

MICHIGAN AVIAN REPORTABLE DISEASES

Avian Infectious Bronchitis (OIE Reportable Disease):

Coronavirus. Presumptive diagnosis can be made on the basis of serology, but a definitive diagnosis requires isolation of the virus. The diagnosing laboratory must report positive results from the previous calendar month to the Michigan Department of Agriculture (MDA) on the first business day of each month. The U.S. Department of Agriculture, Animal and Plant Health Inspection, Veterinary Services (APHIS) notified. No further action.

Avian Infectious Laryngotracheitis (ILT, OIE Reportable Disease):

Alphaherpesvirus. Clinical disease or lesions compatible with wild-type ILT virus confirmed by viral isolation (VI), demonstration of intranuclear inclusion bodies, polymerase chain reaction (PCR), or causative herpesvirus demonstrated directly in tracheal exudate by electron microscopy. Viral antigens may be detected by immunofluorescence. All premises will be quarantined. For commercial chickens, a flock eradication and control program must be initiated by the owner; for turkeys, a cooperative USDA-NPIP eradication program will be followed. APHIS and Michigan Allied Poultry Industry, Inc. (MAPI) notified upon identification of the disease. ***This is a potential Emergency Poultry Disease.*** Chick embryo vaccine may not be used in Michigan without approval from MDA. For more information, please see the Michigan Department of Agriculture's, Animal Diseases webpage at http://www.michigan.gov/mda/0,1607,7-125-48096_48097---,00.html.

Avian Influenza (Fowl Plague, Grippe Aviare; OIE Reportable Disease):

Orthomyxovirus (Low Pathogenicity and High Pathogenicity forms). **POTENTIAL FOREIGN ANIMAL DISEASE.** Diagnosed by virus isolation. The presence of antibodies can be determined by agar gel immunodiffusion (AGID) tests and Enzyme-Linked ImmunoSorbent Assay (ELISA). The presence of virus can be determined by virus isolation or real time and/or reverse-transcription polymerase chain reaction (RT-PCR) tests. Highly pathogenic strains are identified by their lethality in susceptible chickens. However, not all species of birds make precipitating antibodies. Hemagglutination inhibition tests are also used, but are subtype specific and may miss some infections. All strains are reportable to the Michigan Department of Agriculture, further control measures will depend on strain of the virus identified. Highly pathogenic strains will result in quarantine, depopulation, cleaning and disinfection of affected premises. Low pathogenicity strains will be managed according to the Low Pathogenicity Avian Influenza supplemental plan. MDA and APHIS involvement depending upon serotype and pathogenicity. APHIS, Michigan Department of Natural Resources (DNR), MAPI, Michigan Department of Community Health (MDCH) and the Michigan Zoological Network (MZN) notified when deemed appropriate, depending on the virus type. ***This is a potential Emergency Poultry Disease.*** For more information, please see the Michigan Department of Agriculture's, Animal Diseases webpage at http://www.michigan.gov/mda/0,1607,7-125-48096_48097---,00.html and www.michigan.gov/emergingdiseases.

Avian Mycoplasmosis (MG, PPLO Infection, Chronic Respiratory Disease, Infectious Sinusitis, OIE Reportable Disease):

Mycoplasma gallisepticum. Serological tests are widely used for diagnosis (rapid serum agglutination, ELISA and hemagglutination inhibition (HI)). Definitive diagnosis is made by isolation of the organism in a cell-free medium or by detecting its DNA directly in infected tissues or swab samples. MAPI will be notified by MDA upon identification of disease on premises. MDA will maintain information on further positive tests at that premises without continued notification to MAPI. No further action.

Avian Mycoplasmosis (MM):

Mycoplasma meleagridis. Serological tests are widely used for diagnosis (rapid serum agglutination, ELISA and HI). Definitive diagnosis is made by isolation of the organism in a cell-free medium or by detecting its DNA directly in infected tissues or swab samples. MAPI will be notified by MDA upon identification of disease on premises. MDA will maintain information on further positive tests at that premises without continued notification to MAPI. No further action.

