



**KINGDOM OF CAMBODIA**  
**NATION RELIGION KING**



# **FREQUENTLY ASKED QUESTIONS and ANSWERS on**



# **HIGHLY PATHOGENIC AVIAN INFLUENZA**



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**FOREWORD**

Cambodia has reported 23 outbreaks of the Highly Pathogenic Avian Influenza (HPAI) in eight provinces from December 2003 to December 2008. More than 28 000 poultry either died or were killed as a result of these outbreaks. The country reported eight human cases, all fatal, except the last one in December 2008, and seven of them are associated with the outbreaks of the disease in poultry.

As the Ministry of Agriculture Forestry and Fisheries (MAFF) - Department of Animal Health and Production (DAHP), together with the Food and Agriculture Organization of the United Nations (FAO) continue its Information, Education and Communication (IEC) activities in the country, it is deemed necessary that questions about HPAI are addressed in a more consistent manner. This will ensure that information given to the public for both animal and human health is technically sound and cover all the necessary elements required for people to make well-informed decisions on their everyday lives.

Frequently asked questions are answered based on current knowledge and these may change as new findings emerge. This is a living document that will be updated as necessary. For any other information that is missing, please do not hesitate to contact your nearest veterinary officer or by calling the hotline numbers at:

**012-833-795**  
**012-214-970**

Additional information can also be obtained at:

National Veterinary Research Institute (NaVRI)  
Department of Animal Health and Production  
Street Sorla, Sangkat Stung Meanchey  
Khan Meanchey, Phnom Penh  
Cambodia

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## **HIGHLY PATHOGENIC AVIAN INFLUENZA QUESTIONS AND ANSWERS**

### **A. HPAI Disease, General Information**

1. Where did the first HPAI disease occur and when?

This current wave of HPAI of Asian origin started in East-Southeast Asia in Hong Kong of China in 1997

2. What does zoonosis mean?

Zoonoses (singular – zoonosis) is defined by the World Health Organization as those diseases and infections which are naturally transmitted between vertebrate animals and man. Zoonotic is an adjective that describes a disease that is transmitted from animals to man.

3. How do you differentiate HPAI from Newcastle Disease?

The clinical signs of HPAI and Newcastle Disease are very similar. The only way to differentiate the two diseases from one another is to collect samples from the affected birds and submit them to a laboratory which will make the confirmatory diagnosis. HPAI can be fatal to humans. Newcastle disease can cause conjunctivitis in humans but has never been known to cause human death.

4. What ages of birds are susceptible?

All ages of birds are susceptible.

5. How did Cambodia get HPAI?

The origin of the first outbreak of HPAI in Cambodia has not been officially determined. It could have come from different routes/sources like wild birds, shore birds, aquatic birds, illegal importation of sick birds, contaminated vehicles and equipment (egg crates, egg trays, coops, cages, etc), shoes and clothes.

6. Is Bird Flu a seasonal disease?

No, Bird Flu is not a seasonal disease. It can occur anytime given the right condition of temperature, humidity and presence of contamination as mentioned above.

7. How do I know if my birds are sick of Bird Flu or not?

Bird Flu disease is suspected usually when the following conditions are present –

- a. sudden death
- b. high mortality
- c. increasing mortality
- d. spreading mortality

Call the VAHW or VC or DVO to report the occurrence. They will take samples to be submitted to the laboratory for confirmation.

8. Birds die everyday. What is the difference between this Bird Flu and other poultry diseases?

Avian flu is a serious disease in birds caused by a virus. Birds such as chickens, ducks, quail and turkeys can get very sick and die quickly from bird flu.

Avian flu causes clinical signs that are similar to Newcastle Disease, fowl cholera and duck plague. It can cause sudden death, in high number, increasing every day and spreading quickly from one to another. However, humans cannot get sick with Newcastle disease, but they can get infected with, and die from, Avian Flu.

Avian Influenza has caused the death of 7 of 8 people in Cambodia and hundreds more throughout the world.

