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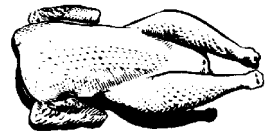

PROCESSING TIP. . .

LISTERIA MONOCYTOGENES ON POULTRY

In May of 1999, the Food Safety and Inspection Service (FSIS) division of the USDA published a notice in a Federal Register advising manufacturers of ready-to-eat poultry and meat products of the need to reassess their HACCP plans to ensure adequate control of potential Listeria monocytogenescontamination. This notice was the direct result of several outbreaks of listeriosis, a disease caused by consumption of food contaminated with Listeria monocytogenes, in late 1998 and early 1999. According to the USDA, nearly 2,500 cases of listeriosis occur each year, with a fatality rate of 20%. In 1999, there were 55 meat or poultry products that were recalled (Table 1). Of these recalled products, 45% were the result of potential Listeria monocytogenes contamination. In the Federal Register notice, FSIS listed four factors that they believe are critical for controlling Listeria monocytogenes contamination. These factors are: 1) pathogen level in raw materials; 2) effectiveness of cooking or heating; 3) potential for product re-contamination; 4) evidence of contamination revealed by end-product testing.

After seeing this Federal Register and the first contributing factor in the list (pathogen level on raw materials), Drs. Mark Berrang, Doug Smith and Julie Northcutt conducted a study to determine the incidence of Listeria monocytogenes on poultry carcasses. Samples were taken from three commercial chicken processing plants before scalding (immediately after death), and after chilling. The percentage carcasses testing positive for Listeria monocytogenes ranged from 0 to 8% on samples taken before scalding and 0 to 22% on samples taken after chilling. One of the plants included in this study upgraded their evisceration system during the study. After this upgrade, the percentage of carcasses testing positive for Listeria monocytogenes dramatically decreased from 22% to less than 2%.

These data suggest that it may be possible for Listeria monocytogenes to reside in/on equipment, particularly in the processing plant environment where temperatures are cool, humidity is high, and food is available for growth. However, when compared to findings published in the 1980's (23% chilled carcasses positive for L. monocytogenes, Bailey et al., 1989) and the 1990's (26% chilled carcasses positive for L. monocytogenes, Cox et al., 1997), it seems that the pathogen reduction

efforts by the poultry industry may have helped to lower incidence of Listeria monocytogenes on raw chicken carcasses.

Table 1: Number of Recalls in 1999 categorized by Hazard

HAZARD	**NUMBER OF RECALLS**
Listeria monocytogenes	25
E. coli 0157:H7	12
Salmonella	5
Process deviation	5
Undeclared allergens	5
Other	3
TOTAL	55

References:

Berrang, M. E., J. K. Northcutt, D. P. Smith, and C. E. Lyon, 2000. Incidence of Listeria monocytogenes on pre-scald and post-chill chicken carcasses. J. Appl. Poultry Research (Accepted for Publication, proposed date Winter Issue)

USDA, 1999. News and Information, "FSIS Announces Strategy to Control Listeria monocytogenes In Ready-To-Eat Meat and Poultry Products." USDA-FSIS Web-page. http://www.fsis.usda.gov/oa/news/Im_haccp.htm

Bailey, J. S., D. L. Fletcher and N. A. Cox. 1989. Recovery and serotype distribution of Listeria monocytogenes from broiler chickens in the Southeastern United States. J. Food Prot. 52:148-150.

Cox, N. A., J. S. Bailey and M. E. Berrang. 1997. The presence of Listeria monocytogenes in the integrated poultry industry. J. Appl. Poultry Res. 6:116-119.

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County Extension Coordinator/Agent

Consult with your poultry company representative before making management changes.

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