



**THAI AGRICULTURAL STANDARD**

**TAS 6908-2010**

**GOOD AGRICULTURAL PRACTICES  
FOR POULTRY HATCHERY**

**National Bureau of Agricultural Commodity and Food Standards  
Ministry of Agriculture and Cooperatives**

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**National Bureau of Agricultural Commodity and Food Standards**

**Ministry of Agriculture and Cooperatives**

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**Technical Committee on the Elaboration of Thai Agricultural Standard on  
Good Agricultural Practices for Poultry Hatchery**

- |     |                                                                                                                                  |                      |
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(3)

The poultry commercial farming in Thailand has continuously developed. The application of scientific knowledge and technology has helped to increase the capability of poultry production. Meanwhile, poultry disease problem, in particular Avian Influenza, caused considerable loss to farmers due to its effect on animal health and higher cost of production. The Agricultural Standards Committee deems it necessary to establish the Thai Agricultural Standard on Good Agricultural Practices for Poultry Hatchery to be used as a guideline for poultry farmers and hatchery operators to promote hygienic operation which is an important basis for production of healthy and good quality chicks or ducklings. Such standard could be applied as a guideline for hatchery certification. The poultry defined in this standard covers only chickens and ducks. Establishment of standards for other kinds of poultry hatchery will be considered when appropriate.

This standard is based on the following documents:

Department of Livestock Development. B.E. 2554 (2011). Regulation on Poultry Hatcheries of Thailand.

World Organization for Animal Health (OIE). 2009. Chapter 6.4 Hygiene and Disease Security Procedures in Poultry Breeding Flocks and Hatcheries. Terrestrial Animals Health Code, Paris, France.



**NOTIFICATION OF MINISTRY OF AGRICULTURE AND COOPERATIVES**  
**SUBJECT: THAI AGRICULTURAL STANDARD:**  
**GOOD AGRICULTURAL PRACTICES FOR POULTRY HATCHERY**  
**UNDER THE AGRICULTURAL STANDARDS ACT B.E. 2551 (2008)**

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Whereas the Agricultural Standards Committee deems it necessary to establish an agricultural standard on Good Agricultural Practices for Poultry Hatchery as a voluntary standard in accordance with the Agricultural Standards Act B.E. 2551 (2008) to promote such agricultural commodity to meet its standards on quality and safety.

By virtue of Section 5, Section 15 and Section 16 of the Agricultural Standards Act B.E. 2551 (2008), the Minister of Agriculture and Cooperatives hereby issues this Notification on the Establishment of Thai Agricultural Standard: Good Agricultural Practices for Poultry Hatchery (TAS 6908-2010), as a voluntary standard, details of which are attached herewith.

Notified on 28 April B.E. 2553 (2010)

(Mr. Theera Wongsamut)  
Minister of Agriculture and Cooperatives

## THAI AGRICULTURAL STANDARD

## GOOD AGRICULTURAL PRACTICES FOR POULTRY HATCHERY

**1. SCOPE**

1.1 This Thai Agricultural Standard covers general conditions of poultry hatchery including the managements of hatchery, personnel, hatching eggs, hatching operations, hatched chicks and ducklings, animal welfare, disease prevention and control and environmental hygiene in order to produce healthy day-old chicks and ducklings.

1.2 Poultry covered under this standard are chicken and duck only.

**2. DEFINITIONS**

For the purpose of this standard:

2.1 **Hatchery** means premises where eggs are hatched to produce commercial day-old chicks or ducklings.

2.2 **Setter/setting machine** means an incubator in which the temperature, humidity, air ventilation and egg turning are controlled during the incubation for embryo development.

2.3 **Hatcher/hatching machine** means an incubator for hatching after the incubation process in the setter as described in 2.2 with the control of appropriate temperature, humidity and air ventilation.

2.4 **Infertile egg** means an unfertilized egg.

