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CAUGHT 'N THE NET

Was It The Long Hot Summer??

By Dr. Gary C. Smith

"Ten years after the Hudson Recall (25 million pounds of ground beef) and as a result of millions of dollars spent on research and sanitation upgrades, the number of recalls related to *E. coli* O157:H7 has declined dramatically in the past five years. But, health statistics in the fight against this pathogen are mixed; after a dramatic reduction in contaminations from 2002 to 2004, two years of increases have left CDC&P watchdogs scratching their heads and saying — We're not sure why it's going up again" (*Omaha World Herald*, August 21, 2007).



USDA-FSIS ground beef testing results revealed that the June 2007 incidence of *E. coli* O157:H7 positives had exceeded the 0.20% that the Agency uses as its actionable benchmark. So, in early July, FSIS increased the weekly test-number of ground beef samples from 325 to 400 to help clarify the issue. Thus far (as of September 23, 2007) the incidence of positives has not exceeded 0.20% for year-to-date test results suggesting that there does not appear to be a significant change in the national prevalence of this pathogen in raw ground beef.



A number of beef packers reported that this summer's incidence of positives for *E. coli* O157:H7 on in-coming cattle and in beef trimmings (in their test-and-hold sampling programs) was higher than it had been in several years. Weather conditions this spring and summer may have increased the incidence or amount of the pathogen on cattle hides, and

kill-floor labor shortages (because of increased ICE activity) may have exacerbated the problem. Whether it was "the long hot summer" or higher hide-to-carcass transfer rates, the "test-and-hold" protocol — once again — proved invaluable in protecting the public health.

With global warming trends likely to continue, beef packers will undoubtedly re-emphasize intensified training of workers regarding sanitary dressing procedures and re-evaluate use of cattle and carcass decontamination procedures as means for countering the larger loads of *E. coli* O157:H7 on in-coming cattle. Beef processors, knowing that there is likely to be increased risk of *E. coli* O157:H7 (and probably of other pathogens as well) on beef cuts and trimmings, may wish to re-assess their HACCP plans and/or re-evaluate their pathogen-testing programs. ■

HACCP – Why Is It So Important?

By Sherri Jenkins,

Director of Auditing and Consulting, FSNS



The importance of HACCP is multifold. Many food manufacturing facilities today are required to operate under a validated HACCP plan for either regulatory reasons (i.e., USDA-FSIS, FDA, etc.) or customer requirements. What most people don't know is the true definition of HACCP and why having the parts to the plan is so vital to the organization and its success.

HACCP originated when NASA sent astronauts into space for the first time. A little company by the name of Pillsbury was contacted to find a way to ensure that the food products being sent into space for the astronauts to consume were microbiologically safe and would have no crumbs. Admittedly, contracting a food borne illness with zero gravity would be less than desirable. For the safety and comfort of the astronauts, the HACCP system was born.

At its basic core, HACCP has seven principles:

1. Conduct a **hazard analysis**.
2. Determine the **critical control points (CCP)**.
3. Determine the **critical limits**.
4. Determine the **monitoring activities** for the CCPs.
5. Determine the **corrective actions** to take when deviation from a critical limit occurs.
6. Determine the **verification procedures** for the CCPs.
7. Develop **record keeping** and **documentation procedures**.

The Hazard Analysis is just what it sounds like, a review of the process steps to determine where chemical, physical, or biological hazards exist. The Hazard Analysis is then used to determine which steps are to be the Critical Control Points. A CCP is the point or step which control can be applied to prevent, reduce, or eliminate a hazard from occurring. Once the CCPs have been determined, the Critical Limits must be set. One must know what parameters are critical for ensuring process control and product safety. The Monitoring Activities are a necessity because the CCP and Critical Limit must be checked to make sure the parameters are being met. The HACCP system was not devised to make a perfect process that would never fail. Deviations from the Critical Limits are to be expected and having Corrective Actions in place to follow will ensure that the process is back in control. Verification must be conducted on the process and CCPs so you will know that the system works as it was intended to. Record keeping and documentation are necessary evils – you must document both the “good” and “bad” to show the HACCP plan was followed.

Why is choosing the right CCPs important? HACCP can be used for all types of processes and not just for product safety,

but for product quality also. However, most HACCP plans are generated to meet regulatory standards or customer requirements. In those instances, the function of the HACCP plan is usually product safety. The first reaction for a management team is not wanting to include the process controls because this would “tie their hands.” Management often thinks that if a CCP fails, then the entire process must be stopped which leads to downtime...downtime is not conducive to throughout. I have learned through the years that this is not necessarily the right way of thinking. Yes, the CCP is out of control if a failure exists, but the process isn't necessarily out of control. A failure must be dealt with by capturing all affected product, finding the root cause of the deviation, correcting the deviation, and instituting preventative measures so the same root cause does not reoccur. Taking all of these steps when a CCP has a deviation from a Critical Limit shows that the system is operating as designed.

Another segment that is becoming important is Validation, which consists of scientific documents, peer reviewed journal articles, and in-plant data collection studies. Why is validation needed? Scientific documents and journal articles are needed because they justify the principles of the CCP or Critical Limit. In-plant validation is needed because you have to determine if your process can operate at the set CCP or Critical Limit. Both types of validation are critical components of a solid HACCP plan.

