



Swine-herd Success Starts with the Feet

A solid foundational structure helps prevent future sow lameness

Structural soundness is a basic component for building long-term success in a sow herd, says Dean Compart, Compart's Boar Store, Inc., Nicollet, Minn., USA, a prominent supplier of Duroc, Yorkshire and Landrace breeding stock. A correct foot, rear-leg and rump structure are particularly important to avoid lameness and the problems that go with it, he states.

"The feet are probably the most important structural part of the pig — that's the foundation, and the area continuously experiencing wear and tear," says Compart, who likens breeding for structural soundness in a pig to designing a long-lasting building with solid footings. "Size and evenness of toes are really important, because the toes are what bear the weight and take the most abuse."

When evaluating breeding stock for structural soundness, Compart recommends starting from the ground up. "You really want to see toes that are even in size in order to equally distribute the weight," he says. "I look for large toes that are square, evenly proportioned and pointed forward (Figure 1)."

If the feet are twisted, either inwardly or outwardly, they will be more likely to move in multiple planes, notes Compart. "Structurally, that can result in slippage and injuries to the dew claws, which can shorten the longevity of sows," he says. "If an animal is slipping, the dew claws can become damaged or torn, resulting in infected dew claws and feet."

If feet develop abscesses, the sow's potential for longevity in the herd becomes severely compromised, which decreases profit potential. "If you have a high cull rate or mortality rate, because of soundness problems, you won't realize the full market value of the animals," he points out. "There is a lot of dollars that can be realized from full-value sows."



Dean Compart
Compart's Boar Store, Inc.

Sound Sow, Sound Business

Swine management professionals should keep conformation, or structural soundness, top-of-mind when selecting for breeding stock or when raising pigs. “A structurally sound animal is going to be better for the animal’s welfare, as well as easier for the caregivers to handle,” says Compart, who works with several family members on four, nucleus-level farms to generate purelines from 750 sows.

“Structural soundness will continue to be of utmost importance,” he says. “If the foundation isn’t right from the start, that foundational flaw will destroy the structure of the pig over time.”

Sound-structured sows are built for longevity, and longevity provides herd managers more flexibility in decision making. “If your sows are structurally sound, you can dictate when they are going to be culled,” says Compart. “Also, during disease challenges, where sow-herd closures can go on for four to five months, structurally sound animals can be retained for another parity until replacements can be safely introduced.”

Fighting among sows may also result in the need to cull animals, especially those more predisposed to injury due to lameness or structural issues. “In group-housing situations, there can be more potential for fighting and injury, particularly if sows lack sound structure and good feet,” says Compart. “With more fighting, there is the potential for more foot, hip and front-end and shoulder injuries.”

From a structural standpoint, sows that do well in a stall will also fare well in group housing on concrete slats, he points out. “If their structure is right, sows should be able to function in either situation equally well,” he says. “However, in a group housing situation, you want to have more of an athletic, loose-structured type of skeleton.”



Figure 1. Toes should be equal size and length

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Compart

Limber Legs, Lasting Legs

Swine require more than good feet to be built for longevity. “On the front end, having a gentle slope and some flex from the forearm to the foot is better than having a straight-legged animal,” says Compart. “A straight-fronted sow, with less slope from forearm to foot, will start to have restrictions and tightness to its movements and a shortened stride.”

Rear legs should also be somewhat angled. “Posty rear legs, where the back legs are straight as posts, lack shock absorption to the rear hock,” he says. “That structure can cause irritation to the joint, and eventually lead to arthritic hocks and stifles.”



In both front and rear legs, robotic, rigid movements will result from a post-like or straight-legged structure, says Compart. In addition, a straight leg that lacks any angle will put a lot of pressure on the pasterns, which increases the likelihood for lameness, he says.

Legs with a severe angle to them are also undesirable. “Sows with too much angle in their rear legs, from the hock to the foot, are more likely to have problems with slippage, which can lead to splaying,” says Compart.

Animals with too much angle to either the front or rear leg structure are typically flat footed, with their wrist portions sitting too low and the angle of the carpals too extreme, he points out. This results in improper wear of their foot and pastern and an increased possibility for injury, he adds.

Leg width is another factor that can detrimentally impact a sow’s movement and the likelihood for lameness. “You need to keep adequate width between the rear legs, but not get extreme,” says Compart.

On the front side, herd managers should select for “good size and dimension to the shoulder and roundness to the shoulder and rib,” he says. “If they have more barrel shape to their front end, it’s easier for them to roll over and get their legs under them when getting up.”

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Compart

Good Structure, Good Results

The rump and rear-leg structure is also very important for soundness. “A gradual, or subtle slope to the rump is more ideal,” says Compart. “If the rump is too sloped, the feet tend to be located too far under the sow, which can result in arthritis and joint damage to the rear hock.”

Sows with a level rump are more likely to have a more level top line. “You want to see the hind feet located below the hip,” says Compart. “That way, they can get up and down with much more ease, with less slippage and less chance for injury.”

Pigs with a level rump also tend to have a level top line, he points out. “Keeping the back level avoids putting undue pressure on either the front or back legs,” says Compart. “Conversely, a high-arching back puts pressure on both the front and rear legs, leading to poor movement and longevity issues.”

Selecting for ideally structured animals (Figure 2) has long-term benefits, particularly when it comes to optimizing gilt introductions onto the farm. “Greater longevity reduces your genetic costs,” says Compart. “You won’t have to bring in as many animals annually.”

With sound-structured backs, legs and feet, sows are more likely to be healthier and more productive. “I like to see sows that are flexible, agile and loose in structure, because they are more productive and profitable long-term,” says Compart. “Last week I sold a load without a single lame sow, a single thin sow or a single sow with a shoulder ulcer – and that’s what we want.”



Research has shown that pig producers should start developing their replacement gilts as early as 18 kg (40 lbs) in order to maximize their lifetime potential and longevity within the herd. Addressing the gilt's nutritional needs helps decrease feed costs — which account for 70 percent of a replacement gilt's expense — while also contributing to her longevity within the herd. By slightly slowing a gilt's growth rate and feeding correct levels of essential trace minerals, including zinc, copper and manganese amino acid complexes (from Availa®Sow), the animal is able to reach physiological maturity at 230 days and 135 kg (300 lbs) of body weight with an improved skeletal structure-to-weight balance.

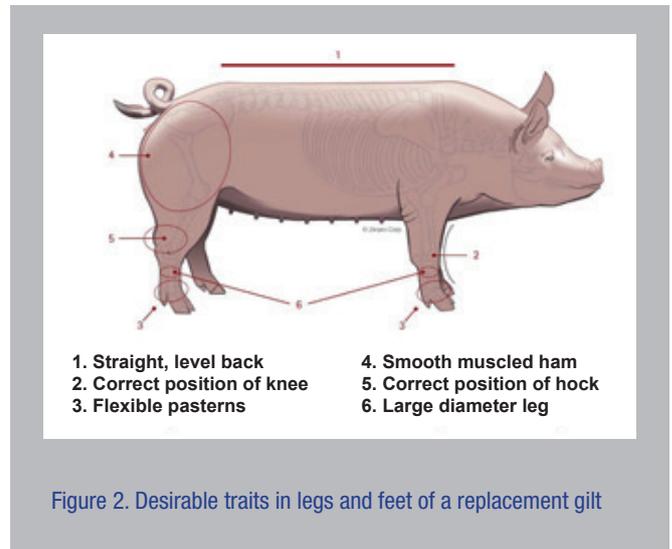


Figure 2. Desirable traits in legs and feet of a replacement gilt

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