

VS Guidance 13403.2

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, ratites, or poultry (including hatching eggs of those commodities) after an outbreak of Newcastle disease (ND) or avian influenza (AI) of any subtype. It also establishes when a facility that has undergone acceptable cleaning and disinfection may be used again to quarantine imported commercial birds, ratites, poultry, or hatching eggs of those commodities.

For completeness, this guidance also provides information regarding cleaning and disinfection of quarantine facilities after outbreaks of other communicable diseases of avians that supports industry standards. Cleaning and disinfection are not required by the Animal and Plant Health Inspection Service (APHIS) in these cases, but APHIS recommends them as they support good husbandry practices.

It is the responsibility of the facility operator to ensure compliance with all applicable environmental regulations and permit requirements.

This guidance document represents the Agency's position on this topic and is intended solely as guidance. It does not have the force and effect of law, 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. Language suggesting that this guidance is mandatory (e.g., "shall," "must," "required," or "requirement") should not be construed as binding unless the terms quote from a statutory or regulatory requirement. The information this document contains may be made available to the public. While this document provides guidance for users outside APHIS, APHIS employees may not deviate from the directions provided herein without appropriate justification and supervisory concurrence.

2. Document Status

- A. Review date: 01/30/2028.
- B. This document replaces VSG 13403.1.

3. Reason for Reissuance

VS is issuing this document to update formatting and to reflect current policy.

4. Authority and References

- A. Authorities (*Code of Federal Regulations* (CFR)):
 - [7 CFR 371.4](#)

VS Guidance 13403.2

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

B. References:

- [NVAP Reference Guide: Cleaning and Disinfection](#)
- [List of Environmental Protection Agency \(EPA\)-registered disinfectants for AI and ND](#)
- [Highly Pathogenic Avian Influenza Emergency Response \(usda.gov\)](#)
- [EPA-registered disinfectants for other types of pathogens](#)
- [Cleaning and Disinfection Basics \(Virus Elimination\)](#)
- [APHIS Post C&D Environmental Sampling Guidance](#)
- [USDA APHIS | Diagnostic Testing at the NVSL](#)
- [United Nations Food and Agriculture Organization Carcass management guidelines – Effective disposal of animal carcasses and contaminated materials on small to medium-sized farms \(usda.gov\)](#)

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. Personnel engaged in cleaning and disinfection operations should wear, at a minimum, coveralls, boots, and gloves. Wear face protection (e.g., goggles, mask, face shield) appropriate for the product or application method (e.g., misting) used and when mixing disinfectant solutions. Wear masks in situations involving significant amounts of dust generation or zoonotic disease potential. Additional PPE, such as chemical-resistant suits (including both pants and jackets with hoods) or respirators, may be necessary for some situations (e.g., formaldehyde or acidic disinfectants) based on an analysis of the hazards present.
 - b. All staff should be familiar with the Material Safety Data Sheets (MSDS and/or SDS) for disinfectants used on the premises.

U.S. DEPARTMENT OF AGRICULTURE

Marketing and Regulatory Programs
Animal and Plant Health Inspection Service
Veterinary Services

VS Guidance 13403.2

2) Removal of organic material

Remove all carcasses, debris, manure, feathers, and other organic materials from the facility before disinfection and dispose of them via incineration or other approved method. Consult state regulations for options for organic debris removal for avian communicable diseases other than ND and AI. If incineration or other approved treatment is not performed onsite, use a waste removal and disposal plan approved by the VS Port Services Veterinarian in Charge (VIC) with oversight of the facility or designee and that meets all relevant local, state, and federal regulations. For additional information, see the [United Nations Food and Agriculture Organization's carcass management guidelines – Effective disposal of animal carcasses and contaminated materials on small- to medium-sized farms \(usda.gov\)](https://www.usda.gov/press-releases/2015/05/15/USDA-Announces-Effective-Disposal-of-Animal-Carcasses-and-Contaminated-Materials-on-Small-to-Medium-Sized-Farms).

