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Food Protection Trends

Science and News from the International Association for Food Protection



Sponge Sampling for Removing Bacteria
from Beef Carcasses

Agrosecurity Awareness Curriculum Design,
Delivery and Evaluation with First Responders
to Agricultural and Food Emergencies

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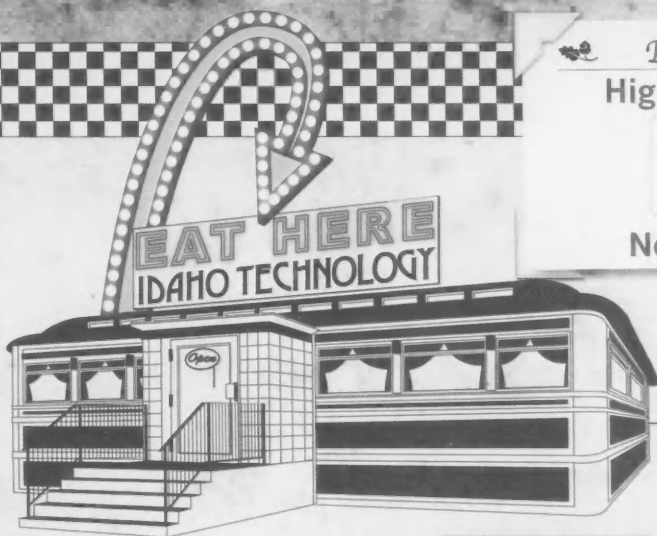
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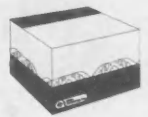


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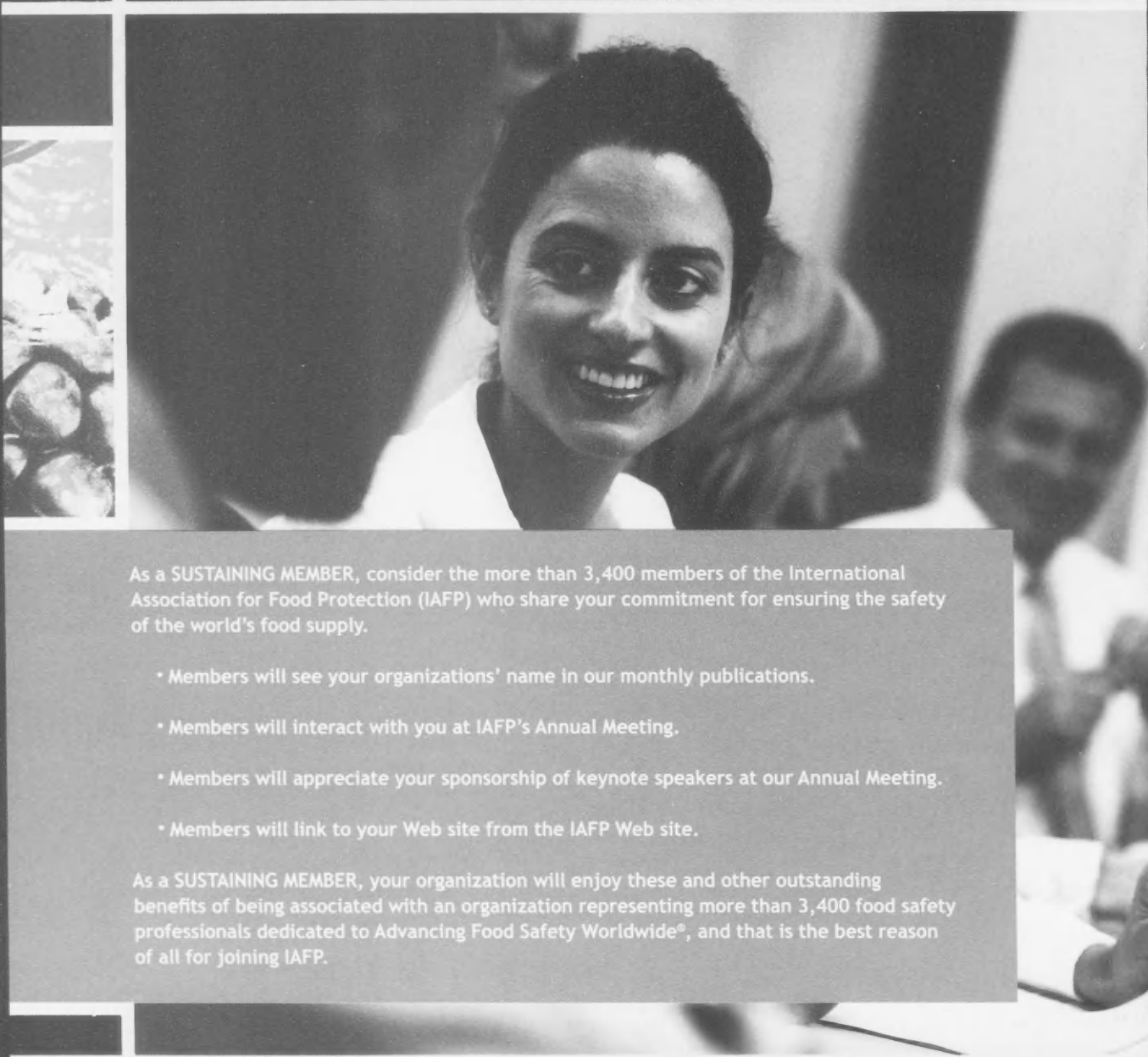


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“VICKIE’S VIEW” FROM YOUR PRESIDENT

In mid-April I attended an off-site Kraft Foods business meeting called the Quality Round Table (QRT). As a company, we hold this roundtable meeting roughly every other year; in my business unit, Cheese and Dairy, we attend them twice a year. The core attendees are employees from the company’s quality, corporate and manufacturing divisions. Other groups or representatives within the company are occasionally invited to give updates and other relevant presentations. Last week, the QRT audience was more broad-based than usual, including staff from the microbiology/food safety, regulatory, sanitation, operations, and auditing business units, as well as key representatives from marketing, sales and the senior leadership teams. One of the reasons for the larger group of roundtable participants was the overarching theme of the meeting: Indispensable Business Partners.

Throughout the meeting, we discussed what it means to be an indispensable (i.e., essential, absolutely or vitally necessary) partner. We considered how each and every function of the business, no matter how directly or indirectly related to food quality, needs to become an indispensable business partner to each other and to the company in order for the overall business to be successful. Success, in our company’s case, means going to market with delicious, high-quality, safe products that delight consumers.

