

Guidelines for Disinfection of Avian Influenza Viruses using Microgen DISINFX D-125

Written by Benjamin Tanner, Ph.D, 2/3/08

Author Background:

Benjamin Tanner is the president of Antimicrobial Test Laboratories, a commercial microbiology laboratory. He holds a Ph.D. in Microbiology and Immunology and has worked in the disinfectant industry for several years. He is the author of the book, "Legal Aspects of Infectious Diseases." Before launching Antimicrobial Test Laboratories, he worked as a microbiologist for the Clorox Company (Oakland, CA), developing disinfectants and other antimicrobial consumer products.

Note About Deference to Instructions Promulgated by Regulatory Agencies:

This document is not intended to supersede or replace instructions for disinfection of avian influenza promulgated by local or global regulatory agencies and organizations.

Background – D-125™ Kills Many Strains of Influenza, Including Avian Influenza:

Avian Influenza, and especially Avian Influenza H5N1 is a major threat to global health¹. Microgen's DISINFX D-125™, which is a dilutable, quaternary ammonium disinfectant, has been proven to be efficacious against the following strains of influenza virus on surfaces in laboratory studies:

Influenza A2/Japan/305 (Gibraltar Laboratories Report #G88964.19)
Avian Influenza/Turkey/Wisconsin virus (Gibraltar Laboratories Report #G88694.A)
Influenza A/Victoria/(H3N2) virus (Gibraltar Laboratories Report #G88694.10)
Influenza A/Brazil (Gibraltar Laboratories Report #G88694.2A)

Different strains of influenza A virus do not have substantially different susceptibilities to disinfection. Thus, the studies above indicate that D-125™ disinfectant is efficacious against the strain of influenza virus of most current concern, H5N1 or "bird flu."

Note: D-125™ disinfectant is also effective against more than 100 additional pathogens, many of which are associated with birds (Such as *Salmonella* and *Campylobacter*)².

Signs that Birds may be Infected with Avian Influenza:

(adapted from www.OSHA.gov)³

- Sudden death without any signs
- Lack of coordination
- Purple discoloration of the wattles, combs, and legs
- Soft-shelled or misshapen eggs
- Lack of energy and appetite
- Diarrhea
- Swelling of the head, eyelids, comb, wattles, and hocks
- Nasal discharge
- Decreased egg production
- Coughing, sneezing

Instructions for Disinfection of Surfaces That May be Contaminated with Avian Influenza Virus⁴:

- Take precautions to ensure that you do not inadvertently infect yourself with avian influenza while cleaning and disinfecting potentially contaminated areas by donning the following protective gear.
 - a. Protective clothing, including coveralls
 - b. N95 respirator
 - c. Thick rubber/latex “outer” gloves
 - d. Latex or nitrile “inner” gloves
 - e. Rubber or polyurethane boots that can be disinfected or disposable protective foot covers.
 - f. Additional protection may be required depending on the extent of suspected contamination.
- Obtain Cleaning Supplies
 - a. Scrub brush
 - b. Basin for rinsing shoes
 - c. Spray bottle and bucket containing D-125™ disinfectant, diluted 1:64, per manufacturer instructions
- Clean and Disinfect Contaminated Surfaces
 - a. Clean gross filth from all potentially contaminated areas using scrub brush and liberal amounts of D-125™ disinfectant solution. Before disinfection of surfaces can take place, organic matter (bird feces, litter) must be removed (surfaces must be clean in order to be disinfected). To prevent the spread of the virus during this phase, D-125™ should be applied liberally and frequently to the litter and all potentially contaminated surfaces. Take care not to saturate the litter, however, since the dripping/running liquid could spread virus to other areas.
 - b. Disinfect all surfaces suspected to be contaminated, especially bird cages, crates, bins, boxes, baskets, and the surfaces of vehicles used to transport birds. Disinfection of these surfaces can be accomplished by applying the appropriately diluted product liberally to the clean surface and allowing it to remain there for at least 10 minutes.
- Dispose of litter, feces, and other bulky items that cannot be disinfected by burying at least 1 meter deep or by incineration.
- After cleaning and disinfecting areas suspected of contamination, disinfect boots and gloves. Then, shower and wash clothes with soap and hot water, taking special care not to breathe in dusts from clothing, touch the face or eyes, or transfer contaminated soil or other matter outside of the disinfected area.

Note: If an outbreak of avian influenza is occurring, all surfaces in all areas that birds have inhabited as well as all bird carcasses should be considered to be contaminated with the virus, and *special precautions should be used for disinfection, in accordance with instructions from local regulatory agencies.*

References:

1. World Health Organization. Avian Influenza (“bird flu”) Fact Sheet. Downloaded 2/3/08. (http://www.who.int/mediacentre/factsheets/avian_influenza/en/).
2. Microgen D-125™ USEPA Master Label. May 17, 2007. Downloaded 2/3/08. (<http://www.microgeninc.com/milestones/PDF/D-125%20Master%20Label.pdf>)
3. Occupational Safety and Health Association. Avian Influenza – Protecting Poultry Workers at Risk. Downloaded 2/3/08. (<http://www.osha.gov/dts/shib/shib121304.html>).
4. USAID. Avian Influenza Commodities Training Guide, Module 2, Decontamination. Downloaded 2/3/08. (<http://avianflu.aed.org/docs/mod2-2.pdf>).