

# Avian Disease Surveillance

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# Why do surveillance?

- For information?
- For disease control?
  - a) reportable only?
  - b) breeder flock - hatchery only?
  - c) all disease?
- For export trade?

# **Breeder Flock & Hatchery surveillance**

- Importance of breeder flock surveillance
- Serology for pullorum/typhoid
- Serology for MG & MS
- Examination of disease or increased mortality.
- Culture from fluff samples, hatchery waste & cull chicks.
- Culture from high mortality in first 10 days.

# Surveillance for information on disease situation in the country

- What information do we need?
- How do we get it?
- Routine diagnostic lab. results
- Field investigations
- Processing plant results
- Serology from blood collected at plant
- Plus?

# Notifiable Diseases

- What categories do we need?

**Canadian Food Inspection  
Agency**

**Animal Products  
Animal Health and Production  
Division**

**1. Reportable Diseases,**

**2. Immediately Notifiable  
and**

**3. Annually Notifiable Diseases**

**A guide for the agri-food  
community and laboratories**

**To prevent the transmission of animal diseases in Canada, the Canadian Food Inspection Agency (CFIA) must be notified of the introduction or presence of certain animal diseases in the domestic population, as outlined in the *Health of Animals Act* and *Regulations*.**

## **Reportable diseases**

**These diseases are outlined in the [Health of Animals Act](http://laws.justice.gc.ca/en/H-3.3/fulltoc.html) and [Regulations](http://laws.justice.gc.ca/en/H-3.3/fulltoc.html) (<http://laws.justice.gc.ca/en/H-3.3/fulltoc.html>) and are usually of significant importance to human or animal health or to the Canadian economy.**

- Animal owners, veterinarians and laboratories are required to immediately report the presence of an animal that is contaminated or suspected of being contaminated with one of these diseases to a CFIA district veterinarian. Control or eradication measures will be applied immediately.**

# **Immediately notifiable diseases (for laboratories only)**

- In general, immediately notifiable diseases are diseases exotic to Canada for which there are no control or eradication programs

**The CFIA can undertake control measures for such diseases when notified of their presence in Canada. This category also includes some rare indigenous diseases. A herd or flock of origin must be certified as being free from these diseases in order to meet import requirements of trading partners.**

**Only laboratories are required to contact the CFIA regarding the suspicion or diagnosis of one of these diseases.**

**Information must be forwarded by e-mail to the Animal Disease Surveillance Unit.**

**E-mail: [notification@inspection.gc.ca](mailto:notification@inspection.gc.ca)**

**Fax: 1-613-228-6675 (att: notification)**

**[D]**

**Annually notifiable diseases  
(for laboratories only)**

- **Annually notifiable diseases are diseases for which Canada must submit an annual report to the Office International des Épizooties (OIE) indicating their presence within Canada. In general, they are diseases that are present in Canada, but are not classified as reportable or immediately notifiable**

**All veterinary laboratories are required to comment on Canada's report to the OIE, which is prepared each February by the CFIA's Animal Disease Surveillance Unit.**

**For more information, you can visit the [CFIA Web site](http://www.inspection.gc.ca) at [www.inspection.gc.ca](http://www.inspection.gc.ca), or contact the nearest CFIA district veterinarian using the listing in the blue pages of your local telephone directory.**

**Importation of animal pathogens**

**The importation and use of animal and zoonotic pathogens is regulated by the *Health of Animals Act and Regulations*. Facilities working with animal or zoonotic pathogens must comply with the "Containment Standards for Veterinary Facilities." This can be found at: </english/sci/lab/bioe.shtml>.**

# Reportable diseases

- African horse sickness  
African swine fever  
Anaplasmosis  
Anthrax  
Bluetongue  
Bovine spongiform encephalopathy  
**Bovine tuberculosis (*M. bovis*)**  
**Brucellosis**  
Chronic wasting disease of cervids  
Contagious bovine pleuropneumonia  
Contagious equine metritis  
**Cysticercosis**

