

# How To Manage Replacement Gilts for Breeding

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## Introduction

Replacement gilts are essential for maintaining the productivity of the sow breeding herd. Loss of sows from the breeding herd will result from failure to breed, to become pregnant, poor productivity, and structural problems with feet and legs. Producers must plan for current herd specific replacement rates that may average 50%. Managing females to meet replacement needs requires planning for the correct numbers of fertile, mature replacement gilts to breed at the same time as weaned sow groups.

## Which Gilts to Select and When

If replacement gilts are raised on the farm, they can be selected anytime after weaning up to the time of market weight (250 lbs) or 160 days of age. The gilts selected should:

- be structurally sound with respect to feet and legs
- have >12 well-formed and evenly spaced nipples
- have normal vulva structure.

If females are chosen at weaning, they should be fast growing and healthy. Likewise, selection at any time thereafter, such as at 160 days of age, should include choosing gilts that have grown at least 1.2 pounds / day from birth (For further information search the Pork Information Gateway for gilt selection, or gilt replacement).

Weight at selection (pounds) ÷ Age at selection (days) = lbs growth / day

## How Many Gilts to Select

The age at which gilts are selected will influence how many to choose. At early ages, the correct number of gilts may involve selecting 40% more females than needed. This is due to 10% failure of all gilts to meet growth, health and structural expectations as they age and mature. It is also important to compensate for the 30% of gilts that will fail to cycle within the expected window of age. Gilts are assumed to cycle randomly and if mature, 25% will cycle within 5 days in a normal 20 day estrous

cycle. For example, if a producer needs 5 replacement gilts to breed within 5 days, the pool will need a minimum of 20 mature gilts. If a producer needs 10 gilts in a 5 day breeding window, then the pool will need at least 40 gilts.

## How to Feed

Gilts should be fed for growth by free access feeding using diets that meet the National Research Council recommendations for lysine, energy and nutrients for animals at specific stages of growth (for more information search the Pork Information Gateway for swine nutrition, gilt diets, or developing replacement gilts). Adequate water spaces and feed spaces should allow animal access to feed and water as they choose. These recommendations can be found in the factsheets for swine diets.

## How to House

Gilts should be maintained in groups within pens at least until they express first estrus. Gilts should have some method for temperature control, and while younger gilts may require higher temperatures, gilts at 140-180 days of age have an optimal temperature at 68 °F.

Lighting recommendations for gilts include standard lighting for 8-10 hours a day with lighting adequate to read words at height of the pig's head. The floor space may be the most critical element for gilts, as crowding can be detrimental to puberty and growth rate.



## When and How to Expose

The expression of puberty is the critical event in the life of a replacement gilt. This event marks the gilt as "fertile" and sets up future breeding. The procedures that aid in induction of puberty in gilts involve:

- some remixing stress with other new females

- some relocation or transportation event
- start of exposure to a mature boar

This process has typically induced anywhere from 20-40% of females within a 10-20 day period. It is common to begin induction using once daily fenceline or once daily physical exposure to a mature boar. This starts at 160-180 days of age, and continues daily with human supervision for observation of heat. This process can involve moving a group of gilts to a boar pen or adjacent to a boar pen that provides sight, sound and smell access for each gilt to the boar. This exposure should be allowed to occur for 30 minutes each day. A higher level of boar exposure can occur with physical boar contact. In this scenario, the boar is moved into a gilt pen and allowed 15-30 minutes access. If the boar is intact, he must be controlled to prevent breeding of estrus gilts, or if vasectomized may be allowed to move freely through the pen. Early puberty induction is beneficial as it allows for more chances to identify fertile and non-fertile females.



The fertile females will be marked and perhaps allowed to cycle at least once more before breeding while non-fertile gilts will be identified as early as possible to minimize any further feed costs and loss of market value from excessive weight.

### What to Expect for Puberty

The following are expectations from the modern gilt in a modern commercial farm following the procedures outline above:

Age	% Cycling (cumulative)	Expected Weight
160 days	1%	210-230 lbs.
180 days	20%	231-250 lbs
200 days	50%	251-270 lbs.
220 days	80%	271-300 lbs

### How to Manage After Detection of Pubertal Estrus

Once a female is detected in estrus it should be identified with a mark and noted with records. Most producers choose to allow gilts that have cycled before 200 days of age to cycle once more to increase the maturity of the reproductive tract. Gilts that express estrus after 200 days of age for the first time are sometimes bred at that first estrus. Regardless, most will choose to mate gilts on their second estrus, as litter size increases.

### Hormonal Induction of Estrus in Replacement Gilts

PG600® is the only commercially available hormone available for induction of estrus or “heat” in prepubertal gilts that are > 190 lbs are at least 5 ½ months of age. This product is given intramuscularly to gilts in the neck and has typically induced 60-70% of gilts into estrus within 5 days. Breeding on induced estrus is not advised if they are younger than 200 days of age but can occur if older than 200 days of age.

### Culling Replacement Gilts

Gilts that develop structural problems, fail to gain adequate weight, or fail to express estrus by 220-230 days should be culled. These females are poor candidates for breeding herd longevity.