

# AVIAN INFLUENZA DISEASE REGULATION

August 2009  
Belize

**BELIZE:**

**STATUTORY INSTRUMENT  
NO. OF 2009**

**REGULATIONS** made by the Minister responsible for Agriculture, after consultation with the Authority, in exercise of the powers conferred upon him by section 86 of the Belize Agricultural Health Authority Act, Chapter 211 of the Substantive Laws of Belize, Revised Edition 2000-2003, and all other powers thereunto him enabling.

**(Gazetted ....., 2009).**

Short title.

1. These Regulations may be cited as the  
**BELIZE AGRICULTURAL HEALTH AUTHORITY (NEWCASTLE DISEASE)  
REGULATIONS, 2009.**

Interpretation.

2. In these Regulations

- 2.1 Accredited Laboratory:** means a veterinary diagnostic laboratory authorized by the Belize Agricultural Health Authority to conduct avian disease diagnostics in accordance with OIE guidelines..
- 2.2 Accredited:** means any person or legal entity to whom BAHA delegates activities related to the prevention, control and eradication of poultry diseases.
- 2.3 AI Incubation Period:** It is considered to be 21 days, in conformity with the OIE's Sanitary Code for Terrestrial Animals.
- 2.4 AI:** Avian Influenza.
- 2.5 Avian Influenza:** Infectious and contagious disease of birds, caused by any virus of Type A Influenza virus, member of the Orthomyxoviridae family.
- 2.6 Backyard:** Place where poultry are exploited in confinement or free roaming in an unorganized and non-technified manner.
- 2.7 BAHA :** means the Belize Agricultural Health Authority.
- 2.8 Biosecurity:** means any sanitary measure designed to reduce the risk of introduction and/or transmission of poultry diseases into poultry establishments.
- 2.9 Case:** Designates the appearance of one or more cases of disease or infection in an epidemiological unit.

- 2.10 Cold chain:** Procedure which guarantees the correct refrigeration temperature of the products during their storage, transportation and administration, from the establishment where they are manufactured until they are utilized.
- 2.11 Commercial Poultry:** means poultry which are raised for trade purpose..
- 2.12 Compartment:** means an animal subpopulation contained in one or more establishment under a common biosecurity management system with an distinct health status with respect to a specific disease or specific diseases for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade.
- 2.13 Compost:** means a mixture which generally contains poultry organic material which may be used as fertilizer.
- 2.14 Confirmed case:** Infected or diseased animals in which the presence of the aetiological agent of poultry disease has been proven by a diagnostic technique approved by BAHA.
- 2.15 Control phase:** Group of sanitary activities, necessary for the control and eradication of poultry disease, realized in a strategic and sequential manner.
- 2.16 Control zone:** A particular geographical area in which are applied sanitary measures which tend to reduce the incidence and prevalence of the poultry disease in a specific period.
- 2.17 Control:** means sanitary measures whose objective are to reduce the incidence and prevalence of a poultry disease in a specific geographic area.
- 2.18 Day old birds:** means birds aged not more than 72 hours after hatching.
- 2.19 Definitive quarantine:** Absolute restriction of the movement of birds, their products and by-products during a period not less than 63 days while the sanitary actions are taken for the elimination of the aetiological agent of the disease.
- 2.20 Destroyed animals:** Those animals which are killed in the control of the disease and whose carcasses are not authorized for human or animal consumption nor for industrial use, reason why they are removed through the indicated sanitary processes.
- 2.21 Diagnosis:** Study based on the joint analysis of history, clinical signs observed in the animal, as well as, serological tests, virus isolation and strain characterization which allows the confirmation or rejection of the suspicion of infection with the ND virus.
- 2.22 Diagnostic test:** Laboratory techniques used to confirm or rule-out the presence of ND virus in a premise or zone..
- 2.23 Endemic zone:** A particular geographical area in which the poultry disease agent habitually exists in a population with an expected frequency in time.
- 2.24 Epidemic zone:** A particular geographical area where there is an increase in the number of cases of poultry disease above the expected frequency in a population in a specified time.
- 2.25 Epidemiological Surveillance:** Systematic, ongoing collection, collation, and analysis of information related to animal health and the timely dissemination of information to those who need to know so that action can be taken.
- 2.26 Eradication phase:** Process of total elimination of the poultry disease agent in a specified geographical area.

