A QUARTERLY NEWSLETTER *from* FOOD SAFETY NET SERVICES

# THE FOOD SAFETY NETWORK

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## In This Issue





## CAUGHT 'N THE NET

### Transfer of *Listeria monocytogenes* from Floor Drains to Product-Contact Surface

By Dr. Gary C. Smith

Ready-to-eat (RTE) meat and poultry products contaminated with *Listeria monocytogenes* have been vehicles in numerous illnesses and fatalities in the US and Canada. The transmission dynamics of *L. monocytogenes* in food-processing and retail environments requires continuous scrutiny. The organism enters processing plants via dust, people and/or raw material but seldom survives commercial processing; RTE foods are usually contaminated with *L. monocytogenes* in the post-processing environment. Ceiling dust and product-contact surfaces have been implicated as sources of L. monocytogenes contamination in some of the most serious listeriosis outbreaks.

If the source is a product-contact surface, how does it get there? A Kansas State University (KSU) study1 states that: (a) floor drains in post-lethality processing rooms often harbor *L. monocytogenes* due to the continuous presence of humidity and organic substrates, and (b) cleaning and washing activities in those rooms can transfer the bacterial cells from the drain to the surrounding environment, subsequently contaminating the food during slicing, portioning or packaging.

The KSU scientists[1] inoculated floor drains (using a meat slurry containing *L. innocua* as a surrogate) at regular intervals to simulate normal conditions of drain surfaces in a food processing facility. They allowed dwell times, after inoculation, of 8 hr (the length of a shift) and 48 hr (to account for biofilm formation) before using a hose with a water pressure of 40-60 psi to clean the drains. The presumption was that aerosols generated by washing and cleaning could cause the translocation of bacteria in the drain into the environment and onto food-contact surfaces. To study translocation, stainless steel coupons were placed at heights of 1, 3 and 5 ft from the floor-drain. The experiment was replicated; one round was performed without cleaning or sanitizing the drain (Non-Treated) before spraying it with water and the second round was performed with cleaning (Johnson Diversey "Eliminex" foaming drain cleaner) and sanitizing ("Final Step" 512 sanitizer) (Treated) before spraying it with water. Results are in Table 1.

**Table 1. Incidence of *Listeria*-positive samples on coupons.[1]**

| Dwell time (in drains) | Treatment of drains | Height of Coupons | | |
|---|---|---|---|---|
| | | 1 ft | 3 ft | 5 ft |
| 8 hr | Non-Treated | 16.6% | 11.1% | 2.7% |
| 8 hr | Treated | 13.8% | 5.5% | 0.0% |
| 48 hr | Non-Treated | 25.0% | 8.3% | 0.0% |
| 48 hr | Treated | 25.0% | 5.5% | 2.7% |

These results reinforce the need for cleaning/sanitizing floor drains, for considering the water pressure used, and for evaluating the sequence in which specific areas of the room are cleaned/sanitized (drains first, or last, or both).

[1]Saini *et al.* 2009. Meat International 19(4):16-18.

*For questions or comments about this article, email gsmith@food-safetynet.com.*

# Determining Shelf-Life

By Wendy Warren, Chief Science Officer

Determination of a shelf-life is a critical step in the road of product development. Assignment of an accurate shelf-life period is essential to ensuring the product is distributed, marketed, and consumed prior to becoming undesirable and/or potentially hazardous to the consumer.

Product shelf-life is determined by examining a combination of organoleptic properties and overall microbial integrity. For some products, chemical qualities may also be considered based on the corresponding impact on organoleptic properties. Several factors must be considered in designing an effective shelf-life study to provide meaningful data for the evaluated product. The nature of the product, processing procedures, packaging, distribution procedures, and retail display conditions are a few examples of what must be considered in developing the most appropriate approach for shelf-life determination.

Food Safety Net Services has extensive experience evaluating a variety of product types for shelf stability and can provide the type of guidance and customized service needed for implementation of effective shelf-life testing programs. Each study approach is individually developed in collaboration with our clients to ensure that all applicable product and processing variables are considered. Each study can be customized to accommodate any unique handling procedures that may be critical to the accurate determination of shelf-life.