2.5 **Dead-in-shell** means a fertilized egg but the developed embryo died during the incubation.

### 3. REQUIREMENTS AND INSPECTION METHODS

Requirements and inspection methods shall be as in Table 1.

**Table 1 Requirements and Inspection Methods**

(Section 3)

Items	Requirements	Inspection Methods
1. Poultry hatchery components 1.1 Location	1.1 Locate in an environment with no risk of any contamination of physical, chemical and biological hazards. If the contamination is unavoidable, preventive measures shall be in place.	1.1 Visual inspection of the hatchery location and its environment. Examine the preventive measures against contamination.
1.2 Layout	1.2.1 Buildings and working areas shall be orderly separated and completely away from residential area.  1.2.2 Availability of fence surrounding the hatchery with clearly visible entrance and exit.	1.2.1 Check layout and on-site verification.  1.2.2 Check fence, entrance and exit.
1.3 Internal design of the hatchery building	1.3.1 Separate the operation areas within the building orderly according to the activities. Clean and dirty areas are completely separated.  1.3.2 Floor surfaces shall be smooth, non-absorbent and easy to clean.  1.3.3 Availability of air ventilation and temperature control systems and adequate light for working condition.	1.3.1 Visual inspection of internal layout  1.3.2 Visual inspection of the floor surfaces  1.3.3 Visual inspection of internal building and check the records of temperature, lighting and air flow.
2. Water supply for hatchery cleaning	2. Water used shall be adequate and good quality.	2. Check record of water test results on quality and microorganisms and water system management.
3. Hatchery management 3.1 Operating procedures	3.1 Availability of operating procedures demonstrating every step comprised of egg receiving, hatching egg handling, tempering and	3.1. Visual inspection of operating procedures.

Items	Requirements	Inspection Methods
	hatching management of day-old chicks or ducklings disease prevention and control, environmental hygiene chicks or ducklings welfare the use of chemicals and veterinary drugs.	
3.2 Personnel	<p>3.2.1 Personnel shall have knowledge and skill in their operations. The clear duty and responsibility of all positions shall be taken into account the cross-contamination.</p> <p>3.2.2 . Personnel engaged in the operations should be trained and refreshed regularly.</p> <p>3.2.3 Personal health check-up at least once a year</p> <p>3.2.4 Availability of number of personnel held Bachelor Degree in Animal Husbandry/Animal Science or egg hatching related fields corresponding to the numbers of chicks or ducklings.</p> <p>3.2.5 Availability of number of veterinarians held the veterinary license and a poultry farm veterinary supervisor license to supervise animal health and hygiene corresponding to the numbers of chicks or ducklings.</p>	<p>3.2.1 Check the records of personnel and visual inspection of their operations.</p> <p>3.2.2 Check training records.</p> <p>3.2.3 Check personal hygiene and health check-up record.</p> <p>3.2.4 Check educational background and working experience.</p> <p>3.2.5 Check the licenses of veterinarian and the poultry farm veterinary supervisor.</p>
3.3 Cleaning and maintenance	<p>3.3.1 Clean and disinfect areas and equipment used in hatchery operations according to cleaning schedule.</p> <p>3.3.2 Test for bacterial and fungal contamination in the setters, hachers, hatchery equipment and hatchery building interior according to planned schedule.</p>	<p>3.3.1 Visual inspection and check the cleaning schedule and records including disinfection methods.</p> <p>3.3.2 Check the laboratory results.</p>