- 2.27 Eradication zone:** A particular geographical area in which are applied sanitary measures which tend to eliminate the ND virus or where epidemiological studies are conducted with the objective to prove the absence of this disease, when the slaughter methodology is applied at least for period of three months.
- 2.28 Eradication:** means the elimination of a pathogenic agent from a country or zone.
- 2.29 Free farm certificate:** Official document granted by BAHA to proprietors of poultry establishments registered in the Poultry Health Programme and who have complied with this Regulation.
- 2.30 Free zone or country:** It is considered that a zone or country is free of poultry disease when it is known that the disease has not been detected in a designated area for at least three years. This period can be reduced to six months after having slaughtered the last affected animal for the countries that apply depopulation, whether associated with vaccination against poultry disease or not.
- 2.31 Hazardous Waste:** means the containers and materials used in the activities for prevention, treatment and control of poultry diseases which constitute a risk to human health and the environment either alone or when combined with other waste materials.
- 2.32 Highly pathogenic strains:** Any AI virus inoculated intravenously at a dilution of 1:10 of allantoic fluid or bacteria free tissue culture into 8 specific pathogen free chicks 4 to 8 weeks old which causes the death of 6, 7 and 8 chicks within 10 days; or whose amino acid sequence at the haemagglutinin rupture site corresponds to that of highly pathogenic viruses.
- 2.33 HPAI:** Highly Pathogenic Avian Influenza.
- 2.34 International or external quarantine:** Application of restrictive measures to prevent the introduction of poultry disease in national territory or even into a determined geographical region within countries.
- 2.35 Low pathogenic strains:** Any AI virus inoculated intravenously at a dilution of 1:10 of allantoic fluid or bacteria free tissue culture into 8 specific pathogen free chicks 4 to 8 weeks old which causes no harm or causes the death of 5 or less chicks within 10 days and whose amino acid sequence at the haemagglutinin rupture site corresponds to that of low pathogenic viruses.
- 2.36 LPAI:** Low Pathogenic Avian Influenza.
- 2.37 Notification:** Formal written or electronic communication to BAHA on the suspicion or existence of poultry disease, providing in a sufficient and necessary manner the relevant epidemiological data for its corresponding identification, localization and attention.
- 2.38 Official Diagnostic Laboratory:** Diagnostic establishment of the BAHA that conducts the assays and analyses that allow the determination of the absence or presence of the aetiological agent of poultry disease.
- 2.39 Official Veterinarian:** means a veterinarian authorized by BAHA to perform certain designated official tasks associated with animal health and/or public health.
- 2.40 OIE:** means the World Organization for Animal Health.
- 2.41 Outbreak:** means the occurrence of one or more cases of disease or an infection in an epidemiological unit.
- 2.42 Poultry Disease :** means Avian Influenza, Avian Infectious Laryngotracheitis, Newcastle Disease, Pullorum and/or Fowl Typhoid.

- 2.43 Poultry Establishment:** means farms, slaughtering plants, hatcheries, feed mills, processing plants and poultry litter outlets.
- 2.44 Poultry Farm:** means establishment, where birds are raised for commercial purposes and includes layers, breeders, broilers, pet birds, and fighting cocks.
- 2.45 Poultry Litter:** means the excrement of birds, pure or mixed with feed and other by-products accumulated during production.
- 2.46 Poultry :** means all domesticated birds including backyard poultry, used for the production of meat or eggs for consumption, for the production of other commercial products, for restocking supply of game, for breeding these categories of birds, as well as fighting cocks, caged birds, song birds used for any purpose.
- 2.47 Precautionary quarantine:** Restrictive measures for the movement of birds, products and by-products when the existence of poultry disease is suspected in one or more establishments.
- 2.48 Prevention:** means sanitary measures based on epidemiological studies with the objective of preventing the introduction, establishment and/or spread of poultry disease.
- 2.49 Programme:** means Programme for the prevention, control and eradication of poultry diseases established with the appropriate legal, financial and human resources.
- 2.50 Proprietor:** means the person or group of persons who owns and is responsible for the poultry establishment.
- 2.51 Region/Zone:** means a clearly defined part of a territory containing an animal subpopulation with a distinct health status with respect to a specific disease for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade.
- 2.52 Report:** Presentation of an official document on the detection of ND in a specified place and time.
- 2.53 Rest period:** means the period of 2 to 3 weeks when the barns are emptied and cleaning and disinfection are done.
- 2.54 Risk analysis:** designates the process which encompasses hazard identification, risk evaluation, risk management and risk communication.
- 2.55 Sanitary protection zone:** It is a defined area, around the farms, in which the construction or existence of living quarters or other types of establishments are prohibited or limited.
- 2.56 Sentinel birds:** Healthy, unvaccinated birds, with identification, that are kept within flocks vaccinated against poultry disease caused by viruses for the purpose that through serological and virological sampling, it would be possible to confirm the absence of viral circulation in the flock or birds that are used prior to repopulation of farms affected by poultry disease.
- 2.57 Sentinelization:** Introduction of sentinel birds in poultry establishments during the rest period after depopulation of flock infected by viral poultry disease, with the purpose of confirming the absence of poultry disease virus for its later repopulation or to maintain sentinel birds with the purpose of diagnosis in vaccinated flocks.
- 2.58 Slaughtered animals:** Those birds which for the purpose of control of the disease do not have any restrictions for their use and consumption.

- 2.59 Solid waste:** means disposed of objects and materials resulting from human activities during the process of consumption, transformation and production of poultry that represents no human health risk.
- 2.60 Suspect case:** Animal probably infected or diseased in which the presence of the poultry disease agent has not been confirmed by laboratory diagnosis.
- 2.61 Vaccinated animals:** Those animals in which a duly approved biological product is administered, with the purpose of immunization for the prevention, control and eradication of poultry disease.
- 2.62 Veterinary certificate:** Official document issued by BAHA or by approved or accredited or authorized persons or legal entities to confirm compliance with this Regulation.
- 2.63 Virus isolation:** Diagnostic test performed by an authorized veterinary diagnostic laboratory consisting of inoculation of samples obtained from birds into chicken embryos for the isolation and identification of the poultry disease virus.

### **3. OBJECTIVE AND APPLICATION**

#### **3.1 Objective**

The present Regulation has as its objective to establish the sanitary measures for the Prevention, control and eradication programme for Avian Influenza.

#### **3.2 Scope of Application**

Compliance with this Regulation corresponds to every person, group of persons or legal entity who is dedicated to production, industrialization, commerce and services in the poultry industry.

#### **3.3 Competent Authority**

BAHA, through the Department of Animal Health, is the Competent Authority for the application of the present Regulation.

### **4 GENERAL PROVISIONS**

- 4.1** The Programme for ND is designed to establish the technical measures for the prevention, control and eradication of the disease.
- 4.2** The planning and coordination of the programme for ND, shall be a shared responsibility among BAHA, Ministry of Agriculture and Fisheries and the Belize Poultry Association.
- 4.3** The programme for ND shall be active and permanent.
- 4.4** BAHA may accredit or authorize private veterinarians and laboratories to conduct official activities of the programme for ND.

