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GUIDE FOR THE PREVENTION AND CONTROL OF AVIAN FLU IN SMALL SCALE POULTRY



- This guide has been developed to ensure that adequate information is available for poultry smallholders in Latin America and the Caribbean for them to better prevent and control Avian Flu.
- The information is specifically intended to backyard and small-scale poultry production units. The guide therefore emphasizes on simple and inexpensive measures for disease prevention and control.
- However, this guide cannot be made available to the millions of poultry smallholders in the near future. It has therefore be decided to combine in this guide both information for poultry owners and information for field veterinaries and livestock experts, since they represent the major provider of animal health service to livestock smallholders, and therefore can better spread the message.
- Ideally this guide should be distributed by the staff of the District Veterinary Office (DVO) during a meeting gathering all field veterinaries from the villages / communes of the district. This meeting should be the occasion to discuss the contents of the guide, so that when Avian Flu is suspected in the district or nearby, both veterinaries and DVO have already discussed the issues.





Avian Flu is a dangerous disease since it can kill all poultry on a farm

Avian Flu is a dangerous disease since it can spread rapidly to other farms and to the whole country

Avian Flu is dangerous since some types of Avian Flu can make humans sick and even die.



■ Cause and virulence:

Avian Flu is a disease caused by a virus. This disease can present different forms:

- Severe and generalized clinical signs = Highly Pathogenic (HPAI)
- Mild and respiratory clinical signs = Low Pathogenic (LPAI)
- No clinical signs.

■ Affected species and natural hosts:

- Chickens, ducks, geese, turkeys, guinea fowl, quail, pheasants, pigeons, "song birds" and numerous wild birds may all be affected by these viruses. Depending on the virus or on the host, they will show clinical signs or not.





■ How can Avian Flu affect an flock?

The virus may enter in a poultry farm through various ways:

- Purchase or gift of one or more domestic birds, even if not sick.
- Human beings (family members or relatives, staff, veterinaries and livestock experts, middlemen, people who deliver animal feed, etc.) coming to the farm after having been on a farm, in a live bird market, at a slaughterhouse, in a laboratory, etc. that was infected or contaminated. They may carry the virus on their clothes, shoes, boots, vehicles (wheels of the motorbike, for example), on the egg crates, etc.
- Purchase or gift of other animals (pig, for example) coming from a farm with infected poultry.
- Dogs bringing dead birds from an infected farm.
- Wild birds during their migration from one area to another. They may contaminate the farm through close contact with domestic birds or through their infected faeces dropped on the ground or in water ponds.
- Ducks going and coming back from rice fields.
- Any domestic poultry that must find its own food outside the farm.

- Contact with water ponds.
- Vaccines not well elaborated
- Contact with infected manure.



Main risks of transmission by contamination with manure and secretions containing virus

