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CAUGHT 'N THE NET

The Escalating Dietary Sodium Debate

By Dr. Gary C. Smith

The average US adult consumes 3,436 milligrams (mg) of sodium each day even though CDC says non-hypertensives should consume no more than 2,300 mg and hypertensives should consume less than 1,500 mg; 70% of us exceed the recommended levels (*Morbidity and Mortality Weekly Report*, 58:281, March 2009). We consume one-fourth of it as table salt (40% sodium) and three-fourths of it in processed foods. The Institute of Medicine, FDA, CDC, American Medical Association, American Heart Association and New York City Health Department are asking food manufacturers and restaurateurs to reformulate products or develop new ones to help keep sodium intake levels in line with Dietary Guidelines (*Associated Press*, April 2009; *Prepared Foods*, May 2009; *Food Product Design*, May 2009). US Senators Harkin and DeLauro introduced the Menu Education and Labeling Act to require fast-food, and other chain restaurants to put information about sodium and other nutrients on printed menus (*SMA InfoMeat*; May 2009).



Many foods benefit in flavor, color, texture, water-holding, fat-binding, preservation, stability, shelf-life and safety from sodium-containing ingredients. Processed meats often contain sodium chloride, sodium tripolyphosphate, sodium nitrate or nitrite, sodium ascorbate or erythorbate, and sodium-containing flavor enhancers (MSG and/or HVP) but table salt contributes about 79% of the sodium in the final product (*Desmond*, 2006; *Meat Science* 74:188). CSPI (May 2009) examined 17 restaurant chains and found that 85 of 102 meals had more than a day's worth of sodium, while some had more than four day's worth; the top offenders contained 5,735 to 7,106 mg. Sodium content (in mg/serving) appears now in the Nutrition Facts panel on many foods. FDA approves label claims based on mg/serving of "sodium free" (<5), "very low sodium" (35 or less), "low sodium" (140 or less) and "reduced sodium" (25% less than the regular product). Food manufacturers challenged with need for reduced-sodium formulations must assure that taste, functionality, shelf-life and safety do not suffer in the process. Potassium chloride provides saltiness but has a metallic flavor and usually is only used to substitute for 20 to 40% of the normal salt content. Phosphates for which sodium has been replaced by calcium or potassium are now being used in baked goods, batter/breading, processed meats, chicken breasts, roast beef and cheese. Keiko et al. (2009) suggested (*J. Food Sci.* 74:S147) that half of the sodium chloride could be replaced by addition of small amounts of rice black vinegar with no decrease in perception of "saltiness."

It can be done. There have been numerous recent reports of companies that have anticipated tightened government standards and/or heightened consumer expectations, and already reformulated products to reduce sodium contents. Among those are Denny's, Burger King, Yum Brands, Au Bon Pain, Sara Lee, Tyson Foods, Foster Farms and Campbell Soup. For food processors that have not yet initiated the process, the starter's pistol has already sounded. ■

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



The Importance of Training and Method Validation

By Adrian Garcia, Technical Writer

Food safety issues are on the rise, ranging from contaminated meat with *E. coli* O157:H7 to contaminated peanut and peanut products with *Salmonella*, and everything in between.

Food safety is a serious issue and companies that sell food either directly or indirectly to the public rely on companies, like Food Safety Net Services (FSNS), to provide accurate results, from start to finish. It is our responsibility, not only as testing facilities but also as consumers, to provide the most accurate results possible to all of our clients. In order to help accomplish this goal we have strong programs for review and, as needed, revision of all of our microbial methods to be in compliance with known, internationally

accepted and scrutinized reference methods. This program is reinforced by a comprehensive training program offered to our staff. At FSNS, we designate Facility Master Trainers from all laboratories that receive "first generation" training from the Corporate Master Trainer to directly train their local personnel on all of the methods as applicable to facility needs. FSNS training requirements and programs provide the necessary tools to support accurate and effective performance. Through these programs, FSNS can ensure that all methods, protocols, and practices are the same from one lab to another. Our ultimate goal is to make sure all products and services, no matter from which facility, are treated the same to ensure the results will be consistent.

FSNS has confidence that through our commitment to a strong training program, we can ensure that testing of all foods adheres to standardized requirements.

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FSNS has continued to expand method validation capabilities, to include individual and multi-laboratory collaborative method validations. In the event of a needed method validation, deviation or modification, FSNS uses a scientific approach, and often a multi-laboratory validation scheme within our network of laboratories. Vali-

dation results are analyzed by a scientist independent of the validation study to remove all bias from the method originator and the participating laboratories guaranteeing the method analysis is free from any preconceived bias ensuring the accuracy and integrity of the results.

