

## **Cleaning and Disinfecting Avian Quarantine Facilities Following Outbreaks of Newcastle Disease, Avian Influenza, or Other Communicable Avian Diseases**

### **1. Purpose and Background**

This guidance applies to the cleaning and disinfection of quarantine facilities used for commercial birds or poultry (including eggs for hatching of those commodities) after an outbreak of Newcastle disease (ND) or avian influenza (AI) of any subtype. It also establishes the timeline after which a quarantine facility that has undergone acceptable cleaning and disinfection may again be used for imported commercial birds or poultry (and eggs for hatching of those commodities).

(Note: At the facility operator's discretion, facility employees may perform cleaning and disinfection following outbreaks of other communicable diseases of avians, although APHIS does not require this.)

This document represents the Agency's current thinking on this topic. It does not create or confer any rights for or on any person and does not bind the U.S. Department of Agriculture (USDA) or the public. The information it contains may be made available to the public. While this document provides guidance for users outside Veterinary Services (VS), VS employees may not deviate from the directions provided herein without appropriate justification and supervisory concurrence.

### **2. Document Status**

- A. Review date: March 31, 2020.
- B. This document replaces the Attachment associated with Veterinary Services Memorandum No 591.31, which is rescinded. The content of this document reflects and enhances the implementation of program changes.

### **3. Reason for Reissuance**

This is a new document.

### **4. Authority and References**

- A. Authorities (*Code of Federal Regulations* (CFR)):

- [7 CFR 371.4](#)
- [9 CFR 71.10](#)
- [9 CFR 93.100](#)
- [9 CFR 93.106](#)
- [9 CFR 93.209](#)
- [9 CFR 93.210](#)

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### **B. References**

- [VSG 13401.1, “APHIS Approval and Oversight of Privately Owned Avian Quarantine Facilities in the United States.”](#)
- [Procedures for Secure Transportation of AI-Infected Poultry Carcasses.](#)
- [List of Environmental Protection Agency \(EPA\)-approved disinfectants for AI and ND.](#)
- [EPA-approved disinfectants for other types of pathogens.](#)

### **5. Audience**

VS employees, other Federal and State agencies, and members of the public.

### **6. Guidance**

#### **A. General (Non-Pathogen Specific) Cleaning and Disinfection Procedures**

- 1) Use of personal protective equipment (PPE)
  - a. All personnel performing cleaning and disinfection in an avian quarantine facility should use PPE as identified in a site-specific job hazard analysis in accordance with Occupational Safety and Health Administration requirements.
  - b. All staff should be familiar with the Material Safety Data Sheets (MSDS and/or SDS) for disinfectants used on the premises.
- 2) Prior to disinfection, all carcasses, debris, manure, feathers, substrates and other organic materials must be removed from the facility and disposed of via incineration or other approved method. (State regulations should be consulted for options for organic debris removal for other types of avian communicable outbreaks.) If incineration or other approved treatment is not performed onsite, a waste removal plan approved by the National Director for Animal Import Centers (NDAIC) or his or her designee, and that meets all relevant local, State, and Federal regulations, must be used. For additional information see [Procedures for Secure Transportation of AI-Infected Poultry Carcasses.](#)
- 3) Most disinfectants, regardless of delivery method, work best at temperatures above 65° F. The agent that causes avian influenza is heat labile; therefore, increasing temperatures of the disinfectant and/or the temperature in the facility increases the inactivation of the virus. When chlorine- and iodine-based disinfectants are used, the ambient temperature should not exceed 110° F. Adequate contact for disinfectants, as stated on the product label, is important for optimal performance.

**B. Cleaning and Disinfection Techniques for Pathogen Categories**

- 1) For viral diseases such as AI and ND, APHIS or facility personnel should:
  - a. Clean all visible organic debris from all surfaces and equipment within quarantine areas, and wash thoroughly with hot water and a good quality detergent (any type containing surfactants).
  - b. If isolettes are used, change all types of air filtration.
  - c. Rinse all surfaces of detergents and allow complete drying before using disinfectants. APHIS personnel will approve adequacy of cleaning before disinfection takes place.
  - d. Disinfect all surfaces and equipment within quarantine areas using permitted disinfectants (listed at the end of this document). Follow the manufacturer's label instructions, which include product concentration, temperature, and contact time. Although not specifically referenced in APHIS regulations, Virkon S and Maxima 256 (both EPA-registered disinfectants) are 99 percent effective against AI and ND viruses, and are recommended by NVSL. Disinfectants listed in 9 CFR 71.10, or referenced on the [EPA Web site](#) for use against paramyxoviruses and orthomyxoviruses, may also be used (see the EPA web site or reference 9 CFR part 71 for more information). Allow all surfaces to dry completely.
  - e. Heating may alternatively be used for disinfection; ambient temperatures within any quarantined area must be maintained at 100° F for 6 days for AI virus and 175° F for 6 days for ND virus.
  - f. After finishing any cleaning and disinfection after an AI or ND event, allow APHIS personnel to take samples from multiple locations within the areas of bird activity. Samples can be submitted to the NVSL as pooled (bundled into one plastic bag and shipped) or as individual samples with labels of specific locations collected. If submitting pooled samples that test positive, treat all sampled areas with comprehensive re-cleaning/disinfection until achieving a negative test result.
  - g. The NVSL may use polymerase chain reaction (PCR) test on samples submitted. If a performed PCR test has a positive result, the NVSL will use virus isolation as the definitive form of testing for AI and ND. APHIS personnel must specify the use of any other tests when submitting samples. The NVSL will report testing results to applicable APHIS personnel as set forth below.