So, how does a department or an individual become an indispensable partner? At Kraft, we are guided by seven principles. An indispensable partner inspires trust and acts like an owner of the organization. An indispensable partner demonstrates strategic agility by anticipating future consequences



By **VICKIE LEWANDOWSKI**
PRESIDENT

“We agreed that a strategic plan would put the tools in place to drive the organization forward”

and reacting appropriately. An indispensable partner demonstrates broad knowledge and perspective, typically gained with experience. An indispensable partner is fully engaged at all times, and as an “owner,” is aware of the company’s strategic plan and works toward accomplishing the goals outlined in that plan.

A week after the QRT meeting, I had the opportunity to use what I learned about the concept of indispensable partnering at the IAFP Executive Board’s spring meeting. As I mentioned in a previous column,

during this meeting we revisited, revived and renewed the association’s three-year strategic plan. We had an excellent facilitator, Doug Whittle, who led us through this important task. Doug was quite skilled at listening to our very vocal group of 11 (often all of us at the same time!) and interpreting our needs, wants and goals for the present and future success of the association.

We began with some basic questions: What is a strategic plan, and why do we need one? A strategic plan is a roadmap, which essentially helps an organization determine where it is going over the next few years, how it’s going to get there, and how it will know if it got there or not. We considered whether IAFP, as a nonprofit organization, really needs a strategic plan. Why not keep doing what we are already doing? There’s an old saying that if you always do what you always did, you always get what you always got. This adage has been updated to include the phrase “or less” at its conclusion. As stewards of IAFP, the Executive Board members and staff decided that we want to make sure that the association doesn’t stay in the same place, or worse, lose ground. We agreed that a strategic plan would put the tools in place to drive the organization forward and help IAFP grow from a good association into a great one.

Next, we pinpointed the Key Result Areas (KRAs) that support our mission statement: “To provide food safety professionals worldwide with a forum to exchange information on protecting the food supply.” We did this by asking three questions:

1. What should IAFP continue to do? In other words, what are we proud of, what do we need more of?

2. What should IAFP stop doing? What are we doing that is not value-added to our members?
3. What should IAFP start doing? What are we missing, where could we be adding value?

For each of the five key strategic plan focus areas identified during the meeting—Engagement, Foundation Fund, Meetings, Publications, and Resources—a minimum of one supporting goal was identified and each goal was assigned at least one objective. The goal is a general action item (it must have a verb in its description), while the objective, also an action item, is specific,

measurable, attainable, realistic and timely (SMART). Once the KRAs, goals and objectives were identified, board members and staff were asked to determine the three W's—*who does what by when*—for each objective. We worked through the process of assigning accountability to individual board members. The accountable person for each objective will identify individuals to be responsible for various related tasks, and/or they will identify individuals or groups with which IAFP can consult. The important thing to remember is a strategic plan is a flexible, dynamic plan and that it is not meant to corner us. The KRAs are the cornerstones of the plan, but as situations or factors change (such as the economy or

member needs), so can the priority of goals and objectives in the plan.

At the end of the day, we had accomplished much. We have a working plan that identifies the goals and objectives consistent with our mission statement. It also defines a feasible timeframe for completion. Once the strategic plan is finalized, it will be communicated to the membership. It is likely that you will be asked to help the organization fulfill its plan. How will you respond? Are you merely a customer, or are you willing to be an IAFP Indispensable Partner? As always, please feel free to contact me with your feedback and suggestions at vlewandowski@kraft.com.

Announcing

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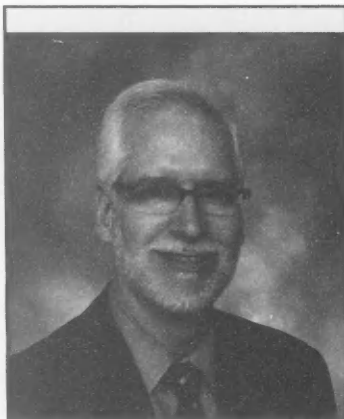
“COMMENTARY” FROM THE EXECUTIVE DIRECTOR

Are you coming to IAFP 2010 in Anaheim? If yes, have you arranged your hotel stay at the Hilton Anaheim? We hope the answers to both questions are a resounding “yes,” but if not – let’s talk a little further.

First and foremost, we hope you will be able to be with us in Anaheim for IAFP 2010. It promises to be an outstanding gathering of food safety professionals from around the globe. We have seen increased interest expressed by exhibitors and sponsors this year which is very reassuring. Our pre-registration for the Annual Meeting is also shaping up to be very strong. These factors, along with other meeting metrics, combine to give us great hope for a superior, face-to-face networking event!

Many people have pooled their efforts to make IAFP 2010 a success. Previously mentioned are our sponsors and exhibitors. There are more than 10 new exhibiting companies already signed up this year. We expect to have the largest number of booths in the exhibit hall in the history of the Association! Sponsoring companies have really come through in 2010 and this is good for all attendees as it helps to keep our meeting registration fees at reasonable levels. Sponsors help to support coffee breaks, receptions, lunches, our program bag, badge lanyards and other events throughout the meeting. We encourage you to thank the IAFP 2010 sponsors, whether you are coming to the meeting or not (see a listing on page 323).

In addition to financial support, we have the most energetic support from those people who have information to share with all attendees! More than 500 presentations take



By **DAVID W. THARP, CAE**
EXECUTIVE DIRECTOR

**“We encourage
you to thank the
IAFP 2010 sponsors”**

place during the Annual Meeting. It is fascinating to receive messages during the planning process from the session organizers and technical presenters who work so very hard to make sure they have everything in place prior to the meeting start up. As you know, everyone involved in this event lives and breathes food safety and is committed to providing

a safe food supply to the consuming public. Sessions and presentations are always superbly coordinated at IAFP’s Annual Meeting!

We also have the assistance of the Southern California Association for Food Protection who will help welcome all attendees to Orange County and Southern California. They have been planning for this event for more than one year and are excited to be involved with IAFP’s showcase, the Annual Meeting. Chairpersons for the Local Arrangements Committee are Margaret Burton and Turonda Crumpler. Under their direction, attendees will feel a part of the meeting upon their arrival in Anaheim. I would be remiss if I did not mention the IAFP staff! We have the finest group on staff that put forth extraordinary efforts to plan each detail of the Annual Meeting. Our planning for IAFP 2010 begins close to two years in advance of the meeting dates. There are so many details to work through, but with our experienced staff, everything flows smoothly!

