

# Cockfighting: the Culture That Has to Change to Avoid a Deadly Influenza Pandemic

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## Abstract

Cockfighting is a contest between 2 gamecocks. Cockfighting is viewed as being barbaric and cruel by most people but a sport, an entertainment, a cultural tradition, or a way of life by those engage in the activities. Many activities relating to cock fighting are a mechanism for the spread of HPAI H5N1 infection and should be condemned. Prevention and control measures including vaccination with good quality vaccines are recommended. Cockfighting is the culture that has to change to avoid a deadly influenza pandemic in the future. Moreover, people should be educated to have a sense of responsibility for themselves and the public and be willing to cooperate with HPAI control measures for the general good of society. Public safety should come before personal self-satisfaction.

**Key words:** cockfighting, avian influenza, chicken flu, H5N1 virus, animal abuse, gambling

A cockfight is a contest between 2 fighting cocks. It is usually held in a small circular pit surrounded by mostly male spectators of all ages, (Figure 1 and 2). It may be held in the yard of the communal house, a smooth open ground, or at local temple. Spectators usually place side bets on their favorites. It is considered to be a traditional sporting event, a gambling, or a

hobby by some, and an example of animal abuse by most others. It is a cultural phenomenon that has existed for many centuries.

Cockfighting can be traced back 3,000 years in Southeast Asia. It has been a popular game and gambling in Thailand since the ancient times. A scene of cockfighting has been displayed on a stone carving at the ancient temples





**Figure 1** Cockfighting is held in a small cockpit surrounded by many excited spectators.



**Figure 2** Cockfighting is sometimes attended by children.

of Nakhon Wat (or Angkor Wat in French pronunciation) for many centuries, indicated that these activities have been practiced in Thailand and other Southeast Asia countries for a long time. It has become a big business in Thailand in the past 2 decades. The activities involve breeding gamecocks, organizing cockfights, gambling, selling supplementary food and supplies for roosters, selling T-shirts and rooster toys, and various advertisements, etc.

Cockfighting is legal in Thailand but has been temporary suspended since the 2004 outbreaks of highly pathogenic avian influenza (HPAI), subtype H5N1. Fighting cocks are often transported long distances for matches and they may play a role in the spread of HPAI infection and in transmission to humans<sup>(1)</sup>. This article is written in an effort to provide information related to cockfighting so that surveillance and effective prevention and control of HPAI infection can be implemented.

### **Animal Abuse Issues**

Cocks naturally fight over food, territory, or mates. The weaker rooster goes into retreat to avoid injury. In the wild, the fights generally exist only to establish pecking order within a group and rarely result in serious injury. A cock fights to death to defend his flock against a predator. This natural behavior is totally different from what occurs in staged cockfights. Fighting cocks attack each other wildly in an enclosed pit. The fight only ends when one bird is dead, collapsed, too weak to fight, or simply runs away. The winner often gets injuries and may not survive either. Unlike birds in the wild, these cocks cannot escape.

In some regions, a gaff or knife is tied to the leg in the area where the cock's natural spur has been removed. Serious injury can occur during the fight with this equipment. In other variations, the cock's natural spurs are left intact. Since fighting cocks are prized possession for the Thai owners, the cock's natural spurs are wrapped with thick cloth or leather to avoid serious injury during practicing and fighting contest. However, some owners prefer to leave the spurs intact during the battle.

Actually, there are no written rules for cock-



fighting, the only regulations are based on local convention or agreement between handlers. A short fight lasts about 10 to 15 minutes. However, it can last from 25 minutes to 2 hours or as long as the cocks can withstand the injuries. In the town and countryside of Thailand, cockfights are held in a small cockpit or an open ground. A half coconut shell with a small hole at the bottom is used as a timer. A round of a fight is called an "ahn" in Thai. One round (ahn) counts from the time a dome shaped coconut shell is floated in water until sunk. During the break the owners clean their roosters with warm towels and clear the birds' throat with a feather or by mouth to mouth suction, (Figure 3). The fight ends when one rooster runs away or dies. However, the owner can ask for withdrawal of his bird if he thinks it can no longer fight.