2) For bacterial and rickettsia diseases:

The importer of the shipment or State authorities, as applicable, will decide how to treat or dispose of birds affected by bacterial/rickettsia pathogens. The importer or State authorities must share any treatment/disposal plans with APHIS. APHIS has no specific regulations for infections caused by pathogens other than AI or ND; therefore, applicable APHIS personnel may consult internal Agency resources for associated biosecurity concerns for other types of disease outbreaks. APHIS personnel may also follow the following guidance to achieve effective cleaning and disinfection:

- a. Ensure all carcasses, debris, manure, feathers, and other organic material are removed from the facility and disposed of per a plan created with all applicable local, State, and Federal agencies. Pesticide application may be needed if infestation of insects, rodents, or other pests exists.
- b. Clean organic debris from all surfaces and equipment within the quarantine areas and wash thoroughly with hot water and detergent containing surfactants.
- c. Rinse all surfaces of detergents and allow complete drying before using disinfectants.
- d. Disinfect all surfaces and equipment within quarantine areas using EPA-registered disinfectants for the pathogen of concern; follow all manufacturers' label instructions. Concentration, temperature, and contact time are critical for product efficacy.

3) Fungal diseases: The importer or State officials, as appropriate, will decide how to treat or dispose of birds with fungal diseases. The importer or State official must share any treatment or disposal plans with APHIS. APHIS has no specific regulations for infections caused by pathogens other than AI or ND; applicable APHIS personnel may consult internal Agency resources for associated biosecurity concerns for other types of disease outbreaks. APHIS personnel may use the following guidance to achieve effective cleaning and disinfection:

- a. Ensure all carcasses, debris, manure, feathers, and other organic material are removed from the facility and properly disposed in accordance with all applicable local, State, and Federal regulations.
- b. Clean all visible organic debris from all surfaces and equipment within the quarantine areas and wash thoroughly with hot water and detergent containing surfactants.
- c. Rinse all surfaces of detergents and allow complete drying before using disinfectants.

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- d. Disinfect all surfaces and equipment within quarantine areas using disinfectants registered by EPA for the pathogen of concern, while following all manufacturers' label instructions, which includes product concentration, temperature, and contact time.
- e. Allow all surfaces in the quarantine area to dry completely. Personnel may heat the quarantine area to 100<sup>o</sup>F for 72 hours in addition to cleaning to disinfect it.

Note: Ambient temperature conditions, including temperature and relative humidity, will affect pathogen survival times.

### C. Confirmatory Testing

- 1) Avian influenza and Newcastle disease outbreaks: After disinfection, APHIS personnel will conduct confirmatory testing of the facility's disinfected hard surface areas. Personnel will submit samples to the NVSL for the appropriate assay (virus isolation, PCR, etc.). A quarantine facility must remain empty for 2 negative tests, separated by 7 days, with NVSL reporting results to APHIS personnel supervising the facility. Personnel must continue cleaning, disinfection, and/or heat cycles if any positive results occur, with testing cycles of 7 days in between sample submissions.
- 2) Other infectious disease outbreaks: Although APHIS has no specific regulations for cleaning of infectious diseases caused by pathogens other than AI or ND, the APHIS veterinary medical officer supervising the facility should use discretion for other types of disease outbreaks. State regulations may be followed for other avian communicable diseases. Personnel should not release avians from quarantine if other infectious disease is present and any animals show clinical signs of illness. Whether the facility is depopulated as a result of such outbreaks, the facility operator may pursue cleaning and disinfection for disease-affected areas of the quarantine facility per the recommendations in this guidance or through a facility-developed protocol.
- 3) The importer will be billed for VS services that may be part of or in addition to those in the cooperative service agreement.

### D. Approved Disinfectants

- 1) Listed in 9 CFR 71.10:
  - a. Cresylic acid: 4 ounces in 1 gallon of water.
  - b. Liquefied phenol (87 percent strength): 6 fluid ounces in 1 gallon of water.
  - c. Chlorinated lime (30 percent available chlorine): 1 pound in 1 gallon of water.
- 2) Other disinfectants:

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- a. Virkon S
  - b. Maxima 256
- 3) Brand names for common disinfectants
- a. Sodium hypochlorite and other chlorine- based agents: bleach-Clorox®, Chloramine-T, Halazone®. Stock solution (works best in warm water): 1 ounce of Clorox® in 1 gallon water. For a larger batch, use 1 cup Clorox® in 8 gallons of water.)
  - b. 4 Way Quaternary Ammonium: Roccal®, Germex®, Warden®
  - c. Phenols: Lysol®, Pine-sol®, 1-Stroke Environ®

*Note: The EPA web site lists registered antimicrobial products with label claims for avian flu disinfectants. This site can be consulted for additional disinfectant resources/references. For use of cresylic acid as an official disinfectant, the National Director for Animal Import Centers (NDAIC), or his or her designee, must obtain, review, and approve specific manufacturer's documentation of proposed use prior to granting approval.*

## 7. Inquiries

Please direct any inquiries to:

Avian Import Specialist, Veterinary Services, National Import and Export Services (NIES)  
301-851-3300, option 2; or [VS-Live.Animals\\_Import.Permits@aphis.usda.gov](mailto:VS-Live.Animals_Import.Permits@aphis.usda.gov).