



Food and Agriculture Organization
of the United Nations

IMPROVEMENT OF BIOSECURITY AND PRODUCTION PRACTICES IN HATCHERIES AND PARENT FLOCKS



Project objective

To reduce the risk of disease transmission and enhance food safety by improving hatchery and parent flock farm biosecurity

Project donor

United States Agency of International Development (USAID)

Project implementer

Emergency Centre for Transboundary Animal Diseases of FAO Viet Nam (ECTAD FAO VN)

Government counterpart

Department of Livestock Production, Ministry of Agriculture and Rural Development (DLP-MARD)

Poultry breeder farms and hatcheries are important nodes in the poultry production chain. Poor biosecurity in these facilities not only reduces the quality and quantity of day-old birds produced, but also contributes to the spread of pathogens, causes environmental pollution, and affects workers' health.

Information provided by the Viet Nam Department of Livestock Production (DLP) shows that over 80% of the poultry breeder farms and hatcheries do not properly implement biosecurity measures. While Viet GAHP (Good Animal Husbandry Practices) issued by the Ministry of Agriculture and Rural Development (MARD) provide official guidance to industrial farms, they are not suitable for small and medium scale poultry breeder farms and hatcheries.

Therefore, in the framework of the project "*Immediate Technical Assistance to Strengthen Emergency Preparedness for Highly Pathogenic Avian Influenza (HPAI) to Viet Nam*", funded by the United States Agency International Development (USAID), the Emergency Centre for Transboundary Animal Diseases (ECTAD) of FAO Viet Nam and the DLP developed a set of minimum biosecurity standards for small and medium scale poultry parent flock farms and hatcheries. These standards have been piloted in 6 duck hatcheries and 6 parent flock farms in Quang Tri and Can Tho Provinces.

Farmers participating in pilot activities confirmed that biosecurity minimum standards are **simple, practical, feasible**, and result in increased income. In coming years, these farmers anticipate healthier poultry flocks, better productivity, and further increases in income generated through applying biosecurity standards in poultry farming.

Following records are available from the pilot farms:

PARENT FLOCK FARMS



1. Improved flock management measures applied

- ▶ Improved feeding practices to control bodyweight of breeder ducks before the onset of the laying period.
- ▶ Supply clean water for ducks through a new water filtration supply system and new low-cost and simple drinkers, which are cleaned daily – before, ducks drink from the pond.

Before



After



- ▶ Introduce new simple feeders to avoid ducks ingesting contaminated faecal feed.

Before



After



- ▶ Dry litter minimises the risk of Aspergillus and bacterial infection.

↳ *Removal of wet litter, additions of new litter material and reduction of stocking density, as well as new drinkers helped keep the litter dry*

Before



After



- ▶ Introduction of nests that are maintained regularly by adding good quality straw.

Before



After



- ▶ Biosecurity improved such as handwashing before entering the farms, changing shoes and slippers upon entering the farm, and separating flocks from the living area.

After



After



2. Results

a) Improved layer flock quality

- Number of laying ducks increased: 1 200 out of a flock of 1 500 young ducks, have been selected as breeders - 14% increase of layers.

b) Egg productivity increased

- Peak egg production period increased up to 5 months in the pilot farms of Mr. Son, Mr. Tao, (Quang Tri Province) and Mr. Thuong (Can Tho Province) resulting in a 10% increase in laying performance.
- 7 500 more eggs from 850 laying ducks were laid during 5 months in Mr. Son's farm, resulting in an additional 6 375 ducklings hatching compared with production before the pilot project. This led to 1 504 US\$ in extra income.

c) Number of dirty eggs reduced

- A reduction in the number of dirty and cracked eggs over the 2.5 month peak production period of Mr. Son's farm recorded by 5%, leading to 2 245 additional day old ducklings and an extra 530 US\$ of income.

d) General flock health improved

- Lower rate of dead and culled laying ducks (2.85% for 5 laying months) was reported by Ms. Bich's farm (Can Tho Province).
- Farmers reported less diarrhea occurred in their flocks.

e) Improved working conditions

- Working time reduced: interventions and improved practices reduced frequencies of egg collection as well as feed and water delivery.
- Working environment for farmers improved: less smell and better hygiene.

HATCHERIES

1. Improved hatchery management measures applied

- ▶ Separation between the owners' living area and the hatchery.
- ▶ Changing slippers and washing hands before entering and after leaving the hatchery.
- ▶ One-way movement through the separation between incubation, hatching and bird delivery areas.
- ▶ Egg fumigation immediately after egg collection performed in a properly equipped egg fumigation cabinet.

Before



* Improper egg fumigation cabinet without airtight sealing, external exhaust pipe and funnel tubes for chemicals

After



* Proper egg fumigation cabinet with airtight sealing, external exhaust pipe and funnel tubes for chemicals

- ▶ Proper cleaning of incubation, hatching and bird delivery areas after each hatched batch.

2. Results:

- a) Increased hatchability by 2.4 - 5% with 9- 29 US\$ extra income earned per 1 000 eggs over a 3 month period.
- b) The first week duckling survival rate increased up to 5%, leading to an improved hatchery reputation and increased business.
- c) Working time reduced through better efficiency linked to the one way movement.
- d) Working conditions improved: less smell and dust.

► Details on hatchability improvements during the 3 months pilot and recording

Model	Setting eggs/ 3 months	Increased hatchability (%)	Extra number of DODs/ 3 months	Price/1 DOD (in US\$ at piloting time)	Increased income from selling extra DODs/ 3 months (US\$)	Extra income (US\$) per 1000 eggs set
Quảng Trị						
Mr. Sơn	30 000	2.4	705	\$0.38	\$271	\$9
Mr. Tuế	51 000	5.0	2 550	\$0.38	\$981	\$19
Cần Thơ						
Ms. Bích	75 000	3.4	2 550	\$0.56	\$1 457	\$19
Mr. Tú	150 000	5.0	7 500	\$0.56	\$4 327	\$29

Based on the pilot farm result, the “Guideline on biosecurity minimum measures for small and medium scale hatcheries” and the “Guideline on biosecurity minimum measures for small and medium scale poultry breeder farms” were officially issued by MARD.

As a part of ECTAD’s strategic communication efforts, **a training film** on hatchery biosecurity is available to help raise awareness, and encourage the implementation of biosecurity strengthening in Viet Nam’s hatcheries. Consisting of stories from 6 successful hatchery models in Quang Tri and Can Tho Provinces, the video shows the benefit of the household hatcheries mastering good production practices and improving biosecurity.

Additionally, **an advocacy film** shows the achievements of the FAO ECTAD Viet Nam - DLP collaboration in poultry production biosecurity strengthening.