## **5. SAFETY OF TECHNICIANS AND FARM WORKERS**

### **5.1 BIOSECURITY OF WORKERS IN POULTRY ESTABLISHMENTS**

- 5.1.1 Official and private technicians, farm workers, as well as all personnel involved in any way with poultry production, should use proper protective equipment. The farm owner is to provide the necessary protection equipment and replace these when deteriorated.
- 5.1.2 In order to guarantee the health of the workers, the water for human consumption should meet the quality standards according to the legal framework of each country.
- 5.1.3 All personnel having direct contact with poultry, their wastes and feed, should have an official health certificate according to the requirements of the official competent authority; these should be updated and available at the farm.

### **5.2 BIOSECURITY OF LABORATORY TECHNICIANS**

- 5.2.1 Official and private technicians, diagnostic laboratory workers, as well as all the personnel involved in any way with the collection of poultry samples, their submission, processing and management, should have the proper protection for their security.

## **6. PHASES OF THE PROGRAMME FOR THE PREVENTION, CONTROL AND ERADICATION OF AVIAN INFLUENZA**

### **6.1 Poultry Disease Programme**

The Poultry Disease Programme contemplates the phases of prevention, control and eradication as well as considers the following conditions which must meet the OIE guidelines:

- a) Have a prevention, control and eradication Programme that complies with OIE and other international technical guidelines and these must be verified and evaluated for their confirmation.
- b) The national prevention, control and eradication programme should have the legal support and manuals which allow its operation.
- c) The programme should have control and verification points for the movement of birds, their products and by-products.

### **6.2 Prevention phase**

- 6.2.1 In this phase, the BAHA shall guarantee that the poultry establishments meet the biosecurity measures established in the TECHNICAL DIRECTIVE TO REGULATE REGIONAL POULTRY ACTIVITY.

### **6.3 Diagnosis**

It shall be conducted through Haemagglutination and Inhibition(HI) tests and Agar Gel Immunodiffusion (AGID), ELISA and PCR. For serological tests, the blood sera samples should be individually collected and analysed

In the case of samples from fighting cocks, songbirds, captive wild birds, pet birds and backyard poultry. cloacal, tracheal and faecal swabs may be submitted for virus isolation and, where necessary, whole blood samples could be used. To conduct official serological tests, the approved techniques and diagnostic reagents shall be used in accordance with the OIE's Manual of Diagnostic Tests and Vaccines for Terrestrial Animals.

#### **6.3.1 Clinical diagnosis**

**6.3.1.1** Infections produced by AI viruses can vary in their presentation from a disease without any clinical signs to one with 100% mortality. A highly pathogenic avian influenza HPAI virus infection can be suspected when it presents with a sudden increase in mortality after a period of severe depression and inappetence; in hens in production there can be a drastic fall in egg production as well.

**6.3.1.2** The presence of facial and/or head oedema, inflammation or cyanosis of the crest and wattle, and petaechial haemorrhages in the tarsus, skin and internal membranes increases the possibility that the disease be that caused by a HPAI virus.

**6.3.1.3** The infections caused by low pathogenic avian influenza virus (LPAI) can present from subclinical and inapparent pictures to diverse levels of respiratory complications whose signs are exarcebated by concurrent infections.

**6.3.1.4** When suspect cases are being investigated, samples are to be collected and submitted for laboratory confirmation. The appropriate poultry disease form should be completed ensuring that the coordinates of the establishment are entered.

#### **6.3.2 Laboratory diagnosis**

(Standardization of laboratory tests)

**6.3.2.1** For the purposes of prevention, control and eradication, the diagnosis shall be conducted in national laboratories or laboratories approved by the BAHA.

**6.3.2.2** The official laboratory tests for the diagnosis of AI are Haemagglutination and Inhibition (HI) tests and Agar Gel Immunodiffusion (AGID), antigen capture ELISA, virus isolation, PCR, typification and pathogenicity tests, genetic sequencing and those specified by the BAHA.

**6.3.2.3** In the case of vaccinated flocks, the oficial tests shall be virus isolation and by HI serology or ELISA in sentinel birds and/or those specified by the BAHA. The

DIVA strategy which allows the differentiation of vaccinated flocks from infected flocks should be used.

**6.3.2.4** The official and/or accredited laboratories are obligated to immediately notify BAHA when AI is detected by virus isolation or by another confirmatory test. In the case of detection in unvaccinated birds by positive serology, this should be immediately notified so as to conduct the confirmatory diagnosis in the shortest time possible.

**6.3.2.5** Sample submission procedure to official and/or accredited laboratories:

**6.3.2.5.1** For serological tests, the blood sera samples should be individually collected and analyzed. The sampling and submission procedure manual shall be according to the OIE guidelines

**6.3.2.5.2** For virus isolation tests, the samples should be from live birds and/or samples of organs (trachea, lung, spleen and caecal tonsils) and/or tracheal swabs and/or cloacal swabs and/or faeces or poultry litter and/or another type of sample as specified by the BAHA.

### **6.3.3 Differential diagnosis**

**6.3.3.1** HPAI can easily be confused with Newcastle Disease in its velogenic form (VND). The signs of the disease and the post mortem lesions are similar. Both viruses easily replicate in chicken embryo and agglutinate erythrocytes. The haemagglutination Inhibition test with AI antiserum is a quick and trustworthy test to rule out AI which corresponds to the serum subtype used in the HI test, unless there exists a mixture of both viruses or the AI virus isolated does not correspond to the antiserum used in the HI test.