In an attempt to make cockfighting more acceptable to the westerners, the Thai Native Chicken Conservation and Development Association held an International Amateur Cock

fighting competition in Chonburi, Thailand. Competitors from several Asian countries participated in this game. This standardized contest consisted of 5 rounds per fight. Each round lasted 15 minutes with 3 minutes break between rounds<sup>(2)</sup>. The matches were classified according to the weight, very much like boxing. When one bird ran away or too weak to fight, the opponent was declared a winner.

Fighting cocks are specially bred and trained for increased stamina and strength. The cock and mother hen are thoroughly searched for mating. The cocks that fail to fight simply are not bred. The mother hen usually lays 10 to 14 eggs but only half of the eggs are hatched. The remainder may be unfertilized eggs or eaten by cats or other predators. The owner selects a few of young chicks according to their physical appearance and inherent aggression. The rest are raised among backyard chickens. The owner looks after the birds, makes sure they are well fed and in good health. Fighting cocks receive training such as running and flight exercises. They have to be trained to fight as they do. They are sometimes given steroid hormones or stimulants (such as caffeine, strychnine, epinephrine, amphetamines, and methamphetamines) to make them more aggressive and increase endurance.

Cockfighting is viewed as being barbaric and cruel by most people but a sport, an entertainment, a cultural tradition, or way of life by those engage in the activities. In general, people believe whatever justifies their practices. Animal abuse is a precursor to violence against humans. It is against most religions, including Buddhism, Islam, and Christianity. People must be taught to have the knowledge of kindness and compassion toward humans and animals.



Figure 3 Activities during the break. One handler is performing a mouth to mouth suction to remove excess excretion from the cock's throat. Another handler is clearing the cock's throat with a feather.



### Gambling and Legal Issues

Animal fights including cockfights have been declared illegal in most countries based on opposition to gambling, opposition to cruelty to animals or both. It is illegal in England, France, and all states of the United States except New Mexico, Louisiana, and the US Territory of Puerto Rico<sup>(3)</sup>. Activists continue to lobby for a ban on cockfights. Despite the efforts of animal rights groups and law enforcement, it is still alive and continues to thrive worldwide. It is still popular in some countries in Latin America, Africa, Southeast Asia, the Philippines, and the Middle East. Although, it is legalized in New Mexico and Louisiana, cockfights in these two states are usually held in secrecy, often in small private farms.

Gambling is illegal in Thailand but it almost always accompanies cockfights. In general, betting is done through personal agreements between the attendees. Lots of money change hands between the fights, creating emotional tension that may lead to violence. The games are often linked to the use of alcohol, illegal drugs, and firearms. Unlike legalized gambling in casino, the government cannot monitor and collect income taxes from the gambling on cockfighting.

### Avian Influenza Issues

Waterfowl have been well recognized as a natural reservoir for all 16 subtypes of AI including H5 and H7 subtypes. It was once believed that waterfowl were resistant to infection by HPAI viruses<sup>(1,4)</sup>. Until the late 2002, the virus was found causing deaths among wild migratory birds and domestic waterfowl in two Hong Kong parks<sup>(5)</sup> and again when the virus was isolated from herons, egrets, and peregrine falcons in

Hong Kong in 2003-2004<sup>(1)</sup>. There is no doubt that waterfowl can be infected and transmit the virus to local poultry. The phenomenon of viruses being pathogenic in their natural reservoir is frightening.

When HPAI, subtype H5N1 swept across Asia in 2004, people pointed finger at migratory birds as likely culprits in its spread. Yet many avian experts were skeptical about it. Ornithologists and animal epidemiologists argued that the epidemics did not fit any known flyways of migratory birds<sup>(4)</sup>. H5N1 outbreaks occurred in some areas along the East Asian/Australian flyway but skipped Taiwan, Malaysia (except its border with Thailand), and western Australia<sup>(1,4)</sup>. At that time the sampling of tens of thousands of waterfowl failed to demonstrate any healthy wild bird carrying HPAI, subtype H5N1<sup>(4)</sup>. Moreover, many expert believed infected wild birds could not fly long distances.