9. Do all birds infected with the virus die or get sick? What is the role of ducks?

No. There are birds which carry the low pathogenic type virus and they may not die – this is very common among wild waterfowl and shorebirds. Highly pathogenic Avian Influenza has also been found in ducks but, in some instances, these birds have not died or do not show any signs or symptoms of the disease. Thus, it is very important to rear ducks separately from other poultry because they maybe seeding new outbreaks but will not succumb to the disease. Ducks are silent natural reservoirs of all influenza A viruses and therefore play a very important role in maintaining the transmission of the virus.

10. Can I mix my birds with my pigs or other livestock?

No. The fear is that pigs may contract the disease from birds and potentially act as a “mixing vessel” for co-infection by flu viruses for birds and mammals, thereby facilitating the development of a new human influenza virus.

## **HIGHLY PATHOGENIC AVIAN INFLUENZA QUESTIONS AND ANSWERS**

### **B. HPAI Virus (H5N1)**

#### **1. How do you kill the virus?**

The Bird Flu virus is very susceptible to different chemicals. It can be killed by soap or detergent. Sunlight, heat and dryness can inactivate the virus. Different disinfectants (example: TH 4, Virakil, GPC 8) can be used to disinfect surfaces.

However, remember that the virus can be protected by organic materials like feces, nasal secretions, dust, egg materials, litter materials etc. Make sure to remove physical dirt by sweeping and scrubbing before washing and applying any disinfectant.

#### **2. Can the virus survive in sea water? What about cold temperatures?**

The persistence of the virus in water is reduced by high salt content and high temperature (17 degrees C and 28 degrees C) but this varies (from 4 days to as long as 111 days) between the different strains of virus.

Cool and moist conditions favour the long survival of the virus. AI viruses have been viable in liquid manure for 105 days in the winter (0 to -20 degrees Centigrade) and in feces for 30-35 days at 4 degrees C and for 7 days at 20 degrees C.

#### **3. How long does the virus survive in soil? Can it be transmitted into vegetables?**

There is still no peer-reviewed scientific article that had shown the survival of the Bird Flu virus in soil. In theory, soil is acidic and therefore, highly susceptible viruses like Bird Flu virus should not persist for a long time. However, the presence of animal manure in the soil will turn the soil alkaline at which environment makes pathogens survive longer.

## **HIGHLY PATHOGENIC AVIAN INFLUENZA QUESTIONS AND ANSWERS**

### **C. Clinical Signs**

1. What are the clinical signs in chickens?

Severe cases of highly pathogenic avian influenza like H5N1 may not show signs except sudden death. Clinical signs in chickens can vary depending on the type of the Avian Influenza virus (low or mildly pathogenic to highly pathogenic) and can be manifested as respiratory difficulty, watery diarrhea, swollen head, comb, and wattles, cyanosis, drop in egg production, nervous signs etc.

2. I heard that HPAI is now in cats, dogs, tigers and pigs. Where did these infections happen and when? Does it occur in other animals?

Thailand reported finding the virus in cats in 2004, Germany in February 2008 and South Korea in July 2008. Thailand reported finding the virus in tigers and leopards in 2003. Thailand and Azerbaijan reported finding an AI virus – H3 N8 in dogs which was believed to have originated from horses. Pigs can get infected with an H3N2 influenza virus which can infect turkeys. This occurred in Canada in 2006-2007.

The virus may have been found in other animals but may not have been reported. Important thing to remember is that the virus has the capability to change and scientists are finding more and more cases of HPAI in non-avian species previously believed to be incapable of hosting the virus.

## **HIGHLY PATHOGENIC AVIAN INFLUENZA QUESTIONS AND ANSWERS**

### **D. Transmission Route**

#### **1. How do birds get the disease?**

From bird to bird: It can be transmitted through close contact between healthy birds and a sick bird; close contact between ducks and chickens as ducks can often be infected without looking sick; through contact with poultry products such as faeces, blood, meat, feathers, or eggs; through wild birds visiting your flocks; by using water from contaminated duck ponds to feed chickens.