The second question I asked in the opening paragraph is of utmost importance. It is about your hotel reservation for IAFP 2010. For each meeting IAFP conducts, we negotiate with our host hotel or hotels to obtain the best rate possible for our attendees. In a contractual relation, promises are made by both parties to come to an agreement that both parties agree to fulfill. In order to obtain a reduced nightly rate, IAFP agrees to fill a certain number of hotel rooms. In return, the hotel agrees to price reductions for meeting space and on food and beverage pricing.

If IAFP does not deliver the agreed upon number of rooms to the hotel under contract, the hotel

has the right to either charge IAFP for that number of hotel rooms not fulfilled and or reduce the amount of meeting space provided and increase the prices charged for food and beverage. This can have a damaging effect on the financial outcome of the Annual Meeting.

We realize there are many options for lodging in the Anaheim area, but we ask you to book your room at the host hotel, the Hilton Anaheim. This will help ensure that we meet our obligation to

the Hilton and will keep our Annual Meeting expense under control. Should it happen that too many people book rooms at off-site hotels, our meeting costs will increase significantly, thereby causing future meeting registration fees to increase accordingly.

The host hotel offers the best access to our meeting space. The Hilton is newly remodeled and updated and provides the opportunity to network with friends and colleagues throughout the

beautiful property. We encourage you to help support IAFP by making your IAFP 2010 reservation at the Hilton Anaheim. You can't beat the \$149 rate and the convenience to our meeting. Why pay more when you can be in the center of all the Annual Meeting activities at the Hilton Anaheim???

We look forward to seeing you in sunny California this coming August. Please let us know if we can assist you in planning for your IAFP 2010 experience.



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How Effective is Sponge Sampling for Removing Bacteria from Beef Carcasses?

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ABSTRACT

Removal of bacteria by sponging carcass surfaces is a common, non-destructive sampling method. The proportion of bacteria removed by sponging was measured as a percentage of those on the sponge plus those on the excised carcass surface beneath the sponged area. For a total of ten experienced operators working at five abattoirs, the mean proportion of bacteria removed at each site was 39.1% (rump), 39.9% (flank) and 33.7% (brisket). The standard deviation at each site was relatively high (28.5, 21.3 and 17.4%, respectively), reflecting the wide variation of recovery among operators (2.3–93.1%). To determine the proportion that could be removed by continued sponging, numbers of bacteria were counted after each of five sequential spongings, together with those remaining on the excised site after homogenizing of tissue by stomaching. The proportion of bacteria recovered by sequential sponging varied between 11.1 and 97.4% and, with one exception, larger proportions were recovered from the first sponge. The present study demonstrates that sponge sampling, while convenient, is a highly variable means of removing bacteria for enumeration.

INTRODUCTION

The USA Pathogen Reduction Final Rule in 1996 (1) introduced the requirement for microbiological monitoring of carcasses at defined sites. The most common means of sampling involves abrading carcass sites with a rehydratable sponge, a method both convenient and non-destructive of the meat surface. Microbiological testing is an important verification tool for meat processing and, in Australia, data are collected by export meat slaughter establishments as part of the *E. coli* and *Salmonella* Monitoring (ESAM) program administered by the Australian Quarantine and Inspection Service.

Observation of the sponging technique at meat establishments indicated variability among operators, particularly in the pressure applied to, and therefore the degree of abrasion of, the site. Accordingly an investigation was carried out in which trained operators were required to sponge designated sites marked at the rump, flank and brisket of beef carcasses, after which the sponged area was excised. By counting bacteria removed by the sponge and those remaining on the excised area, the proportion which each operator removed by sponging could be

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calculated. The results of this study are presented in this report.

MATERIALS AND METHODS

Samples were collected in January and February 2008 from five abattoirs. Sampling was carried out on 14 beef carcasses that had been held under active refrigeration for 16 to 24 h. On each carcass side, an area measuring 10 cm × 10 cm (100 cm²) was marked at each of the rump, flank and brisket sites, using a knife sanitized by immersion in water at 82°C.

One side of a polyurethane sponge (Whirlpak speci-sponge, NASCO, USA) moistened with Butterfield's solution (25 ml; bioMérieux) was used to sample each site. A total of 10 samplers were used, all of whom had undergone a training course in sponge sampling and were either industry/government inspectors or research staff.

The ability of each operator to sponge each site was assessed according to whether the operator conformed with the technique prescribed in the Microbiological Guidelines that accompany the Australian Standard for production and transportation of meat and meat products for human consumption (2): *"Wipe the sponge over the sampling area (10 cm × 10 cm) approximately 10 times in the vertical and 10 times in the horizontal directions. The pressure of sponging is important and should be as if you are removing dried blood from the carcass. However, the pressure should not be so hard as to crumble or destroy the sponge."*

Using a knife sanitized by immersion in water at 82°C, the previously-sponged and demarcated area was carefully excised by slicing approximately 2 mm below the surface, and the sample was placed in a sterile Stomacher bag.

All samples were packed in insulated containers with chiller packs for transportation to the laboratory, a journey never longer than 3 h. At the laboratory, samples were held at 2–4°C until examination within 1 h of arrival.

After the sponge had been manually squeezed several times and the fluid had been stripped from it, serial dilutions of the fluid were prepared in 0.1% peptone water (Oxoid, Hampshire, England). Aliquots (1 ml) were transferred to APC Petrifilm® (3M, Sydney, Australia). To each excision sample, 30 ml of peptone water (0.1%) containing

2% (v/v) Tween 80 (Merck Pty Ltd, Victoria, Australia) was added and the tissue homogenized in a stomacher (Colworth Stomacher 400, A.J. Seward & Co. Ltd, London, UK) for 2 minutes. Aliquots were diluted and plated as already described. Duplicate Petrifilm® plates were incubated at 25°C for 72 h, after which time colonies were counted. The limit of detection for sponge samples was 0.25 CFU/cm² and for excised samples 0.33 CFU/cm².

The total number of bacteria recovered was defined as the number obtained by sponging plus the number from the excised tissue. All counts were converted to counts per square centimeter and analyzed using analysis of variance to test for differences between sites (rump, brisket, flank). Plant and Operator were also included in the model, so that the variability between plant and the variability between operators could be evaluated. The variability between operators within each plant was confounded with carcass, as each operator sponged only a single carcass. Only Operator 10 sponged carcasses at each of the five plants.

