

Biosecurity and health assurance within a boar station

Good biosecurity programs should be carried out in all livestock farms to avoid the occurrence of infectious diseases. Biosecurity is of utmost importance in AI studs due to the transmission of infectious diseases by means of semen. Hence, the maintenance of biosecurity in AI studs is important for owners as well as for clients (recipient farms).

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Barrier of trees as a protection screen.

Biosecurity means that different measures and preventive programs should be carried out to avoid the appearance of infectious diseases and to prevent its spread within the farm.

In short, it is a group of measures that begin with the location of the farm, its structure, the source of the animals, management procedures, and staff training, etc. All of them should lead to the prevention of infectious agents entering the farm.

Although these measures may be common for all livestock farms, the degree of biosecurity and specifications can be higher depending on the type of farm.

In the case of pig farms, this depends on whether they are fattening, genetic GGP/GP nucleus or an AI stud.

It is considered that there is less risk of widespread disease in an AI stud, compared to sow units, as there are fewer transmissible diseases by semen than by live animals; nevertheless, a boar stud has the capacity for transmission to a larger number of farms.

Hence, in an AI stud all biosecurity

measures should be well observed. The most important factors of biosecurity may be taken into consideration as follows:

- Location.
- Animal source.
- Biosecurity measures in the stud.
- Quarantine.
- Health program.
- Semen handling.

Location

One of the most important factors to bear in mind is the location of the AI stud, which includes:

- Type of nearest farms: closed cycle, fattening, three phases; same species, other species, etc.
- Water supply: Avoid supply of water of unknown quality. Perform analysis regarding water quality.
- Occurrence of highways or nearby roads: High risk if <50m.
- Presence of slaughterhouses in the area. Very high risk if <1km.
- Surrounding trees nearby may act as a protection screen.

- High land is better than low land. Less wind is better.
- Climate: Rain and humidity are a greater risk than a dry climate.
- Type of land and slope: this is very important for the disposal of slurry.

Animal source

Another factor which is high risk to health is to bring new animals into the AI stud (replacement).

Most of the diseases can come in with the replacement of the herd or through reproduction. It is very important to know the source of the animals as well as their health status.

Previous serological controls should be performed at source.

New boars should be purchased free or test seronegative for sexually transmitted diseases, such as brucellosis, PRV, mycobacterium, TGE, leptospira, PRRS, etc.

Single negative and not circulating in origin farm in the last four months. Do not mix boars from different origins in the same batch.

Biosecurity measures

It is important that the facilities available in the AI stud are functional and equipped to control and avoid the entrance of diseases. These measure include:

- **Structure**
 - Fencing the AI stud.
 - Control of main entrance. Avoid free entry.
 - Independent external loaders to prevent trucks entering the site.
 - Screens to avoid birds and flies.
 - External parking space.
 - Slurry tanks external to fences.
 - Area for treatment or burying dead animals external to fence.
 - Feeding from the outside. Silos for feed should be external or filled from outside
 - Provide dressing and shower rooms. Total change of clothes and shoes.
- **Functional**
 - Biosecurity education.
 - Sufficient surgery equipment to avoid entrance of others.
 - Fumigation (formaldehyde) of external supplies and consumables and sterilisation of materials introduced to the laboratory (UV).
 - Sufficient clothes and boots.
 - Distribution of tasks in accordance from lower to higher risk.
 - Personnel that work in the AI stud can not visit other farms.
 - Control over domestic animals.

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Bacteria identified in boar semen