Subsequent investigations kept turning up evidence suggesting that poultry trade and human movements of infected poultry were to blame. For example, a shipment of infected chickens from Lanzhou, China was responsible for the H5N1 outbreak among poultry in Lhasa, Tibet in January 2004. Two hawk eagles were smuggled from Bangkok to Brussels Airport, Belgium in an air traveler's carry-on bag in October 2004<sup>(4, 6,7)</sup>. Although, the birds showed no clinical sign of disease, both had enteritis and one of them had bilateral pneumonia detected at necropsy and high pathogenic H5N1 virus was isolated from their lungs<sup>(7)</sup>. The incidents demonstrate that international air travel and bird smuggling represent major threats for spreading of H5N1 virus worldwide<sup>(7)</sup>.

The role of wild birds in the spread of H5N1 virus has become more convincing in 2005 but



with no finding of a positive link. In spring of 2003, more than 8,000 migratory aquatic birds (mostly bar-headed geese and some other species) were found dead due to H5N1 infection at the Qinghai Lake in northwestern China<sup>(1,2)</sup>. Shortly thereafter, H5N1 virus emerged on a poultry farm in the same province. Another outbreak occurred at Erkeke Lake in Mongolia in August 2003. Highly pathogenic strain of H5N1 virus was found in dead birds but not in any samples from the live ducks, gull, geese, or swans<sup>(3)</sup>. By ruling out human movement of infected poultry in these remote areas, there is little doubt that wild birds were responsible for the spread of the virus.

Later in the same year, H5N1 outbreaks in poultry occurred in Russia, Croatia, Kazakhstan, Turkey, Romania, Kuwait, and Greece. The eastern European outbreaks seem to be along the flyway connected Siberia to the Black Sea. Recently, the H5N1 outbreak has spread southward to the Indian subcontinent along the flyway from Qinghai Lake and to Egypt, Nigeria in Africa along Black Sea/Mediterranean flyways. These data indicate that HPAI, subtype H5N1 has spread from China to various regions in Asia and Europe through wild bird migration and transport of the birds. Thus the global spread of this virus in migratory birds and domestic poultry is inevitable.

The first outbreak of H5N1 in Thailand was officially declared on January 23, 2004<sup>(4)</sup>. How the virus was introduced into the country could not be accurately traced. However, a few months earlier, farmers in central Thailand observed numerous deaths of domestic poultry following the southward migration of wild aquatic birds from southern China to the region. At that time, the weather was warmer, rice-fields, ponds, and wet-

lands were plentiful and poultry population was high in central Thailand. It is very likely that those wild waterfowl intermingled with the local poultry flocks and introduced the virus to them. Later on they probably transferred the virus back and forth. Village and backyard chickens, free-grazing ducks, and fighting cocks further enhanced viral dissemination.

The 2003-2004 epidemic of HPAI, subtype H5N1 has become established in 8 Southeast Asian countries<sup>(10)</sup>. The outbreaks were followed by human cases of direct transmission of H5N1 viruses from chickens and a case of probable human to human transmission<sup>(12,16)</sup>. The virus affected various poultry species, wild birds, and several mammals including tigers, leopards, cats, mice, ferrets, pigs, and dogs<sup>(17,20)</sup>. The 2004 outbreak claimed the lives of more than 30 million birds and 12 human beings among 17 confirmed cases in Thailand. Although, human death cases were low, the mortality rate was as high as 70.59 percent in Thailand<sup>(21)</sup>. Moreover, the outbreaks could not be controlled despite several control measures<sup>(22)</sup>. It is partly due to a lack of qualified personnel, facilities, and/or system for early detection of the infection.

Recent research data show that genetically similar H5N1 viruses are antigenically diverse, infect and transmit efficiently in ducks and their pathogenicity in ducks ranges from nonpathogenic to lethal<sup>(23)</sup>. The existence of H5N1 viruses with low pathogenicity in ducks but high pathogenicity in other species is of great concern because these ducks can efficiently transmit the virus to poultry and other healthy hosts. The observation of various H5N1 outbreaks in Thailand indicates that almost 100 percent of H5N1 infected ducks died at the beginning of the 2004 outbreak, however more and more of



them survived and continued shedding the virus in the subsequent outbreaks. This suggests that ducks including free-grazing ducks may have play a crucial role in the genesis of HPAI H5N1 outbreaks among chickens in Thailand.

