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## Gilt Management in the BEAR System

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### Introduction

Gilt litters can represent as much as 22% of all litters farrowed on a commercial sow farm. Therefore, improvements in gilt productivity will impact the overall reproductive performance of the entire sow herd. Prior to entering the breeding phase, gilts will need to be appropriately managed in a gilt development program that ensures proper growth and body composition, health, and pubertal maturation. The establishment of a management program to effectively stimulate puberty attainment from a smaller pool of replacement gilts is economically beneficial to a sow farm. Effective management of gilts improves the utilization of floor space, labor and flow of service-eligible gilts within the gilt facility. The single most important factor to stimulate early puberty in gilts is boar exposure. The Swine Research and Technology Center at the University of Alberta has designed an area in the gilt development unit called the BEAR (Boar Exposure Area). A schematic drawing of the BEAR is indicated in Figure 1.

### Objectives

This article describes:

1. How to construct a BEAR
2. The management procedures for a BEAR for stimulating and detecting estrus

### 1. Principle components for constructing the BEAR

•Teaser boar stalls. Because of body size differences among boars, the width of boar stalls range from 24" to 30". The length of the boar stall is 8' and the height is 46". Each stall can be opened and closed at either end. Each gate swings in one direction and the gate is securely locked with a drop pin to prevent animals from opening the gate. Because a boar can be facing either end of the stall, a nipple drinker is available at each end of the stall on the side partition. The boars are fed by sliding a feed pan under the gate. During the summer months, a water sprinkling system is used to cool the boars. The floor is totally slatted. Any boar can be used in either heat-check pen.

•Platform scale. One platform scale is installed to determine the weight of gilts at puberty. The width of the weighing area is 24". To simplify moving gilts onto the scale, crowding gates can be attached to the pen partition of the scale area.

•Stockperson pass-through. To simplify movement of stockpeople among the two heat-check pens, a 12" wide pass-through is located between the scale and boar stall.

- Heat-check or Estrus detection pens. A pen on each side of the row of boar stalls for boar stimulation and estrous detection. Each totally slatted heat-check pen is 8' to 9' wide and 16' long. The length of the heat-check pen will vary due to the number of boar stalls and width of the holding pen for gilts. Each heat-check pen is equipped with an 8' entry/exit gate on each end of the pen. The gate swings on either end. Posts are placed across the corners of the pen farthest from the boar stalls. The purpose of the posts is to prevent gilts from being cornered and injured by teaser boars.

- Estrous gilt holding pen. One pen is designed to hold gilts that are identified to be in estrus. The holding pen is 4' wide x 8' long x 40" high. The width of the holding pen can be increased by removing one of the boar stalls. The pen has swing gates on three sides. The gates swing on either end.

## 2. Management procedures for stimulating and detecting estrus in the BEAR

- A group of 15 or fewer gilts are moved to one of the two boar exposure pens located on either side of the teaser boar stalls. Gilts can enter the boar exposure pen on either side of the pen.

- Carefully observe the gilts and identify (record ear tag number) any gilts that exhibit signs of standing heat (rigid immobilization and lifting of ears) as they enter the BEAR and face the teaser boars. Sit on or apply hand-pressure to the gilt's back. Gilts found standing are moved into the holding pen.

- Gilts that have attained heat-no-service pubertal estrus are marked using a different color at 5- to 7-day intervals.

- Release a vasectomized teaser boar that has a high level of sexual behavior (older than 10 months) into the heat-check pen to stimulate the remaining gilts. Movement of people can occur safely by using the pass-through space and also by use of the corners with the protective posts. It is important to note the time that direct physical contact started and the reactions of gilts to the boar. After one or two minutes of direct boar contact, apply hand-pressure to the back of each gilt.

- Intervene when a gilt exhibits the standing in response to the boar. Approach the engaged pair of boar and gilt from the side of the interaction activity and attempt to separate the two by inserting a hand-held panel between the boar and gilt. At this time, either the boar is moved to his stall or the gilt is moved to the holding pen. For safety reasons, NEVER turn your back to the boar.

- Depending on the duration of time a boar has been in the heat-check pen, one may decide to release a different boar into the pen of gilts. Observe for any additional gilts that may indicate they are close to standing.

- It is acceptable to leave the teaser boar unattended in the pen with the gilts for a short time if no other gilts are exhibiting signs of standing. In this time period, the stockperson can move the next group of gilts to be exposed into the heat-check pen located on the opposite side of the boar stalls.

- After the gilts have received 10 to 15 minutes of direct physical boar contact, the teaser boar is moved back into his stall by using a hand-held panel. A boar should never be allowed to physically abuse an anestrous gilt.

- If gilts in standing estrus and non-estrous gilts are to be returned to their home pen, release the standing gilt(s) first by opening the side gate next to the alley. After the gilts are removed from the holding pen, the non-estrous gilts can be removed from the heat-checking pen by opening the gate on the holding pen side. Non-standing gilts tend to help move the estrous gilts to their home pen.