**6.3.3.2** HPAI should be carefully differentiated from other poultry diseases such as Newcastle in its velogenic form, infections from other paramyxoviruses, mycoplasmosis, bronchitis, chlamydiosis, fowl cholera and other diseases associated with the respiratory syndrome. Given that the AI virus is of immediate notification, its confirmation by virus isolation and pathogenicity tests is essential.

**6.3.3.3** A definitive diagnosis cannot be made based on signs and lesions of the disease without serological evidence and/or virus isolation and identification. However, in a zone where the disease produced by a HPAI virus is endemic, a presumptive diagnosis can be made based on the history, signs and macroscopic lesions of the flock. The virulence of the AI virus is not associated to its “H” or “N” designation and such tests are not a requirement before making a diagnosis of HPAI virus.

**6.3.3.4** The PCR or virus isolation is the official diagnostic test in control and eradication zones except in flocks and/or farms free without vaccination. In free zones, as well as in farms free without vaccination, serological haemagglutination inhibition tests and virus

isolation tests should be used. In the case of flocks in free zones with officially approved vaccination the official test shall be virus isolation.

**6.3.3.5** The diagnostic tests required for the importation of birds, their products and by-products shall comply with the importation requirements of the importing country.

**6.4 Biosecurity:** Biosecurity and epidemiological surveillance are the most important weapons to fight avian influenza disease in all its phases, therefore, they are vital for the prevention phase; the biosecurity guidelines are found in the Technical Directive to regulate the regional poultry activity.

The levels of biosecurity in commercial farms need to be characterized and critical points of morbidity and mortality established so as to serve for the notification of suspect disease cases.

**6.5 Epidemiologic surveillance:** In the case of suspicion and/or presentation of an outbreak or of a positive result to an official serologic test or virus isolation of any AI subtype in the country, it is mandatory for all persons related to poultry production to immediately notify BAHA.

**6.5.1 Mandatory notification:**

Health promoters, community leaders, school teachers, NGOs and civil authorities shall be incorporated for the notification of adverse health events in poultry or in wild birds in the communities for the investigation, sampling and submission of samples by BAHA with the purpose to rule out the presence or emergence of the disease.

**6.5.2** Active and passive epidemiological surveillance of any AI subtype must be established in susceptible birds raised and/or traded throughout the country, including free zones according to serological and virus isolation techniques specified by the Programme and according to the statistical sample size established by BAHA.

**6.5.3** The BAHA shall establish every semester a permanent and continuous statistically representative epidemiological monitoring of type A avian influenza virus in commercial and backyard poultry, through diagnostic techniques specified by the Programme. Such analyses shall be conducted in official and/or accredited laboratories.

**6.5.4** In free zones or in farms certified as free, the BAHA may conduct sampling in slaughter plants, processing plants, private slaughter plants, hatcheries and storage, consumption or distribution centres of poultry and poultry products, among others, to verify the serological or the virological absence of the disease, as the case may be, through diagnostic techniques specified by the Programme.

**6.5.5 Monitoring in wetland areas**

To establish, according to the characteristics of the country, the monitoring of range poultry, especially during the resting periods of migratory aquatic birds in the communities considered at greatest risk because of the contact of migratory birds with native wild birds.

### **6.5.6 Case investigation and follow-up**

In the prevention phase, this activity shall be strictly observed when the clinical picture is compatible with avian influenza and it can be conducted through a clinical or serological diagnosis or even by virus isolation until the case is closed.

### **6.5.7 Information system**

Every programme shall have an information system that permits having accurate data to know the behavior of the disease and to apply control and eradication strategies besides keeping the stakeholders duly informed.

## **6.6 Training**

There should be a continuous training plan that contemplates the setting up of seminars, talks and simulations in poultry disease.

**6.6.1** The training plan shall be directed to technical, official, and private personnel, poultry producers, backyard poultry owners, poultry merchants and all those directly or indirectly related to the poultry sector.

**6.6.2** Awareness campaign: the design and distribution of stickers, informative and educational material, highway bills, radio spots, addressed to the different sectors, according to their educational level, to maintain alert among the poultry owners in the rural and urban sectors and to invite them to notify abnormalities observed in domestic poultry and wild birds.

## **6.7 Sanitary requirements and import controls**

**6.7.1** Birds, poultry products and poultry by-products that are desired to be imported into the country shall include in their documentation: an official international veterinary certificate that attests to their origin and place of shipment from a compartment, zone or country officially recognized by the Veterinary Services of the exporting country as free of AI.

**6.7.2** The exporting countries should comply with the harmonized regional requirements for the importation of birds, their products and by-products.

**6.7.3 Risk analysis:** Risk analysis shall be conducted for decision making in matters of importation of birds, their products and by-products and for zoning processes.

**6.7.4 Quarantine measures:** Countries free of avian influenza should take the necessary measures to avoid the introduction of the disease through the importation of birds, their products and by-products.

**6.7.5 Border controls:** Border control points should maintain a constant vigilance to prevent the introduction of birds, their products and by-products from quarantined countries.

## 7. CONTROL PHASE

### a. Biosecurity:

In this phase, the BAHA shall guarantee that the poultry establishments meet the biosecurity measures established in the TECHNICAL DIRECTIVE TO REGULATE REGIONAL POULTRY ACTIVITY.