Items	Requirements	Inspection Methods
	3.3.3 Tools and equipment, standby generator and emergency alert system are functioned effectively and maintained regularly	3.3.3 Check the effectiveness of the systems and records of their performance.
4. Egg receiving	<p>4. Eggs received shall come from certified breeder farms. Egg transport vehicles shall be cleaned and disinfected. Appropriate temperature and relative humidity (RH) for transport are as follows:</p> <ul style="list-style-type: none"> <li>- For chicken egg transport: 18°C - 20°C and 75% - 85% RH</li> <li>- For duck egg transport: 17°C - 24°C and 70% - 90%RH or as specified in the operating procedure.</li> </ul>	4. Check the records of egg receiving and the operations.
5. Hatching egg management	<p>5.1 Sort good quality and clean eggs.</p> <p>Disinfect those if they have not been disinfected.</p> <p>5.2 If it is necessary to store the eggs, appropriate temperature and relative humidity (RH) for storage are as follows:</p> <ul style="list-style-type: none"> <li>- For chicken egg storage: 15°C - 18°C and 75% - 85% RH.</li> <li>- For duck egg storage: 16°C - 20°C and 70% - 90% RH.</li> </ul> <p>or as specified in the operating procedure</p>	<p>5.1 Check the records of hatching egg management and operations.</p> <p>5.2 Check the records of operations, temperature and relative humidity of storage rooms and methods of operations.</p>
6. Egg hatching	6.1 Incubate eggs in setter in which the temperature and relative humidity are controlled to be suitable for eggs at different stages. Disinfect the setter interior. Candle the eggs to cull off poor quality eggs.	6.1 Check the records of hatching egg management, operations, temperatures, relative humidity and disinfection of the setter interior.

Items	Requirements	Inspection Methods
	6.2 Transfer the hatching eggs to the hatcher controllable with temperature and relative humidity. Transfer hatched chicks or ducklings from the hatcher and cull off unhealthy ones.	6.2 Check the records of temperature, relative humidity of the hatcher and the hatching results.
	6.3 Clean and disinfect egg trays and hatcher every time after the removal of day-old chicks or ducklings. Hatch debris should be disposed of to prevent microbial contamination to the environment or pest harborage.	6.3 Check records of cleaning and disinfecting, hatch debris disposal. Visual inspection of the operations.
7. Post-hatching management 7.1 Sorting and sexing of day-old chicks or ducklings	7.1.1 Personnel responsible for sorting and sexing chicks or ducklings shall have skill in their operation. Chicks or ducklings shall be of good quality and healthy while those with malformations should be destroyed humanely.  7.1.2 Clean and disinfect equipment, chick or duckling sorting and sexing room and air filtration system.  7.1.3 Availability of sampling plans and laboratory test results of hatching process for pathogenic contamination.	7.1.1 Visual inspection of the operations.  7.1.2 Check the records of cleaning and disinfection. Visual inspection of the operations.  7.1.3 Check sampling plans and laboratory test results of the hatching process.
7.2 Vaccination	7.2 Vaccination program shall be under supervision of a veterinary supervisor according to TAS 9032 entitled Code of Practice for Control of the Use of Veterinary Drugs.	7.2 Check the records of vaccination program and the operations.
7.3 Caring for day-old chicks or ducklings prior to transportation	7.3 Keep chicks or ducklings in a good air flow box and place in a room equipped with blue light and good air ventilation.	7.3 Check the room conditions.
7.4 Day-old chick or duckling transportation	7.4.1 Availability of movement document issued by the Department of Livestock Development for	7.4.1 Check the movement document.