Avian Mycoplasmosis (MS, OIE Reportable Disease):

Mycoplasma synoviae. Serological tests are widely used for diagnosis (rapid serum agglutination, ELISA confirmed by HI). Definitive diagnosis is made by isolation of the organism in a cell-free medium or by detecting its DNA directly in infected tissues or swab samples. MAPI will be notified by MDA upon identification of disease on premises. MDA will maintain information on further positive tests at that premises without continued notification to MAPI. No further action.

Avian Tuberculosis:

Mycobacterium avium. If there is a characteristic history of tuberculosis in the flock, or typical lesions of tuberculosis are present in birds at necropsy, the demonstration of acid-fast bacilli in smears or sections made from affected organs is sufficient for a presumptive diagnosis. Definitive diagnosis requires isolation and identification of the organism by culture must be attempted. Notification of disease to MAPI and MDCH will be handled on a case-by-case basis.

Chlamydiosis of pet birds (Ornithosis, OIE Reportable Disease):

Chlamydophila psittaci. Presumptive diagnosis may be made based on serology (Complement Fixation (CF), ELISA), PCR, immunofluorescence, or immunohistochemical examination of swabs or tissues. Isolation and identification of *C. psittaci* is required for definitive diagnosis. Positive and suspect cases are investigated. Owners and sources of animals are counseled on husbandry, treatment, prevention, and public health concerns associated with this disease. MDCH notified upon identification of disease. Identified cases will be handled on a case-by-case basis. ***This disease has public health***

significance. The *Compendium of Measures To Control Chlamydophila psittaci Infection Among Humans (Psittacosis) and Pet Birds (Avian Chlamydiosis)*, 2009 may be found at <http://www.nasphv.org>

Chlamydiosis in poultry (Ornithosis, OIE Reportable Disease):

Chlamydophila psittaci. Presumptive diagnosis may be made based on serology (CF, ELISA), PCR, immunofluorescence, or immunohistochemical examination of swabs or tissues or histopathology. Isolation and identification of *C. psittaci* is required for definitive diagnosis. This disease has public health significance. APHIS, MAPI, and MDCH notified upon identification of the disease. Identified cases will be handled on a case-by-case basis and may include quarantine, treatment, controlled depopulation, cleaning and disinfection of affected premises.

Duck Virus Enteritis (DVE, Duck Plague):

Herpesvirus. Presumptive diagnosis is based on a combination of assessing the clinical signs, gross pathology, and histopathology with the demonstration of intranuclear inclusion bodies. Definitive diagnosis is by the identification of the virus by viral isolation or PCR. Virus affects domestic and wild species, and may be endemic in wild species. Quarantine, depopulation, cleaning and disinfection of affected premises. APHIS, DNR, MAPI, and MZN notified on identification of disease (domestic or wild birds). ***This is a potential Emergency Poultry Disease.***

Duck Virus Hepatitis (DVH, OIE Reportable Disease):

Unclassified picornavirus (Type I), astrovirus (Type II), picornavirus (Type III). Diagnosis can be made on the basis of characteristic gross and microscopic lesions and demonstration of the agent. Positive results must be reported to MDA from the previous calendar month on the first business day of each month. APHIS and MAPI notified by MDA. Recommend vaccination program for control.

Equine Encephalomyelitis:

Togavirus: Cooperative program with MDCH and DNR. APHIS, DNR, MAPI, MDCH, and MZN notified on identification of disease. Movement restrictions implemented on premises; recommend flock depopulation. Mosquito control is important. Actions determined on a case-by-case basis.

Fowl Cholera (Avian pasteurellosis, OIE Reportable Disease):

Pasteurella multocida. Presumptive diagnosis may be made based on the observance of typical signs and lesions and/or on the microscopic description of bacteria showing bipolar staining in smears of tissues, such as blood, liver, or spleen. Diagnosis is made on the isolation and identification of *P. multocida*. APHIS, DNR, MAPI, and MZN notified on identification of disease in wild waterfowl. In commercial flocks, positive results must be reported to MDA from the previous calendar month on the first business day of each month. APHIS

notified by MDA. Further action may be taken on a case-by-case basis. ***This is a potential Emergency Poultry Disease in wild waterfowl.***

Fowl Typhoid (OIE Reportable Disease):

Salmonella gallinarum. Serological tests (agglutination test) are satisfactory for establishing the presence and estimating the prevalence of infection within a flock. Definitive diagnosis requires isolation and identification of *S. gallinarum*. Cooperative program with USDA-National Poultry Improvement Program (NPIP). APHIS and MAPI notified by MDA upon identification of the disease. Quarantine, depopulation, cleaning and disinfection of affected premises.