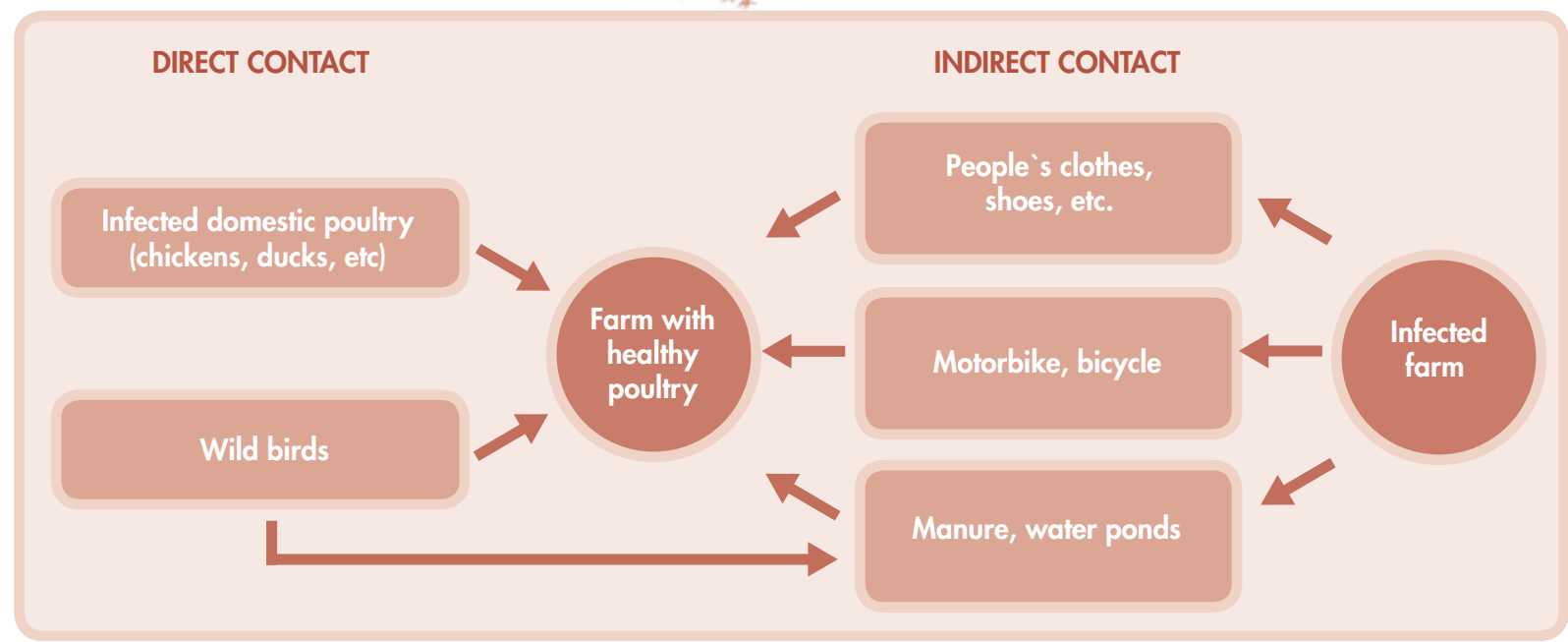


Figure 1. Possible direct and indirect contacts between infected and non-infected poultry that can bring Avian Flu into a Farm with healthy poultry



■ Incubation Period:

- It takes usually 2 to 5 days between the contamination by the virus and the start of the clinical signs.

■ Clinical signs:

Avian Flu is very similar to Newcastle disease.

You must suspect Avian Flu when you see important & rapid death in poultry!



- The clinical signs are very variable and influenced by factors such as the type of the infecting virus, the poultry species affected, their age, the other diseases that may be present and the environment.
- The disease appears suddenly in a flock, and many birds die:
 - Either very quickly with no apparent symptoms of illness.
 - Or with minimal signs of depression, little food intake, ruffled feathers and fever.
 - Some birds show weakness and a staggering gait.
 - **Sick birds often sit or stand in a semi-comatose state ("sleepy") with their heads touching the ground.**
- Some animals, especially younger birds may show neurological signs.
- Hens may at first lay soft-shelled eggs, but soon stop laying.
- Combs and wattles are dark red to blue and swollen and may have pinpoint haemorrhages at their tips.
- Profuse watery diarrhoea is frequently present, and birds are excessively thirsty.
- Respiration may be fast and laboured.
- Haemorrhages may occur on unfeathered areas of skin, especially the shanks of the legs.



- The mortality rate varies from 50% to 100%: at least half of the poultry die.
 - In turkeys, the disease is similar to that seen in layers, but it lasts 2 or 3 days longer. Occasionally, eyelids and sinuses are swollen.
 - In domestic ducks and geese, signs of depression, little food intake and diarrhoea are similar to those in layers, though frequently associated with swollen sinuses.
 - Ducks infected with Avian Flu and excreting the virus may not show any clinical signs or lesions.
- **Pathology:**
- In birds that die very quickly due to the disease, only minimal gross lesions can be seen:
 - Dehydration, congestion of internal organs and muscles.
 - In birds that die less quickly:
 - Pinpoint haemorrhages are seen throughout the body, particularly in the larynx, trachea, in and around the heart, etc.
 - Extensive subcutaneous oedema, particularly around the head and hocks.
 - The carcass may be dehydrated.



- Yellow or grey necrotic foci may be present in the spleen, liver, kidneys and lungs.
 - The air sac may contain exudates or appears trichened.
 - The spleen may be enlarged, dark and hemorrhagic.
- **Differential Diagnosis:**
- Highly Pathogenic Avian Influenza may be difficult to distinguish from:
- Other diseases that cause sudden high mortality:
 - Virulent Newcastle disease;
 - Duck Plague;
 - Acute Poisonings;



- Other diseases that cause swelling of the combs and wattles: Acute fowl cholera and other septicaemia diseases; Bacterial infection of the comb and wattles.

Avian Flu should be suspected in any disease outbreak in poultry that persists despite the application of preventive and therapeutic measures for other diseases.

■ **Laboratory diagnosis:**

Avian Flu is difficult to differentiate from other diseases without the laboratory tests, but the field veterinary or livestock expert should not wait for the test results before implementing some control measures (explained further in this manual). The techniques for collecting specimens are not presented in this manual. Only veterinarians who have received adequate training on these techniques can do this collection of specimens. They normally take samples from sick animals but also from healthy animals. They have to sample at least 15 animals per farm.

■ **Treatment**

There is no treatment for Avian Flu.

■ **Vaccination**

Vaccines against Avian Flu exist and are being further developed. The decision to make these vaccines available in a country can only be taken by the Central Veterinary Services. However, vaccination is only one method for

prevention and control, and other methods and principles (for instance, the ones described in this guide) still have to be applied even when vaccines are available and used.

■ **Zoonosis**

Avian Flu is a zoonosis: human beings may be affected and die if in contact with certain types of the virus.