Items	Requirements	Inspection Methods
	<p>transporting day-old chicks or ducklings</p> <p>7.4.2 Transport vehicles shall be cleaned and disinfected.</p>	<p>7.4.2 Check the cleanliness and disinfection of transport vehicles.</p>
<p>8. Disease prevention and control</p>	<p>8.1 Both vehicles prior to entering the hatchery and persons entering the hatchery building shall be disinfected.</p> <p>8.2 Record the entering and exiting the hatchery.</p> <p>8.3 Availability of pest control plans</p> <p>8.4 In case of an outbreak or suspicion of epidemic disease, Animal Epidemic Act B.E. 2499 (1956) and its amendments shall be complied.</p>	<p>8.1 Check the preventive systems and disinfection.</p> <p>8.2 Check the records of entering and exiting the hatchery.</p> <p>8.3 Check the pest control plans, working areas and operating procedure of pest control.</p> <p>8.4 Check disease prevention and control procedures, action plan for the outbreak, records of animal health and diagnostic results.</p>
<p>9. Use of chemicals and veterinary drugs</p>	<p>9. Follow the recommendations of poultry farm veterinary supervisor.</p>	<p>9. Check the records of the use of chemicals and veterinary drugs.</p>
<p>10. Animal welfare</p>	<p>10. Handle chicks or ducklings with care.</p>	<p>10. Check the operations.</p>
<p>11. Environmental hygiene</p>	<p>11. Availability of appropriate disposal systems for hatch debris, waste and wastewater.</p>	<p>11. Visual inspection of the hatchery, waste disposal operation and wastewater treatment systems.</p>
<p>12. Record and record keeping</p>	<p>12. Availability of records on hatchery and production management, prevention and control of disease outbreak, use of chemicals and veterinary drugs and maintenance of tools and equipment. Keep the records for at least 3 years.</p>	<p>12. Check the documents and kept records of the hatchery.</p>

#### **4. GUIDANCE ON GOOD AGRICULTURAL PRACTICES FOR POULTRY HATCHERY**

Good Agricultural Practices for Poultry Hatchery are intended to provide recommendations for farmers and operators. Details of which are described in Appendix A. Examples of record forms are shown in Appendix B.

## **APPENDIX A GUIDANCE ON GOOD AGRICULTURAL PRACTICES FOR POULTRY HATCHERY**

(Section 4)

### **A.1 POULTRY HATCHERY COMPONENTS**

#### **A.1.1 Location**

A.1.1.1 Hatchery is located in an appropriate area, open space, good air flow, convenient for transportation and not flood-prone.

A.1.1.2 Hatchery should be away from sources of physical, chemical and biological hazardous contamination. If there is a risk, preventive measures shall be in place.

A.1.1.3 The site for hatchery should be at least 5 km away from bird gathering areas such as live poultry markets and/or poultry slaughterhouses.

A.1.1.4 Hatchery is located in an area supplied with clearly visible water for the operations.

#### **A.1.2 Layout**

A.1.2.1 Layout of the hatchery shall be well designed for buildings and working areas. The buildings and working areas are sufficient in spaces, orderly separated and proportionate to the activities, i.e., areas for hatching, equipment storage, hatch debris disposal, office building, entrance and exit, road, waste water treatment, garbage and waste collecting and water reservoir to prevent cross-contamination. If accommodation is provided within the hatchery, it should be clearly separated from the hatching buildings in order to prevent and control of diseases.

A.1.2.2 Hatchery should be fenced with clearly visible entrance and exit.

A.1.2.3 Road inside the hatchery shall be constructed with durable materials with good conditions and appropriate width convenient for transport of equipment and produce in and out of the hatchery.

#### **A.1.3 Internal design of the hatchery building**

A.1.3.1 The internal layout of the building should be provided with separated areas proportionately and orderly. Clean areas should be segregated from dirty ones, for examples, rooms for showering before entering, egg receiving, shell disinfection, egg cold storage, setters, hatchers, equipment cleaning, chick or duckling handling, sexing, vaccination, day-old chick or duckling storage, vaccine preparation, equipment storage, hatch debris, including areas of garbage and waste collection and water facilities to facilitate the operations and disease prevention and control. Entrance and exit should be clearly separated.

A.1.3.2 Hatchery building and floor surface shall be constructed with smooth and non-absorbent materials which are easy to clean.

A.1.3.3 There shall be air ventilation and temperature control system and adequate light appropriate for operations in each area according to the operating procedures.

## A.2 WATER SUPPLY FOR HATCHERY CLEANING

A 2.1 Water sources in the hatchery shall be managed regularly and continuously by taking into account the environmental impact, disease control and safety.