RESULTS AND DISCUSSION

Bacterial numbers recovered when ten experienced operators sponged sites of beef carcasses chilled overnight are presented in Table 1. At each establishment, operators sampled adjacent carcass sides, each sponging an area marked by Operator 10, who also excised each site after sponging was completed. The mean proportion of bacteria removed at each site was 39.1% (rump), 39.9% (flank) and 33.7% (brisket) and the standard deviation at each site was relatively high (28.5, 21.3 and 17.4%, respectively), reflecting the wide variation of recovery among operators (2.3 – 93.1%). There was no significant difference among sites, on average, for the proportion of bacteria removed ($P = 0.67$) or aerobic plate counts (APCs) ($P = 0.19$).

Although all operators had received training some years previously in carcass sponging, conforming exactly to procedures set out in the Australian Standard, their technique in this 2008 study varied considerably. Important departures from the standard method were doubling-over the sponge (effectively halving the area available for removing bacteria) and sponging "lightly," differences which might be expected to reduce recovery of

bacteria, or using more than 10 up-and-down strokes and exceeding the marked area, which might be expected to increase recovery. This is in agreement with a recent study in which total viable counts were also shown to be significantly different depending on the person sampling the carcass, as well as the animal species tested and the bacterial load (7). However, unlike the present study, operator variability using sponging and excising methods on different carcass sites was compared.

To determine the proportion that could be removed by continued sponging, a single operator (Operator 10) undertook sponging and excision on two carcass sides. Numbers of bacteria recovered from each site after use of five separate sequential sponges are presented in Table 2, together with the numbers remaining on the sponged site measure by excision. The proportion of bacteria recovered by sequential sponging varied between 11.1 and 97.4% and, with one exception, larger proportions were recovered from the first sponge.

As indicated in Table 1, sponges were capable of removing relatively large numbers of bacteria, with 26.2 and 28.6% of sponges removing more than 50% of the surface load and containing more than 100,000 colony-forming units (CFU), respectively. In contrast, the sponge used by Operator 10 removed only 2.3% of the 1.1 million bacteria from a rump site, indicating that there may be other factors, apart from operator technique, that influence removal of bacteria. One factor, which was noted during the study, was fat cover, with the possibility that the pores of the sponge become occluded, thereby reducing removal of bacteria. This is in addition to variables such as rates of bacterial attachment to the meat surface, uneven distribution of bacteria on the carcass, whether carcasses are sampled "warm" or chilled, abrasiveness of the swab/sponge, and the vigor with which the sponge is applied to the site (4, 5, 6, 9). In addition, it is well recognized that the sponge itself retains bacteria.

A further variable confounding comparison of non-destructive and excision sampling methods is that previous studies have compared bacterial populations on different sample sites, either on the same or different carcasses (3, 4, 6, 7, 8, 9). By contrast, the present study limited the number of variables listed above, first because the sponged area was the

TABLE 1. Recovery of bacteria by sponging sites on chilled beef carcasses by ten experienced samplers

Operator(s) at each abattoir	Total number of bacteria removed by sponging the 100 cm ² site		
	Rump	Flank	Brisket
Abattoir 1			
1	17,500 (82.0) ^a	2,738 (39.8)	775 (24.3)
2	2,763 (31.0)	1,088 (33.0)	5,463 (25.4)
3	5,700 (13.1)	2,238 (93.1)	1,413 (35.1)
10	2,375 (58.8)	1,238 (58.7)	3,250 (57.5)
Abattoir 2			
4	41,750 (93.0)	211,750 (48.6)	8,875 (68.0)
10	2,263 (25.2)	57,125 (59.8)	33,000 (57.4)
Abattoir 3			
5	113,625 (64.4)	196,000 (31.0)	263,500 (18.0)
10	23,375 (2.3)	191,125 (25.8)	197,125 (16.3)
Abattoir 4			
6	316,500 (68.6)	539,250 (41.4)	275,000 (31.3)
7	12,000 (15.5)	156,750 (37.9)	332,875 (34.4)
10	75,250 (21.4)	175,875 (42.9)	44,875 (20.3)
Abattoir 5			
8	1,213 (21.2)	3,988 (21.7)	1,788 (9.0)
9	1,850 (22.5)	8,125 (15.5)	11,500 (43.4)
10	4,525 (27.6)	8,625 (8.6)	6,950 (30.8)
Mean recovery (%)	39.1	39.9	33.7
SD % recovery	28.5	21.3	17.4

^aNumber in parentheses was calculated by dividing the number recovered by sponging by the sum of the number of bacteria recovered by sponging and by excision.

same as the excised area and second because a single sponging technique was used.

Although, as the present study indicates, sponge sampling is a convenient but variable means of removing bacteria for enumeration, it remains a valuable method of evaluating process hygiene of the carcass slaughter and dressing process, both at the individual plant and national industry level in Australia. In addition, a fuller understanding of the benefits of carcass sampling for process control can result from a larger data set that may reduce the effect of differences

in sampling operator technique, bacterial distribution, and other variables (6, 7). In this regard, each year in Australia around 23,000 new data points for beef carcasses are added to the national microbiological database, the *E. coli* and *Salmonella* Monitoring (ESAM) program.

ACKNOWLEDGMENTS

We are grateful to the staff and management of the abattoirs for their assistance and cooperation in this project. Funding was made available

by Meat & Livestock Australia and the Tasmania Institute of Agricultural Sciences' Food Safety Centre.

REFERENCES

1. Anonymous. 1996. Pathogen reduction: hazard analysis critical control point (HACCP) systems; final rule. *Fed. Regist.* 61, 38806-38989.
2. Anonymous. 2007. Australian standard for the hygienic production and transportation of meat and meat products for human consumption. (AS 4696:2007).

TABLE 2. Effect of repeated sponge sampling on number and proportion (%) of the total APC removed from the rump, flank and brisket sites of chilled and freshly-slaughtered beef carcasses

Sponge sample	Chilled carcass 1	Chilled carcass 2
Rump 1	10,250	1,862
Rump 2	2,850	486
Rump 3	1,475	262
Rump 4	925	75
Rump 5	1,387	37
CFU removed by sponging	16,887 (83.5)	2,725 (11.1)
CFU removed by excision	3,330 (16.5)	21,750 (88.9)
Flank 1	162	51,375
Flank 2	200	10,250
Flank 3	62	4,162
Flank 4	25	1,650
Flank 5	50	1,537
CFU removed by sponging	500 (66.2)	68,974 (93.0)
CFU removed by excision	255 (33.8)	12,906 (7.0)
Brisket 1	262	2,562
Brisket 2	125	450
Brisket 3	75	112
Brisket 4	112	187
Brisket 5	100	75
CFU removed by sponging	675 (75.0)	3,886 (97.4)
CFU removed by excision	225 (25.0)	90 (2.6)

3. Byrne, B., G. Dunne, J. Lyng, and D. J. Bolton. 2005. Microbiological carcass sampling methods to achieve compliance with the 2001/471/EC and new hygiene regulations. *Res. Microbiol.* 156:104-106.

