

Replacement Gilts and Sow Longevity

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The future of the sow herd is based on replacement gilts. They are also half of the genetics of the market pigs. Many niche pork producers raise their own replacements. Some buy them from other farms or companies. Regardless of source, selecting quality gilts is important for the success of the pig farm.

Puberty/boar exposure/mating

Gilts reach puberty about 160-190 days of age. Puberty can be delayed by high temperatures. Puberty is encouraged by exposure to a mature boar. Gilts are usually mated at the second or later estrus after puberty.

Feeding

Replacement gilts usually are selected when they are around four or five months of age. Gilts are then removed from the finishing pens for a 2–3 month acclimation period. High lean gilts may be continued on a full feed. Moderately lean (fatter) gilts should be limit fed 4.5–6 pounds of corn-soybean meal diet daily (0.8% lysine).

Selection

Choosing which gilts to keep for replacements is an important decision. Gilts should be chosen for long-term good mothers. There are four selection criteria: structure, underline and vulva, size and fitness, and litter size and weight.

1) Structure

Bone structure and feet/leg structure are indicators of whether a gilt will be durable and sound. Sows must be able to walk, carry

a pregnancy, support a boar, and carefully stand and lie down among her piglets. Soundness is heritable.

The front legs should have a long stride and slope to the shoulder. Front toes should neither point in or out, but straight ahead. Toes should be about the same size, indicating even wear and correctness. Rear legs should be slightly sloping, and neither cow-hocked nor very straight. All feet should have some slope and flex in the pasterns.

The gilt should have a wide ribcage, large body cavity, and moderately heavy bone. Legs should be set wide apart. Adequate muscling and fatness should be evident. Gilts with some fatness have been shown to last longer in the herd and breed back more quickly.

2) Underline and Vulva

Underline and vulva are indicators of reproductive soundness. An underline should have at least 12 well-spaced functional nipples. The vulva should be normal size and shape, and not tipped up.

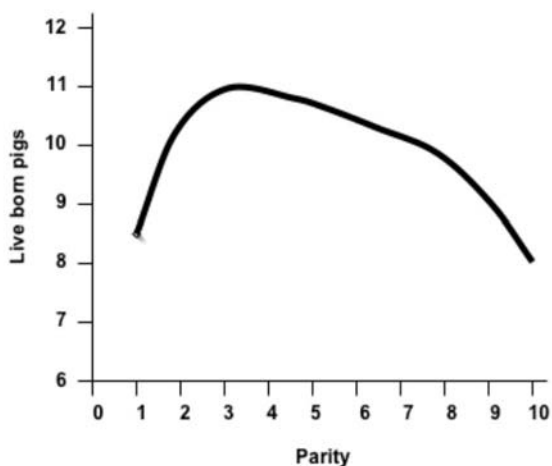
3) Size and Fitness

Size and fitness are indicators of growth and appetite. Gilts that eat more, grow faster, and tend to be fatter. Both are valuable heritable traits.

4) Litter Size and Weight

Litter size and weight are very valuable traits, even though they are lowly heritable. Try to select gilts from large litters (many pigs and heavy pigs) if records are available.

Figure 1. Number of live born pigs by parity of sow.



Sow longevity

Sows that are productive and stay in your herd are the most profitable. It takes the first litters to pay for the cost of the replacement gilt. Litter size increases for the first three parities, is maintained until parity 5 or 6, and then gradually declines (Figure 1). Thus it is advantageous to keep sows in good condition and productive for as long as possible, at least through parity 5 or 6.

Reasons for sow culling (1960 to 2000):

- ◆ Reproductive failure (29%)
- ◆ Old age (17%)
- ◆ Small litters (12%)
- ◆ Feet and leg disorders (11%)
- ◆ Death (7%)

Table 1. Basic pig reproduction numbers.

Age at puberty	Approximately 170–120 days of age for gilts
Estrus cycle	21 ± 2 days
Estrus duration	About 40 hours in gilts and 55 hours in sows
Ovulation	Occurs 30–40 hours after onset of estrus (about 2/3 into estrus)
Target insemination times	12 & 24 hours after onset of estrus for gilts 24 & 36 hours after onset of estrus for sows

Some of these causes are under the control of the producer. Every effort to keep sows in correct body condition (not too thin or too fat) should be made. Sow condition can be managed during gestation feeding. Thin sows can be fed extra. Fat sows should be fed less.

Older sows have higher immunity to diseases than younger sows. This is valuable for healthy pigs throughout the herd. Sows with an overly aggressive disposition can cause injury to the stockperson and should be culled.

Keeping a cohort group of sows is a good idea, but it usually is not achievable. Conception is never 100% on working farms, and in order to keep farrowing group size consistent, other sows and/or gilts will need to be added to a group of sows over time.

Mixing sows can be difficult because older larger sows will dominate younger smaller sows. Also, sows that are not familiar will fight to establish dominance. The best time to mix sows is at weaning. When sows are mixed provide extra space and plenty of feed and water. Keep young sows separate from the older sows for the first gestation, farrowing, and lactation, if possible. Mix them with the older sows at weaning of the first litter.

Gestation length	114 ± 3 days (3 months, 3 weeks, and 3 days)
Typical weaning age	From 10–70 days; usually 35–42 days for many niche markets
Wean-to-breed interval	About 3–6 days or more, longer lactation leads to shorter breeding interval; if sows are very thin this interval is longer

Additional Resources

Iowa Pork Industry Center. 109 Kildee Hall.
Iowa State University, Ames, IA, 50011.
515-294-4103.
in Iowa: 1-800-808-7675
<http://www.ipic.iastate.edu/about.html>

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