A.2.2 Water supply in the hatchery should be adequate and of good quality. Water samples should be tested for chemical contamination at least once a year including regularly testing for microorganisms.

**Table A.1 Water quality for hatchery**

(Section A.2.2)

<b>Physical properties</b>	<b>Optimum level</b>	<b>Maximum allowance</b>
1. Color 2. Turbidity 3. pH	5 (Platinum-Cobalt) 5 (Silica scale) 7.0-8.5	15 (Platinum-Cobalt) 20 (Silica scale) 6.5-9.2
<b>Chemical properties</b>	<b>Optimum level (mg/l)</b>	<b>Maximum allowance (mg/l)</b>
1. Iron (Fe) 2. Copper (Cu) 3. Total hardness as CaCO <sub>3</sub> 4. Non-carbonate hardness as CaCO <sub>3</sub> 5. Total dissolved solids	Not exceeded 0.5 Not exceeded 1.0 Not exceeded 300 Not exceeded 200 Not exceed 600	1.0 1.5 500 250 1,200

<b>Microbiological properties</b>	<b>Optimum level</b>
1. Standard plate count 2. Most probable number of Coliform organism (MPN) 3. <i>E. coli</i>	Not exceeded 500 colony/cm <sup>3</sup> Less than 2.2/100 cm <sup>3</sup>  Not detected

**Source:** Ground Water Quality Standard for Drinking Purpose, annexed to the Notification of the Ministry of Natural Resources and Environment entitled Technical Criteria and Measures to Prevent Public Health and Environmental Hazards B.E. 2551 (2008).

## A.3 HATCHERY MANAGEMENT

### A.3.1 Operating procedures

Operators shall make available the operating procedures on production process steps, hatchery management, record and record keeping, disease prevention and control, animal welfare and health care of chicks or ducklings.

The operating procedures shall contain the following detail contents:

- (1) egg receiving;
- (2) hatching egg handling;
- (3) egg tempering and hatching;
- (4) management of day-old chicks or ducklings e.g. culling off chicks or ducklings, vaccination, chick or duckling storage prior to transportation and transportation;
- (5) disease prevention and control;
- (6) management of environmental hygiene;
- (7) animal welfare; and
- (8) use of chemicals, veterinary drugs and vaccines.

### **A.3.2 Personnel**

A.3.2.1 Personnel shall have knowledge and skill. The clear duty and responsibility of all positions shall be taken into account the cross-contamination.

A.3.2.2 Personnel engaged in the operations should be trained and refreshed regularly in relevant subjects. Performance and training shall be recorded.

A.3.2.3 Operators shall maintain good personal hygiene and health check-up at least once a year. Any injured or sick person who is likely to transmit diseases such as fever, sore throat, diarrhea, vomiting shall report to the manager and not be allowed to enter the hatchery.

A.3.2.4 There shall be person(s) responsible for egg hatching. This person should hold Bachelor Degree in Animal Husbandry/ Animal Science or related fields, or has at least 3 years of experience. One such person shall be responsible for not more than 500,000 chicks or ducklings per week.

A.3.2.5 There shall be veterinarian(s) held the veterinary license and a poultry farm veterinary supervisor license issued by the Department of Livestock Development (DLD) responsible for animal health, hatchery sanitation and animal welfare. One such person shall be responsible for not more than 2,000,000 chicks or ducklings per week.

### **A.3.3 Cleaning and maintenance**

A.3.3.1 Areas and equipment used in hatchery operations shall be cleaned and disinfected daily. There shall be a cleaning schedule and appropriate disinfection methods.

A.3.3.2 There shall be sampling and testing for pathogens such as bacteria and fungi in the setters, hatcher, hatchery equipment and hatchery building interior according to planned schedule.

A.3.3.3 Tools and equipment shall be managed to assure their effectiveness, readiness and sufficient amount for work.

A.3.3.4 There shall be standby generators, uninterruptible power supplies with emergency alert system.