From farm to farm: by moving sick birds to another farm; by carrying the infection on contaminated materials such as shoes, clothing, tools, cages, motorcycle tires, egg boxes; by infected carcasses carried by dogs or other animals; and through duck ponds or water source contaminated by the bird flu virus.

#### **2. Is Bird Flu transmitted by air?**

Avian influenza is not an airborne disease, unlike other poultry viral diseases like Newcastle Disease.

#### **3. What is the effect of composting on the HPAI virus?**

When properly done, composting is an effective way of inactivating the Bird Flu virus. Proper mixing, piling and turning of animal carcasses and litter or saw dust and water over several days and weeks will generate a temperature high enough (140 degrees Fahrenheit) to kill the virus.

Animal manure covered with tarpaulin can be successfully composted if temperature is constantly maintained for one week at 32 degrees Celsius.

#### **4. Can I sell my sick poultry?**

Sick birds can not be sold as they maybe sick of Bird Flu or some other illnesses that may be fatal to humans and other animals. Whenever birds show any signs of illness, call the VAHW/VC or District Veterinary Officer or the hotline to report by 012 214 970 or 012 833 795. In the meantime, quarantine sick birds and do not move or sell the rest of the flock.

#### **5. Are wild birds infected with Bird Flu virus?**

Wild birds are believed to be carriers of different strains of the Bird Flu virus. This is the reason why they should be kept out of domestic poultry populations.

## 6. Is Bird Flu sexually transmitted?

No, Bird Flu is not sexually transmitted. This means that the eggs or progeny of poultry will not carry the virus from the reproductive system. However the virus can still be on the shell of eggs as it maybe in the feces that came in contact with the egg. Then, the virus can enter the egg since the eggshell is porous. No fertile egg from an AI infected flock has ever hatched because the virus will kill the embryo before it hatches.

An infected rooster/hen however can infect a susceptible hen/rooster during mating by direct contact from nasal secretions, feces and feathers.



## **HIGHLY PATHOGENIC AVIAN INFLUENZA QUESTIONS AND ANSWERS**

### **E. Treatment and Control**

#### **1. Is there treatment in birds?**

There is no treatment in birds. Affected birds in the area have to be depopulated to prevent the disease from spreading to other flocks.

#### **2. Is there vaccine for poultry?**

Yes, there are vaccines available for poultry and licensed in some parts of the world. There are inactivated (killed) vaccines as well as live (vectored) vaccine.

Vaccination has been used in some countries but at present, Cambodia does not vaccinate. A vaccination programme/strategy against Bird Flu is very complicated and it can not be used as the sole measure for prevention and control. Countries which opted to vaccinate still have difficulties controlling the disease.

#### **3. If there is no VAHW in my village, to whom should I report about suspicious mortality in poultry?**

In the absence of a VAHW, please call the hotline or the village chief or the district veterinary officer.

#### **4. What should I do if there is an AI epidemic?**

The best thing to do is to avoid visiting other places with poultry. Protect your poultry by fencing them and prevent visitors from entering your yard or farm. Practice bio-security measures.

Government officers will handle the outbreak by complete culling and depopulation of all poultry in the infected zone, proper disposal of carcasses, disinfection of farms and transportation equipment, control poultry and people movement and enforcing trade and border regulations.

## **HIGHLY PATHOGENIC AVIAN INFLUENZA QUESTIONS AND ANSWERS**

### **F. Prevention**

1. How do you prevent the virus from getting into your birds?

The number one recommendation is to observe good bio-security practices – keep your yard clean; separate your poultry from other domestic birds; keep your poultry from wild birds; clean vehicles and equipment before entering your farm; care in the introduction of new birds to your farm by procuring them from reputable and known sources and keeping these new poultry separate for at least 14 days.

