



Disease Surveillance and Compartmentalization in Swine Industry of Thailand



Outline

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Swine production Overview

2

**Compartmentalization Practice
in Thailand**

3



Classified for pig production

The pig production in Thailand is classified into 4 systems according to their biosecurity

Production system	Biosecurity systems	Biosecurity level	Consumption groups	Raising system
Sector 1	Compartmentalization	high level	Mainly for exportation	Corporate Farm, intensive or semi-intensive pig production
Sector 2	Good Agricultural Practice (GAP)	Medium to high level	For exportation and domestic consumption	intensive or semi-intensive pig production, Contract farming
Sector 3	Good Farming Management (GFM)	Medium level	For domestic consumption	Opened housing farm, small Evaporative housing system
Sector 4	Basic biosecurity	Low level	For domestic consumption	Opened housing farm

Population of swine in Thailand

The pig population in Thailand is 12,329,680 heads, raised on 148,881 farms.



Sector 2 GAP
87.9 %



Sector 3 GFM
1.3 %



Sector 4 Basic biosecurity
10.8 %

Compartmentalization in Thailand

Scope and purpose

Compartmentalization standards provide principles and criteria for swine disease-free compartmentalization , including a common biosecurity management system, traceability system, surveillance, and disease control.

The aim is to promote good sanitary practices in swine production to benefit animal health, prevent the spread of diseases among swine and facilitate international trade in swine and related products

- 1 Swine farm
- 2 Feedmill
- 3 Slaughterhouse

Compartmentalization

Establishing swine farm Compartmentalisation

**Chapter 4.5 application of compartmentalization Article 4.5.3
from Terrestrial Animal Health Code 2022 by WOAH**

1. Physical
2. Infrastructural factors
3. Biosecurity plan
4. Traceability

Compartmentalization

Establishing swine farm Compartmentalisation

1. Physical

WOAH recommendation	DLD activity
Physical or spatial factors that affect the status of biosecurity in a compartment a) <u>disease status in adjacent areas and in areas epidemiologically linked to the compartment</u> b) <u>location, disease status and biosecurity of the nearest epidemiological units or other epidemiologically relevant premises.</u> Consideration should be given to the distance and physical separation from risk establishments	- location : registered all farms by DLD e-Regist. - Disease status: data from active and passive surveillance - Biosecurity level: depends on the certified standards.



Compartmentalization

Establishing swine farm Compartmentalisation

2. Infrastructural factors

WOAH recommendation	DLD activity
<u>Structural aspects</u> of the establishments within a compartment contribute to the effectiveness of its biosecurity. Consideration should be given to: fencing or other effective means of physical separation, facilities for people entry, vehicle access, unloading and loading facilities, isolation facilities for introduced animals, facilities for the introduction of material and equipment, infrastructure to store feed and veterinary products etc.	- The structural components of the establishment will be evaluated using a checklist. - fencing, vehicles, equipment, personnel, isolation facilities for introduced animals, feed and water supply, and other relevant elements.

Compartmentalization

Establishing swine farm Compartmentalisation

3. Biosecurity plan

WOAH recommendation	DLD activity
The biosecurity plan should describe in detail: a) potential pathways for introduction and spread into the compartment of the agents for which the compartment was defined. b) the critical control points for each pathway c) measures to mitigate exposure for each critical control point d) standard operating procedures may implementation, maintenance, monitoring and record keeping	- Identify the critical control points from all potential pathways for pathogen introduction into the compartment through <u>risk assessment</u>. - Apply measures to mitigate exposure at each critical control point, and include them in the biosecurity manual.
e) contingency plan	- The farm will develop a contingency plan
f) reporting procedures	- Evaluated using a checklist.
h)the surveillance programme in place.	- The DLD designed the surveillance plan for compartmentalization certification.

