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## *PROCESSING TIP . . .*

### **POULTRY HEALTH DIRECTLY IMPACTS FOOD SAFETY**

A recent evaluation of poultry processing plant data was conducted. The data obtained from the processing facility were collected over a two-year period and the number of chickens from which data were obtained was 32,300,000. The data were analyzed by the Department of Statistics at The University of Georgia. The following relationships were evaluated:

1. The effect of the presence of air sacculitis (AS) infection of birds on fecal contamination of carcasses.
2. The effect of the presence of infectious process (IP) on carcasses on fecal contamination of carcasses.
3. The relationship between the number of condemned carcasses and fecal contamination of carcasses.
4. The effect of AS infection of birds on *Salmonella* prevalence.
5. The effect of AS infection of birds and presence of IP infection of carcasses.
6. The effect of AS infection of birds on carcass weight.

The analyses demonstrated that when birds were infected with air sacculitis, the number of carcasses with visible fecal contamination in the processing plant increased as well. This effect may be attributed to an increase in cut intestines during processing for carcasses from AS infected flocks. Flocks with a high prevalence of infectious process infections also had a higher level of visible fecal contamination when processed.

### **PUTTING KNOWLEDGE TO WORK**

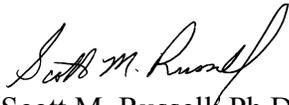
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There was a positive relationship between the number of condemned carcasses and the incidence of fecal contamination. It is possible that diseases like AS and IP that increase the number of dead birds also increase fecal contamination, possibly by influencing the integrity of the intestinal tract of the chicken or by decreasing fecal passage during feed withdrawal.

Incidence of active air sacculitis infections, as detected by USDA processing line inspectors, was positively associated with an increase in the prevalence of *Salmonella* on processed carcasses. Based on the very large number of carcasses sampled in this investigation, there is convincing evidence that an increase in air sacculitis infection is associated with increased probability of *Salmonella* colonization.

Increasing levels of AS were associated with progressively increased percentage of IP infected birds. Moreover, birds suffering from air sacculitis produced carcasses with lower weights. In fact, according to the industry data we analyzed, a poultry company with 4 growout houses containing 25,000 birds each would lose approximately \$21,000 per growout cycle or \$126,000 per year (6 flocks per year) if the birds were infected with AS.

These analyses strongly indicate that birds with air sacculitis infections are more likely to have the following negative parameters associated with their processed carcasses: 1) higher fecal contamination, 2) higher *Salmonella* prevalence, 3) higher infectious process, and 4) lower carcass weights. Likewise, higher IP and condemned carcasses (indicating diseased flocks) resulted in higher fecal contamination on carcasses.



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