### b. Control programmes

When avian influenza control and eradication actions are implemented these shall comply with the following requirements:

- i. Have an avian influenza prevention, control and eradication programme that meets technical guidelines and are verified and evaluated for their certification.
- ii. The avian influenza control and eradication national programme should have legal support and manuals which permit its operation.
- iii. The programme should have control points and verification of movements of birds, and poultry products and by-products.
- iv. The programme should have the following updated information: poultry census of commercial farms and backyard poultry at the national level, list of commercial poultry farms (hens, chickens, ducks, geese, turkeys, quails, captive pet and wild birds) that are registered and under the control of the programme.
- v. The programme should know, and exercise epidemiological surveillance, of wild birds in wetlands and in backyard poultry around these.
- vi. The programme should have the responsibility for epidemiological surveillance, including notification and case follow-up and closure.
- vii. The poultry farms should comply with the biosecurity requirements established and these will be evaluated by the programme with the purpose to strengthen biosecurity at the national level.
- viii. Epidemiological surveillance

Epidemiological surveillance is based on a passive component where suspect cases are investigated and an active component which shall be carried out every 4 months in establishments and poultry farms for export, following a

statistical sample design; and in backyard poultry it shall be conducted at least once a year.

- ix. The programme shall have the diagnostic facilities to analyze samples in official and/or accredited laboratories.

**c. Movement control (internal quarantine)**

- i. For the movement of birds, their products and by-products throughout the country a movement permit must be obtained from BAHA or an accredited person.
- ii. The issuance of the movement permit shall follow the requirements established in these and should indicate in the section on “Description of laboratory or field tests, treatments, special sanitary measures, certifications and attestations” the following information: number of certificate of avian influenza free farm, or number of vaccination certificate, number of cases with negative laboratory results (its validity period shall be from the receipt of the samples by the laboratory), number of record of cleaning, washing and disinfection or heat treatment, according to the directives of the programme.
- iii. The vehicles or containers used in the transportation of birds, their products and by-products originating or transiting from control zones to eradication zone, from free or eradication zone to free zone or from free zone to free zone, when these transit through control or eradication zones, they should be washed, disinfected and sealed at the point of origin and this should be certified in the movement permit.
- iv. The movement of birds, their products and by-products from free farms located in eradication zones to free zones, shall be sealed at origin by official personnel or personnel authorized by the BAHA with removal of the seal at the final destination of the commodity. In the case of table eggs, these shall be moved directly from the farm of origin or from a collection or distribution centre authorized by the BAHA, as long as they maintain an area that stores and keeps the eggs originating from these farms and avoids the contact and mixing with eggs of a different origin.

In the case of meat products, these shall come from slaughter plants, processing plants or collection centres with inspection by veterinarians or by personnel authorized by the BAHA to prevent the mixing of products of different sanitary origins.

- v. The table eggs that are moved among the different districts shall be clean, and free from blood and faeces.

**d. Vaccination against avian influenza\***

- i. The programme shall have strict control of the importation, distribution and administration of the avian influenza vaccine. BAHA shall register the avian influenza vaccine after conducting a risk analysis, authorizing the laboratories manufacturing the vaccines and similar types, through a formal letter which defines the standards for information management, strategies, responsibilities, obligations and sanctions in the case of non-compliance with the directives described in the OIE's Manual of Diagnostic Tests and Vaccines for Terrestrial Animals.

\* OIE information documents/Verona Recommendations

- ii. The BAHA shall authorize the administration of inactivated, emulsified vaccine, recombinant vaccine, vector vaccine and others of new technology, only in control and eradication zones. Vaccines against avian influenza may be authorized as long as these are certified and authorized by the BAHA and permit the demonstration of efficacy and efficiency for the prevention and control of this disease.
- iii. Inactivated emulsified vaccines should only be used from laboratories authorized by the BAHA and the laboratories shall comply with the requirements of the importing country.
  - a. That the manufacture of vaccines be based on protocols in accordance with the OIE directives.
  - b. The laboratories and importers authorized for the manufacture and/or commercialization of vaccine approved and authorized for AI, should report monthly to the Programme the sale and commercialization of such biologic.
- iv. The administration of the vaccine shall be according to the sanitary strategy defined by the Programme.
- v. For the purpose of epidemiological surveillance, in the eradication zone a minimum of 50 sentinel birds per farm, duly identified or contained in cages within each poultry house, shall be maintained in farms where the vaccine is used, and vaccinated birds cannot be differentiated from infected birds. In farms with more than 12 poultry houses, a minimum of 10 sentinel birds per house, duly identified or contained in cages within each poultry house and in contact with the rest of birds, shall be maintained. The poultry producer is obligated to

allow the serological and virological sampling of the birds as required by the Programme.

- vi. Subject to epidemiological analyses, the BAHA may determine vaccination of poultry farms without requiring sentinel birds, as well as vaccination of backyard poultry, fighting cocks, ostriches, ducks, quails, songbirds, captive pet and wild birds.
- vii. In free zones, the BAHA may require, in the case of an outbreak of AI, through risk analysis, the vaccination of poultry farms at high risk, in areas previously quarantined, indicating the type of vaccine to use and period of use. The vaccination cannot exceed six months, and all the vaccinated birds must be removed to recover the free status, otherwise, the zone will be incorporated into the eradication phase.
- viii. The Programme shall maintain the register of poultry producers using vaccine, the manufacturing laboratories and their distributors, and farms certified as free of the disease.
- ix. The BAHA may authorize the manufacture and application of another vaccine produced with a low pathogenic strain that adequately protects against AI, in accordance with the technological-scientific advances, or because of the introduction of another exotic subtype of the AI virus in the region, independently of the counter-epidemic measures adopted for the eradication of another subtype of AI.
- x. The vaccines shall be managed through adequate use of the cold chain; this is a shared responsibility among all stakeholders - producers, official veterinarians, accredited veterinarians, firms that manufacture or commercialize biological products as well as others identified by the Programme.
- xi. Producers of backyard poultry, fighting cocks, and other types of non-commercial domestic poultry as well as captive wild birds and others determined by the Programme, should vaccinate their birds. The vaccination programme shall be subject to analyses on the epidemiological behavior of the AI virus in the geographical region where they are located. In any case, the BAHA jointly with stakeholders may establish mandatory vaccination programmes.
- xii. The administration of vaccine without prior authorization in free zones or in farms certified as free or the use of vaccines not authorized by the BAHA in a farm in control, eradication and free zones, shall imply the establishment of quarantine and administrative and criminal sanctions, independently of the corresponding sanitary measures.