2. Why do we need to separate new birds from old flock for 14 days?

If your birds are carrying a disease-causing organism, in most cases, the illness will show within 14 days. Separating them will give you time to observe first before you expose them to your healthy old flock. If they go get sick, then the chances of them infecting your other birds will be minimized.

3. What do I do if my birds are diagnosed of AI?

Once AI is diagnosed, government authorities will declare the infected zone which is 1 km radius from the infected farm/flock. To prevent the spread of the disease to nearby flocks, Cambodia's current HPAI disease control policy is to depopulate all birds in the infected zone. Proper disposal of carcasses, disinfection of farms and transportation equipment, and enforcing trade and border regulations will be imposed. Movement of animals and people will be restricted.

During this time, ensure that you practice proper hygiene and follow the directives from the authorities. Most importantly, do not eat sick or dead poultry.

## **HIGHLY PATHOGENIC AVIAN INFLUENZA QUESTIONS AND ANSWERS**

### **G. Human Health**

#### **1. How does Bird Flu infect humans?**

There are several ways humans can get the virus: direct contact with infected poultry through handling and processing the birds for consumption; drinking from water sources that have been contaminated by bird faeces or feathers; direct contact with faecal materials, blood, and mucous from infected birds.

#### **2. What are the signs of bird flu in humans?**

Symptoms are similar to those of other influenzas - fever, cough, head ache and muscle pain. The symptoms may vary in severity. If you do have symptoms and have been around poultry, do get medical help immediately. H5N1 has been found to cause more severe symptoms in humans and leads to faster deterioration in the patient's condition. Many of those infected with the virus have died; this is a very serious and deadly virus.

#### **3. Is there treatment for the human flu?**

Doctors have used anti-viral medication for Bird Flu patients. It is very important that a patient seeks medical attention immediately once clinical signs are observed. Failure to get immediate medical attention can be fatal even if medications are used as the disease would have progressed to a level that can no longer respond to any type of treatment.

#### **4. If my child has a Bird Flu, what do I do?**

If your child shows any signs of Bird Flu as mentioned above, seek medical attention as soon as possible. Do not wait for the signs to get worse. Children should not be allowed to play with poultry.

#### **5. Is there a risk associated with consuming imported poultry meat and poultry products?**

No, there is no risk associated with Bird Flu by consuming imported poultry meat and poultry products that go through a rigorous quality control procedure before they are marketed. Exporters of such products have to meet food safety regulations before they can even export their products. As with any raw food products, handle them properly and cook them very well to avoid bacterial contamination and/or poisoning.

6. What are the risks of slaughtering sick birds?

With the possibility that the birds are dying of Bird Flu and the fact that this is a zoonotic disease, slaughtering sick birds is not advisable. In the absence of Bird Flu, birds could still be suffering from other viral/bacterial or protozoan infections that can still have adverse effects on human health.

7. Can I get Bird Flu from consuming chicken meat that may have been affected with the disease?

People that have died of Bird Flu are known to have been in close contact with live birds that had Bird Flu. The Bird Flu virus is found in great amounts in respiratory secretions and in faeces. These can then be easily transferred to people during slaughter.

In village setting, there is no known record to date of Bird Flu human infection that occurred due only to consumption of meat.

In developed countries, live birds are inspected and are certified as healthy prior to slaughter. The entire processing system also requires several steps of inspection and sanitation to prevent any other bacteria from establishing in large numbers in the meat. In theory, no sick birds should reach the food chain.

Regardless, poultry and poultry products must be cooked thoroughly at all times.

8. Can the virus enter through an open wound?

Yes, the virus can enter through an open wound.

9. Is there a vaccine for the bird flu in humans?

No, there is no specific vaccine for Bird Flu in humans. However, if you believe you are at risk, you should receive the regular influenza vaccine that is available for humans every year. Not only will you protect yourself from the seasonal flu, but you can also prevent any chance that the Bird Flu virus will combine with another type of flu virus in your body and become easier to pass from one person to another as a result. In theory, Type A influenza vaccine can have cross protection with an infection of the same type of Hemagglutinin (H) antigen.