3) Disinfectants

Most disinfectants, regardless of delivery method, work best at temperatures above 65° F. The agent that causes AI is heat labile; therefore, increasing temperatures of the disinfectant and/or the temperature in the facility increases virus inactivation. Consult the product label for specific temperature requirements. Dehydration and sunlight ultraviolet rays rapidly destroy the ND virus. When using chlorine- and iodine-based disinfectants, do not let the ambient temperature exceed 110° F. Adequate contact for disinfectants, as stated on the product label, is important for optimal performance. Use the right disinfectant to eliminate the virus in question. See Section 6. D. for the list of approved disinfectants.

B. Cleaning and Disinfection Techniques for Pathogen Categories¹

1) For **viral** diseases such as AI and ND, APHIS or facility personnel should:

- a. Remove all visible organic debris (soil, manure, bedding, and feed) from all surfaces and equipment within quarantine areas and wash thoroughly with hot water (at temperatures available in the facility) and a good quality detergent (any type containing surfactants).
- b. If using isolettes, clean and disinfect the interior and exterior and change all types of air filtration. Change filtration per manufacturer's instructions.
- c. Rinse all surfaces of detergents and allow complete drying before using disinfectants. APHIS personnel will approve cleaning adequacy before disinfection occurs.

¹ For additional guidance, see [NVAP Reference Guide: Cleaning and Disinfection](#).

U.S. DEPARTMENT OF AGRICULTURE

Marketing and Regulatory Programs
Animal and Plant Health Inspection Service
Veterinary Services

VS Guidance 13403.2

- d. Disinfect all surfaces and equipment within quarantine areas using approved disinfectants (listed in Section 6. D. 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. Disinfectants listed in [9 CFR 71.10](#) or referenced on the [EPA Website](#) for use against paramyxoviruses and orthomyxoviruses may also be used. Allow all surfaces to dry completely.
 - e. Alternatively, use heating for disinfection, maintaining ambient temperatures within any quarantined area at 100° F-120° F for no fewer than three (3) consecutive days and a maximum of seven (7) days in total for AI virus and 175° F for six (6) days for ND virus.
 - f. Once completing cleaning and disinfection after an AI or ND event, APHIS personnel must collect samples from multiple locations within the areas of bird activity. Refer to the sample collection guidance in: [APHIS Post C&D Environmental Sampling Guidance](#).
 1. Personnel submit samples to the National Veterinary Services Laboratories (NVSL) for the appropriate disease, specifying that the samples were collected after cleaning and disinfection and by collection date.
 2. Where polymerase chain reaction (PCR) test is used for screening, NVSL tests samples with a positive PCR result by virus isolation to identify viable virus. APHIS personnel must specify the use of any other tests when submitting samples if additional testing is desired. NVSL reports test results to applicable APHIS personnel.
 - g. Sampled areas with non-negative results on virus isolation must be re-treated by comprehensive re-cleaning/disinfection until achieving a negative test result by virus isolation. No further testing is needed if no viable virus is detected.
- 2) For **bacterial** and **rickettsial** diseases:
- a. The importer of the shipment or state authorities, as applicable, decide how to treat or dispose of birds affected by bacterial/rickettsial pathogens. The importer or state authorities must share any treatment/disposal plans with APHIS. Do not release sick or known diseased birds from quarantine. If the importer elects no treatment, the birds should be refused entry. APHIS will give the importer a written exit date for bird removal.

U.S. DEPARTMENT OF AGRICULTURE

Marketing and Regulatory Programs
Animal and Plant Health Inspection Service
Veterinary Services