Infectious Bursal Disease (Gumboro disease, OIE Reportable Disease):

Avibirnavirus. Clinical disease can usually be diagnosed by a combination of characteristic signs and post-mortem lesions. Definitive diagnosis or detection of subclinical disease can be carried out by demonstration of a humoral response in unvaccinated chickens or by detecting the presence of viral antigen or viral genome in tissues. Histological examination of bursae may be helpful. The diagnosing laboratory must report positive results from the previous calendar month to MDA on the first business day of each month. APHIS notified by MDA. No further action.

Marek's Disease (MD, OIE Reportable Disease):

Alphaherpesvirus. Diagnosis is made on clinical signs, gross and/or microscopic lesions. Infection is detected by virus isolation and the demonstration of viral antigen or antibodies. The diagnosing laboratory must report positive results from the previous calendar month to MDA on the first business day of each month. APHIS notified by MDA. No further action.

Newcastle Disease (Exotic Newcastle Disease, Velogenic Newcastle Disease, Asiatic Newcastle Disease, Avian Pneumoencephalitis; OIE Reportable Disease):

Paramyxovirus (Lentogenic, Mesogenic, Velogenic). **POTENTIAL FOREIGN ANIMAL DISEASE.** Diagnosis is based on virus isolation, and further tests may be performed to determine pathogenicity and virus strain. Lab tests for diagnosis include serologic testing by hemagglutination (HA) or HI and virus detection by PCR and/or virus isolation. Isolation of Newcastle disease virus alone is rarely sufficient to confirm a diagnosis of disease. Virus characterization by pathogenicity testing or nucleotide sequencing is necessary to determine strain and pathogenicity – necessary information for control measures. Serology tests available include HI and ELISA. Vaccination and previous exposure to disease may affect serology results. The velogenic form of the disease is reportable to MDA by the diagnosing laboratory upon identification. APHIS, DNR, MAPI, and MZN notified by MDA upon identification of velogenic disease. Velogenic disease will result in quarantine, depopulation, cleaning and disinfection of affected premises. Positive results for the lentogenic and mesogenic forms of the disease are reported to MDA from the previous calendar month on the first

business day of each month. Further action may be taken on a case-by-case basis. MDA will notify the MZN of lentogenic and mesogenic forms.

Velogenic/exotic form of the disease is an Emergency Poultry Disease.

Pullorum disease (OIE Reportable Disease):

Salmonella pullorum. Serological tests (plate or tube agglutination tests) are satisfactory for establishing the presence and estimating the prevalence of infection within a flock. Definitive diagnosis requires isolation and identification of *S. pullorum*. Cooperative program with USDA-National Poultry Improvement Plan (NPIP). APHIS and MAPI notified upon identification of the disease. Quarantine, depopulation, cleaning and disinfection of affected premises.

Salmonella enteritidis enteritidis: Reportable only if one of the following has occurred: 1) if an egg-associated human outbreak is confirmed by MDCH, 2) clinical disease is diagnosed in a flock, or 3) poultry flock outbreak trace through the NPIP has occurred. This is a cooperative USDA-State program. All phage type-4 suspicions or diagnoses must be reported regardless of origin. APHIS and MAPI notified upon identification of the disease.

Toxic Substance Contamination

APHIS, DNR, MAPI, MDCH, and MZN will be notified upon identification of toxic substance contamination when the contamination impacts more than one flock.

Turkey Coronavirus (TCV, Blue Comb Disease, Mud Fever, Transmissible Enteritis, Coronal Enteritis):

Coronavirus. Diagnosis is based on VI, EM, serology, or detection of viral antigens (fluorescent antibody) or viral RNA in intestinal tissues, bursa of Fabricius, or intestinal contents. MAPI notified upon identification of the disease. Stop movement, quarantine, controlled depopulation, cleaning and disinfection of affected premises.

