is essential.

Figure 7. A close-up view of the feeding area in an ESF pen using one feeder.

6'



Figure 8. An example of a large-group ESF pen using multiple feeders. For a capacity of up to 150 sows.

ADVANTAGES

- ESF systems allow sows to be protected during feeding.
- Individualized feed intake and ration control is possible, and phase feeding is readily achievable.
- Sows have the freedom to move around and choose their location in the pen. They also have some control over choice of social partners.
- There is moderate to low feeding-associated aggression, as it can only occur outside the actual feeder.
- The system can accommodate a single group of 50 to 65 animals or larger group sizes of 200 or more sows per pen with multiple ESF stations.
- The system works with both static and dynamic groups depending on herd size and breeding groups.
- ESF stations can be used on a partially-slatted floor system without foraging material as well as in solid-floor, bedded systems; however, they are considered to work best in combination with foraging material, which may decrease aggression around the feeder.
- Sows that have not eaten during the feeding cycle are identified on the computer and personnel can readily determine if sows are sick, injured or have simply lost an ear tag.

- People are not associated with feeding time. Sows are often more docile and easier to handle, and workers often report a more satisfactory work environment.
- Automatic marking and separating functions can be incorporated as part of the feeding station. This makes segregating and/or identifying sows for heat checking, pregnancy checking, vaccination, other treatments, or transfer to the farrowing unit relatively easy.
- Ear tag loss is usually very low if it is correctly implanted in the ear and equipment is maintained to prevent snagging.
- Reproductive performance and longevity can be as good as, or better than, with conventional gestation stalls.
- Successful conversions to this system in existing barns can sometimes be accommodated.

- ESF design and pen layout are particularly important to avoid problems with aggression, allow easy access to the feeder, and provide defined resting and dunging areas.
- Aggression, including vulva biting, at the feeding station entrance can be a problem, particularly when there is no foraging material or other enrichment distractions. Exceeding the feeder's sow capacity will only increase these problems.
- In pens with a single ESF, sows cannot eat at the same time.
- Highly committed stockpersons and management are required for success. Personnel must check the computer daily, monitor sows, and adjust feed allowance or take corrective actions as needed.
- High level of competency with computer software and/ or ready access to technical support is required.
- A separate training area with ESF is needed for animals being introduced into the system. Each training pen, consisting of one feeding station, can handle a maximum of 30 gilts.

- The success of the system hinges on good gilt training. An inadequate training area or rushed training will lead to more animals not adapting to the feeding system. A small percentage of gilts may not be readily trainable to the ESF station. For barn conversions, training sows that were previously housed in stalls to use an ESF may be more difficult.
- A back-up plan for feeding due to power outage or equipment failure is essential, but can be very challenging with fully-slatted floor systems which will not allow for floor feeding. The risk of having to use a backup feeding plan due to equipment failure is reduced in systems that have multiple ESF stations in each pen.
- A separate breeding area is most commonly used so that only bred animals are introduced into the group pen.
- If an automated separating function is not part of the feeding system, a lot of time can be taken for personnel to sort out animals in a large group system. If available, separation areas with slatted floors should provide a minimum of 1.8 m² (19 ft²) of space per sow.



FREE-ACCESS ELECTRONIC SOW FEEDERS



Free-access electronic sow feeder (free-access ESF) systems combine attributes of the free-access stalls with those of standard ESF systems. A freeaccess ESF allows for individualized sow feeding by a computer-directed feed drop into a single enclosed freeaccess stall. The feeder recognizes and feeds the sows the same way as other ESF stations – by reading an electronic transponder and allocating the ration according to a pre-programmed feeding curve. Unlike a standard ESF station, sows are expected to back out of the feeding stall voluntarily. The free-access ESF accommodates 15 to 20 sows per feeder. For larger group sizes, pens are equipped with multiple feeders.