10. If a person is positive for H5N1, can that be transmitted back to poultry?

Currently, there is no reported case of humans transmitting Bird Flu virus to birds.

11. Can HPAI be acquired through contaminated drinking water?

If infected birds were present in large numbers in a confined (not flowing) body of water, levels of contamination in that water could infect someone who drank the water without treating it. On top of this, people should be wary in the quality of the water that they drink since bacteria from fecal materials can have equally devastating consequences.

12. If some of my birds are sick but some are healthy, can I eat the healthy ones?

It is not advisable to slaughter and eat apparently healthy birds originating from a sick flock because you would not know if these birds are already incubating the disease that is killing your other birds. The best thing to do is to report the occurrence of illness in the flock and have the problem diagnosed. Once the authorities have cleared the flock of any serious disease and the birds are back to eating and drinking well, then birds can be slaughtered for food.

13. Can I eat a sick chicken if the illness is not that serious?

No, you should not prepare sick birds for eating. Preparing and eating infected poultry could get you infected too not only from any virus but from other disease-causing organisms. Moreover, slaughtering the sick or dead bird brought from outside could get your poultry or your neighbor's poultry infected.

14. Can I eat the eggs from a chicken that died of Bird Flu?

No, it is not advisable to eat the eggs from a chicken that died of Bird Flu. The feces from the sick bird could have come in contact with the eggs and therefore contaminating the shell surfaces of the eggs. The shell is porous and can allow the virus to penetrate. Eggs from birds that died of Bird Flu must be disposed off along with the dead chickens by burying or burning.

15. Can I suck the beak of the chicken to remove mucus exudates?

No, you can not suck the mouth of a chicken to remove mucus exudates because you can get infected not only of the Bird Flu virus but of some other bacteria, viruses or protozoa from the bird.

## 16. What is the proper way of handling poultry for food?

The greatest risk of exposure to avian influenza is through the slaughter and handling of infected poultry. Slaughter of infected poultry for food or consumption of dead poultry should not be practiced.

Generally, poultry products should be properly cooked and properly handled during preparation – that includes covering your face with a mask or cloth so you won't breathe in blood, mucous, feathers and feces; and wear gloves or use plastic bags.

Good hygiene practices are essential during slaughter and post-slaughter handling to prevent contact of raw poultry meat to other foods, food preparation surfaces or equipment.

- Keep raw meat, poultry, fish, and their juices away from other foods.
- After cutting raw meats, wash hands, cutting board, knife, counter tops and all other exposed areas with hot soapy water, and use bleach if available.
- Ensure that poultry meat and eggs are thoroughly cooked (not pink) and eggs should not be eaten raw or with runny yolks. .
- Do not eat runny eggs or meat that is pink. To be safe, egg whites and yolk must be solid. Raw eggs should not be used in foods that will not be cooked i.e. fruit shake or milk shake.
- Wash hands after handling eggs as eggs can contain avian influenza virus both on the outside (shell) and the inside (whites and yolk).
- Freezing or refrigeration does not kill avian influenza virus.
- Cooking (temperatures at or above 70°C in all parts of a food item) will kill the avian influenza virus.

Be safe and do not eat birds that have died for whatever reason.

## 17. What are the different strains of human flu in Asia and what do we have in Cambodia?

The current strains that we have in Cambodia are the Type A viruses H3N2 and H1N1. Other parts of the world also have the Type A H1N2 virus.

A new virus, Influenza A (H1N1) was first detected in Cambodia in June 2009. Also called pandemic H1N1 2009, the virus started circulating in North America in April 2009. The symptoms of Influenza A (H1N1) are similar to seasonal influenza and include fever above 38 degrees Celsius, cough, running nose, lethargy, nausea, vomiting and/ or diarrhea. Influenza A (H1N1) is spread from human-to- human through infected droplets, when an infected person sneezes, talks, coughs or spits.