4. Capita, R., M. Prieto, and C. Alonso-Calleja. 2004. Review: Sampling methods for microbiological analysis of red meat and poultry carcasses. *J. Food Prot.* 67:1303-1308.

5. Gill, C., and T. Jones. 2000. Microbiological sampling of carcasses by

excision or swabbing. *J. Food Prot.* 63:167-173.

6. Hutchinson, M., L. Walters, S. Avery, C.-A. Reid, D. Wilson, M. Howell, A. Johnston, and S. Buncic. 2005. A comparison of wet-dry swabbing and excision sampling methods for microbiological testing of bovine, porcine, and ovine carcasses at red meat slaughterhouses. *J. Food Prot.* 68:2155-2162.

7. Martinez, B., M. Celda, B. Anastasio, I. Garcia, and M. Lopez-Mendoza. 2010. Microbiological sampling of

carcasses by excision or swabbing with three types of sponge or gauze. *J. Food Prot.* 73:81-87.

8. Pearce, R.A., and D.J. Bolton. 2005. Excision vs sponging—a comparison of methods for the microbiological sampling of beef, pork and lamb carcasses. *J. Appl. Microbiol.* 98:896-900.

9. Ware, L., M. Kain, J. Sofos, K. Belk, and G. Smith. 1999. Comparison of sponging and excising as sampling procedures for microbiological analysis of fresh beef-carcass tissue. *J. Food Prot.* 62:1255-1259.

Agrosecurity Awareness Curriculum Design, Delivery and Evaluation with First Responders to Agricultural and Food Emergencies

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ABSTRACT

Disruption of agriculture and food systems, by intentional acts or through accidental introduction of diseases or contamination, would have devastating consequences. Heightened awareness and planning improves response, minimizing emergency impacts and shortening recovery time. This project was initiated to develop, implement and evaluate a curriculum to increase awareness and improve hazard recognition, thus improving emergency response. The curriculum includes eight modules, instructor resources and supplemental activities. Extension Agents trained in content and implementation helped conduct the training statewide. Program impact on awareness of issues and responsibilities was evaluated using 11 items and a 5-point Likert scale prior to and following the training. Participants (1,670) included firefighters, law enforcement, emergency management, wildlife and veterinary, and food industry sectors. Improvements in awareness ranged from 77% to 94% ($P < 0.01$). As a result of this training, 85% of participants planned to become familiar with local agriculture and food security emergency management and response systems; 87% planned to review responses to animal and plant disease outbreaks; 90% planned to become familiar with the Incident Command System; and 89% planned to examine emergency preparation in their communities. These results indicate the curriculum successfully increased agrosecurity awareness and could serve as a model for other states and/or countries initiating awareness level education as an important first step in recognizing and responding to potential threats. The diversity in professions of participants in this training indicates a need for a variety of training modules targeted to individual professions.

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INTRODUCTION

Agroterrorism has been defined as the intentional introduction of animal or plant pathogens; the intentional biological or chemical contamination of farm water supplies; the intentional adulteration of food or feed in the process from the farm to the table; the intentional misuse of a product meant for agricultural use such as pesticides, fertilizers, etc. for destructive purposes; and the intentional misuse of food and agricultural technology for illicit purposes (7). The potential for terrorist attacks against agriculture and food systems has been recognized as a national security threat not only in the United States but in other nations as well. Results of such an attack could lead to economic crises, loss of confidence in a government's ability to protect its citizens and loss of lives (5).

Food, agriculture and agribusinesses are an important part of Georgia's critical infrastructure. Georgia provides a substantial portion of the nation's food supply and the corresponding gross domestic product. It is the top United States producer of poultry meat and eggs, in addition to several crop commodities (1).

Emergency Support Function (EFS) 11 of the U.S. National Response Framework includes measures related to controlling and eradicating highly contagious or economically devastating animal/zoonotic diseases or outbreaks of economically devastating plant pests and diseases (2). The Georgia Emergency Operations Plan is a comprehensive plan to ensure mitigation and preparedness, appropriate response, and timely recovery from man-made, as well as natural disasters that may affect the residents of Georgia (4). Under this plan, the Georgia Dept. of Agriculture, the University of Georgia College of Agricultural and Environmental Sciences and the Georgia Emergency Management Agency have collaborated to make efficient use of human and financial resources in improving capabilities to respond to an attack on the state's agricultural sector. This agrosecurity awareness curriculum development and training project was designed to increase awareness of, and ability to recognize, threats and vulnerabilities, to help manage these risks and

to improve the reporting and diagnosing of suspected bioterrorism events, thus enhancing the preparedness of Georgia to face disasters, both natural and man-made.

The specific objectives of this project were to develop a state-specific curriculum that could be used by State Extension Specialists and County Extension Agents to:

- increase awareness of the economic impact of agriculture and food-related industries on the economy of the State of Georgia;
- increase awareness of potential events, both intentional and unintentional, that can have a devastating impact on agricultural and food-related income;
- increase awareness of the appropriate actions to take in the event of an emergency;
- increase awareness of the importance of the National Incident Command System (3) in dealing with agricultural and food emergencies; and
- increase awareness of the need for developing local systems and response teams for dealing with agricultural and food emergencies.

A second objective was to implement the agrosecurity awareness curriculum with first responders to agricultural and food emergencies and to evaluate its effectiveness in increasing the awareness levels of these responders about these types of emergencies.

