



# Biosecurity and control of epidemics

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## Introduction:

Covid-19 infection force all of us to take measures to prevent the infection, but also to prevent it to be spread. Avoiding social contact in the first stage of the pandemic was essential to avoid new infections, allowing the health systems to cope with it. But as knowledge increased other measures were imposed aiming to reduce virus spreading. Masks, cleaning hands or social distancing have been probably the most popular ones. All these measures are what is known as biosecurity.

By on farm biosecurity, we refer to the application of health controls and measures to prevent the introduction of new infectious diseases into herds but also to contain the spread of other infections already present in the farm.

All too often we undervalue the importance of biosecurity. The ignorance of many diseases and the existence of many others with different epidemiology could be the cause of certain incredibility that often has serious consequences. However, this possible ignorance quite often turns into fear leading to the adoption of exaggerated biosecurity measures that finally are not applied. In other cases, having already a low health status is the most common excuse for not applying them. The health status of a herd should not condition the introduction and application of biosecurity measures, as always can be worse. Probably covid-19 help us in understanding how important is to be perseverant in the application of such measures as we never know when the risk will arise.

## Measures to avoid introduction of a new infection

Obviously, a farm located far away of other livestock has a lower risk of infection, but this is never “0”, as a farm must sell animals to market, meaning it has to allow transport to happen, but not only, a farm needs also supplies to exist. It needs genes to be introduced either in form of replacement stock or semen doses, it needs feed, water, medicines, and other supplies. All these activities can represent, once in a while, a health risk and therefore measures to minimized it are needed.

- The temporary isolation (quarantine) of replacement stock allows us to detect diseases in the incubation phase in the source farm, new infections happening during transportation, check for the presence of chronic diseases and even eliminate infectious agents through medication before the animals are introduced into the herd. Ideally Isolation should be out-side the main farm.
- Because no farm can exist without a truck it is essential to have in place a **loading-bay**. Trucks bringing new stock to the farm are not a big risk, as long as, new animals are introduced through isolation. Trucks used to send animals to other farms or slaughterhouse should come always clean, disinfected and empty to the farm but, as no one is able to find bacteria or viruses with bare eyes, therefore additional measures are needed. Having a **loading-bay** allows to clearly define clean and dirty zones and should prevent the re-entry of animals and liquids. A good loading bay has to allow to load animals even in a dirty truck without infecting the farm.
- Farms are often located in countryside, having a **complete fence** surrounding the whole farm will prevent the entry of animals and people.
- The **main and other entrances** must remain closed. A sign reading “No entry for health reasons” should be erected. And having a call-bell or another system to notify the arrival is essential when every door is closed.
- Workers and visitors should go through **changing facilities** which be situated within the main perimeter fence. Showers or an intermediate area (e.g. Danish SPF herds) should define the clean area of the changing facilities. Overalls, farm shoes or boots and hat should be provided once in the clean side leaving all personal items in the dirty side.
- Under no circumstances should personnel and staff be allowed to eat outside the canteen and the consumption of **pork or its by-products should be prohibited** as these can transmit viruses such as CSF, ASF, and FMD.

- **Feed should be loaded from outside the fencing.** Its components should be from safe, known sources. And water when coming from a well should be chlorinated.
- When working with liquid slurry, channels running from the different farm buildings into a **pit outside the compound fence** are recommended. Additionally, removing slurry with farm owned vehicles reduces the risk of contamination.
- For other material which need to be introduce into the farm, having a **disinfection chamber** can allow to disinfect and isolate them for a while before moving them inside. Storage should be always done inside the perimeter fence.
- An **incinerator** for dead animals or a collecting point must be fenced and located outside the main perimeter fence but attached to it to allow disposing carcasses from clean side.

## Measures to avoid the spread of infection inside the farm

Today reducing the use of antibiotics is an obligation that society requires of us. To achieve this, it is as important to avoid the introduction of new infections, as it is to reduce the spread of diseases within the farm. And for this, the measures discussed below will be essential.

- **Batch management and batch integrity.** Batch management has allowed us to cut infection cycles and has been extremely effective in controlling bacterial and viral processes. But all the benefits of batch management are lost if batch integrity is not maintained. Rolling back animals, workers moving among batches from old to young, not changing needles when injecting them or not maintaining proper hygiene with the material will prevent reaping the advantages that the system can bring.

- Batch management should always be accompanied by **all-in-all-out**. This is already an old technique, but its benefits are indisputable, as long as it is combined with a good cleaning and disinfection. However, breaking it is still too common.
- Within a farm we can also find other animal species that could move from area to area and prevent us from collecting the advantages that have been discussed in the previous points. This is one of the reasons why **good fly and rodent control** is essential.
- Animals have to eat and drink daily; they have to have the right climate according to their age and productive phase, they have to be allocated at the right density and they must receive fast attention when they would be needed. A **good management** has to be able to provide the welfare the animals need, reducing any stress and allowing them to express their immunity.
- And last but not least, we cannot forget the vaccines. A good **vaccination program** will be the ideal complement to the previous measures, strengthening immunity and reducing the chances of infection.

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