

Cleaning and Disinfecting Your Poultry House

Michael J. Darre, Ph.D., P.A.S
Extension Poultry Specialist
University of Connecticut

As spring approaches, the time is almost here to do a good cleaning and disinfecting of your poultry facilities after the long winter. This is especially true if you are considering bringing in new birds or replacing your flock, be they layers, meat birds or show birds. This is a major part of a good biosecurity program. Marek's disease, mycoplasma, respiratory viruses, E.coli, and other bacteria and mites must be reduced or eliminated by proper cleaning and decontamination to prevent poultry disease and/or production problems. More importantly is the control of *Salmonella enteritidis* (SE). SE, as with many other salmonellae, may, without necessarily causing obvious disease in the chicken itself, colonize the intestinal tract. This may lead to the organism invading other tissues and eventually into the reproductive tract and ovary, contaminating the egg itself. Eggs contaminated by SE held at room temperature may allow the growth in numbers so as to cause illness in those eating undercooked contaminated eggs.

Thus, to reduce SE and other health risks, a complete dry cleaning, washing and disinfection (C&D) of the poultry house after each flock or at minimum once each year is recommended. A small piece of debris provides remarkable protection from salmonella-killing disinfectants.

Successful C&D is hard work and time consuming and requires systematic completion of several sequential steps. Every step is important. Skipping one step or doing an incomplete job at any point will make the next step harder and lead to failure.

Remove all birds from the building to be cleaned. This may require a temporary shelter for a several days while the building is being cleaned and disinfected.

Remove all equipment that can be cleaned in another place, such as feeders and waterers and thoroughly clean and disinfect them.

Wear proper attire for cleaning and disinfecting. Waterproof shoes or boots, a rain suit, rubber kitchen gloves and safety goggles or glasses protect you from accidental spills and overspray.

Dry Cleaning

Sweep or blow dust and other loose dirt off ceilings, light fixtures, wall, cages or nest boxes, fans, air inlets etc. onto the floor. Remove all feed from feeders. Scrape manure and accumulated dust and dirt from perches and roosts. Remove all litter from the floor. Litter can be added to a compost pile. Sweep the floor to remove as much dry material as possible. With a small coop, a wet-dry shop vacuum does a good job of removing this material. However, be careful to clean the filter often as the fine dust from the coop may easily clog the filter and make the vacuum work harder or lead to burn out of the motor.

Wet Cleaning

Turn the power off to the building prior to using any water for cleaning. Wet cleaning is done in three steps: soaking, washing and rinsing. Warm or hot water will do a better job getting through organic matter than cold water. Cheap neutral detergents are suitable. A neutral detergent has pH value of 6 - 8. These are generally the dish detergents used for hand-washing of dishes. There are many different brands/types of these detergents on the market. This is good for making a soaking solution. Use as indicated on the label for making a solution for general cleaning.

Soaking

Soak the heavily soiled areas thoroughly (perches and roosting areas, floors, etc.). Use a low pressure sprayer to totally soak all surfaces. Soak until the accumulated dirt and manure has softened to the point it is easily removed.

Washing

Wash every surface in the building, especially window sills, ceiling trusses, wall sills and any surface where dirt and dust may accumulate. The washing solution can be either a neutral detergent or an alkaline detergent. Alkaline substances vary in their strength with the strongest causing burns and internal injuries if swallowed. A mild alkali is baking soda (sodium bicarbonate), moderate alkalis include household ammonia, borax and trisodium phosphate (TSP). Strong alkalis include washing soda (sodium carbonate) and lye (caustic soda). Mix in Hot water (160°F or hotter is best). Use as indicated on the label for general cleaning.

A high pressure sprayer is good for this step, but manual scrubbing with a moderately stiff brush is one of the best ways to insure a thorough cleaning. Inspect manually to be sure you have removed all of the dirt and manure from all surfaces. Make sure you carefully clean electrical parts. You may have to remove cover plates and vacuum those areas.

If you have metal surfaces with hard water scale, then you will need to use an acid detergent on those surfaces to remove the scale. Acid detergents involves acid as the major component which is used in dissolving mineral deposits (Calcium and Magnesium precipitates) or hard water deposits from equipment surfaces.. Two main groups of acid detergents are: Inorganic (HCL, H₂SO₄) , and Organic (Vinegar, Citric Acid).

Rinsing

A final rinse immediately after washing is recommend to remove any harmful residues and to obtain a spotless building. Mop up puddles as they can rapidly become breeding grounds for salmonellae.

Drying

Thoroughly dry the building if disinfection cannot immediately follow rinsing. Open all windows and

ventilation openings. Use a blower or fan if available. Cleaning on a dry, sunny day helps in the drying process.

Repairs

Make any repairs to the structure prior to the final disinfection step. Seal any rodent entry holes at the outside and inside the building. Apply a small amount of spray foam insulation into the hole, then pack in fine steel wool and top with more spray foam.

Disinfecting

Disinfectants may be applied only after the building and equipment have been thoroughly cleaned and ideally should be done immediately following rinsing. Disinfectants can be applied by sprays, aerosols or fumigation. For most small flock facilities, using a garden type sprayer is the easiest method. The types of disinfectants generally used around farms are the Phenolic compounds (e.g., Pine-sol[®], One Stroke[®], Osyl[®]), Iodine or iodophors, (e.g., Betadine[®] and Weladol[®]), Chlorine compounds (e.g., Clorox[®], generic bleach), Quaternary Ammonium compound (e.g., Roccal D Plus[®]) and Oxidizing compounds (e.g., Virkon S[®], Oxy-Sept 333[®]).

Follow the manufacturer's directions for mixing and dilution of these disinfectants. Apply at the rate of one gallon of diluted disinfectant per 150-200 square feet of surface area. A garden type sprayer works well for this application.

Soak waterers and feeders in a 200 ppm chlorine solution (1 tablespoon chlorine bleach per gallon of boiling water).

Go to the University of Vermont general farm biosecurity web page for more information on the use of disinfectants around the farm.

References:

New England Poultry Letter Vol 4 # 6 November/December 1990

Commercial Chicken Production Manual, 4th Ed. Mack O. North and Donald D. Bell. 1990, Van Nostrand Reinhold. ISBN 0-442-31882-2

Storey's Guide to Raising Chickens, Gail Damerow 2010. Storey Publishing. ISBN 978-1-60342-469-1

University of Vermont General Farm Biosecurity Practices—Disinfection in On-Farm Biosecurity

[http://www.uvm.edu/~ascibios/?Page=General/Disinfection in On Farm Biosecurity.htm](http://www.uvm.edu/~ascibios/?Page=General/Disinfection%20in%20On%20Farm%20Biosecurity.htm)