# Reportable diseases

- Equine infectious anaemia  
Equine piroplasmosis (*B. equi* and *B. caballi*)  
Foot and mouth disease (FMD)  
**Fowl typhoid (*Salmonella gallinarum*)**

# Reportable diseases

- **highly pathogenic avian influenza**
- hog cholera (classical swine fever)
- lumpy skin disease
- **Newcastle disease**
- peste des petits ruminants
- pseudorabies (Aujeszky's disease)
- **pullorum disease (*S. pullorum*)**
- rabies
- Rift Valley fever
- rinderpest
- scrapie
- sheep and goat pox
- swine vesicular disease
- trichinellosis
- Venezuelan equine encephalomyelitis
- vesicular stomatitis

# Immediately notifiable diseases

- Aino virus infection  
Akabane disease  
**Avian chlamydiosis (*C. psittaci*)\***  
**Avian encephalomyelitis\***  
**Avian infectious laryngotracheitis**

# Immediately notifiable diseases

- Besnoitiosis
- Borna disease
- Bovine babesiosis (*B. bovis*)
- Bovine ephemeral fever
- Bovine petechial fever
- Contagious agalactia
- Contagious caprine pleuropneumonia

# Immediately notifiable diseases

- Dourine
- Duck hepatitis**
- Egg drop syndrome (adenovirus)**
- Enterovirus encephalomyelitis (Teschen disease)
- Epizootic haemorrhagic disease
- Epizootic lymphangitis
- Equine encephalomyelitis, western and eastern\*
- Fluvinat-resistant Varroa mite
- Fowl cholera\***

# Immediately notifiable diseases

- Glanders
  - Goose parvovirus infection (Derzsy's disease)**
  - Heartwater (cowdriosis)
  - Hendra virus
  - Herpes virus of cervidae
  - Ibaraki disease
  - Japanese encephalitis
  - Louping ill
  - Nairobi sheep disease
  - [Nipah virus](#)

# Immediately notifiable diseases

- Screwworm (*Cochliomyia hominivorax* and *Chrysomya bezziana*)
- Small hive beetle (*Aethina tumida*)
- Theileriasis
- Tick-borne fever (*Cytoecetes phagocytophilia*)
- Tissue worm (*Elaphostrongylus cervi*)
- Trypanosomiasis (exotic to Canada)
- Turkey viral rhinotracheitis or swollen head disease in chickens**
- Viral haemorrhagic disease of rabbits
- Wesselsbron's disease
- [West Nile fever\\*](#)

# REPORTABLE DISEASES

\* Indigenous diseases tracked for export certification

## **Annually notifiable diseases**

**Acarine disease**

Actinomycosis

American foul brood

Atrophic rhinitis

**Avian infectious bronchitis**

**Avian leukosis**

**Avian salmonellosis**

**Avian spirochaetosis**

**Avian tuberculosis**

# REPORTABLE DISEASES

\* Indigenous diseases tracked for export certification

Blackleg

**Botulism**

Bovine genital campylobacteriosis

Bovine malignant catarrhal fever

Bovine viral diarrhoea or mucosal disease

# REPORTABLE DISEASES

\* Indigenous diseases tracked for export certification

- **Annually notifiable diseases**
  - Caprine arthritis-encephalitis
  - Caseous lymphadenitis
  - Coccidiosis**
  - Contagious ophthalmia
  - Contagious pustular dermatitis

# REPORTABLE DISEASES

\* Indigenous diseases tracked for export certification

- **Annually notifiable diseases**

Dermatophilosis

Distomatosis (liver fluke)

**Duck virus enteritis**

Echinococcosis or hydatidosis

Enterotoxaemia

Enzootic abortion

Enzootic bovine leucosis

Equine coital exanthema

Equine influenza

Equine rhinopneumonitis

European foul brood

# REPORTABLE DISEASES

\* Indigenous diseases tracked for export certification

## **Annually notifiable diseases**

- Foot-rot
- Fowl pox**
- Haemorrhagic septicemia
- Horse mange (*Psoroptes equi*)
- Equine viral arteritis
- Infectious bovine rhinotracheitis (IBR or IPV)
- Infectious bursal disease (Gumboro disease)**
- Infectious coryza**
- Intestinal salmonella infections**