COMMON

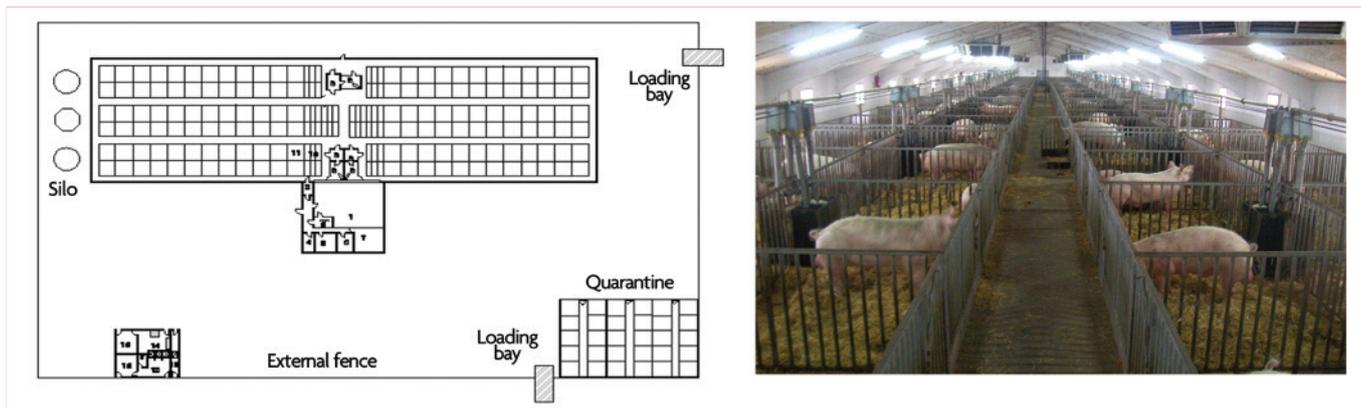
Staphylococcus spp
 Pseudomonas spp
 Escherichia spp
 Klebsiella spp
 Citrobacter spp
 Micrococcus spp
 Eubacterium suis
 Leptospira spp

INFREQUENT

Corynebacterium spp
 Streptococcus spp
 Proteus spp
 Serratia spp
 Bacillus spp
 Enterobacter spp
 Aerobacter spp
 Bordetella spp
 Mycoplasma spp
 Pasteurella spp
 Erysipelothrix rhusiopathiae
 Salmonella spp

Table 1. List of bacteria identified in boar semen.

	Risk depending on stock density	Risk depending on distance from other farms
Low	<200 head/km	>5km
Moderate	200-600 head/km	2-5km
High	600-1000 head/km	<1km



AI stud layout.

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● **Educational**

- Mandatory and updated visit book to record visitors, trucks, cars, etc.
- Do not incorporate food on the farm.
- Be aware of the importance of biosecurity and quarantine rules.
- Visitors only when strictly necessary and requested to be 'out of pigs' for at least 48 hours before.

● **Quarantine**

The quarantine units are of the upmost importance to avoid the entrance of sick, positive carriers to the AI stud. All animals entering the stud must first go through an isolation facility in order to ensure that all animals are free of diseases. The following must be kept in mind:

● **Location**

Bear in mind the same principles of stock density and distance to other 'risk' farms as stated before for the AI studs. It is recommended that

they are not located within the same premises of an AI stud and at least 250m, ideally 1km, away from any other farm.

● **Quarantine period**

The length of the quarantine period should depend on the health status of the AI stud receiver and the disease intended to be controlled. The normal length should be between 30-60 days. During this period animals should adapt to the microflora of the stud and if any infectious disease is present it will have had enough time to occur.

● **Measures**

Blood test (serological analysis, PCR) should be performed at entry and at least five days later.

● **Management**

Quarantine units must be managed with the principle of 'all in, all out'. This means a group of animals arrives at the same time without mixing with others. Before the next arrival the place should be emptied, cleaned and disinfected. During quarantine boars can be trained to jump in dummy sows and semen

collected to evaluate fertility. Personnel working in quarantine should be different from those working in the AI stud.

● **Health programs**

- Vaccination program (if and when necessary).
- Preventive treatments.
- Periodical serological controls.
- Regular visits of the veterinarian.
- Monitoring of boar health.

● **Semen handling**

Semen can transmit a great number of bacterial and viral diseases, all of which can be avoided by hygiene controls and adequate management of semen during every process, from collection through evaluation, processing and storage, etc.

All steps in the collection and manipulation should be performed with strict hygiene measures and using disposable, sterilised materials

as much as possible. High quality, reliable purified water and wide spectrum antibiotic preservation extenders must be used and, in this way, a great number of bacterial infections can be eliminated or controlled, resulting in semen of high quality. ■

Virus identified in boar semen

- Adenovirus
- African Swine Fever
- Aujeszky's (Pseudorabies)
- Cytomegalovirus
- Enterovirus
- Foot and mouth disease
- Hog cholera
- Japanese encephalitis
- Porcine parvovirus
- PRRS (Blue ear disease)
- Reovirus
- Swine influenza: several strains
- Swine vesicular disease
- Transmissible genital papilloma