Why do we care about tracking and trending? To continue doing the same thing time after time and getting nowhere is a waste of time and money. If you don't track the failures and corrections, how do you know if your process is improving, needs adjustment or is operating as designed? Knowing where you started and where you are going is imperative to building a safer, higher quality product. ■

UPCOMING TRADESHOWS

October 24-27, 2007

AMI International (Chicago, Illinois)
Booth #N2657

November 6-8, 2007

Supply Side West (Las Vegas, Nevada)
Booth #14091

WASHINGTON OUTLOOK

By Danny Spellacy, FSNS Washington Representative

Appropriations :: As the House and Senate get back in full swing after the August recess, domestic spending bills, another installment of Iraq war funding and other must-do authorization measures such as the farm bill must be completed before Senate Majority Leader Reid's previously set target for adjournment of November 16. Due to the difficulty associated with passing the outstanding appropriations bills, Congress is discussing the parameters of a continuing resolution (CR) that will provide short term extensions of FY 07 spending measures. In all likelihood, this will open the door to a brief December session. The CR would provide a month or more of breathing room for what are likely to be intense negotiations on these bills. Vetoes are hanging over most of the Democrats' major legislative priorities, including their plan to spend billions of dollars more on FY08 appropriations than President Bush wants.



Farm Bill :: After the recess, the Beltway is waiting to see what kind of farm bill will emerge from the Senate. It is speculated the Senate Budget Committee Chairman Kent Conrad (D-ND) and the Ranking Republican on the Senate Agriculture Committee Saxby Chambliss (R-GA) are collaborating on proposals that will be a departure from the direction of Senate Agriculture Committee Chairman Tom Harkin (D-IA). Chairman Harkin has different priorities from many of the members of the Committee. For example, Harkin has proposed basing countercyclical payments on revenue versus price alone. In addition, higher nutrition program spending is a priority for the Chairman. While the House has completed its version of the farm bill, the Senate will not likely advance the bill from Committee until mid to late October. Widely viewed by industry insiders to be true, anyone who claims to know the destination of the Senate farm bill is either bluffing or psychic.

Food and Drug Administration Reorganization :: The House Energy and Commerce Subcommittee on Oversight and Investigations has held hearings on the U.S. Food and Drug Administration's (FDA) ability to safeguard the nation's food supply. In short, the committee drew the following conclusions from their investigation of FDA's response to the recent food contamination problems: 1. FDA regulation of food imports is minimal. 2. FDA's proposed reorganization of its field staff would likely expose Americans to even more danger from unsafe food, particularly imported food. 3. The spinach and peanut butter food poisoning outbreaks may highlight flaws in FDA's voluntary compliance approach to regulation.

A principal focus of the Committee is FDA's reorganization plan and the likely closure of several labs as well as the manner in which the labs and district offices responded to recent food contamination outbreaks. The Committee has received testimony that suggests that FDA should double in size to adequately address food safety concerns in the United States. ■

NEW GEORGIA LAB TO OPEN IN MID-OCTOBER

Food Safety Net Services is proud to announce its newest, full service laboratory located in Atlanta, Georgia. This state-of-the-art facility will officially open on October 15, 2007. As in the case with all of our laboratories, the Atlanta facility is open 7 days a week, 365 days a year in order to serve our clients with accuracy, efficiency, and unparalleled customer service.

The Laboratory Manager of our newest facility will be Kelly Surprise who has been serving as the Assistant Laboratory Manager in our Green Bay facility.

We are excited to present this outstanding facility to our valued clients. FSNS continues to provide unequivocal technical standards and unsurpassed customer service in support of important industry issues. For more information about the Atlanta laboratory, or any of our other facilities throughout the US, please visit our website at www.food-safetynet.com or call us at 888.525.9788.



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MORE THAN SCOOPING DIRT

By Dr. Wendy Maduff, Technical Services Manager, FSNS

The most basic premise of statistics is to randomly sample a population and collect a sample with normal variance, or simply put: to collect a representative sample of a population. However, this is no simple task whether in a processing facility or on a food production farm, especially when an unevenly distributed potential foodborne pathogen is being sought.

Field sampling for the produce industry has not only become an increasingly popular focus in the food safety and quality industry based on recent recalls and associated foodborne illnesses, it is also one of the most challenging and dynamic sampling situations. Determining the appropriate sampling method for extreme environments, such as a 500 acre produce farm is a complicated endeavor. There are several field sampling methods to consider, including, random, quadrat, and plotless density estimators, but the most important factor in selecting the appropriate sampling method is determining where the target organism is most likely located. Though the sampling methods to choose from remain the same, the site conditions are time and location specific.

Determining what to sample is often dictated by previously documented sampling of that location; however, one of the most valuable attributes of the sample collector is the ability to identify an unanticipated potential area of interest. This can directly impact the overall success of a sampling event, defined as finding the target organism if it is present. Further, a comfortable understanding by the sample collector of which matrix is most likely to harbor the target pathogen and the effects of environmental factors such as climate, topographical features, and prevailing wind direction, are a key qualities. Water, vegetation, soil, and manure have historically been the most commonly collected samples on farms, but if animal droppings or other unexpected items are present are they noticed and also collected?

Collecting the sample requires thought and skill. An aseptic collection and sample holding scheme must first be devised to insure sample integrity. Samples must be collected from all regions of the location and all portions of each matrix because bacteria are not uniformly distributed. Representative samples must be collected to account for variability at the macro and micro levels. For example, samples of standing water should be collected from the top, middle, and bottom of the water column and from the soil sediment layer. Additionally, two to three times the amount of sample required by the testing method should be collected to provide extra testing material.

The final step is determining which test method is most likely to identify the presence of a pathogen. Knowing the limit of detection and potential complication from the sample matrix and other background microorganisms is essential for selecting the best analytical method. ■

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