# REPORTABLE DISEASES

\* Indigenous diseases tracked for export certification

## **Annually notifiable diseases**

**Listeriosis**

Maedi-visna

**Marek's disease**

Melioidosis

**Avian mycoplasmosis (*M. gallisepticum*)**

Myxomatosis

Nosematosis of bees

# REPORTABLE DISEASES

\* Indigenous diseases tracked for  
export certification  
**Annually notifiable diseases**

- Other clostridial infections
- Other pasteurelloses
- Ovine epididymitis (*Brucella ovis*)
- Ovine pulmonary adenomatosis
- Paratuberculosis (Johne's disease)
- Porcine reproductive and respiratory syndrome  
(PRRS)
- Q fever

## INDIGENOUS DISEASES

\* Indigenous diseases tracked for export certification

### **Annually notifiable diseases**

- *Salmonella abortus ovis*  
*Salmonella abortus equi*  
Sheep mange (scab)  
Strangles  
Swine erysipelas  
**Toxoplasmosis**  
Transmissible gastroenteritis (TGE)  
Trichomoniasis  
Tularaemia  
Ulcerative lymphangitis  
Vibronic dysentery  
Warble infestation

# Surveillance, Monitoring and Diagnosis

- 1. What diseases?
- Who makes the list?
- Is it the same list for all countries in the Caribbean.

# Financial support

- Are staff are available?
- Is equipment is available?

# Political support

- ?

# What diseases?

- Only contagious diseases?
- All infectious disease?
- All significant diseases?

# **Avian Diseases Reportable in** **Michigan**

# Avian Infectious Bronchitis:

- N. Coronavirus. Presumptive diagnosis can be made on the basis of serology, but a definitive diagnosis requires isolation of the virus.

# Avian Infectious Laryngotracheitis (ILT):.

- **(N)** Herpesvirus. Clinical disease or lesions compatible with wild-type ILT virus confirmed by either histologic demonstration of intranuclear inclusion bodies or electron microscopic demonstration of typical viral particles and virus isolation. For chickens, a flock owner eradication and control program; for turkeys, a cooperative USDA-NPIP eradication program

# **Avian Influenza:.**

- **(N) Orthomyxovirus. FOREIGN ANIMAL. DISEASE. Quarantine, eradication, clean and disinfect. State and USDA, APHIS, VS involvement depending upon serotype and pathogenicity**

# Avian Tuberculosis:.

- **(N) *Mycobacterium avium*. Presumptive diagnosis is based on demonstration of acid-fast bacilli in smears or sections from affected tissues. Definitive diagnosis requires isolation and identification of the organism by culture**

# Chlamidiosis (pet bird)

- **(N) *Chlamydia psittaci*, ornithosis. Presumptive diagnosis may be made based on serology (CF, ELISA), immunofluorescence, or immunohistochemical examination of swabs or tissues. Isolation and identification of *C. psittaci* is required for definitive diagnosis. Positive and suspected cases are investigated. Owners and sources are counseled on husbandry, treatment, prevention, and public health concerns. MDCH notified as appropriate**

# Chlamydiosis (poultry)

- **N) *Chlamydia psittaci*, ornithosis. Presumptive diagnosis may be made based on serology (CF, ELISA), immunofluorescence, or immunohistochemical examination of swabs or tissues. Isolation and identification of *C. psittaci* is required for definitive diagnosis. Public health significance. Quarantine, depopulate, clean and disinfect premises**

# Duck Virus Enteritis

- **(N) Herpesvirus, DVE, Duck Plague. Presumptive diagnosis can be made on the basis of gross and histopathologic lesions, with the demonstration of intranuclear inclusion bodies. Definitive diagnosis requires isolation and identification of the DVE virus. Affects domestic and wild species. Quarantine, depopulate, clean and disinfect premises. USDA, APHIS, VS involvement**

