

HPAI Outbreak 2014–2015

Post C&D Environmental Sampling Guidance

(Guidance Issued August 19, 2015)



Policy Update

- Provides responders with revised procedures learned from the 2014–2015 highly pathogenic avian influenza (HPAI) outbreak.

Key Components

- Scope and Intended Use
- Protocol for Environmental Sample Collection
 - Collection and Handling Procedure
- Supply Appendix

Scope and Intended Use

This document applies to commercial poultry premises; the protocol provides guidance to State Animal Health Officials (SAHOs), APHIS officials, and Incident Management Teams (IMTs) for environmental sample collection and testing.

Biosecurity practices (on-site), including the use of personal protective equipment (PPE), will be followed for temperature taking, sample collection, and final inspection for quarantine release, as directed by State and APHIS officials, and/or the IMTs.



Source: ISU CFSPH

Note: There is no requirement or option to release compost based upon environmental sampling and diagnostic testing of compost piles.

Protocol for Environmental Sample Collection

Important Considerations

- Virus load can also impact the likelihood of detecting virus on a particular surface.
- Submissions other than official cleaning and disinfection (C&D) testing may be subject to user fees.

Applicability

- Surfaces, waterers, feeders, other items inside the barn (refer to #4 below).



Collection and Handling Procedure

1. **Schedule sample collection** for Monday, Tuesday, Wednesday, and **notify lab when to expect samples** to ensure samples are processed without delay. **Note:** If samples arrive on Friday, they may sit at the lab over the weekend resulting in poor sample quality (low volume, bacterial contamination etc.), causing prolonged test turnaround, and compromising analytical results. Contact National Animal Health Laboratory Network (NAHLN) lab for specific schedules and around holidays.
2. **Keep BHI cool at all times.** Maintaining the cold chain is crucial; supplied media may not contain antibiotics. *Avoid freezing swab material.*
3. **Use a clean tube of Brain Heart Infusion (BHI) media to moisten swab,** sample surface as indicated in #4–6, and **collect swab sample in a separate tube** maintaining the volume of media provided. Do not collect sample with dry swabs.
 - a. Following sample collection:
 - i. vigorously swirl the swab in BHI media,
 - ii. squeeze excess liquid from swab inside specimen tube, and
 - iii. discard the swab in the appropriate container.
 - iv. **The entire swab suspension is submitted for diagnostic testing.**

Note: Swabs left inside the sample tube may result in media being drawn into the swab, leaving limited material for diagnostic testing.

Collection and Handling Procedure (Continued)

4. **Collect samples** from at least 10 selected locations in each house.
 - a. *Facilities vary widely* within and across sectors; houses/barns are different, therefore it is important for those collecting samples to determine sampling appropriate to the facility.
 - b. *Good areas to sample:*
 - i. Heavy contact with birds, manure, and oral secretions
 - ii. Frequently touched surfaces: switches, electric panels, handles, doors, etc.
 - iii. Areas within the barn: floors, walls, feeders, circulating and exhaust fans
 - c. *For layer facilities consider:*
 - i. Cages, surfaces associated with egg processing, pits, and surfaces associated with manure handling.
 - d. *For turkey facilities consider:*
 - i. Drinkers, sills, curtain, and frames.

5. **Each swab may be used to sample several surfaces by type (e.g., multiple wall areas) or specific area of the barn.** Alternatively, multiple swabs may be used to obtain samples from a sample type or area and pooled together in a single BHI tube. Avoid creating an overly, dark, sludgy, or viscous sample.

Collection and Handling Procedure (Continued)

6. **Optional sample collection:** may be useful for cages or other uneven surface sampling.
 - a. Use 4x4 gauze pads or plain dry Swiffer cloth for pooled surface sample of the barn. *Please submit only the liquid media from the sample collected for laboratory testing (see below).*
 - i. A similar approach can be used for using boot swabs (such as those used for environmental testing for Salmonella) to obtain a pooled floor sample or from gloves of the sample collector.
 - ii. The gloves of the collector may also be sampled if desired.
 - b. *Moisten gauze or Swiffer cloth with BHI media (use a separate clean tube of media— do not saturate— refer to #3 above) and collect sample.*
 - c. *Place gauze or Swiffer cloth in quart size Ziploc bag and pour sufficient clean BHI media into bag and wet the pad (2–4 tubes), seal bag while expelling air out and gently apply manual pressure for 10–15 seconds to release sample into the liquid media.*
 - d. *Drain media into empty sample collection tube by tilting sealed bag and cutting a small portion (~4–6mm) of the opposite corner; collect at least 2 mls and no more than 3 mls.*
 - e. *Disinfect scissors between samples.*
 - f. *Appropriately discard sample pad and Ziploc bag.*

Collection and Handling Procedure (Continued)

7. Label each tube with the date, house, and sample number.
8. Disinfect exterior of tubes.
9. Place one label on tube (as pictured below).



10. Place matching label on laboratory submission form.
11. Indicate farm name and premises ID on the lab accession form; if official testing, indicate “OFFICIAL post C&D samples.”
12. Bag the sample tubes and place in a pre-chilled cooler with correct lab accession form.
13. Repeat for each house.
14. Return cooler to NAHLN lab as soon as possible for sampling processing. Provide submission form and tracking number to lab as soon as possible.

Collection and Handling Procedure (Continued)

- 15. Polymerase chain reaction (PCR) with an internal control to monitor for PCR inhibitors may be useful adjunct to virus isolation (VI) for post-cleaning environmental testing.** Samples can be testing at the NAHLN laboratory (NAHLN deviation needed). NAHLN labs and personnel may refer to “*2015 Testing Guidance for Post C&D Environmental Samples*” (NVSL [WI-AV-0045](#)) for further details.
- 16. Report results to the State Veterinarian.**



Supply Appendix

- As directed by SAHOs, APHIS officials, and/or IMT, appropriate PPE will be used, e.g.,:
 - Tyvek Coveralls
 - Shoe Covers
 - Hairnet
 - Gloves
 - Respirator
 - Eye Protection
- Darcon swabs with plastic handles (include 15–20 percent more in addition to planned samples).
- Sample collection tubes containing BHI or other appropriate media (**Note:** Extra media is needed to moisten swabs. Include at least 50 percent more media than number of samples planned; up to 2x more are needed if planning to use gauze/Swiffer sampling options).
- Barcode ID stickers for sample tubes.
- Empty tube holder.
- Pre-filled accession form with house numbers.
- Larger clear plastic bags to contain samples in the cooler.
- Cooler with gel ice packs.
- Permanent markers, pens.
- Spray disinfectant, paper towels, and hazardous waste trash bag.
- Optional materials:
 - 4x4 gauze pads or plain white dry quilted Swiffer cloths,
 - Whirlpak or quart size Ziploc freezer bags to release sample into media, and
 - Scissors to clip small corner from plastic bag to drain liquid.

For More Information

- [APHIS FAD PReP Website](#)
- Recommendations for Collecting Specimens from Poultry for Viral Diagnostic Testing
 - [WI-AV-0020](#) (also provides appropriate sample collection media options)
- Post C&D Environmental Sampling Guidance
 - [WI-AV-0045](#)