- If standing gilts are not returned to their home pen, they can be relocated to another group pen or to individual stalls. This practice allows boar stimulation to be focused on gilts that have not been observed in heat.

- If gilts have not been detected in standing heat by 23 days after starting boar exposure at 150 to 180 days of age, consider treatment of non-standing gilts with PG600™. Treated gilts can then receive an additional 7 to 10 days of direct physical boar contact. Gilts not responding to PG600 should be culled.

- Weigh and record heat-no-service gilts within a few days of detecting estrus. The recorded weight will be used to predict their weight at fertile breeding.

•Breed and mate gilts for the first time at either their second or third estrus. The target weight of gilts at time of breeding should be ~ 298 to 330 pounds.

•To help maintain a high level of sexual behavior in teaser boars, allow boars to breed an estrous gilt or hand-collect boars while mounted on a gilt once each week.

## Summary

Reproductive management of replacement gilts should be a major focus on sow farms. Poor management of replacement gilts can result in the farm raising or purchasing too many gilts, entering too many gilts into the breeding facility, breeding too many gilts, over-working the farm staff, and incorrectly administering hormone therapy to get gilts to cycle. The implementation of a BEAR system will enhance the farm staff's ability to efficiently stimulate gilts, identify puberty in gilts and work efficiently. Readers in search of additional information about the BEAR, gilt development or detection of estrus are referred to the following references.

## References

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Figure 1. Diagram of the BEAR.

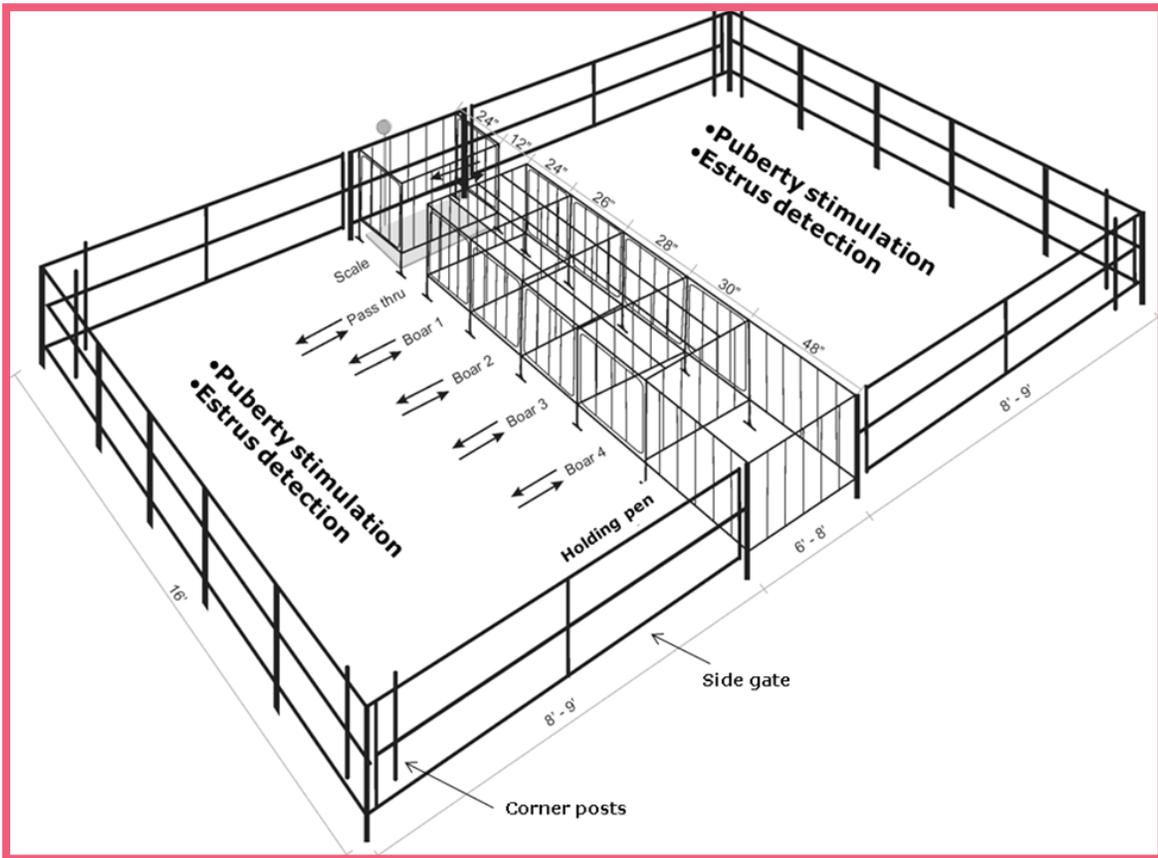


Figure 2. A set of boars in the stalls of the BEAR facing each of the pens.



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Figure 3. Gilts on one side of the stimulation and detection area of the BEAR.



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