A.3.3.5 Set continuous inspection and maintenance programs for each equipment according to its manufacturer manual.

## **A.4 EGG RECEIVING**

Eggs received for hatching shall come from certified breeder farms with no evidence of disease outbreak in the flocks. Egg transport vehicles should be cleaned, disinfected and provided with temperature control system. During transportation, the temperature and relative humidity should be controlled, namely, for chicken eggs between 18°C and 20°C and 75%-85% RH, for duck eggs between 17°C and 24°C and 70-90% RH, or as specified in the operating procedure.

## **A.5 HATCHING EGG MANAGEMENT**

### **A.5.1 Egg culling**

A.5.1.1 Dirty, cracked or broken, thin or porous-shelled, abnormal, off-size eggs should be culled off and disposed appropriately in order to prevent disease contamination.

A.5.1.2 Sort clean and quality eggs. The weight of chicken eggs should be not less than 50 g/egg while the weight of duck eggs should be not less than 65 g/egg. After sorting, disinfect those if they have not been disinfected.

### **A.5.2 Hatching egg storage**

If it is necessary to store the eggs, the storage room shall be cleaned and disinfected. Suitable temperature and relative humidity should be adjusted accordingly. For chicken eggs should be between 15 -18 °C and 75-85% RH while duck eggs should be between 16 -20 °C and 70-90% RH or as specified in the operating procedures.

## **A.6 EGG HATCHING**

A.6.1 Prior to incubation, the eggs from storage room should be warmed at the ambient room temperature with good air flow not less than 12 hours for chicken eggs and not less than 6 hours for duck eggs or as specified in the operating procedures.

A.6.2 Setters should be turned on at least 3 hours prior to introducing the eggs.

- For chicken eggs: 37°C -38 °C, 60-65% RH

- For duck eggs: 37.5°C -38 °C, 65-70% RH

or as specified in the operating procedures.

A.6.3 Eggs should be placed on trays in the setter and disinfected. Appropriate incubation periods are depending on types of eggs as shown in Table A.2. Temperature and relative humidity should be controlled to be suitable for eggs at different stages. Egg turning should be carried out at least 4-6 times a day.



A.6.4 Egg candling for culling off infertile and dead-in-shell eggs shall be conducted and recorded.

A.6.5 Chicken eggs and duck eggs incubated for 18 days and 25 days respectively should be transferred to hatchers without egg turning. The temperature and relative humidity for chicken eggs and duck eggs should be lowered to 37°C -37.5°C and 61-65% RH, and 36°C -37°C and 65%-90% RH respectively or as specified in the operating procedure.

**Table A.2 Appropriate temperature and relative humidity for egg hatching**

(Section A.6.3 and A.6.5)

Type of egg	Incubation period (days)	Temperature (°C)	Relative Humidity (%)
Chicken eggs	1 to 18	37 to 38	60 to 65
	19 to 21	37 to 37.5	61 to 65
Duck eggs	1 to 25	37 to 38	65 to 70
	26 to 28	36 to 37	65 to 90

A.6.6 Remove day-old chicks or ducklings from the hatchers and record the hatching results.

A.6.7 Clean and disinfect egg trays and hatcher every time after the removal of day-old chicks or ducklings. Hatch debris should be disposed of to prevent microbial contamination to the environment or pest harborage.

## **A.7 POST-HATCHING MANAGEMENT**

### **A.7.1 Sorting and sexing of day-old chicks or ducklings**

A.7.1.1 Personnel responsible for sorting and sexing shall have skill in their operation.

A.7.1.2 Inspect the overall feature of day-old chicks or ducklings. Quality day-old chicks or ducklings shall have normal body with dry feather and fluffy without the shell membrane attached, un-swollen belly and properly healed navels without black scab.

A.7.1.3 Malformed chicks or ducklings should be disposed of humanely.

A.7.1.4 After each sorting, clean and disinfect equipment and sorting room including air filtration system.

