In 2011, the CDC recorded an estimated one million people in the U.S. who became ill from the food-borne pathogen *Salmonella*, resulting in over 19,000 hospitalizations and nearly 400 deaths.¹

Although thorough cooking can kill *Salmonella* in meat and eggs, minimizing the incidence and delivering a safe food product is desirable, and should be a priority for poultry producers.

Historically, the primary means of reducing *Salmonella* in the U.S. has been through interventions at the processing plant.² However, on-farm live bird intervention can also be an effective means of significant reduction in the amount of *Salmonella* arriving to the plant.

In a recent presentation at the International Production and Processing Expo (IPPE, Atlanta, GA), Dr. Charles Hofacre, University of Georgia, pointed out that attempting to control *Salmonella* only at the processing plant has not been completely effective. He further discussed the efficacy of on-farm interventions.

“By reducing the level of *Salmonella* coming into the poultry slaughter plant,” Dr. Hofacre stated, “it is quite a bit more effective to reduce *Salmonella* there and in the final product.”³

Vertical transmission is a significant contributor to *Salmonella* incidence. Effective *Salmonella* intervention is a multi-step approach. Interventions should start with the breeder flock, and follow through the grow-out system, in order to significantly minimize contamination load coming into the plant.

Listed below are some measures that have been effective for live-bird and processing plant *Salmonella* intervention:
1. Reduce *Salmonella* incidence in the breeder flock.
   - Be aware that *Salmonella* vaccination in breeders can reduce *Salmonella* colonization in the liver, spleen, and cecal contents of their progeny by as much as 99% based upon previous reports with SE challenges.\(^4\)

2. Ensure hatchery sanitation and monitoring.
   - Clean and disinfect thoroughly.
   - Consider fumigating eggs and equipment, which has proved beneficial.
   - Monitor for *Salmonella* to confirm status.

3. Check source of chicks.
   - Obtain chicks from *Salmonella*-free flocks and hatcheries.

4. Implement feed interventions.
   - Source feed from a feed mill performing *Salmonella* monitoring.
   - Use heat-pelleted feed when applicable.
   - Consider feed sanitation measures (aldehydes).

5. Optimize the nutrition and immune status of birds.
   - A balanced immune system is vital for maintaining performance while protecting animals from intestinal bacteria challenges.\(^5\)

6. Control coccidiosis.*
   - Maintain intestinal health, including control of cocci, to reduce *Salmonella* prevalence.\(^3\)

7. Implement multi-tiered *Salmonella* monitoring programs.
   - Monitor hatcheries.
   - Check feed mills.
   - Evaluate flock status.
   - Measure birds at processing plant.

8. Raise birds with *Salmonella* reduction in mind.
   - Use all-in/all-out systems, which can reduce cross-contamination between flocks.
   - Provide adequate down time between flocks to reduce challenge load.

9. Use a proven *Salmonella* control feed ingredient.**

10. Develop and document a pest control system that prevents access to poultry houses by rodents, birds, and other animals.

11. Implement *Salmonella* control between flocks.\(^3\)
    - Bait and control rodents – important first step.
    - Blow down dust.
• Remove all litter/manure and dispose properly.
• Wash equipment and facilities by applying hot water, then detergent, followed by thorough drying -- a critical step.
• Disinfect premises and equipment.
• Dispense insecticides – final step.

12. Initiate effective biosecurity measures.
• Restrict access, thereby reducing human traffic and poultry disease transmission.
• Allocate dedicated equipment for poultry houses.
• Ensure all visitors and workers have clean clothes and boots.


14. Take appropriate action in cases of *Salmonella* outbreaks.

**Research Notes**

*Research has shown that Diamond V Original XPC™ significantly reduced intestinal lesions and deleterious effects caused by coccidiosis.*

- Original XPC reduced intestinal lesions resulting from:
  - E. acervulina
  - E. maxima
  - E. tenella
- Original XPC increased body weight gain.
- Original XPC improved feed conversion.
- Additive performance benefits observed when Original XPC was combined with an ionophore.6

**Research has shown that Diamond V Original XPC can be an effective *Salmonella* control.

- Original XPC has been shown to reduce the prevalence and load of *Salmonella* with:
  - Proven efficacy in layers7
  - Proven efficacy in broilers8
  - Proven efficacy in turkeys9
  - Reduced positive *Salmonella* counts
  - Reduced *Salmonella* cecum counts
  - Reduced positive *Salmonella* environmental swabs10
- Studies indicate that Original XPC can help control the following *Salmonella* serotypes:
  - *enteritidis*
  - *heidelberg*
  - *kentucky*
  - *typhimurium*
  - *arizonae*
Note: Maximum benefits derive from feeding Original XPC to poultry (both breeders and progeny) from day-old chicks to slaughter. Original XPC balances the immune system, which helps minimize insult from *Salmonella* challenge.

**References**