**e. Zoning**

In the event of the detection of an outbreak of AI, the following procedures apply:

**i. In free zones and eradication zones**

Quarantine of the poultry farm with the period and place determined by the BAHA

1. In the case of an outbreak of AI in a free or eradication zone, the BAHA shall evaluate the counter-epidemic measures to adopt in the affected poultry farms. These measures may include the evaluation of type of quarantine to apply; slaughter or vaccination; disposal area (burial or incineration) of carcasses, products and by-products of poultry origin; or commercialization of poultry products and by-products and repopulation, among others.
2. Identify during the outbreak and until its closure, the number of outbreaks, animals vaccinated, slaughtered and destroyed.
3. Cleaning, washing and disinfection of the installations, in accordance with what is established for each case by the Programme. Compliance with this process should be supervised by an official veterinarian.
4. Inactivation of the organic and inorganic wastes of the establishments, in accordance with what is established for each case by the BAHA.
5. The BAHA, prior risk analysis and epidemiological analysis, shall determine the sanitary requirements for the application of quarantine and movement restrictions, as the case may be, for poultry farms, slaughter plants, hatcheries, industrial and commercialization plants for poultry products, by-products and wastes; as well as the sanitary requirements for slaughter and burial or destruction of affected or at risk birds, their processing, transportation and commercialization from origin to final destination.
6. Such evaluation shall consider the magnitude of the outbreak, the epidemiological situation of the zone and surrounding areas, susceptible poultry population, commercialization channels, type of product produced, poultry insurance, emergency animal health task force, infrastructure for diagnosis and for the control of movement of birds, their products, and by-products and implements and equipment used in poultry production, among others.
7. A specific epidemiologic surveillance shall be established in affected or at risk farms, through the collection of 30 serum samples or samples for virus

isolation, as necessary, by poultry farm every three months, while quarantine is in place.

8. The affected zone can recover its sanitary status of free or in eradication three months after the last case of the disease or infection is diagnosed, after epidemiological surveillance and having concluded the actions of depopulation, cleaning and disinfection of all the affected farms or premises as well as those farms where birds were vaccinated.
9. The certificate of free farm shall be cancelled in a free zone or eradication zone affected by an outbreak of AI, after risk characterization. BAHA may certify free farms, after the closure of the outbreak, as long as these meet the measures established in this Regulation.

**f. In Control zones**

- i. Premises shall be quarantined in accordance with the place and time determined by the BAHA.
- ii. Where there is an outbreak of AI in a control zone, BAHA shall evaluate the control measures to implement in affected farms; these may include the evaluation of type of quarantine to apply; slaughter and/or vaccination; area for disposal by burial and/or incineration of dead birds, carcasses, products and by-products of poultry origin; commercialization of poultry products and by-products; and repopulation, among others.
- iii. Once the poultry farm is empty, cleaning, washing and disinfection shall be undertaken according to the requirements that the Programme establishes for each case and under the supervision of an official veterinarian.
- iv. Premise wastes shall be inactivated in accordance to what is established for each case by the Programme.

**g. Loss of free status in the control and eradication phase**

- i. Any of the following deficiencies shall be cause for loss or suspension of the recognition of a zone as free, and it shall be incorporated to the eradication phase of the disease in question:
  - Not submitting annually to BAHA, within the first two months of each year, the updated poultry census for the preparation of the statistical sample size for the target population;

- Not conducting an active epidemiological surveillance in time and form in accordance with what is established in the statistical sample size issued by the BAHA;
- Not having 100% of the poultry farms certified as free of AI;
- Not submitting samples for serology and virus isolation according to the active epidemiological surveillance established in the zone; these should not come from other sources or zones, different to the ones requested.
- Not submitting the type and quantity of samples established by this Directive to an official or authorized diagnostic laboratory;
- Not having a movement control system for animals, their products and by-products including sanitary verification and inspection points for vehicles and border inspection points at airports, land borders and sea ports. In the case of new access to the free zone, authorized sanitary verification and inspection points shall be immediately established to prevent free access without inspection of animals, products and by-products;
- Not applying, in case of an outbreak, the control measures established by BAHA to eradicate the problem;
- Not allowing the entry of birds, their products and by-products or products containing parts of these, when accompanied exclusively with the veterinary movement certificate. Such authorization shall be verified physically and by vetting the documents, and it must be authorized by the Programme from where such movement originates. Any act which violates what is established in the National Animal Health Act and in the present

Directive, should be cause for suspension and/or cancellation of its authorization and registry by BAHA;

ii. When the Programme fails to meet any of the following requirements, it shall be cause for loss or suspension of the recognition of a zone recognized as free, and it shall be incorporated to the eradication phase of the disease in question:

