

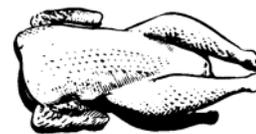


The University of Georgia

Cooperative Extension Service

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PROCESSING TIP . . .

SALMONELLA PREVALENCE ON POULTRY IN THE U.S.

The United States Department of Agriculture - Food Safety and Inspection Service (USDA-FSIS) regulation requires that slaughtered poultry be evaluated for *Salmonella* on an intermittent basis. Typically, a USDA Inspector in Charge (IIC) will receive notification that he or she should begin testing and the following will occur:

1. One carcass per day will be selected, rinsed, and the rinse will be mailed to the USDA-FSIS laboratory and tested for the presence of *Salmonella*.
2. Carcasses will be selected and tested for approximately 51 processing days or until 51 carcasses have been evaluated. In some cases, carcass rinses must be discarded and more rinses are collected. For example, if carcass rinses are temperature abused or lost during shipment, they would not be tested.
3. Thirteen or more positives out of 51 samples (> 23.5 %) results in a failure.
4. Once the first failure (Set A) occurs, the plant is given 30 days to make corrections, and the testing series (51 samples) begins again.
5. After a second failure (Set B), the company must write an action plan detailing corrective actions that will be taken to prevent the problem from recurring.
6. Testing resumes 30 days after the second testing series has been completed.
7. Once the third failure (Set C) has occurred, inspection will be withdrawn, which effectively closes the processing plant (USDA, 1996).

Three failures by a poultry plant results in layoffs, loss of reputation, and lost business. In addition, flocks must be processed by another plant that is owned by the same company or the birds must be sold to another processor.

These regulations have recently caused serious problems within the poultry industry. Initial baseline studies by the USDA indicated that nationwide, raw broiler chicken carcasses were 20 % positive for *Salmonella*. Thus, the USDA set the maximum limit for *Salmonella* on chicken carcasses at 23 %. By taking the average prevalence nationwide, and making it the new maximum level for prevalence, the USDA effectively made a rule by which almost 50 % of the processors in the country were producing carcasses that were out of specification for *Salmonella* prevalence. Since that time, researchers and poultry companies have been attempting to institute a number of intervention approaches both in the field and at the processing plants to lower *Salmonella* prevalence on carcasses.

These measures have had some impact. The effect of implementation of these measures was able to lower the national prevalence of *Salmonella* to approximately 7.5 % in the year 2000 (Figure 2). However, since that time, the national prevalence has increased back to the levels observed during the baseline study. Likewise, the number of processing plants that are failing the *Salmonella* performance

PUTTING KNOWLEDGE TO WORK

standard is increasing (Figure 1). Many of the factors that influence this increase are not taken into account by the *Salmonella* performance standard and are due to changes during the growout process. This FSIS regulation places all of the responsibility on the plant to reduce the level of *Salmonella* on finished raw carcasses. Thus, drastic interventions are sometimes required.

The increase in *Salmonella* prevalence and failures has not gone unnoticed. The USDA-FSIS is preparing to change the *Salmonella* performance standard. It is possible that, by the end of 2005, the USDA may implement a “zero tolerance” policy for certain serotypes of *Salmonella* on raw poultry carcasses. This would be discriminatory because some states struggle with particular serotypes more than others. Another consideration is that they may lower the prevalence allowance from 23% to 7-12% (to be decided). This may be based on the implementation of a “zero tolerance” policy for *E. coli* O157:H7 on beef, making it an adulterant if found on beef. This resulted in drastic reductions of this bacterium on beef throughout the U.S. However, there are enormous differences in processing beef when compared to poultry. Because the hides of cattle are removed prior to testing, all of the *E. coli* O157:H7 on the hide can be disinfected using very harsh chemicals or heat treatments without deleterious effects to the meat.

Figure 1: Number of processing plants that are failing the USDA *Salmonella* Performance Standard

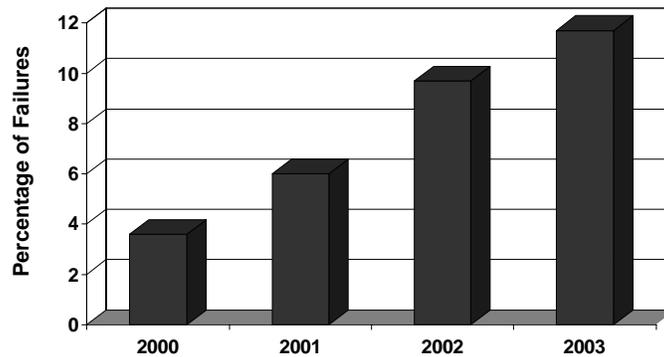


Figure 2: Average prevalence for *Salmonella* throughout the U.S.



However, any bacterium that a chicken is exposed to during growout has the opportunity to remain on the skin of the chicken all the way to the area of the plant where the inspector takes the sample. This is because poultry carcasses are evaluated with their skin on. Also, the relative amount of *Salmonella* that chickens are exposed to during growout is much higher than cattle exposure to *E. coli*

O157:H7. Because of the likelihood of changes in the Salmonella performance standard, the industry should prepare for new and extremely stringent regulations in the very near future.

A handwritten signature in cursive script that reads "Scott M. Russell".

Scott Russell
Extension Poultry Scientist

Extension County Coordinator/Agent

“Your local County Extension Agent is a source of more information on this subject.”