VS Guidance 13403.2

- b. APHIS has no specific regulations for infections caused by pathogens other than AI or ND. APHIS personnel may consult internal Agency resources for associated biosecurity concerns for other types of disease outbreaks.
 - c. APHIS personnel may also follow the guidance below to achieve effective cleaning and disinfection:
 - 1. Remove all carcasses, debris, manure, feathers, feed, and other organic material from the facility and dispose of it 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.
 - 2. Remove organic debris (soil, manure, bedding, and feed) from all surfaces and equipment within the quarantine areas and wash thoroughly with hot water and detergent-containing surfactants.
 - 3. Rinse all surfaces of detergents and allow complete drying before using disinfectants.
 - 4. 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) For **fungal** diseases
- a. The importer or state officials, as appropriate, 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.
 - b. APHIS has no specific regulations for infections caused by pathogens other than AI or ND. APHIS personnel may consult internal Agency resources for associated biosecurity concerns for other types of disease outbreaks.
 - c. APHIS personnel may also use the following guidance to achieve effective cleaning and disinfection:
 - 1. Remove all carcasses, debris, manure, feathers, and other organic material from the facility and dispose of it in accordance with all applicable local, state, and federal regulations.
 - 2. Remove all visible organic debris (soil, manure, bedding, and feed) from all surfaces and equipment within the quarantine areas and wash thoroughly with hot water and detergent-containing surfactants.
 - 3. Rinse all surfaces of detergents and allow complete drying before using disinfectants.

U.S. DEPARTMENT OF AGRICULTURE

Marketing and Regulatory Programs
Animal and Plant Health Inspection Service
Veterinary Services

VS Guidance 13403.2

4. Disinfect all surfaces and equipment within quarantine areas using EPA-registered disinfectants for the pathogen of concern while following all manufacturers' label instructions, including product concentration, temperature, and contact time.
5. Allow all surfaces in the quarantine area to dry completely. To disinfect it, personnel may heat the quarantine area to 100^o F for seventy-two (72) hours in addition to cleaning.

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

C. Removing Facility Restrictions and Return to Operations

- 1) AI and ND outbreaks: After disinfection, APHIS personnel will conduct confirmatory testing of the facility's disinfected hard surface areas. A quarantine facility must remain empty for two (2) negative tests, separated by seven (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 seven (7) days between sample submissions.
- 2) Outbreaks of other avian communicable diseases: APHIS has no specific regulations for cleaning and disinfection of communicable diseases caused by pathogens other than AI or ND. The APHIS veterinary medical officer supervising the facility and APHIS VIC with facility oversight should use their discretion regarding return to operations, with respect to any applicable state regulations and in consultation with APHIS VS Live Animal Import staff as necessary. Importers should be advised that poorly implemented cleaning and disinfection procedures can affect future shipments held in the facility. If the importer is unclear of the adequacy of the cleaning, they should consult industry experts.
- 3) The importer will be billed for VS services, including sample testing at NVSL, that may be part of or in addition to those in the Cooperative Service Agreement or Memorandum of Understanding between APHIS and the approved quarantine facility.

D. Approved Disinfectants

- 1) Listed in 9 CFR 71.10:
 - a. Cresylic acid: Four (4) ounces in one (1) gallon of water.
 - b. Liquefied phenol (Eighty-seven (87) percent strength): Six (6) fluid ounces in one (1) gallon of water.

U.S. DEPARTMENT OF AGRICULTURE

Marketing and Regulatory Programs
Animal and Plant Health Inspection Service
Veterinary Services

VS Guidance 13403.2

- c. Chlorinated lime (Thirty (30) percent available chlorine): One (1) pound in one (1) gallon of water.
- 2) Other disinfectants:
 - 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): One (1) ounce of Clorox® in one (1) gallon water. For a larger batch, use one (1) cup Clorox® in eight (8) gallons of water.
 - b. 4 Way Quaternary Ammonium: Roccal®, Germex®, Warden®
 - c. Phenols: Lysol®, Pine-sol®, 1-Stroke Environ®

Note: The [EPA website](#) lists registered antimicrobial products with label claims for avian flu disinfectants. Consult this site for additional disinfectant resources and references. For use of cresylic acid as an official disinfectant, the VIC with oversight of the facility or designee must obtain, review, and approve specific manufacturer's documentation of proposed use before granting approval.

7. Inquiries

Please contact VS Strategy and Policy, Live Animal Imports by phone at (301) 851-3300 or by email LAIE@usda.gov with any questions or concerns related to this document.