



ULST Timisoara  
**Multidisciplinary Conference on  
Sustainable Development**  
15-16 May 2025



## THE ROLE OF BIOSECURITY IN CONTROLLING INTENSIVE PIG HERD HEALTH

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**Abstract:** In an organized pig herd, individual animal health care is becoming increasingly less important. In today's environment, characterized by a large concentration of animals in a relatively small area, this situation necessitates health care at the farm level. It is commonly known that biosecurity measures are important in pig farming, as they are designed to prevent diseases from entering the farm and to restrict the spread of infections, within it. The presence of various breeding diseases of bacterial or viral origin leads to decreased production performance and demands additional efforts from the farm's employees, resulting in higher medication usage and, consequently, reduced economic profit for the farmer. A health protection program in well-organized farming should also include regular parasitological checks, as parasitic infections considerably impact animal health. Thus, parasitological diagnostics must be a part of the routine health monitoring of pigs. It is acknowledged that the willingness of farm personnel to adopt biosecurity measures is crucial for achieving a high level of protection against pathogen introduction and spread. Implementing these measures requires an understanding of the pigs' health status. One of the most common risk factors is the introduction of acquiring boars, gilts, or weaned piglets with unknown health status. Alongside the aforementioned measures, vaccination programs also play an important role in stabilizing the health of pigs. Promoting good health in organized herds involves applying a system of preventive measures. This paper aims to provide an overview of our research on the importance of biosecurity practices in both extensive and intensive pig production.

### • Introduction

- Achieving the necessary level of biosecurity on a pig farm requires a plan developed through careful planning and prompt action within a specific environment and epidemiological context. Understandably, the extent of the gaps and the scale of production significantly restrict the scope and quality of the measures implemented. Sustainable health protection and successful production are only achievable in the absence of infectious and parasitic diseases as well as other factors that can cause technopathies. The methods of use, storage, maintenance, and handling of therapeutic agents, instruments, and semen, along with the use of single-use devices, significantly influence the attainment of satisfactory health conditions for all pig categories. Developing and carrying out biosecurity measures necessitates constant work to establish and preserve a suitable environment for the production and welfare of the animals. particularly focusing on preventing the introduction and spread of infectious agents. This issue is becoming increasingly important as the pig market adopts a more global perspective. Various implemented strategies within organized pig breeding aim to improve profitability, efficiency, and safety production often lead to discomfort, pain, and stress for the animals. These strategies also hinder the expression of natural instinctive behaviors, which is notably reflected in the economic outcomes of production. Furthermore, it is essential to recognize that, in most cases. These are pigs of varying age categories, often originating from various geographic and health backgrounds, and individuals congregate in a restricted space. Additionally, it is essential to recognize the increased vulnerability of sensitive breeds to stress as a factor that inevitably leads to a rise in disease prevalence. Insufficient biosecurity measures can lead to the occurrence of diseases, reduced production, increased mortality, and financial losses, threatening the sustainability of entire farms. These factors reflect a farm's biosecurity status; however, it is crucial to consider their interactions and the holistic nature of the measures taken. Key aspects that must be addressed include: implementing isolation as part of farm biosecurity, establishing quarantine protocols, evaluating herd health status, analyzing staff-equipment interactions, regulating movement and traffic, instituting a visitation protocol, overseeing food and feeding equipment, managing insemination practices, handling animal carcasses on the farm, controlling bird and rodent populations as well as other animals, and maintaining sanitation standards. This paper aims to overview the research on the significance of biosecurity measures in both extensive and intensive pig farming scenarios.

### • Material and method

#### Questionnaire/survey method

- In order to improve and/or introduce biosecurity measures on commercial farms, a survey is being conducted that will serve to eliminate deficiencies on the farm. The attached survey is for use in the design task. The Biocheck application was also recently created and is available online. University of Ghent (Belgium). <https://biocheck.ugent.be/en> The first application that enables online assessment of biosecurity measures in pig farming, which was developed by researchers from the University of Ghent (Belgium). It is available in several languages, and biosecurity can be compared at the farm level and between farms, within the country and, of course, across Europe.

### • Results and discussions

Indikator	Evaluation	Pig farm, comments
Assessment of on-farm biosecurity settings	4	
Isolation	4	
quarantine	5	
Herd health status	5	
Staff to equipment ratio	5	
Movement and traffic control	4	
Attitude towards achievers	5	
Control of nutrition and water supply	5	
Manuring	5	
removal of dead animals	4	
Attitude towards other animals on the farm	5	
Rodent and bird population control	5	
Sanitation	5	
Average grade	4,6	

#### Grades applied

- Evaluation
- 0 (insufficient without possibility of repair)
- 1 (insufficient with the possibility of repair)
- 2 (enough)
- 3 (good)
- 4 (very good)
- 5 (exelent)
- The scale it applies
- 0-1,99 insufficient
- 2,00-2,49 enough
- 2,5-3,49 good
- 3,5- 4,49 very good
- 4.5-5,0 exelent

### • Conclusions

- In the intensive production of pigs, important elements are: biosecurity, well-being, good production practice, as well as risk analysis at critical control points. Planned application of biosecurity measures is crucial in protecting the health and success of production. The importance of biosecurity on commercial farms is a significant factor in maintaining animal health.
- The health status of the herd depends on: the technology of keeping, care, nutrition, organization, the level of training of farm employees and the systematic implementation of health protection measures. A large number of diseases of bacterial and viral etiology as well as certain parasitosis can threaten the production of pigs.