

# Hygiene monitoring of animal houses in livestock farming

The goal of implementing good biosecurity practices on the farm is to prevent the introduction of pathogens on the farm and once established to minimize the spread within the farm. One aspect of biosecurity is hygiene management. The most critical point of hygiene management of animal houses is cleaning and disinfection.

If pathogens were circulating in the previous group of housed animals, thorough cleaning and disinfection of the housing facilities reduces the risk that the pathogens infect the next group of animals entering the house. To ensure that the cleaning and disinfection procedures were effective, the hygiene should be monitored. Different methods can be used for this, all with their own advantages and limitations.

Methods often used to evaluate the cleaning step are non-microbiological assessments used to detect the presence of organic material. In general, they are cost-effective, rapid and easy to perform but also subjective with limited reliability and sensitivity. The simplest method is visual inspection, with or without the use of fluorescent markers. Furthermore, tools such as ATP (adenosine triphosphate) measurement and protein rapid tests can be performed.

Methods used to evaluate the effect of the disinfection step are the microbiological assessments. The surface is investigated for the presence of (specific indicator) pathogens directly by using agar contact plates or indirectly by taking swabs or sponge samples that are further processed in the laboratory. Those assessments are objective, reliable and sensitive but costly, time-consuming and more technical. With molecular techniques it is even possible to type pathogens at subspecies level, although this is not always useful or necessary.

In conclusion, one ideal method for evaluating the efficacy of the cleaning and disinfection process does not exist. It is recommended to use a combination of methods that are written down in a farm specific protocol for assessing the hygiene in the animal houses.

Non-microbiological test		
Cheap	Quick	Easy
+++	+++	+++
Reliable	Sensitive	Quantitative
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Microbiological test		
Cheap	Quick	Easy
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Reliable	Sensitive	Quantitative
+++	+++	+++

- Cost-effective, rapid, non-microbiological tests can be used for locations bearing a lower risk of pathogen transmission
- Objective, microbiological tests are recommended for locations bearing a higher risk of pathogen transmission

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