

' ZERO TOLERANCE' BEGINS AT THE FARM

The task of meeting “zero tolerance” regulations for fecal material in chilling tanks in the processing plant begins on the farm. ■ by S.F. “Sarge” Bilgili

Effective May 5, 1997, “zero tolerance policy” regulations (381.65e) of the FSIS/USDA required all processing establishments to prevent poultry carcasses contaminated with visible fecal material from entering the chill tanks. Visible fecal material on the carcass is considered by the FSIS as indicator of microbial pathogens and hence an important source of cross-contamination in the chilling system. “Zero fecal tolerance” became an important food safety and process control standard in poultry plants, in addition to the Pathogen Reduction-HACCP System related process control requirements (i.e., *E.coli* testing).

Currently, inspection personnel perform at least two 10-bird checks at each evisceration line per shift, by visually examining the carcasses prior to chiller. The carcasses are examined for the presence of fecal material on the interior and exterior

surfaces. The “zero fecal tolerance policy” does not apply to ingesta, therefore care must be exercised in separat-

programs identifies ingesta and fecal material based on the following three characteristics: color, consistency and composition (see Table below).

Visual assessment of fecal material on the carcass can be extremely difficult, since the above listed characteristics are not very specific. Lack of a simple test to separate fecal material from other potential extraneous contaminants (specs of ingesta, blood clots, uric acid crystals and other matter) have created, at times, false alarms and unnecessary reactionary measures.

Critical control points or limits to prevent and eliminate visible contamination are not defined by the FSIS but rather are left to the plant’s hazard analysis and HACCP plan. In conducting HACCP activities, FSIS utilizes *ISP 03*

procedures 01 (random sample to review regulatory HACCP features) and 02 (looks at the entire process, through pre-shipment review, for specific production to determine if the HACCP plan prevented distribution of adulterated product) to determine the monitoring, verification and record keeping activities of the plant. In the case of deviation from a critical limit, unforeseen hazards, or positive salmonellae results, plant corrective actions will be verified and the plan will be reassessed by the FSIS. During the HACCP veri-

Live Production-Related Factors Contributing to Contamination

- Lack of uniformity in flocks processed, especially straight-run flocks
- Differences in birds' sizes over time or between the shifts
- Excessively long plant holding (yard) time and conditions
- Frequent or last minute changes in feed withdrawal and catch schedules
- Communication problems with growers
- Frequent feed outages, especially week prior to market
- Lack of synchronization in feed withdrawal and catching in multi-house farms
- Timing of the last feeding and targeted amount feed left in pans at feed withdrawal
- Policy on fate of leftover feed in pans
- Excessive grower activity in the house during feed withdrawal
- Extremes in house temperatures during feed withdrawal
- Lack of standardization of in-house feed withdrawal time
- Continuation of restricted or meal-feeding programs and/or lighting programs until marketing

ing fecal material from ingesta and/or other extraneous materials. Although open to frequent criticism and much debate in the field, the FSIS training

	Fecal material	Ingesta
a. color:	Varying shades of yellow to green, brown and white	Color varies with the diet
b. consistency:	Semi-solid to paste	Solid or granular; w/digestive fluids
c. composition:	May or may not be plant origin	Identifiable plant material



What is the ideal poultry house? These live production managers described their concept of the ideal broiler and broiler breeder houses at the Poultry Production & Health Seminar. Pictured are Randy Reeves, breeder department manager for ConAgra Poultry in Gainesville, Ga.; Guy Matthews, broiler division manager for Fieldale Farms, Baldwin, Ga.; and Mark Hamby, broiler manager for ConAgra Poultry in Gainesville.

fication process, fecal contamination found on a pre-chiller test is considered a deviation from a critical limit. Each plant's HACCP plan should identify the corrective actions to be followed and assign responsibility in response to a deviation from a critical limit. These corrective actions include:

- Identification and elimination of the cause(s)
- Assuring that the CCP is under control
- Measures to prevent recurrence
- Prevention of adulterated product from entering commerce

Fecal check failure would be considered monitoring noncompliance (NR) and the plant management is notified for immediate corrective and preventative action. If the HACCP procedure used is *ISP 03J (Slaughter) 01* then an NR is issued and the *02* procedure is performed to verify corrective actions. If the fecal contamination is found during the *03J02* procedure, then the procedure is completed and a NR is issued. When fecal contamination is found, all of the product back to the last acceptable fecal check must be held. The cause of deviation must be identified and eliminated to bring the CCP under control. A determination of a "system failure" can be made based on repetitive noncompliance with the zero tolerance standard and with plant history of NRs.

Carcass contamination with ingesta and/or fecal material during processing is expected and frequently attributed

exclusively to field or plant causes. However, most will agree that usually both field and plant factors are involved to some extent in most cases. An increase in carcass contamination rate during evisceration can increase not only the reprocessing rate (washouts) but also the likeli-

hood for failing the fecal checks. By the same token, lack of excessive contamination and reprocessing can never guarantee compliance with the zero fecal tolerance regulations. Consequently, most plant have modified the evisceration process to include additional carcass sprayers, scrubbers, washers, disinfectants (including on-line reprocessing) and house inspectors to be able comply with the regulations. Plant causes of contamination problems that are related to equipment,

process control or personnel are not included in the scope of this presentation and will be not be discussed here.