- Updating annually within the first two months of the year the poultry census for the preparation of the statistical sample size for the target population;
- Conducting an active epidemiological surveillance in time and form in accordance with what is established in the statistical sample size issued by BAHA;
- Have 100% of the poultry farms certified as free of AI;
- Submitting the samples for serology and virus isolation according to the active epidemiological surveillance established in the zone; these should not come from other sources or zones, different to the ones requested.
- Submitting the type and quantity of samples established by this Directive to an official or authorized diagnostic laboratory;
- Have a movement control system for animals, their products and by-products through the revision of vehicles at sanitary verification points and border inspection points at airports, land borders and sea ports. In the case of new access to the free zone, new authorized sanitary verification and inspection points shall be immediately established to prevent free access without inspection of animals, products and by-products;

- Applying, in case of an outbreak, the control measures established by the BAHA to eradicate the disease;
- Allowing the entry of birds, their products and by-products or products containing parts of these, exclusively with the veterinary movement certificate in accordance with what is stated in this Directive. Such authorization shall be verified physically and by vetting the documents, and it must be authorized by the Programme where such movement originates.
- Any act which violates what is established in the National Animal Health Act and in the present Directive should be cause for suspension and/or cancellation of its authorization and registry by BAHA.

## 8. CASE FOLLOW UP

- a. In the case of not controlling the case or outbreak within a six month period, counting from the identification of the index case or outbreak, the zone shall lose its free sanitary status and move to the control phase.
- b. In the case where a farm located in an eradication zone does not apply vaccination nor is it certified as free of AI, it shall be quarantined according to this directive and sanctioned according to what is stipulated in the BAHA Act.

## 9. EPIDEMIOLOGICAL SURVEILLANCE

- a. In the case of a suspicion and /or presentation of a case or a positive result to an official serological test or virus isolation of any subtype of AI in the country, it is mandatory for every person related to poultry production to notify it to the BAHA.
- b. Active and passive epidemiological surveillance of any subtype of AI shall be established throughout Belize, including free zones, according to the statistical sample size established by BAHA in susceptible birds produced and/or commercialized within Belize. Samples collected shall be tested according to the serological and virus isolation techniques determined by the Programme;
- c. **Sample determination:** The statistical determination of the sample size shall be conducted using the WIN programme EPISCOPE, which contemplates a sampling scheme at a 95% confidence level, an expected prevalence of sampling units of 1%, with a precision level of 1% (range 0 - 2%) and the

prevalence within each community of 10%, which increases the size of the sample and its precision.

It is based on the statistical calculation in accordance with the following formula:

$$N = \frac{1 - (1 - a)^{1/d}}{1 - (1 - a)^{1/d}} [N - (D - 1)/2]$$

where

N = sample size

a = confidence level      95% = 0.95

D = number of sick animals      prevalence X population

N = population size

Estimated prevalence =      10% = 0.1

- d. BAHA shall annually prepare a permanent and continuous statistically representative sample size of type A avian influenza in commercial and backyard poultry. These will be tested through the haemagglutination inhibition technique, ELISA, AGID, virus isolation and/or some other prescribed diagnostic technique. Such analyses should be conducted in official and/or authorized laboratories.
- e. In free zones and farms certified as free, BAHA may conduct sampling at slaughter plants, processing plants, private and municipal slaughter plants, collection centres, production units, hatcheries and storage, consumption or distribution centres of birds and their products and by-products to verify the serological absence or, where appropriate, virological absence of the disease, through diagnostic techniques prescribed by the Programme.

## 10. CERTIFICATION

- a. In free zones, every proprietor of birds, poultry farms and collection centres for the purpose of production, commercialization and movement, shall certify their establishment as free of AI. In eradication zones, those farms that are not vaccinated should be certified as free of AI.
- b. With the purpose of epidemiological surveillance, the collection centres for live birds shall conduct sampling of at least 30 birds per lot before their commercialization; 20 of these samples should correspond to complete sera and 10 to cloacal or tracheal swabs.
- c. BAHA may certify free farms in eradication zones, where authorized vaccination is administered, as long as the type of vaccine permits differentiating vaccinated birds from infected birds through diagnostic tests. These tests shall be previously evaluated and authorized by BAHA for the purpose of official confirmation.

- d. BAHA may authorize in eradication zones, the certification of farms as free with vaccination against the AI subtype present in the zone through an official diagnostic technique which permits differentiating vaccinated birds from infected birds and the use of sentinels.
- e. In control zones, the certification shall be conducted exclusively in poultry farms free of AI.
- f. In all cases, BAHA shall issue a certificate attesting that the farm has complied with all official requirements.
- g. To obtain the certificate of farm free of AI, it is required to comply with the following procedure:
  - i. Submit opportunely to BAHA the registration form for control and eradication described by the programme, signed by the proprietor or legal representative and by the official or accredited veterinarian.
  - ii. Submit to BAHA the laboratory report, which shows, in non-vaccinated birds, negative serological results to haemagglutination inhibition and negative to virus isolation for AI or the diagnostic test prescribed by the programme.
  - iii. BAHA may determine other types of samples for avian species not contemplated in the present Directive.
  - iv. The farms obtaining the certification as free shall conduct serological and virological re-sampling according to what is established by the Programme to maintain their status. The sampling shall be conducted based on the date of issuance of the certificate and depending on its livestock function. The submission of the results to BAHA shall be the responsibility of the proprietor or veterinarian.
  - v. The Programme shall conduct periodic supervisions and audits of the certified farms as well as of the sampling conducted, with the objective of verifying the sanitary status of the premise and of the region.

In zones under the eradication phase, for obtaining certification as well as for sampling, the collection and submission of samples to the laboratory shall be by official personnel accompanied by technical personnel designated by the company; half of all the samples shall be submitted to the authorized diagnostic laboratory determined by the company, while the other half shall be submitted to the official laboratory. The number of samples to obtain shall be established by BAHA.