A.7.1.5 There shall be sampling plans and laboratory test results of hatching process for pathogenic contamination.

A.7.1.6 In case the report showed any sign of irregularity in the hatching process as specified in the operating procedures, examine possible causes and effectiveness of hatchery system as well as laboratory disease diagnosis.

## **A.7.2 Vaccination**

A.7.2.1 Vaccination program shall be under supervision of a veterinary supervisor according to TAS 9032 entitled Code of Practice for Control of the Use of Veterinary Drugs.

A.7.2.2 Day-old chicks or ducklings' antibody levels against diseases should be determined when necessary.

## **A.7.3 Caring for day-old chicks or ducklings prior to transportation**

Prior to transportation, day-old chicks or ducklings should be kept in a box with good air flow and placed in a room equipped with blue light.

## **A.7.4 Day-old chick or duckling transportation**

A.7.4.1 There shall be the movement document issued by the Department of Livestock Development (DLD) for transporting day-old chicks or ducklings from hatchery to any farm.

A.7.4.2 Transport vehicles shall be cleaned, disinfected and maintained in good condition.

A.7.4.3 Day-old chicks or ducklings transportation shall be complied with the Department of Livestock Development's Rule on Transportation of Poultry.

## **A.8 DISEASE PREVENTION AND CONTROL**

There shall be an effective disease prevention and control system in the hatchery. Pathogenic decontamination should be provided prior to entering the hatchery. Preventive measure against accumulation of pathogens should be made available.

A.8.1 Disinfection of vehicles entering the hatchery: At the entrance of hatchery, there shall be disinfectant spraying facilities equipped with disinfectant spraying systems incorporated with wheel dips which are strong enough for all types of vehicles to pass through. The appropriate disinfectant shall be used and changed regularly.

## **A.8.2 Disinfection of personnel entering the hatchery building**

A.8.2.1 There shall be records of persons entering and exiting the hatchery for traceability.

A.8.2.2 Persons entering the hatchery shall be cleaned, for examples, by spraying with disinfectant, showering, shampooing, and changing clothes and footwears to those provided by the hatchery.

A.8.2.3 Showering room and clothes changing facility shall be clearly divided such as clothes changing facility before entering the showering room, showering room, and dressing room before entering the hatchery building.

A.8.2.4 Clothes and footwears should be cleaned and disinfected every time after use.

### **A.8.3 Pest control**

A.8.3.1 Pest preventive and control plans should be available and implemented accordingly.

A.8.3.2 Hatchery surrounding area should be clean and able to prevent pest harborage.

A.8.3.3 There shall be hatch debris and waste disposal management systems to prevent pest harborage.

### **A.8.4 Prevention of pathogenic accumulation in the hatchery**

A.8.4.1 Areas for cleaning tool and equipment should be separated to prevent disease contamination to day-old chicks or ducklings.

A.8.4.2 For the reduction of pathogenic contamination, disinfectant basins for foot dipping shall be provided at the entrance of every room. Tools and equipment shall be cleaned and disinfected. Personnel shall wash their hands regularly during the operations.

A.8.4.3 Air inlet and outlet should be distinctly separated.

A.8.5 In case of an outbreak or suspicion of epidemic disease, Animal Epidemic Act B.E. 2599 (1956) and its amendments and the recommendations issued by the Department of Livestock Development shall be complied.

## **A.9 USE OF CHEMICALS AND VETERINARY DRUGS**

A.9.1 The use of chemicals and veterinary drugs shall follow the recommendations of the poultry farm veterinary supervisor.

A.9.2 Poultry farm veterinary supervisor shall abide by the Veterinary Profession Act B.E. 2545 (2002) and the provisions of TAS 9032 entitled Code of Practice for Control of the Use of Veterinary Drugs.

## **A.10 ANIMAL WELFARE**

A.10.1 Handle day-old chicks or ducklings with care such as removing from the hatcher, sorting and sexing.