Pre-slaughter feed and water withdrawal programs

The type, amount, location and consistency of digestive tract contents in a broiler at slaughter is directly related to feed and water intake prior to and rate of clearance during feed withdrawal. Feed withdrawal time refers to total time of fasting in the house, in transit and in the plant. In order to empty the digestive system adequately (complete emptying is not necessary and must not be the goal), factors must be controlled affecting feed and water consumption and those that affect passage through the digestive system.

It is extremely important to maintain a steady-state feed and water consumption and avoid voluntary fasting, as well as meal or binge eating days prior to feed withdrawal. Factors such as environmental temperature, dietary nutrients, feeding programs (timed or meal feeding), lighting programs (day length), pellet quality, feeder and drinker space, and water availability, quality and temperature can affect feed consumption pattern of a flock quite rapidly. Probably the most common

Broiler service personnel ... who needs 'em?

Speaking at the U.S. Poultry & Egg Association's Poultry Production & Health Seminar, Tyson Foods Director of Veterinary Services Leonard Fussell talked about the role that live-production service people play in the broiler industry. "Not often are they told how important they really are," Dr. Fussell said, and he related the following: "A number of years ago, our company had some growers who were saying, 'We are doing very well in performance and are in the top 10 percent to 15 percent in performance among the growers in this complex, and we don't need these [service representatives] coming out and telling us what to do.' So, as an experiment, we took the service techs away from those growers, and let them focus on the bottom 75 percent of the growers in the organization. We let the experiment go on for a while. For the most part, within a year and a half, those growers who had previously been the best were way down the list on settlements. And those growers who were on top had moved way up the page [from a lower position on the settlement sheet]. So, the poor growers were beginning to make money and were eclipsing those growers who felt they did not need to be serviced. That's one example of how important service technicians are."—G. Thornton

POULTRY PRODUCTION & HEALTH SEMINAR



Dr. Gary Edwards (left) presided over a three-man panel dealing with broiler management issues at the Poultry Production & Health Seminar. Panelists included Dr. Leonard Fussell, director of veterinary services for Tyson Foods; Dr. Mike Lacy, University of Georgia; and Frank Halpin, live production manager for Seaboard Farms.

problems encountered in the field during the last week of grow-out involve feed outages. These problems are often due to empty bins (feed delivery problems) and empty pans (mechanical breakdowns in the feed delivery system or feed bridging in the bins etc.). In all of these cases, return of flocks to steady feed and water consumption will not be quick. Several days' time may be required before a flock is stabilized and feed withdrawal programs can be implemented consistently. Although the rate of passage through the digestive tract is fairly rapid in poultry, factors such as water intake, environmental temperature and stresses associated with fasting, catching, confinement and transportation often slow feed clearance rate.

Since not all the birds eat and drink and void in synchrony, how can we standardize a flock to respond similarly to feed withdrawal? In practice and under steady-state feed consumption

with feed (excessively full crops can be detected by palpation) prior to feed withdrawal, then this period needs to be extended to allow crop clearance. In either of these cases, maintenance of the comfort zone is essential in the house (i.e., temperature) to promote bird activity to consume water. On the other hand, if the in-house feed withdrawal time is excessive (this commonly occurs either by design or when the birds voluntarily stop eating prior to feed withdrawal because of high temperatures), then the birds will consume excessive amounts of litter, feathers, and water.

Field experiences indicate that carcass contamination can take place with

pattern, the in-house feed withdrawal time (with free access to water) is calculated to give those birds in a flock that had just consumed a meal to clear the crop (usually 4-5 hours). This is critical, because clearance of feed from the crop requires ample water consumption. If the birds have engorged

both excessively short (less than 8 hours) or excessively long (greater than 12 hours) total feed withdrawal times. The condition of the digestive tract contents can be an important gauge to evaluate the effectiveness of feed withdrawal program. Those indicators are as follows:

- type of digestive tract content (feed or litter)
- amount (full or empty crop and gizzards)
- consistency (solid or watery)
- location (upper or lower digestive tract)
- color (green discoloration due to bile)

The condition of the viscera (intestinal shape and integrity, gas formation, mucosal sloughing) should also be assessed, on a flock basis, during processing. Sufficient number of viscera should be evaluated, since given normal variation in any flock of birds, some

will always exhibit signs of a too-short or too-long feed withdrawal. Frequent and/or dramatic changes in feed withdrawal programs, based on few extremes in a flock of birds and/or fecal failure without sound data, should be avoided, especially when a majority of the birds are in an

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acceptable condition.

It should also be pointed out that many other live production-related factors, most of them unique to a complex or company, often contribute to contamination problem in the plant. These factors must be identified and controlled for consistent and successful implementation of pre-slaughter feed withdrawal programs. ■

No Time for Science?

Some heated debate during the Poultry Production & Health Seminar was sparked by a panel presentation on nutrient management's impact on the environment. The EPA's Ira Linville told live production managers in attendance that while "strong science" is needed to manage environmental problems, high-profile media coverage and strong public interest has reduced the time frame in which science can be applied in formulating government's regulatory response. Panelist John Chalda of Perdue Farms said regulators and industry, alike, should concentrate on educating both farmers and the public and avoid unrealistically raising the expectations of the public. There can be no quick solutions, Chalda said. ■

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