Turkey rhinotracheitis (TRT, Turkey Rhinopneumonitis, Avian Metapneumovirus, OIE Reportable Disease):

Diagnosis is made by serology (ELISA), particularly in unvaccinated flocks; or may be made by VI, but the degree of success depends on the strain of the virus, type and timeliness of sample collection. Electron microscopy, virus neutralization, and molecular techniques have been used to identify the virus. APHIS and MAPI notified upon identification of the disease. Stop movement, quarantine, controlled depopulation, cleaning and disinfection of affected premises.

West Nile Virus (WNV, West Nile Fever, OIE Reportable Disease):

Flavivirus. In clinically suspicious cases, diagnostic specimens from all animals, particularly birds, should be handled at biosafety containment level 3 following appropriate laboratory procedures. Bird tissues generally contain higher concentrations of virus than equine tissues. In birds, kidney, heart, brain, liver or

intestine can yield virus isolates. Cell cultures (using, for example, rabbit kidney or Vero cells) are used most commonly for virus isolation. Viral nucleic acid and viral antigens can be demonstrated in tissues of infected animals by reverse-transcription polymerase chain reaction (RT-PCR) and immunohistochemistry, respectively. APHIS, DNR, MAPI, MDCH, and MZN notified upon identification of the disease. Due to zoonotic potential of the disease, identified animals will be handled on a case by case basis.

DISEASE PRIORITY CLASSIFICATION

PRIORITY STAGE I MICHIGAN AVIAN REPORTABLE DISEASES

Diseases in this classification include diseases reportable to OIE, Foreign Animal Diseases (FAD), diseases that have some level of zoonotic potential, or diseases that have catastrophic consequences to avian flocks. MAPI will be notified on identification of these diseases, and action will be immediately taken.

- Avian Infectious Laryngotracheitis
- Avian Tuberculosis
- Chlamydiosis (Non-pet Poultry)
- Duck Viral Enteritis
- Equine Encephalomyelitis
- Exotic Newcastle Disease (Velogenic/exotic form only)
- Fowl Typhoid (*Salmonella gallinarum*)
- High Pathogenicity and Low Pathogenicity Avian Influenza (H5 and H7)
- Pullorum Disease (*Salmonella pullorum*)
- Toxic Substance Contamination
- West Nile Virus (Avian)

PRIORITY STAGE II MICHIGAN AVIAN REPORTABLE DISEASES

Diseases in this classification consist of diseases reportable to OIE and those diseases with a potential to be catastrophic to avian flocks under the right conditions. MAPI will be notified on identification of these diseases, and any action(s) taken will be on a case-by-case basis.

- Avian Influenza non-H5/H7
- Avian Mycoplasmosis (*Mycoplasma gallisepticum*)
- Avian Mycoplasmosis (*Mycoplasma meleagridis*)
- Avian Mycoplasmosis (*Mycoplasma synoviae*)
- Bluecomb Disease (Turkey Coronavirus)
- Duck Viral Hepatitis
- Fowl Cholera (*Pasteurella multocida*)
- Turkey rhinotracheitis
- *Salmonella* enteritidis (egg associated human illness, clinical illness in poultry or with a trace back incident).

PRIORITY STAGE III MICHIGAN AVIAN REPORTABLE DISEASES

Diseases in this classification consist of those diseases on the State Of Michigan Avian Reportable Diseases List which have the ability to cause high morbidity, but low mortality and those that are reportable to OIE for epidemiological purposes. These diseases will be reported to MDA by the diagnosing laboratory on a monthly basis.

