Growing pigs usually are usually fed with self-feeders. Managing sow feeding is more of a challenge. In the wild pigs consume large amounts of poor quality feeds and need a large gut to efficiently use the nutrients. Corn-soybean meal diets are highly available, concentrated feeds. Pigs fed this type of diet grow rapidly. This is an advantage in young pigs but a disadvantage in sows. Sows have more gut capacity than needed when fed a corn-soybean meal diet. Sows would like to eat more feed than necessary and if allowed to will become fat and less productive.

Gilt Development
Many niche producers raise their own replacement gilts. In most cases gilts are kept with groups of finishing pigs and have unlimited access to growing pig diets. It is important that developing gilts receive enough amino acids, particularly lysine to develop muscle tissue. Gilts should consume enough energy to build backfat reserves. Balancing calcium and phosphorus in developing gilt diets is important for good bones. Obtaining adequate backfat, muscle, and skeletal development in gilts prior to mating is essential for sow longevity. General targets for gilt size at first mating are:
♦ 290 lb liveweight.
♦ 220 days old.
♦ 0.8 inches of backfat at approximately 2.5 inches from the midline on the last rib.

Gestation Feeding
Feed during gestation is used to grow the fetal pigs, maintain and grow sow muscle tissue, and replenish sow fat reserves lost during previous lactations. Gestation diets should be designed to:
♦ Maximize number of pigs per litter.
♦ Optimize birth weight of the pigs.
♦ Minimize the wean-to-conception period.
♦ Maximize sow feed intake during lactation.
♦ Optimize sow longevity and lifetime productivity.

Over a productive lifetime, a sow will fluctuate in body weight and fat reserves. Over time a sow will gain weight. It is desirable that weight gain be controlled and that fat reserves be maintained. If properly fed, a sow will grow larger as she ages but not necessarily fatter or much thinner (Figures 1 and 2).

![Figure 1. Pattern of sow weight change.](image-url)
If a gestating sow is allowed to consume as much corn–soybean meal diet as she desires, she will become too fat. Fat sows are costly to pig operations. Impacts of sows that are overweight:

♦ Higher feed costs due to more feed intake.
♦ Sows that are excessively fat have difficulty becoming pregnant, maintaining pregnancy, and delivering large vigorous litters.
♦ Overweight sows are more stressed by summer heat than normal.
♦ Fat sows are less nimble and more likely to crush their young.
♦ Overweight sows wean lighter litters due to poorer milk production.

Most gestating sows should be limit-fed. Individual feeding stalls allow group housing of large numbers of sows but individualized control of feed intake. Sows can also be kept in small (3-5 sows) groups of similar body condition and fed accordingly. It is difficult to control feed intake in large groups of sows with simple floor feeding, although spreading feed out over a wide area may be one strategy to minimize competition between sows.

Interval feeding, or feeding sows on alternating days is another feeding strategy that some producers use. Individuals should consult the feeding guidelines of their niche market because some prohibit skip–day feeding.

Gestating sows can utilize forages. Forage containing diets are less digestible and more bulky than corn–soybean meal diets. Thus a sow can eat more of a diet that contains forages without becoming overly fat. Leaflet number 370 of this handbook presents seven diets containing high amounts of forage plus several diets suitable for supplementing sows on pasture. High forage diets may not flow through a self–feeder and so feeders will need to be checked and adjusted accordingly.

Lactating Sows

As shown by Figures 1 and 2, sows will lose weight during farrowing and lactation. This is the weight of the young pigs, but also the body weight (mostly fat) used to produce milk for the litter. As litter size increases, so does milk production (Figure 3).

Milk production typically peaks about 21 days after farrowing. Performance during lactation is partly dependent on how much body fat reserves were stored during gestation.

![Figure 2. Pattern of sow body fat change.](image)

![Figure 3. Litter size and milk production.](image)
A nursing sow will have a difficult time consuming enough feed to meet both the demands of milk production and body maintenance. If not fed properly lactating sows will become too thin.

**Excessively thin sows**
- Have difficulty breeding back and maintaining pregnancy.
- May lose muscle tissue resulting in premature culling.
- May have difficulty maintaining body temperature in cold weather.
- Are more susceptible to shoulder sores, wounds, and problems with their feet and legs.

Lactation diets should be formulated to maximize milk production and minimize loss of muscle in the sow. This is accomplished by increasing the amount of feed fed to the sow while also increasing the amino acid content of the diet. Feed intake is critical for the lactating sow. It is desirable to have lactating sows consume as much feed as possible. Immediately following farrowing the sow’s feed intake should be limited, but rapidly increased over the next three to seven days to full feed. This strategy will maximize feed intake over the entire nursing period.

Group lactation with sows on a self-feeder is an effective strategy for maximizing both piglet growth and sow feed intake. If sows are not on a self feeder, they should be fed two to three times daily. Litters that are combined for group lactation should be as close to the same age as possible (< 7 day age spread). Producers usually start group lactation at about 7 days of age and it continues through weaning.

**Maximizing nursing sow feed intake**
- Keep sows cool—the room temperature should be around 60-65°F.
- Provide plenty of clean, fresh water.
- Supply fresh feed.
- Greatly reduce or eliminate forage in diet.
- Feed moist or wet feed.
- Encourage sow exercise.
- Do not keep sow in a small pen.

Figure 5 shows examples of sow condition score from the rear view. Table 6 provides descriptions of sow body condition score. Sows should be at a body score of 3 at farrowing and will likely be near a score of 2 at weaning.
Table 6. Sow body condition score$^1$.

<table>
<thead>
<tr>
<th>Score Number</th>
<th>Condition</th>
<th>Shape of body</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Emaciated</td>
<td>Hips and backbone are visible</td>
<td>Emaciated sow, backbone very prominent</td>
</tr>
<tr>
<td>2</td>
<td>Thin</td>
<td>Angular with prominent backbone</td>
<td>Sow is thin, hips and backbone noticeable and easily felt</td>
</tr>
<tr>
<td>3</td>
<td>Normal</td>
<td>Tubular</td>
<td>Ideal condition during lactation and at weaning. Hips and backbone only felt with firm pressure</td>
</tr>
<tr>
<td>4</td>
<td>Fat</td>
<td>Bulging tube</td>
<td>Slightly overweight, hips and backbone cannot be felt</td>
</tr>
<tr>
<td>5</td>
<td>Overfat</td>
<td>Bulbous</td>
<td>Sow is very fat, hips and backbone heavily covered</td>
</tr>
</tbody>
</table>

$^1$ Adapted from Garth Pig Stockmanship Standards, 1998.

Additional Resources

Carr, John. 1998. Garth Pig Stockmanship Standards. 5M Enterprises Ltd. Sheffield, UK.

