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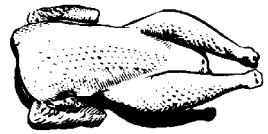

PROCESSING TIP . . .

GENERAL INFORMATION ABOUT CAMPYLOBACTER

Late last year, the USDA issued a directive (FSIS Directive 10,210.1) permitting them to sample raw whole chicken carcasses for Campylobacter. These data will ultimately be used to establish a baseline for a Campylobacter performance standard, similar to the Salmonella and E. coli performance standards that are already in place. Because of the interest in Campylobacter, this poultry tip will provide general information about the pathogen, as well as its prevalence on poultry.

The name "Campylobacter" refers to a group of a dozen or more species and subspecies of curved to spiral shaped bacteria that actually grow best in low levels of oxygen (microaerophiles). According to the Centers of Disease Control and Prevention (CDC), Campylobacter is the leading cause of human gastroenteritis. More specifically, the CDC estimates that there are approximately 2.4 million cases of human campylobacteriosis, 1.2 million cases of human salmonellosis, and 25,000 cases of human E. coli infections each year. While Campylobacter is widespread in the environment, consumption of raw milk or non-chlorinated water, handling raw poultry or beef, and eating undercooked poultry or beef are the sources most frequently implicated in Campylobacter related illnesses. Of particular emphasis in the cited sources are the words "raw" and "undercooked." Campylobacter is extremely heat, salt, and acid sensitive, along with sensitivity to drying. However, as with other pathogens like Listeria, Campylobacter is stable in chilled conditions, and thus, contamination of chilled foods should be minimized.

Campylobacter is commonly found in the intestinal tracts of poultry, cattle, sheep, swine, dogs, and cats. Other potential sources include wild birds, flies, rodents, or contaminated water or equipment. Researchers studying Campylobacter in poultry have suggested that intestinal colonization comes primarily from the environment with no transmission from parent to offspring. However, recent evidence using DNA testing indicate otherwise. Cox et al. (1999) found that DNA from Campylobacter isolates from a commercial broiler breeder flock matched those found in their offspring. This suggest that Campylobacter is transferred from parent to offspring. Further studies using DNA sequencing techniques are being investigated to track and identify transmission of

Campylobacter.

It has been reported that once a broiler in a house is found to be positive for Campylobacter, all broilers in that house will be contaminated within 1 week, with counts remaining high until slaughter (Jacobs-Reitsma, 1997). This is probably due to common waterers and feeders that help spread the contaminated. It has also been reported that transportation of broilers to the processing plant can result in as much as a five-fold increase in Campylobacter positive carcasses (Stern et al., 1995). Researchers at the USDA have recently submitted a publication to the Journal of Applied Poultry Research reporting on the presence and level of Campylobacter on broiler carcasses during various stages of processing (Berrang and Dickens, 2000). These researchers found that processing lowered levels of Campylobacter on broiler carcasses; however, certain processing steps increased counts, such as picking. Noticeable differences were found in Campylobacter levels among flocks, with no correlation between Campylobacter and E. coli counts on carcasses exiting the chiller.

The good news is that the CDC recently published a report (March 1999) stating that the overall incidence of Campylobacter and Salmonella infections in humans had significantly declined. According to their report, a 15% decline occurred in illnesses caused by Campylobacter from 1997 to 1998, and a 13% decline occurred in Salmonella infections between 1996 and 1998, with a 44% drop in illnesses specifically attributed to Salmonella enteritidis (eggs). Secretary of Agriculture Dan Glickman was reported as saying that the declines in food borne illnesses were due to implementation of the Pathogen Reduction and HACCP inspection system.

References:

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Cox, N. A., N. J. Stern, K. L. Hiett, and M. E. Berrang, 1999. Transmission of Campylobacter jejuni from breeders to commercial broiler chickens. Proceedings of the 10th Annual Meeting of Campylobacter, Halobacter and Related Organisms. Baltimore, Maryland, September.

Jacobs-Reitsma, W. F., 1997. Aspects of epidemiology of Campylobacter in poultry. Vet Quart 19:113-117.

Stern, N. J., M. R. S. Clavero, J. S. Bailey, N. A. Cox, and M. C. Robach, 1995. Campylobacter spp. in broilers on the farm and after transport. Poultry Sci. 74:937-941.

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Consult with your poultry company representative before making management changes.

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