RECOMMENDATIONS

- Placement of the feeder in a pen should ensure sows cannot get caught in blind corners. The in-gates should be freely accessible from both sides, i.e. full 180° access.
- Feeder capacity should be strictly adhered to. Generally, this is in the range of 15 to 20 animals per feeder; pens with only one feeder and gilt pens should have at least 1 feeder per 15 animals. Over-stocking feeders will increase pressure on the system, reduce the time allowed for each animal to obtain its daily ration, and can result in increased aggression around the feeder.
- Only dry feed should be presented in the feeders with water available outside the feeders; this encourages sows to exit the feeders. An "anti-lay" bar centred on the floor of the feeding stall discourages sows from lying down while in the stall.
- A feeding cycle that starts in the late afternoon or evening means that most of the animals should feed before mid-morning of the next day. Any animals not eating can be identified and checked promptly during the work-day. Evening cycles may also reduce sow aggression.

- When groups are initially mixed, closing the back gates of the feeding stalls for the first 3 to 4 hours prevents submissive sows from hiding in the feeding stalls, which, if allowed, could become habitual, and allows the social hierarchy to be formed more readily.
- Gilts and sows require some training to learn how to use the feeding stalls. Training areas can be used prior to breeding and should provide 1 feeder per 7 to 10 animals. Sows will tend to learn the system faster than gilts; slower learners will learn by observing faster ones.
- Stockpersons that are conducting the training need to follow a carefully structured program and be patient with the gilts to avoid creating any negative association with the feeders. Special attention should be paid to ensuring the gilts learn how to trigger the mechanisms that allow them to feed and to exit the stall.
- Assurance of computer and equipment reliability and accessible technical support is essential.

Slat 10'

Figure 9. An example of a free-access ESF system using multiple feeders. For a capacity of up to 80 sows.



ADVANTAGES

- Free-access ESF systems allow sows to be protected during feeding.
- Individualized feed intake and ration control is possible, and phase feeding is readily achievable.
- Sows have the freedom to move around and choose their location in the pen. They also have some control over choice of social partners.
- A less-rigorous training regime to the feeding system is required than with a standard ESF system. Sows previously housed in gestation stalls tend to adapt well to this system. Gilts may require more time to learn how to use them, including how to access feed and exit the stalls.
- There is moderate to low feeding-associated aggression, as it can only occur outside the actual feeder.
- This system can accommodate a wide range of group sizes, from small static groups to larger dynamic groups. A single free-access ESF is intended for a relatively small group of 15 animals. Larger group sizes, with up to 20 animals per feeder, can be accommodated by incorporating multiple free-access ESF stalls in a pen.

- Free-access ESF stalls can be used on a partially-slatted floor system without foraging material as well as in solid-floor, bedded systems; however, they are considered to work best in combination with foraging material, which may decrease aggression around the feeder.
- Sows that have not eaten during the feeding cycle are identified on the computer and personnel can readily determine if sows are sick, injured or have simply lost an ear tag.
- People are not associated with feeding time. Sows are often more docile and easier to handle, and workers often report a more satisfactory work environment.
- Ear tag loss is usually very low if it is correctly implanted in the ear and equipment is maintained to prevent snagging.
- Reproductive performance and longevity can be as good as, or better than, with conventional gestation stalls.
- Successful conversions to this system in existing barns can often be accommodated at a lower cost than conversions to standard ESF systems.

LIMITATIONS

- The pen layout is particularly important to avoid problems with aggression, allow easy access to the feeder, and provide defined resting and dunging areas.
- Aggression, including vulva biting, at the feeding station entrance can be a problem, particularly when there is no foraging material or other enrichment distractions. Exceeding the feeder's sow capacity will only increase these problems.
- Younger, smaller or more timid animals may remain in the stalls for longer periods to avoid aggressive encounters with more dominant animals.
- In pens with a single free-access ESF, sows cannot eat at the same time.
- Highly committed stockpersons and management are required for success. Personnel must check the computer daily, monitor sows, and adjust feed allowance or take corrective actions as needed.

- High level of competency with computer software and/or ready access to technical support is required.
- A small percentage of gilts may not be readily trainable to the free-access ESF system. The back gate mechanism of the feeder can sometimes deter gilts from exiting the stall.
- A back-up plan for feeding due to power outage or equipment failure is essential, but can be very challenging with fully-slatted floor systems which will not allow for floor feeding. The risk of having to use a back-up feeding plan due to equipment failure is reduced in systems that have multiple feeders in each pen.
- A separate breeding area is most commonly used so that only bred animals are introduced into the group pen.

FURTHER INFORMATION

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