To obtain the certificate of farm free of AI, the biosecurity certificate needs to be presented in addition to negative serological and virological results to AI.

**h. Validity of the certification of free farm**

- i. The certificate of farm free of AI should be valid for 12 months from the date issued, as long as there is compliance with the sampling established. Certified farms shall, close to the expiry of certification, initiate the process to obtain a new certificate 30 days in advance.

**i. Use and restrictions of the certificates**

- i. In the case of farms certified as free, positive serology, positive virus isolation or other positive results issued by an official test authorized for the purpose, shall cancel the certification.

**11. COMPENSATION**

This is defined as a financial or in kind contribution that is granted to the producer affected by natural disaster or disease, the amount depending on the magnitude of damage and the means of the organization responsible for the grant, and according to what is established by the official sector and the producers.

- a. BAHA shall coordinate with other government agencies, producers and other people involved with the poultry industry, mechanisms which allow financial or in kind re-imburement for the eradication of an AI outbreak in free or eradication zones, without prejudice to the patrimony of the affected producer; while this occurs the zone shall remain under quarantine.

**12. IMPORTATION**

- a. Birds, their products and by-products that are desired to be imported into the country shall include in their documentation an official veterinary certificate that attests to their originating and proceeding from a zone or country officially recognized by the Veterinary Services of the exporting country, as free of AI, for which the zone or country of origin and/or point of departure of the poultry merchandise, shall request in writing its recognition as free. The exporting countries shall comply with the regionally harmonized requirements for importation.

**13. ERADICATION PHASE**

This phase of the Programme shall be implemented when there is an epidemiological silence of at least 63 days, which is equivalent to three

incubation periods. The sanitary measures to apply shall basically be as for the prevention phase. Also, the emergency mechanism shall be available to proceed to the eradication of outbreaks as rapidly as possible, when depopulation is used.

- a. **Emergency plan:** the Programme shall have the emergency plan written and updated so as to apply it in this phase in the eventuality that new cases occur.
- b. **Emergency task force:** An emergency task force shall be established, be duly trained to implement the emergency plan and shall have available equipment, supplies and materials.
- c. **Eradication of cases:** It shall proceed as in the control phase, in a rapid manner, by elimination and burial.
- d. **Emergency and compensation funds:** The mechanisms shall be established for the creation of these funds which are necessary to guarantee rapid intervention for the control of any incidence of avian influenza disease.

#### 14. QUARANTINE MEASURES

- a. The poultry farms may be subject to the application of the following quarantine measures:
  - i. **Precautionary quarantine:** This shall be applied when there is clinical suspicion of a case or an outbreak of AI and shall be maintained until the diagnostic results are obtained to serology or to virus isolation, where applicable, with the objective of applying quarantine as required by the case. If results are negative, then quarantine is to be lifted.
  - ii. **Internal quarantine:** This shall be applied in the event of a case or outbreak confirmed by serological evidence or isolation of the AI virus. This quarantine refers to the restriction of movement and where the case occurs it applies to the observation of suspect or sick birds and those apparently healthy but exposed to the disease, as well as their products and by-products whether found in direct contact or not with infected birds. The purpose of this type of quarantine is to prevent the possible transmission of AI to other susceptible birds not directly exposed, within an installation, zone or region.

All birds that are under the AI campaign scheme, as well as reservoirs and any material potentially capable of transmitting the virus, shall be subject to conditional or total quarantine, such that for their movement it is necessary to comply with the stipulations of this present directive, and, where applicable, with the guidelines issued by BAHA.

For the application of the quarantine measures, the geographic area where the AI virus is found, including the regions under its influence, shall be considered as an affected area.

In such an area the focal and peri-focal area determined by BAHA needs to be identified. These zones should be delimited through the installation of check points, specific for the movement of birds and their products.

- iii. **Total quarantine:** Consists of the absolute restriction of the movement of birds, their products and by-products during a period not less than 63 days, equivalent to three times the average period of incubation of the disease, in accordance with the OIE guidelines, and shall be counted as from the appearance of the last clinical case.
  - iv. **Conditional quarantine:** Consists in the restriction of the movement of birds, which shall be applied only when it is proven that such birds, their products and by-products comply with the specific sanitary requirements for AI, reason for movement, origin and destination. It is applied in special circumstances, bearing in mind the differences in susceptibility and endemic manifestation of the disease, as well as the justifiable economic reasons. Such quarantine shall be applied in the presence of a case or outbreak of AI.
  - v. **External quarantine:** Consists in the application of restrictive measures that are applied to prevent the introduction of AI into national territory, or, as well, into a specified geographic region with the country. The preventative actions shall be subject to the specific sanitary measures in the document of sanitary requirements for the importation of birds, their products and by-products.
- b. Quarantine may be lifted once BAHA verifies the absence of AI; or when the activities of vaccination or certification are adhered to and pertinent for its lifting, BAHA shall proceed to notify in writing those directly affected, as well as the operational sectors involved, making reference to this directive.
  - c. The slaughter of birds, disposal of dead birds, cleaning and disinfection shall be carried out in accordance with the guidelines of the emergency plan.
  - d. Sentinel birds: In this phase of the Programme there shall be unvaccinated sentinel birds for serological surveillance and early detection of the circulation of the disease virus.

## 15. VERIFICATION

- a. Compliance with the stipulations and guidelines established in this directive shall be verified by the BAHA.

## 6 OFFENSES AND SANCTIONS

Non-compliance with the provisions contained in this regulation shall be sanctioned according to the BAHA Act and its auxiliary regulations.