FSNS continues to strengthen our technical abilities thanks to our laboratory staff and the tasks they perform, and moreover, the winning attitude of each lab member toward our clients and toward our new approach to training and validations. ■

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



Sampling Plans

Environmental Sampling - Part 2 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 are environmental sampling, product sampling of both raw materials and finished product, and equipment sampling. Many customers actually require that a supplier has most of these in place. A third party auditor must check to make sure these plans are in place and are being executed as designed. **This article will focus on Product Sampling schemes.**

In general, there are three product sampling types: raw material product samples, in-process product samples, and finished product samples. Each one of these sampling
This article is part two of a three part series that discusses the environmental sampling plan......

types is important in its own right. This article will encompass the general microbiological profile, not pathogen testing.

Raw material product sampling allows a producer to know if their ingredients are 'clean'. The data from this testing can also be tracked and trended, so that it can be determined over time how each supplier performs microbiologically. Starting with ingredients that have a low microbial load gives the process a head start in the 'clean' direction. Whether a raw product or a cooked, Ready-to-Eat item is being produced, starting with ingredients that have a low microbial load will only enhance the end product. The best practice would be to take samples from every load or lot received.

The in-process samples can provide beneficial information about the production process.

Generally, there are points in every production process that can increase the microbial population or add to it. These points are not necessarily Critical Control Points, but it is important that they are managed in order to maintain a 'clean' process and ultimately produce a 'clean' product. The sampling frequency for this type of scheme could be as much as daily to weekly or monthly, etc., depending on the amount of information that you want to obtain. The in-process sampling also could be utilized during times of investigation of an issue.

Finished product samples would be taken from the finished, packaged product. These samples give an idea of the microbial population on the product that the customer will be receiving. It also provides an insight as to the potential shelf-life of the product. The lower the initial microbial load, the longer it

will take the product to reach spoilage levels of bacteria. Of course, the shelf-life of the product also depends on the proper storage temperature of the product. The data obtained from these samples can also be tracked and trended to determine performance of the facility or process over time. With this information, it is possible to see potential issues on the horizon or to determine if a process always has a problem at a certain time of year. Utilizing a set sampling frequency is recommended for the finished product sampling scheme. The frequency can range from daily, weekly, monthly, quarterly, etc. Again, the frequency depends on the information you want to obtain.

In regards to numbers of samples for any of the sampling schemes, the larger the sample size at one time the better the information will be from that sample set. However, sampling at a lower rate over time yields a strong data set, as well. Every product code can be tested; however, the practical rule of thumb would be to use common sense in grouping like products together to optimize the sampling scheme.

As with any testing that is performed, a plan must be in place to designate how the data will be utilized. The data will only assist in the production process if it is known how the results will be used. ■

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



Welcome Jim Byron and Neda Vaseghi

Food Safety Net Services welcomes **Jim Byron** as Vice President of Sales and Marketing. Jim has numerous years of experience in the industry and throughout his extensive career he has consistently been successful in his endeavors. This has been demonstrated by his recognition as Sales Person of the Year and Area Manager from national sales organizations. Jim is a native of Boston, Massachusetts where he attended Boston College, graduating Cum Laude with a degree in business before he started on his sales career.

Also joining our sales team is **Neda Vaseghi** as Western Regional Sales Representative. Neda is a top sales professional bringing over 12 years of expertise in the biotechnology community. She will be taking on responsibility for the West Coast area providing new business development for our Fresno and Phoenix laboratories. Neda holds an MBA from the University of Phoenix, Seattle, Washington and a BS in Environmental Health and Safety from the University of Washington.

Jim and Neda will be tremendous assets to FSNS and our clientele! ■

Registration Open for BRC Global Food Safety Standard Course August 25-26 • San Antonio, TX



The Global Standard for Food Safety, Issue 5, is published by the British Retail 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, led by **Michael J. Pearsall** (Approved BRC Training Provider), will provide you with the necessary knowledge and information to implement the BRC Global Food Safety Standard, Issue 5, in your facility. It will especially cover the following topics: Senior Management Commitment, The Food Safety Plan - HACCP, Food Safety/Quality Management System, Site Standards, Product Control, Process Control and Personnel. ■

Registration Fee: \$595 per class*

Classes are limited to 20 people

Save 10% when registering more than 2 people.

*Registration fee includes: All course materials, lunch. FSNS reserves the right to cancel the course if there are fewer than 10 registrants.

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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