**Duck Virus Hepatitis: (N)**

**Picornavirus, Astrovirus, DVH.**

**Diagnosis can be made on the basis of characteristic gross and microscopic lesions and demonstration of the agent. Quarantine and recommend vaccination program for control.**

**Equine Encephalomyelitis:**

**Togavirus.**

**Cooperative program with MDCH and DNR.**

**Quarantine and possible depopulate.**

**Mosquito control is important.**

**Exotic Newcastle Disease:**

**(N) Paramyxovirus.**

**FOREIGN ANIMAL DISEASE.**

**See Newcastle**

**Fowl Cholera: (N)**

***Pasteurella multocida*, avian pasteurellosis.**

**Presumptive diagnosis can be made based on clinical signs, gross lesions and/or the microscopic demonstration of bipolar staining bacteria in smears from affected tissues. Definitive diagnosis is made on the basis of compatible clinical signs or lesions and the isolation and identification of *P. multocida*.**

**Fowl Pox:**

**(N) Avipoxvirus.**

**Presumptive diagnosis can be made by demonstration of cytoplasmic inclusion bodies with the morphology of poxvirus. Definitive diagnosis requires isolation of the poxvirus.**

**Fowl Typhoid: (N)**  
***Salmonella gallinarum.***

**Flocks are monitored by serology (agglutination test). Definitive diagnosis requires isolation and identification of *S. gallinarum.***

**Cooperative program with USDA-National Poultry Improvement Plan (NPIP).  
Quarantine, depopulate, and eradicate.**

**Highly Pathogenic Avian  
Influenza:**

Orthomyxovirus,

Fowl Plague.

**FOREIGN ANIMAL DISEASE.**

See Avian Influenza.

# **Infectious Avian Encephalomyelitis:**

**Picornavirus,  
Epidemic Tumor.**

**Primarily chickens, turkeys,  
pheasants, and coturnix quail.**

**Characterized by incoordination and  
tremors, especially of the head and  
neck in chicks and, in hens, a drop in  
egg production and hatchability.**

**Infectious Bursal Disease:**

**(N) Birnavirus,  
Gumboro Disease.**

**Diagnosis of clinical disease is based on characteristic signs and lesions.**

**Definitive diagnosis requires virus isolation and serotyping using virus neutralization along with cross protection tests.**

# **Marek's Disease: (N)**

**Herpesvirus.**

**Diagnosis of clinical disease can be based on characteristic clinical history, signs, gross pathology, and histopathology.**

# ***Mycoplasma gallisepticum*: (N)**

**MG, PPLO Infection,  
Chronic Respiratory Disease,  
Infectious Sinusitis.**

**Flocks are monitored using  
serology (plate agglutination,  
ELISA confirmed by HI).**

**Isolation and identification of *M.  
gallisepticum* is definitive.**

# **Newcastle Disease:**

Paramyxovirus (velogenic, mesogenic, lentogenic), avian pneumoencephalitis.

**FOREIGN ANIMAL  
DISEASE.**

# **Paramyxovirus:**

All paramyxoviruses in addition to Newcastle Disease.

For pigeon paramyxovirus, recommend vaccination program.

**Pullorum Disease:**

**(N) *Salmonella pullorum*.**

**Flocks are monitored by serology  
(agglutination test).**

**Definitive diagnosis requires isolation  
and identification of *S. pullorum*.**

**Cooperative program with USDA-NPIP  
and Michigan State University.**

**Quarantine, depopulate, eradicate.**

# ***Salmonella enteritidis enteritidis:***

- **Reportable only if one of the following has occurred:**
  - (1) If egg-associated human outbreak confirmed.**
  - (2) Clinical disease in flock.**
  - (3) Poultry flock outbreak trace through NPIP has occurred.**

**Cooperative USDA-state program. However, all phage type 4 suspicions or diagnoses must be reported, regardless of origin**



## **Other diseases**

**What action?**



