

American Association of Avian Pathologists

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Committee on Salmonellosis

OUTLINE: SUGGESTIONS FOR SALMONELLA CONTROL IN POULTRY GROWN FOR SLAUGHTER

Purpose: This outline presents promising suggestions for the reduction of salmonella contamination of poultry grown for slaughter rather than specific instructions which may not fit all operations. It is not an eradication program. It is not expected that all parts would go into effect now. Additionally, industry men would need to monitor for salmonella in their product and choose those methods which, according to their experiences, epidemiological investigations and research projects, produce the most significant impact on reduction.

The suggestions are listed roughly in order of their current promise to help prevent and reduce salmonella in live poultry. Suggestions generally possible now are preceded by an asterisk(*).

Better control in feed is central to progress inasmuch as feed can introduce salmonella at two key points: (1) contamination of poultry from day one to day of slaughter and (2) contamination of breeders and subsequent spread to progeny before delivery to growing farms.

1. Whenever possible or practical obtain feed and feed components, for example rendered product, from manufacturers with an active program for the prevention and control of salmonella. Feed must be carefully protected against moisture and recontamination during storage and use on the farm.
Reasons: The important role played by feeds in the introduction to and spread of salmonellas among poultry is now beyond a doubt. It appears that a significant reduction in carcass contamination rate could be markedly enhanced by prevention and control of salmonella in the feed.
Note: Recommendations for the prevention and control of salmonella in feeds and feed components are being developed by the U.S. Advisory Committee on Salmonella.
2. Whenever possible or practical secure day-old chicks, poults, ducklings, etc. from breeding flocks and hatcheries conducting an active campaign for the prevention and control of salmonella.
Reasons: Breeder/hatchery transmission of salmonella to hatching eggs and day-old poultry does occur and can be a significant link in a chain of infection leading to the processing plant and beyond.

Note: Recommendations are being developed by the U.S. Advisory Committee on Salmonella for the prevention and control of breeder/hatchery infection. The U.S. Sanitation Monitored program has been formulated recently by NPIP as a broad, national starting point to begin reducing incidence.

- * 3. Buildings should be cleaned of all litter, debris and dust and the entire interior (floors, walls and ceilings) washed and disinfected by well-trained crews at least once yearly. Do not forget entry, feed and other service areas or any feeders, waterers, fan louvers or hanging equipment. EPA registered disinfectants, such as cresylic acid or phenolics, should be used and at label approved strength. Floors need be thoroughly soaked with cresylic acid or other disinfectants highly efficient in the presence of organic matter (see note below). Be sure disinfectants have been absorbed, set or dried before housing birds.
Reasons: The poultry house environment can be a significant source of salmonella. Good disinfection has successfully reduced salmonella contamination of buildings. Hygienic husbandry on growing farms will help reduce the volume of salmonella entering the processing plant.
Note: Dirt floors have reportedly been disinfected of salmonella using a solution of formaldehyde (37%) diluted to one gallon to twelve gallons of water and applied diluted as a spray under low pressure to floors at a rate of twelve gallons to 200 square feet. Concrete floors would need less formaldehyde solution for efficient disinfection. EPA label clearance is needed before this technique can be fully recommended. Caution! Personnel should wear gas masks and protective clothing while applying formaldehyde solutions.
- * 4. Houses should be constructed and managed to minimize or eliminate direct or indirect contact with free-flying birds. The same is true for dogs, cats, barnyard fowl such as bantams, waterfowl, game fowl, sheep, cattle, horses and swine. An environmentally safe, active rodent, pest, and lesser meal worm or other litter infesting insect control program is emphasized. The area adjacent to the poultry house needs to be kept free from accumulated manure, rubbish and unnecessary equipment. The farm manager must recognize and vigorously implement these flock security practices.
Reasons: Free-flying birds, rodents, insects, pets, barnyard fowl, and livestock can be carriers of salmonella infection that may be transmitted to the growing flock. If managers do not appreciate the dangers of salmonella cross-contamination, the overall prevention and control effort will be seriously jeopardized.
- * 5. Allow no visitors except under controlled conditions which insure sanitary precautions. Remember that exterminators, meter readers, salesmen, plumbers, fire extinguisher inspectors and others frequently move farm-to-farm and walk through buildings in addition to generally expected visits of children, managers,

veterinarians, and feed or chick deliverymen. Rubber boots should be disinfected before entering and after entering poultry houses. New, durable plastic boots may be worn and disposed immediately on leaving. Coverall changes, using new or re-laundered disposable (paper/plastic) or cloth coveralls, are encouraged. Used poultry equipment from other sources should be disinfected before their movement onto poultry premises.

Reason: Salmonella can be transmitted through contaminated footwear, clothing and equipment.

Note: Dead birds should be disposed in a hygienic manner. When unusual losses occur, representative specimens should be taken to a diagnostic laboratory.

- * 6. Sampling and analysis to monitor effectiveness of the sanitation procedures is recommended. Sampling on a statistical basis rather than 100% can provide reasonable quality assurance. Consideration should be given to periodic representative sampling of: (1) feed and water, (2) newly delivered, day-old birds, (3) the poultry house environment after disinfection, (4) growing stock one week prior to slaughter. Culture results should be shared with those concerned in preparation, supply and/or utilization of materials sampled.
- Reasons: Monitoring can identify problems if they exist and will aid in their prevention and correction. It provides a useful incentive factor and is also a means to measure progress. Negative flocks could be slaughtered early on kill day to aid the processor in contamination control.
- Note: Cultural and serologic sampling procedures have been published by the American Association of Veterinary Laboratory Diagnosticians - U.S. Animal Health Association, the National Poultry Improvement Plan, and the American Association of Avian Pathologists. The industry should encourage state and federal agencies to expand salmonella testing, isolation and serotyping services so industry can implement practical and effective monitoring programs.
7. Rotate turkey ranges whenever possible. If this is not currently feasible, the range can be plowed and planted with a cover crop between growouts. Scraping and soil disinfection with formalin is reported to be an equally effective alternate procedure.
- Reason: Range rotation, plowing or disinfection can suppress re-introduction of infection from the soil.
8. Cleaning and sanitizing of transport crates is needed particularly if they have carried slaughter birds from positive flocks. Some modern transport crates cannot be cleaned economically.
- Reason: Transport crates move farm-to-farm. Therefore, they can serve as vehicles for salmonella and other dangerous infectious agents.

A coordinated approach involving essentially simultaneous application of at least suggestions 1, 2, and 3, offers the best promise to reduce salmonella in live poultry shipped to processors.