

Cutting your coat to suit your cloth

Thailand's adaption of response actions for highly pathogenic avian influenza (HPAI)

Background

Thailand has experienced four major waves of highly pathogenic avian influenza (HPAI) outbreaks:

- 1) 23 January–24 May 2004: The first round affected 42 provinces and resulted in 320,000 birds being culled.
- 2) 3 July 2004–12 April 2005: The most significant series of outbreaks resulting in (the culling of 63,000,000 birds across 51 provinces.
- 3) 1 July–9 November 2005: 11 provinces affected and 450,000 birds culled.
- 4) 24 July–2 August 2006: The most recent outbreak affected only two provinces and resulted in a limited number of cullings.¹

Indigenous backyard chickens and native waterfowl are the most common flock types in Thailand, constituting more than 95 percent of all flocks. However, these are mostly small flocks and only constitute 30 percent of the national poultry population. The great majority of birds, mainly broilers, are raised in commercial farms which are typically located in the central region. In 2004, intensive, large-scale, integrated poultry raising farms accounted for about three percent of poultry flocks and close to 70 percent of total population².

Although backyard flocks represent the majority of flocks affected by HPAI, this appears to be mainly a reflection of their number, as the risk of HPAI infections was found to be lower in backyard chickens, duck and geese flocks compared to layer, broiler and particularly quail flocks raised commercially.

Control measures have been based on provisions contained in World Organisation for Animal Health (OIE) guidelines. They included culling infected flocks, restricting poultry movements, surveillance, disinfection, and carcass disposal. Extensive disease awareness-raising took place during the peak outbreak months and compensation (at between 80 to 100% of market value) and preferential loans have been incorporated into HPAI impact mitigation packages. Vaccination, however, was not utilised.



Response actions

The Thai animal health authorities adapted disease control measures to match the prevailing situations. For example, during the first wave in January 2004, birds in HPAI infected premises were culled, and a radius of 5 kilometres (km)–the maximum allowable

¹ S. Heft-Neal, J. Otte, W. Puppavessa, D. Roland-Holst, S. Sudsawasd, and D. Zilberman. (2008) Supply Chain Auditing for Poultry Production in Thailand.

² S. Burgos, J. Otte, D. Pfeiffer, R. Metras, S. Kasemsuwan, K. Chanachai, S. Heft-Neal and D. Roland-Holst. (2008). Poultry, HPAI and Livelihoods in Thailand – A Review.

by law—was initially applied for pre-emptive culling around farm outbreaks. Restrictions of poultry movements were applied within 50 km around infected areas.

Then, in February 2004, the Department of Livestock Development (DLD) reduced the radius to 1 km in response to reassessments of epidemiological factors, and because reduced numbers of cases were being detected. Culling within the 5 km zone, based on ‘European’ production systems was seen to be impractical in a Thai context of a near continuous patchwork of holdings³. A judgment was also made that full pre-emptive culling of mostly healthy birds in the entire 5 km radius was prejudicing the cooperation of poultry owners. The 1 km radius has proven to be workable so long as interceptions and response measures are implemented quickly enough. The restriction on poultry movements was also reduced to a 5 km radius.

In another example of adapting control measures, the DLD changed the case definition for HPAI in March 2004 in order to reduce the time needed to implement control measures



once outbreaks were reported. The original definition (poultry with clinical signs, or sudden death of almost 100% or cumulative death of about 40% after 3 days) was based on information in scientific literature and reports from other countries. However, some clinical signs and mortalities noticed in the Thai outbreak differed, and the case definition was revised based on field information and scientific findings. Under the new definition, a “case” was defined as any positive test, any instance where the poultry death rate in a flock was >10% within a single day, or any instance where the death rate in a flock exceeded a cumulative

>40% over three days and the flock displayed other signs of infection (e.g., diarrhea, ruffled feathers, depression, etc).

Additionally, birds were sampled before movements, and they were allowed to move only after samples tested negative.

A feature of the response to the second wave of the HPAI epidemic was the so-called ‘X-ray’ surveillance campaign. This was a coordinated, intensive, cross-sectional approach by the Ministry of Agriculture and Cooperatives (ie DLD) and the Ministry of Public Health (MOPH). A system of more than 1,000 Surveillance and Rapid Response Teams (SRRTs) was established. The teams integrated the technical expertise of DLD and the resources and the grassroots-level volunteer network of MOPH. The village health volunteer (VHV) network comprises about 1 million lay health advocates and extends to almost all villages. The effectiveness of and acceptance by the community of VHVs makes them ideal candidates for undertaking poultry surveillance at the village level. At least one VHV per village has been selected to also serve as the Livestock Development Volunteer (LDV) with the primary role of reporting unusual events in animals to the DLD.

In July 2005, the case definition was further updated to improve detection and response. If poultry death rates were higher than 1 percent on commercial farms and higher than 5 percent in backyard poultry; birds, products and materials were destroyed. Pre-emptive culling was implemented within a village only within a 1 km radius around an outbreak.

³ Safman, R. (2009). The Political Economy of Avian Influenza in Thailand

Since 2006 this policy has been further amended to take into account local or district veterinary assessments. Now, if a case of HPAI is identified

- a 5 km radius Protection Zone is established, where intensive targeted surveillance is undertaken
- a 10 km radius Movement Restriction Zone is established, where clinical surveillance is undertaken and movement controls are imposed for at least 30 days
- depending on the number of farms and number of birds, culling may be carried out only for infected premises and in-contact flocks within the Protection Zone
- restocking is permitted 90 days after completion of disinfection of the last infected premises.

Vaccination

Vaccination has never been implemented. Some of the reasons for this are that HPAI infection was not endemic in the country and that vaccination could have had a negative impact on export trade agreements (Thailand has an export-oriented commercial poultry industry). Furthermore, vaccination potentially masks the symptoms of the disease, thus removing the most significant early warning signals for the presence of HPAI.

Longer term measures

Fighting cocks

The restrictions on movement impacted heavily on the fighting cock industry, an activity that has a large following in Thailand. The movement controls specified that owners of birds to be transported over provincial boundaries obtain a certificate of health from a DLD veterinarian within 2 weeks of the move. Although the movement control restrictions were not unique to fighting cocks, they affected this population disproportionately, given the frequency with which the birds had to be moved. Requests for inspections were often subject to extensive delays causing owners, in some instances, to miss a scheduled match, or to move the birds without the appropriate permissions.



This was resolved to a certain extent in mid 2005 by the introduction of Fighting Cock Passports. These official travel documents are based on a set of photographs of each bird's distinctive head and legs and an imprint of their feet. The birds must have a monthly test for the virus. The passports, which were relatively inexpensive to produce and created little inconvenience and no risk for bird handlers, represented a good example of successful negotiation between the government and the industry⁴.

⁴ Ibid

Free Grazing ducks

In the 1990s open-field duck production (free-grazing) gained in popularity as a low-cost and ecologically sound system. The duck keepers—with little need for land or capital inputs—move their ducks between rice farms where they graze newly harvested rice fields, feeding on leftover grain and on rice pests such as cherry snails and insects. However, a series of studies demonstrated a strong geographic correlation between outbreaks of HPAI in chickens and density of open field duck production. In October 2004 a plan was announced that would have required ducks to be kept in enclosed facilities, where their contact with other poultry or open waterways would be restricted. Because of the likely impact on small to medium duck producers, the program was withdrawn in 2005 in favour of other measures. These include strict movement controls; registration and surveillance of flocks; pre-movement testing; and incentives (such as loans) and technical support to move to more biosecure closed production systems.



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