

# Gilt management 1

## Batch management and synchronisation

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**It is often said that the production cycle begins with breeding, but we also always hear that gilts are the future of our farm. Consequently, gilts will be the bigger group on our farm and the most difficult to work with.**

### The key steps for successful gilt management:

- Initiate direct contact with boars when females are between 160-180 days old (5-5.5 months) every day (at least five days per week).
- Boars must be at least 9-10 months of age (pheromone production) and with good libido (10% of males lack libido).
- Group 6-10 females in pens (not crates) for direct contact with the boar (1.5-2.0m<sup>2</sup>). No less than 15 minutes per pen.
- Change boars regularly (rotation with three boars for example).
- Direct boar contact can reduce up to 10% of non-productive days (range entry-AI) according to studies.
- Oestrus detection of gilts with boar and/or back pressure to show the reflection of immobility. Separate these females.
- Introduce the boar in the pen to the rest of the gilts for more direct contact.
- Annotate gilts in heat for later use, planning and control.
- Non-selected females (not submitted heat) should have one opportunity (PG 600) prior to slaughter before they reach an excessive weight.
- The area allocated for detection should also have the right design for boar-gilt contact.
- Move females with controlled heat to the area of control-mating.
- Group and control according to the first heat recorded.
- Inseminate (dead sperm) or mate (epidectomised or vasectomised boar) before the real AI to improve subsequent fertility outcomes. This prevent boars from becoming aggressive.
- Inseminate in the second or third heat to enhance the number of total piglets.

Facilities, boar power and, most importantly, onset of oestrus and synchronisation are key points for successful gilt management.

### Facilities

Despite being a crucial point, we still have questions on whether pens are better than crates or not. Each design has its advantages and disadvantages, thus the best choice is to combine both designs to optimise the objectives. The HDA (heat detection areas) do combine both but can result in many suitable designs so it is important to adapt the design to the farm in question. The general idea of the HDA is to house sows in cages and parks to have a good pacing and sensing in small groups.

### Boar power

Boar exposure triggers normal endocrine changes in the female that are associated with the development of follicles. While most pre-pubertal gilts older than 140 days of age will indeed respond to boar exposure, the synchrony of this response appears to be optimum when gilts are between 170-190 days of age. In other words, the same percentage of females usually reach puberty regardless of age of first boar exposure, but those between 170-190 days of age do so in a

considerably shorter period of time than older or younger females. The success of boar exposure for synchronisation of oestrus in gilts varies among farms and is influenced by a number of genetic and environmental factors.

### Onset of oestrus and synchronisation

To achieve a good onset of oestrus we need to have a good boar exposure and also good facilities. But synchronisation is also key in order to have the needed number of gilts in our batches. With a good record and tracking system we can achieve this synchronisation. Two important tools can be also used to achieve this synchronisation: Regumate and PG 600.

### Regumate

The active ingredient in Regumate is altrenogest. Altrenogest is a synthetic progestogen. In the pig it acts just like the natural progesterone produced by the corpora luteum (CL). As long as the pig is ingesting altrenogest, its ovaries will be suppressed and no follicles will grow or mature. Altrenogest exerts a negative feedback onto the hypothalamus, minimising the pulses of GnRH (gonadotrophin releasing hormone) which is necessary to stimulate oestrus activity. The gilt will have no interest in the boar. After treatment on day 18, altrenogest is withdrawn. Within hours, the hypothalamus will start secreting GnRH, stimulating the pituitary to secrete FSH (follicle stimulating hormone) and LH (luteinising hormone). Antral follicles (recruited follicles for next oestrus cycle) respond and begin to grow and produce oestrogen. The gilts will stand for a boar to be bred 4-7 days after the product is discontinued. Ovulation generally occurs 32-36 hours after the onset of oestrus. Treatment can be initiated at any stage of the oestrus cycle. If it is started during oestrus or very shortly after the onset (1-2 days), it will coincide with the normal pattern of progesterone secretion from the corpora lutea.

### PG 600

PG 600 is a combination of PMSG and eCG also known as gonadotrophins. In animals which are not cycling, gonadotrophins have to be used. They are safe in all animals and have no withdrawal time. For years, the combination of PMSG/eCG and hCG (PG 600) has proven to be very effective, and easier to use, than two separate injections of PMSG/eCG and hCG (Bates et al., 1991; Knox et al., 2001). The combined product can be used routinely in pre-pubertal gilts (about six months of age) to reduce the number of days between final selection and first spontaneous oestrus. Individual treatment with PG 600 can be given to anoestrus gilts (>7 months). Oestrus will be present from 3-6 days after injection.