Various outbreaks in a wide geographic area have raised a global concern that this disease has a potential to become a pandemic in the near future if not properly managed. However, the most immediate threat is the economic loss resulting from a large numbers of poultry infected or culled. Poultry are a major food supply of protein for humans. As human population increases, poultry production has changed. It has become commercialized and industrialized in many countries, notably in the western and other developing countries.

Prior to 2004, Thailand was one of the world's major poultry exporters, and produced 1 billion chickens per year<sup>(24)</sup>. Poultry production in Thailand ranges from local production with no biosecurity to commercial production with moderate to high bio-security<sup>(22)</sup>. Same as other Southeast Asian countries, local production constitutes an important poultry source in Thailand. Losing poultry would have a devastating effect on the livelihood of the people. It has an impact on the entire poultry market chain, including producers, consumers and employees in the retail poultry industry.

Some traditional practices in Asia can facilitate the transmission of HPAI viruses. For example, local poultry production with minimal or no biosecurity is common in the region. Village and backyard chickens, free-grazing ducks, and fighting cocks are often raised along with other animals. The birds freely roam the village around people and other animals. Free-grazing ducks are allowed to wander through

rice-fields scavenging fallen rice grains for their living. In addition, live-birds markets are widespread throughout Asia. Local poultry producers usually sell their birds at live-bird markets where Asian customers love to purchase live birds for fresh produce. Live-bird markets have been known to be a source of HPAI viruses since the late 1970's<sup>(25)</sup>. By the early 1990's in the United States, live-bird markets were recognized as the missing link in the epidemiology of influenza<sup>(26)</sup>. Daily human contacts (including children) with live birds at the markets are at optimum for zoonotic transfer<sup>(27)</sup>.

The tradition of fleeing the birds with a belief that it will bring the releasers good luck is an ongoing practice in Thailand. Small birds are captured and sold at Buddhist temples, live-bird markets, or tourist centers. These birds are usually too weak to fly a long way and they finally are re-captured again, mostly by the same group of people. Although, there has been no HPAI virus isolated from this type of birds as yet, people should be aware that this tradition is a kind of animal abuse rather than doing good deed and it should be discouraged.

### Recommendations

Prevention and control of HPAI, subtype H5N1 rely heavily on an effective control of the disease in animals, especially in poultry at all levels of its production. Adequate resources and well-trained veterinary services are required. For example, laboratory facilities must be available to provide rapid and accurate diagnosis of the infection. Other recommendations include improved biosecurity in the farms, isolation of domestic poultry to avoid contact with wild birds, and segregation of chickens from waterfowl at all levels of the industry.



H5N1, subtype H5N1 virus is chiefly excreted via the respiratory tract and feces of infected birds. Virus can spread quickly when poultry are housed at high density in confined quarters. Transmission is most commonly through direct contact between birds, through aerosolized droplets, or through contact with virus on fomites (clothing, shoes, vehicles, equipment, etc). Transmission can also occur through eating infected birds<sup>(16, 18)</sup>. Domestic poultry were clearly the source of cross-species transmission of H5N1 virus to humans during the 1997 outbreak in Hong Kong<sup>(28-30)</sup> as well as the various H5N1 outbreaks throughout Asia in 2003-2004<sup>(11-15)</sup>. Therefore, management of the infectious material is mandatory. Depopulation, cleaning, and disinfection with 15 percent glutaldehyde are measures implemented to reduce the amount of virus circulating in poultry, live-bird markets, and on farms.

Other measures to create barriers between foci of infection and uninfected poultry are also necessary. They include bird movement controls and improved sanitation. Active surveillance in wild migratory birds and poultry including ducks and fighting cocks is mandatory for it serves as an early-warning system of emerging influenza viruses that are a threat to the commercial poultry industry and potentially to humans. H5N1 surveillance sampling of ducks may need to include tracheal/oro-pharyngeal swabbing along with cloacal/fecal swabbing. This recommendation is based on the study in ducks showing higher H5N1 viral titer in tracheal swab than in cloacal swab<sup>(29)</sup>.