A.10.2 Any part of equipment used in sexing shall not be sharp and without any gap that may injure day-old chicks or ducklings.

A.10.3 Boxes for day-old chicks or ducklings should have no sharp end/part and be lined with lining materials and appropriate size. Space for each day-old chicks or ducklings should be at least 20 cm<sup>2</sup>.

A.10.4 Culled day-old chicks or ducklings shall be disposed of immediately and humanely.

## **A.11 ENVIRONMENTAL HYGIENE**

A.11.1 There shall be appropriate disposal systems for hatch debris such as egg shells, unhatched eggs and dead-in-shell with the treatment that not cause disease contamination to the environment.

A.11.2 Waste water shall be treated before being released to the public water resources.

A.11.3 Bins and trash cans used for waste disposal should be covered with lids in order to prevent the access of pests.

A.11.4 Hatchery surrounding area shall be clean to prevent pest harborage.

A.11.5 There shall be methods to manage the disturbance from the operations such as unpleasant odor, dust from fluff and noise from tools or equipment used in the hatchery.

## **A.12 RECORD AND RECORD KEEPING**

A.12.1 Record information on hatchery management such as personnel.

A.12.2 Record information on the production management such as sources of hatching eggs, production information and records of animal health.

A.12.3 Record information on tool and equipment inspections.

A.12.4 Records shall be kept for at least 3 years for traceability.





**B.3 Eggs Candling (Infertile eggs)**

Setting date.....Candling date .....Candling time  
 .....

No. of setter	No. of hatcher	Flock	Setting eggs	Infertile eggs		Rotten eggs	Infertile eggs	Culled eggs		Damage eggs		Fertile eggs
				Trays	Eggs			Pore	Crack	Infertile eggs	Fertile eggs	

Reporter.....

Examiner.....

**B.4 Eggs Candling Record Form (Dead-in-shell)**

Hatcher	Flock	Setting eggs	Hatching eggs		Infertile eggs		Rotten eggs	Dead- in-shell	Dead pips	Live pips	Damage eggs	Infertile eggs
			Tray	Eggs	Tray	Eggs						

Reporter.....

Examiner.....



**B.5 Chemical Used**

Chemical..... Concentration/Rate of application .....

Date	Time	Amount	Purpose of use	Place	User	Examiner	Remarks



**B.7 Day-old chick/duckling Holding Room: Temperature/Relative Humidity**

วันที่.....

Temperature (°C)/Relative Humidity (%) )

Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
max																								
35																								
34																								
33																								
32																								
31																								
30																								
29																								
28																								
27																								
26																								
min																								
ความชื้น																								

Remark .....

**B.8 Use of Veterinary Drugs**

Name of veterinarian.....Poultry Farm Veterinary Supervisor License  
 Number.....  
 Hatchery's Name.....Registration No. ....  
 Location.....Sub district.....District.....Province.....Phone number.....  
 Batch No. ....

Drug name	Registration No.	Batch No.	Manufacturer/Distributor	Active ingredient	Chick age (Days)	Dosage	Date of treatment	Total number of chick	Amount of drug (g)	Withdrawal period	Administration route	Reason of use

Signed by.....Poultry Farm Veterinary Supervisor  
 (.....)  
 .... / .... / .....

Veterinary License No. .... Poultry Farm Veterinary Supervisor License No. ....

**APPENDIX C**  
**UNITS**

The units and symbols used in this standard and the units recognized by the International System of units (*Le Système International d' Unités*) or SI are as follows:

<b>Type of Measurement</b>	<b>Name of Unit</b>	<b>Symbol</b>
Volume	milliliter	ml
	cubic centimeter	cm <sup>3</sup>
Area	square meter	cm <sup>2</sup>
Lenght	kilometer	km
Mass	gram	g
Concentration	milligram per liter	mg/l
Temperature	degree celsius	°C