**Product shelf-life is determined by examining a combination of organoleptic properties and overall microbial integrity.**

During evaluation period, Food Safety Net Services can provide up-to-date information for the overall performance of the product with regard to organoleptic properties, microbial integrity, and chemical quality as applicable. Based on real-time data, guidance from our technical staff on whether study should be prematurely ended will also be provided. Critical to the assignment of an accurate shelf-life period, is the consideration of all data generated such that complex interplay between microbial integrity, organoleptic quality, and in some cases, chemical quality, is carefully interpreted. Upon completion of the study, a summary report containing the raw data and corresponding recommendations and conclusions will be provided based on the data interpretation. ■

*If you have questions, comments or concerns with any of our methods, validations or training, please email Wendy wwarren@food-safetynet.com.*

# Sampling Plans
## *Environmental Sampling - Part 3 of 3*

By Sherri L. Jenkins, Vice President of Auditing and Consulting Services

There are many different types of sampling plans for a facility to implement. A few examples of such are environmental sampling, product sampling of both raw materials and finished product, and equipment sampling. Many customers actually require that you, as a supplier, have most of these in place. As a third party auditor, we must check to make sure you have sampling plans in place and are executing them as designed. **For this article, we will focus on the last group – Equipment Sampling plans.**

It is important to sample equipment in order to know that your cleaning procedures are effective and you begin each day with clean equipment. In addition, you should sample the equipment throughout operations to know if your equipment becomes dirtier at times, thus posing a hazard (i.e., food safety risk or a shelf-life risk) to your product.

**This article is part three of a three part series that discusses the environmental sampling plan.**

When contemplating areas to sample, it is a good idea to look for the niche areas or harborage points. The niche areas or harborage points are the diminutive places or things that are hard to get to, but will affect (i.e., touches product, excess water or purge) your product as it passes through the equipment. Some of the niche areas may be obvious, although most will not and may also be difficult to access. A rule of thumb to use is the following – if it looks too difficult or cumbersome to clean, then it probably isn't getting cleaned.

The numbers of samples will depend on how many places you have identified or how much equipment you have. The best recommendation is to complete baseline studies on each piece of equipment or area so you will know what to expect from that site. You can then sort through the sites that are routinely low or no counts reported to focus on the more prominent sites with higher counts.

Each of these sampling plans do have a place in your operation, but it is up to you and your management team to decide where that place is. It is a great deal easier to handle a problem or issue in a proactive manner, than when the bus side swipes you, so to speak! *Good luck!* ■

*For more information, email sjenkins@food-safetynet.com.*

## A Note from the President:

A special word of thanks to our important clients and also to our valued staff members. Food Safety Net Services, Ltd. was founded on the concept of offering outstanding customer service. Every single employee in our organization shares the value of customer service and our commitment to it. Dedicated time and many training opportunities have been taken to pass down numerous stories that provide concrete advice and guidelines about how things are done at Food Safety Net Services.

We have always supported the vision that our growth depends on solid partnerships and only through these partnerships will we grow. There are many examples of how Food Safety Net Services adheres to these standards, from making sure that management and staff is available 24/7, to the hiring of outstanding team members and making sure these members are satisfied and happy. We find few things that are more compelling than direct, honest feedback from the customers that we serve and we welcome comments about both positive and negative experiences.

We want happy, delighted customers! Many thanks for your trust and continued business.

*- Gina Bellinger*

FSNS® Food Safety Net Services

# Implementation for the BRC Standard for Food Safety

The Global Standard for Food Safety, Issue 5, is published by the Retail British Consortium (BRC). Originally developed in the UK Retail Market, it has acquired world wide recognition as the framework for any business to produce a safe and quality product. This training will provide you with the necessary knowledge and information to implement the BRC Global Food Safety Standard, Issue 5, in your facility. It will specifically cover the following topics:

- Senior Management Commitment
- The Food Safety Plan – HACCP
- Food Safety / Quality Management System
- Site Standards
- Product Control
- Process Control
- Personnel

Both BRC courses taught by:
**Michael J. Pearsall,**
*Approved Training Provider*

**Course Dates:**

| | | |
|---|---|---|
| October 27-28, 2009 | November 16-17, 2009 | December 8-9, 2009 |
| Atlanta, GA | San Antonio, TX | San Antonio, TX |

*Registration Fee: $595.00 (two day course)*

# BRC Internal Auditor Certification

A comprehensive audit system is fundamental to a company's food safety and product quality. It provides confirmation that systems and procedures are operating effectively. The audit identifies areas that require improvement. The BRC Internal Auditor Certification Course will teach you how to conduct internal audits in your facility against BRC Global Standard for Food Safety. The following topics are to be covered:

- Audit Scopes
- Development of audits through risk assessment
- Identification of auditors
- Audit checklist preparation
- Audit timing
- Objective evidence collection
- Non-conformity classifications
- Establishment of timelines for the correction of non-conformities
- Communication methods of audit findings and correction

**Course Dates:**

| | | |
|---|---|---|
| October 29, 2009 | November 18, 2009 | December 10, 2009 |
| Atlanta, GA | San Antonio, TX | San Antonio, TX |

*Registration Fee: $395 (one-day course)*

***Three-Day course, combined: $795***

**REGISTER NOW!** Call Heather Amis at 888.525.9788 x229 (toll free) or email Heather at hamis@food-safetynet.com.

*For comments on this newsletter, please contact Wendy Harmon at 888.525.9788 or wharmon@food-safetynet.com.*


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