METHODS

Protecting Georgia's Agriculture and Food, an agrosecurity textbook developed by Brown, Choueke, and Myers, (1) was used as the basis for curriculum development. The curriculum includes a CD-ROM with PowerPoint® slides for eight modules developed by content specialists and revised by outreach specialists into a format suitable for delivery to responders to food and agricultural emergencies. The topics included in the curriculum were an overall introduction to agrosecurity topics as outlined by Shutske (6). Modules included the following topics:

- Introduction to agrosecurity (the need for agrosecurity awareness training)
- Economic, Social and Environmental Impacts of Agroterrorism (economic data related to specific agricultural and food sectors within the state and the social, environmental and economic impacts of emergencies or disasters in those sectors)
- Animal Agriculture and Pathogens (recognizing signs of foreign animal diseases, using BUDDIES – an acronym for blisters, unusual ticks or maggots, deaths/downers, diarrhea, illnesses or abortions in high numbers, eating abnormality/will not eat, staggering/strange neurological signs, including spasms)
- Plant Agriculture and Pathogens (recognizing symptoms of plant diseases, using the five D's – discolored, deformed, defoliated, dying, deficient)
- Food Industry in Georgia/Risks and Threats (introduction to potential risks and vulnerabilities in food industries in Georgia)
- Agriculture and Food Emergency Management System (identification of appropriate responses to potential emergencies, including RAIN – recognize, avoid, isolate and notify)
- Chain of Events in an Emergency and Responsibilities in a Disaster (who to contact within the state of Georgia to report possible adverse situations and what to do until help arrives); and
- Summary and Next Steps (a summary of potential risks and possible actions to minimize adverse outcomes, steps needed in communities to become more adequately prepared to respond to emergencies, etc.)

All content modules were reviewed by Georgia Dept. of Agriculture and Georgia Emergency Management Agency personnel to ensure accuracy in such topics as identification of disease signs

TABLE 1. Audience categories attending agrosecurity awareness trainings

Category of Participants	Percentage of Audience (%)
Firefighters	21
Law enforcement	20
Emergency management personnel	15
Wildlife and conservation personnel	11
Agribusiness and agricultural personnel	9 ^a
Health service related personnel	6
Veterinary personnel	5 ^a
Department of Natural Resources personnel	3
Food industry personnel	2 ^a
Poultry industry personnel	2 ^a
Forestry related personnel	1
Volunteers	1
Agricultural research personnel	1 ^a
Public works officials	1
Storage/warehousing personnel	1
Government officials	1

^aParticipants involved in agriculture and food-related industries

and symptoms, reporting of potential emergencies, appropriate actions to take until help arrives, etc.

An Instructor Manual was developed to provide step-by-step information to instructors on procedures to follow for the implementation and evaluation of the training, the specific script or dialogue for each module presentation, activities to include in classes to reinforce awareness education, and instructions and evaluation tools for assessing training impact. A Participant Manual was developed to provide participants with a print copy of the content being presented, as well as supplemental resources, such as lists of acronyms, useful websites to obtain content and training to help establish local infrastructure, and handouts to help identify and report potential emergency situations.

Georgia Extension Agents attended a two-day training session on background information related to the content. Agents who conducted pilot trainings in local communities received

additional training on implementation and evaluation of the curriculum.

Agrosecurity Awareness Training opportunities were advertised statewide through the Georgia Emergency Management Agency, the Georgia Department of Agriculture and the University of Georgia Cooperative Extension. During the initial project period, trainings were conducted by Extension Agents and agrosecurity project personnel in approximately 50 locations statewide. Continuing education units (CEU) were made available from the Georgia Peace Officers Standards and Training Council; Georgia Firefighters Standards and Training; Georgia Department of Human Resources, Office of Emergency Medical Services; Georgia State Board of Veterinary Medicine; Pesticide Applicators Recertification and Certified Crop Advisor.

A retrospective pre and post-evaluation design was used to evaluate the impact of the program on participants' awareness about agrosecurity issues and responsibilities. This type of evaluation

is useful in overcoming response shift bias in self-reports. When people gain awareness of a subject, they may realize their response on a pre-test was less accurate than they originally believed. According to Rockwell & Kohn (6), retrospective pre and post "data collection instruments are relatively easy to develop, use, and analyze. Results are credible and indicate program impact even though the process seems backwards." The Cronbach reliability alpha of the 11-item instrument was 0.93. At the end of the program, participants were asked to record their level of awareness before and after the program for each of the 11 items on the instrument. Responses to these items were aggregated to obtain a value for general awareness about agrosecurity. Participants were asked to indicate whether or not they would take specific actions as a result of the training. Levels of satisfaction with the training were rated on a 5-point Likert scale ranging from 1 (not very helpful) to 5 (very helpful).

TABLE 2. Comparison of participants' agrosecurity awareness before and after the program

Participants' Awareness About:	Pre-test Mean	Post-test Mean	Significance Level	Percentage of Participants Whose Awareness Level Improved
1. Importance and vulnerability of agriculture and food and effects of potential terrorist acts	2.8	4.2	$P = 0.01$	82%
2. Need to participate in preparedness efforts to protect the state's agriculture and food	3.0	4.2	$P = 0.01$	77%
3. Who should be contacted in an agricultural emergency	2.6	4.2	$P = 0.01$	85%
4. Unusual clinical signs or "BUDDIES" ^a in animals that may indicate serious disease or agroterrorism	2.1	4.1	$P = 0.01$	91%
5. Need to inform local veterinarian immediately about unusual clinical signs in animals	2.6	4.3	$P = 0.01$	82%
6. Plant disease symptoms such as 5Ds ^b	1.8	4.0	$P = 0.01$	94%
7. Need to inform local Cooperative Extension Office immediately about plant disease symptoms ^c	2.2	4.1	$P = 0.01$	89%
8. Chain of events that occur when an agricultural incident is reported	2.1	4.1	$P = 0.01$	90%
9. Legislation and measures in place to help protect the food supply	2.1	4.0	$P = 0.01$	89%
10. Risk assessments, risk management and risk communication	2.3	4.1	$P = 0.01$	88%
11. Steps to take in my community when there is an emergency	2.7	4.2	$P = 0.01$	79%
General awareness about agrosecurity	26.1	45.4	$P = 0.01$	98%

^aBUDDIES, an acronym for clinical signs of diseases in animals, stands for blisters, unusual ticks or maggots, death/downers, diarrhea, illnesses or abortions in high numbers, eating abnormality/will not eat and staggering/strange neurological signs, including spasms.

^bThe 5Ds of plant disease is an acronym for recognizing symptoms: discolored, deformed, defoliated, dying and deficient.

^cNotification of County Extension Agents in the event of a suspected agricultural-related problem is an important step. In Georgia, agents can help notify the appropriate authorities and can take measures to help clients isolate conditions and avoid further spread of disease until the appropriate help arrives.