- Avian Infectious Bronchitis
- Infectious Bursal Disease
- Marek's Disease
- Newcastle Disease (Lentogenic and Mesogenic forms)

Disease	Action	Reporting and Notification Process
Avian Infectious Bronchitis	No action taken.	Positive results from the previous calendar month must be reported to MDA on the first business day of each month. APHIS notified by MDA.
Avian Infectious Laryngotracheitis	Quarantine and response taken by MDA/APHIS.	MDA immediate upon suspicion. APHIS and MAPI by MDA upon confirmation.
Avian Influenza (depending on type)	Quarantine and response taken by MDA/APHIS.	MDA immediate upon suspicion. APHIS, DNR, MAPI, MDCH, and MZN by MDA depending on virus type.
<i>Mycoplasma gallisepticum</i>	No action taken.	MDA immediate upon suspicion. MDA notifies APHIS upon confirmation and MAPI if this is premises first case.
<i>Mycoplasma meleagridis</i>	No action taken.	MDA immediate upon suspicion. MAPI by MDA upon confirmation if this is premises first case.
<i>Mycoplasma synoviae</i>	No action taken.	MDA immediate upon suspicion. MDA notifies APHIS upon confirmation and MAPI if this is premises first case.
Avian Tuberculosis	Determined on a case by case basis.	MDA immediate upon suspicion. MDA notifies MAPI and MDCH upon confirmation.
Chlamydiosis (pet birds)	Determined on a case by case basis.	MDA immediate upon suspicion. MDA notifies MDCH upon confirmation.
Chlamydiosis (poultry)	Determined on a case by case basis.	MDA immediate upon suspicion. MDA notifies APHIS, MAPI and MDCH upon confirmation.
Duck Virus Enteritis	Determined on a case by case basis.	MDA immediate upon suspicion. MDA notifies APHIS, DNR, MAPI, and MZN upon confirmation (domestic and wild birds).
Duck Virus Hepatitis	No action taken.	Positive results from the previous calendar month must be reported to MDA on the first business day of each month. MDA notifies APHIS and MAPI.
Equine Encephalomyelitis	Determined on a case by case basis.	MDA immediate upon suspicion. APHIS, DNR, MAPI, MDCH, and MZN notified on confirmation.
Fowl Cholera	No action taken. Determined on a case by case basis.	Positive results from the previous calendar month must be reported to MDA on the first business day of each month (EXCEPTION: MDA notified immediately upon suspicion in wild waterfowl). MDA notifies APHIS .
Fowl Typhoid	Quarantine and response taken by MDA/ APHIS.	MDA immediate upon suspicion. MDA notifies APHIS, DNR, MAPI, and MZN upon confirmation (domestic and wild birds).
Infectious Bursal Disease	No action taken.	Positive results from the previous calendar month must be reported to MDA on the first business day of each month. MDA notifies APHIS.
Marek's Disease	No action taken.	Positive results must be reported to MDA from the previous calendar month on the first business day of each month. MDA notifies APHIS.
Newcastle Disease	Determined on a case by case basis.	MDA immediate upon suspicion. MDA notifies APHIS, DNR, MAPI, and MZN upon confirmation of velogenic disease. Positive results for lentogenic and mesogenic forms from the previous calendar month are reported to MDA on the first business day of each month. MDA notifies MZN of lentogenic and mesogenic forms.
Pullorum Disease	Quarantine and response taken by MDA/ APHIS.	MDA immediate upon suspicion. MDA notifies APHIS and MAPI upon confirmation.
<i>Salmonella enteritidis enteritidis</i>	Response taken by MDA/APHIS.	MDA immediate upon suspicion. MDA notifies APHIS and MAPI upon confirmation.
Toxic Substance Contamination	Determined on a case by case basis.	MDA immediate upon suspicion. MDA notifies APHIS, DNR, MAPI, MDCH, and MZN upon confirmation when multiple flocks are affected.
Turkey Coronavirus	Quarantine and response taken by MDA.	MDA immediate upon suspicion. MDA notifies MAPI upon confirmation.
Turkey Rhinotracheitis	Quarantine and response taken by MDA/APHIS.	MDA immediate upon suspicion. MDA notifies APHIS and MAPI upon confirmation.
West Nile Virus	Determined on a case by case basis.	MDA immediate upon suspicion. MDA notifies APHIS, DNR, MAPI, MDCH, and MZN upon confirmation.

Michigan Avian Reportable Disease Action and Notification Table