Compartmentalization

Establishing swine farm Compartmentalisation

3. Biosecurity plan

Potential pathways	Risk level
Pigs	Negligible
Vehicles entering the farm	Negligible
Food	Negligible
Bird	Negligible
Pet	Negligible
Pest	Negligible
Water	Negligible
Drainage	Negligible
Equipment	Negligible
Human	Negligible
Feed	Negligible
Semen	Negligible
Risk of contamination with the African swine fever virus"	Negligible

Compartmentalization

Establishing swine farm Compartmentalisation

**Chapter 4.5 application of compartmentalization Article 4.5.8
from Terrestrial Animal Health Code 2022 by WOAH**

Surveillance

1. Internal surveillance (Farm)

- Early detection
- Testing conducted by the DLD laboratory every 6 months

2. External surveillance (Buffer zone)

- Risk based surveillance in buffer zone every 6 months
- Epidemiological linkage units

Compartmentalization

Establishing swine farm Compartmentalisation

4. Traceability system

WOAH recommendation	DLD activity
A prerequisite for assessing the integrity of a compartment is the existence of a valid traceability system. All animal movements into and out of the compartment should be recorded	Animal Movement Permit - Farm to farm or slaughterhouse request via e-Movement system. Animal inspection - Farm Veterinarian inspects and fills in the raising information, including feed, medication, vaccine and health status in the inspection form (BLSC001)

Compartmentalization

Establishing Feed Mills Compartmentalisation

Chapter 4.5 application of compartmentalization Article 4.5.2 (1)(c) from Terrestrial Animal Health Code 2022 by WOAHA

Feed mills are considered as “infrastructure supporting the compartment.
Feed mills must support compartmentalized systems through strict biosecurity

Compartmentalization

Establishing Feed Mill Compartmentalisation

1. Feed Ingredient Article 4.5.3 (1)(e)

- Feed ingredients must be sourced from areas free of ASF risk
- traceability must be available.

2. Traceability System Article 4.5.3 (1)(b)

- A system must be in place to clearly trace the origin of raw materials and the destination of finished feed.
- Data retention 3 years

Compartmentalization

Establishing Feed Mill Compartmentalisation

3. Biosecurity Measures Article 4.5.3 (1)(a), (1)(f)

Measures must be implemented to prevent contamination, including transport and personnel management:

- Sanitation of transport vehicles
- personnel access control
- Separation of clean/dirty zones

4. Surveillance and Oversight Article 4.5.3 (2), Article 4.5.4 (1)

- A certified quality assurance system with regular inspections and audit trails

Compartmentalization

Establishing slaughterhouses/abattoirs Compartmentalisation

implement the **HACCP system** and conduct **risk analysis** of swine disease pathogens throughout the production process in compliance with **Codex CXC-1969 (Revised in 2020, 2022) – General Principles of Food Hygiene**

Chapter 4.5 application of compartmentalization Article 4.5.3 from Terrestrial Animal Health Code 2022 by WOAH

1. Physical
2. Infrastructural factors
3. Biosecurity plan
4. Traceability

Compartmentalization

Establishing slaughterhouses/abattoirs Compartmentalization

1. Physical

- Accept live pigs from farms certified by the Department of Livestock Development (DLD)
- Slaughtering sequence arrangement
- Transportation of compartment pigs must be identified and separated from others
- The vehicle Disinfection station must be well designed
- Production process separation along the process from slaughtering to storage areas

2. Infrastructural factors

- The Holding pens at the Slaughterhouse must be designated to separate pigs
- Production process separation from other farms at all stages, including slaughtering, cutting, packaging, and storage. Separate storage areas

Compartmentalization

Establishing slaughterhouses/abattoirs Compartmentalization

3. Biosecurity plan

- Transportation of compartment pigs must be identified and separated from
- All vehicles transporting live pigs must be thoroughly cleaned and disinfected
- An inspector must conduct an ante-mortem and post mortem inspection to assess the health condition and approved meat before distribution
- The production data of pigs from Compartment Farms must be reported to the Compartment Farm Manager.
- Contamination prevention measures when miscommunication or other errors

Compartmentalization

Establishing slaughterhouses/abattoirs Compartmentalization

4. Traceability system

- Live pigs and products movement register via the e-Movement system.
- Pork products originating from Compartment Farms must be identified and labelled.
- Operators must have an effective traceability and recall system that allows for the quick and complete retrieval of products if necessary. Recall and record-keeping must be conducted to assess the system's efficiency.