RESULTS

Participants who completed the Agrosecurity Awareness training program submitted 1,670 evaluations. There were participants from 131 of Georgia's 159 counties. The majority of the participants

were firefighters and law enforcement personnel; however, 19% were directly involved in agriculture and food-related industries (Table 1). The comparison of pre- and post-training awareness data for each item indicates that the curriculum significantly increased the aware-

ness of participants on each individual topic ($P = 0.01$) as well as improved their awareness in general about agrosecurity ($P = 0.01$), as summarized in Table 2. Mean scores of pre- and post-training awareness levels are presented in Fig. 1. Over 85% of participants indicated that

FIGURE 1. Comparison of participants' agrosecurity awareness before and after the program.

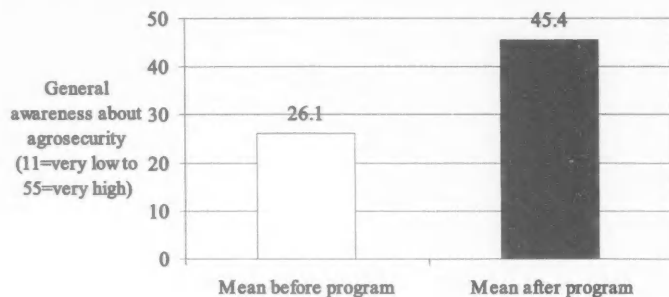
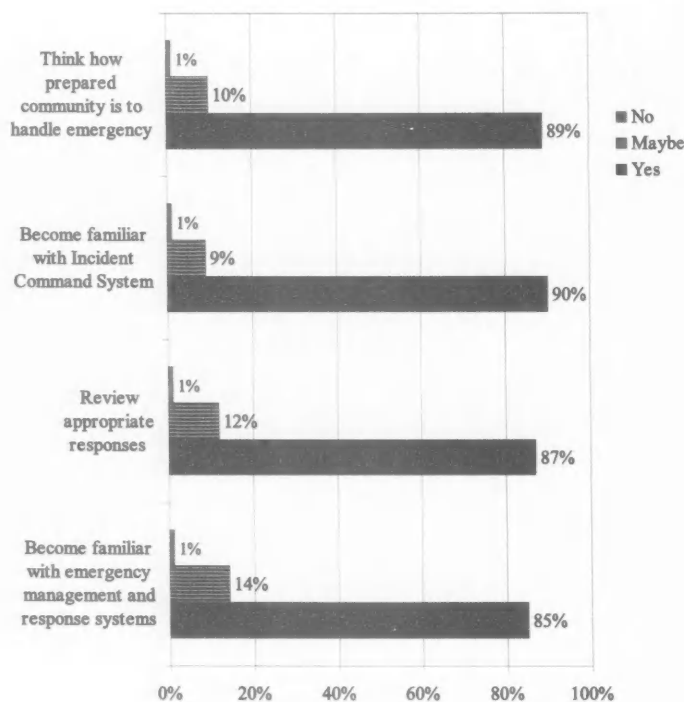


FIGURE 2. Action toward agrosecurity that participants plan to take as a result of participation in the training.



they plan to implement changes in each category as a result of the training they received (Fig. 2). Ninety-two (92) percent of participants rated the overall training as helpful to very helpful. Ratings for satisfaction for each content module are presented in Table 3.

CONCLUSIONS

This project was designed as an awareness level education initiative to introduce audiences to risks and vul-

nerabilities of the food and agricultural sectors. As such, the curriculum developed as a part of this project offered a broad introduction to a variety of topics. The limitation of such a project is that awareness does not necessarily translate into behavior change. However, it is an important first step in helping individuals recognize potential risks and identify appropriate authorities to notify and courses of action to take if a possible adverse event is suspected. Results indicated that the greatest improvements were

seen in recognizing clinical signs of animal disease, in understanding the proper chain of events that should occur in the event of an agricultural emergency and in increasing overall awareness of agrosecurity.

Data from these sessions were used to revise the curriculum. The revisions include combining the animal and plant pathogen topics into one module and adding a CARVER + Shock Risk Assessment (8) activity to expand the food industry module. In addition, the modules have served as the basis for development of an on-line, password protected course on agrosecurity awareness. The broad range of occupations of those who attended these sessions indicates a wide interest in protecting agricultural and food systems and illustrates the need for more in-depth training on each topic targeted to specific audience sub-groups. Certain groups, such as food inspectors, manufacturers and food-service personnel, were underrepresented in the audience. This project can serve as a model for other states and/or nations interested in designing and conducting agrosecurity awareness training.

REFERENCES

1. Brown, C., E. Choueke, and L. Myers. 2005. Protecting Georgia's agriculture and food. Boca Publications Group, Inc., Boca Raton, FL.
2. FEMA. 2008. ESF #11 - Agriculture and natural resources. National response framework: Overview. Available at <http://www.fema.gov/pdf/emergency/nrf/nrf-overview.pdf>. Accessed 8 January 2010.
3. FEMA. 2008. National incident command system. Available at http://www.fema.gov/pdf/nims/NIMS_core.pdf. Accessed 8 January 2010.
4. Georgia Emergency Management Agency. 2008. Georgia emergency operations plan. Available at [http://www.gema.state.ga.us/ohsgemaweb.nsf/a29ce156b1dc53e1852571180043368a/30c5ce607328558f8525720900627e3a/\\$FILE/GEOP%20Updated%20January%202008.pdf](http://www.gema.state.ga.us/ohsgemaweb.nsf/a29ce156b1dc53e1852571180043368a/30c5ce607328558f8525720900627e3a/$FILE/GEOP%20Updated%20January%202008.pdf). Accessed 8 January 2010.
5. Monke, J. 2004. Agroterrorism: Threats and preparedness. CRS report for Congress. Available at <http://www.fas.org/irp/crs/RL32521.pdf>. Accessed 8 January 2010.

TABLE 3. Participants' levels of satisfaction with the individual training modules

Training Session/Module	Percentage of the Participants Who Rated the Module as:			Mean	Standard Deviation
	Not helpful	Somewhat helpful	Very helpful		
1. Economic, Social and Environmental Impacts of Agroterrorism	1%	21%	78%	2.8	0.4321
2. Animal Agriculture and Pathogens	1%	18%	81%	2.8	0.4154
3. Plant Agriculture and Pathogens	1%	22%	77%	2.8	0.4471
4. Food Industry in Georgia/Risks and Threats	1%	18%	81%	2.8	0.4073
5. Agriculture and Food Emergency Management System	1%	20%	79%	2.8	0.4296
6. Chain of Events in an Emergency and Responsibilities in a Disaster	1%	19%	80%	2.8	0.4241
7. Summary and Next Steps	1%	23%	76%	2.7	0.4580

6. Rockwell, S. K., and H. Kohn, (1989). Post-Then-Pre Evaluation. *Journal of Extension* [On-line] 27(2), Article 2FEA5. Available at <http://www.joe.org/joe/1989summer/a5.php> Accessed 8 January 2010.