The 2004 H5N1 outbreak in Thailand prompted the Thai government to announce a temporary suspension on cockfighting as a control measure. There is no doubt that some hu-

man activities related to cockfighting can spread the virus. For example, fighting cocks are often raised in unsanitized condition along with backyard chickens or other domestic waterfowl. They are commonly carried a long distances for trade as well as for fighting contest. The contest is usually held in a small cockpit or open ground surrounded by many excited spectators, including adults and children. The overcrowded cockpit allows close contact between humans and live birds. In addition, mouth to mouth suction to remove an excess secretion from the bird's throat is a common practice among the handlers and it is a perfect mechanism for viral transfer from fighting cock to human. After performing mouth to mouth suction, they spit the secretion right onto the ground.

The above activities are another potent mechanism for the spread of HPAI virus and should be condemned. Segregation of fighting cocks and improved sanitation in the farms are needed. Steroids or other stimulants should not be used for these drugs may make the birds more vulnerable to infection. Movement of rooster can be done only when there is a proof that the bird is free of virus.

Presently, it is quite clear that wild and domestic waterfowl can be a carrier of HPAI H5N1 virus and it is almost impossible to control these wild birds. Vaccination with good quality vaccines can be a means to protect poultry including fighting cocks against the disease. Poultry vaccines are not standardized on the basis of antigen content, thus both good and bad poultry vaccines are in use in these days. Good vaccines provide protection from disease and reduce viral shedding below the level of transmissibility whereas bad vaccines prevent



disease signs but do not prevent shedding of transmissible levels of virus<sup>(1)</sup>. Bad vaccines also promote undetected spread of virus on farms and to live-bird markets and promote antigenic drift<sup>(1)</sup>. Serology tests permit distinction between vaccinated and naturally infected birds. Controversy regarding vaccination is partly due to the different experience encountered in the use of different quality of vaccines-good and bad vaccines.

### Conclusions

Cockfighting is the culture that has to change to avoid a deadly influenza pandemic in the future. People should be educated to have a sense of responsibility for themselves and the public and be willing to cooperate with HPAI control measures for the general benefit of society. Public safety should come before personal self-satisfaction.

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**บทคัดย่อ** การชนไก่ : วัฒนธรรมที่ต้องปรับเปลี่ยนเพื่อหลีกเลี่ยงการระบาดหนักของไข้หวัดใหญ่  
เขาวเรศ (วงศ์ศิระวิลาส) ยัง  
กลุ่มงานพยาธิวิทยา สถาบันโรคทรวงอก กรมการแพทย์ กระทรวงสาธารณสุข  
วารสารวิชาการสาธารณสุข ๒๕๕๙; ๑๕:๓๕๗-๖๖.

การชนไก่คือการประลองการต่อสู้ระหว่างไก่ชน ๒ ตัว ซึ่งคนส่วนใหญ่คิดว่าการชนไก่เป็นสิ่งป่าเถื่อน  
และโหดร้าย แต่สำหรับผู้รักการชนไก่จะเห็นว่าเป็นกีฬา ความบันเทิง เป็นมรดกทางวัฒนธรรม หรือวิถีชีวิต  
ของคน กิจกรรมหลาย ๆ อย่างที่เกี่ยวข้องกับการชนไก่เป็นหนทางหนึ่งที่ทำให้เชื้อไวรัส H5N1 แพร่  
กระจายจึงสมควรเลิกเล่นการกระต๋องกล่าว แต่ได้เสนอแนะให้ทำการป้องกันและควบคุมโรครวมทั้งการใช้  
วัคซีนที่มีคุณภาพดี การชนไก่เป็นวัฒนธรรมที่จะต้องเปลี่ยนแปลงไปเพื่อป้องกันการแพร่ระบาดขั้นหายณะ  
ในอนาคต นอกเหนือจากนี้ประชาชนควรจะได้รับการอบรมให้มีจิตสำนึกในการรับผิดชอบต่อตนเองและ  
สาธารณะ และเต็มใจให้ความร่วมมือในมาตรการควบคุมโรคระบาดไข้หวัดนกเพื่อสันติสุขของสังคม บุคคล  
ควรคำนึงถึงความปลอดภัยของสาธารณะมากกว่าความพึงพอใจส่วนตัว

**คำสำคัญ:** การชนไก่, ไช้หวัดนก, ไช้หวัดไก่, เชื้อไวรัส H5N1, การทรมานสัตว์, การพนัน