7. Shutske, J. 2004. Protecting our food system from intentional attack. Available at <http://safety.cfans.umn.edu/presentationsProtecting%20our%20Food%20System%20from%20Intentional%20Attack1.pdf>. Accessed 8 January 2010.

8. USDA/FDA. 2007. An overview of the CARVER Plus Shock Method for food sector vulnerability assessments. Available at <http://www.fsis.usda.gov/PDF/Carver.pdf>. Accessed 8 January 2010.



Gold Sustaining Member Profile

3M

3M is the leading global manufacturer of innovative solutions that help the food industry optimize the quality and safety of their products to enable consumer protection. At every step, 3M is dedicated to providing solutions that help mitigate risk, improve operational efficiencies and impact the bottom line.



3M Food Safety is part of 3M, a global diversified technology company with a 100-year reputation for innovation, ingenuity, integrity and quality. Reflecting on our corporate commitment, we develop, manufacture and market products that cover a broad spectrum of sample preparation, identification, testing and monitoring needs. We are committed to maximizing product safety for consumers and protecting the reputation and brand of our customers.

Every day, in more than 100 countries, product solutions from 3M are helping food industry professionals succeed in achieving the highest food safety standards possible – and, helping them apply those solutions to their operations. These products include the 3M™ Petrifilm™ Plates and the 3M™ Petrifilm™ Plate Reader, 3M™ Clean-Trace™ ATP Hygiene Monitoring Systems, 3M™ Tecra™ Pathogen Assays and a wide range of sampling products and specialty media including 3M™ Electronic Pipettors and 3M™ Quick Swabs. In addition, our dedicated team of field consultants and technical people offer unmatched service and support around the world.

In 2008, we were honored by the International Association for Food Protection with its most prestigious award, the Black Pearl, in recognition of 3M's efforts in advancing food safety and quality through consumer programs, employee relations, educational activities, adherence to standards and support of the goals and objectives of IAFFP.



Gold Sustaining Member Profile



BD

Helping all people
live healthy lives

BD is a leading global medical technology company that develops, manufactures, and sells medical devices, instrument systems, and reagents. The Company is dedicated to improving people's health throughout the world. BD is focused on improving drug delivery, enhancing the quality and speed of diagnosing infectious diseases and cancers, and advancing research, discovery, and production of new drugs and vaccines. BD's capabilities are instrumental in combating many of the world's most pressing diseases. Founded in 1897 and headquartered in Franklin Lakes, New Jersey, BD employs approximately 29,000 associates in approximately 50 countries throughout the world. The Company serves healthcare institutions, life science researchers, clinical laboratories, the pharmaceutical industry, and the general public.



The company's original microbiology products division, Baltimore Biological Laboratories (founded in 1935 and acquired by BD in 1955), undertook the study of the preparation of peptones and development of culture media. The acronym "BBL" became the brand name for products offered by the company.

Difco Laboratories, founded in 1895, produced high quality enzymes, dehydrated tissues, and glandular products. In 1934, the focus was to develop new and improved bacteriological culture media, many of which were adopted as "standard" formulations in water, dairy, food, pharmaceutical and other microbiological laboratories.

In June 1997, the merger of Difco Laboratories with the Microbiology Systems division brought together the leading providers of microbiology products to industrial

and clinical microbiology laboratories worldwide, with over 180 years of combined experience. Today, both businesses comprise BD Diagnostics – Diagnostic Systems, headquartered in Sparks, MD, near the city of Baltimore.

Continuing this tradition of excellence, BD has developed an innovative line of media that incorporates carefully selected synthetic chromogenic and/or fluorogenic substrates. This novel technology has been shown to provide improved accuracy and faster detection than other traditional primary culture media. Depending on the media type and organism, identification may be accomplished without the need for confirmatory testing, subculturing, or supplemental biochemical or latex testing, leading to more efficient use of technologist time and earlier reporting of final results. In addition, four chromogenic media, all BBL™ CHROMagar™ formulations, have been developed and AOAC™-RI approved for rapid detection and identification of *E. coli* O157:H7, *Listeria monocytogenes*, *Salmonella* and *Staphylococcus aureus* from foods.

The business that now constitutes BD Diagnostics – Diagnostic Systems was founded by entrepreneurs whose ideas, diligence and foresight have contributed to making BD one of the world's leaders in the healthcare field. Through its products and services, BD is committed to "helping all people live healthy lives."

For more information, please visit www.bd.com/ds. AOAC is a trademark of AOAC International. CHROMagar is a trademark of Dr. A. Rambach. BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company ©2009 BD.



Gold Sustaining Member Profile



Advancing Diagnostics to Improve Public Health

bioMérieux is a leading international group specializing in the field of *in vitro* diagnostics. Through 39 subsidiaries and a large network of distributors, the company is present in more than 150 countries.



TEMPO® System

bioMérieux provides diagnostic solutions (reagents, instruments, software), which determine the source of disease and contamination to improve patient health and ensure consumer safety. Its products are used for diagnosing infectious diseases and providing high medical value results for cancer screening and monitoring cardiovascular emergencies. They are also used for microbiological analysis of food, drug or air samples to monitor and confirm the quality of the production process and finished product.

Microbiological analysis plays a crucial role in a changing global food market. Microbiological food safety is evolving due to ongoing changes in demographics, globalization, food products and processing, and food consumption patterns. These changes are also reflected in the transformation of the role of the microbiologist. Twenty years ago, the role of food microbiologists was limited and underestimated. Today, food microbiologists are at the forefront of food safety, anticipating the challenges generated in today's global market.

A Family History Rooted in Microbiology

bioMérieux's commitment to public health is rooted in its unique history. Marcel Mérieux worked with Louis Pasteur before founding Institut Mérieux in 1897 and starting off the century-long fight that his family has waged against infectious diseases. Under the leadership of Alain Mérieux, grandson of Marcel, Institut Mérieux became the world leader in human and veterinary vaccines (now evolved into two companies, Sanofi Pasteur and Merial, no longer belonging to the family). In 1963, Alain Mérieux founded the diagnostics company known today as bioMérieux.

Its launch from the field of clinical diagnostics soon led to the development of a new division, bioMérieux Industry, a pioneer in providing solutions to improve the safety and quality of food, biopharmaceutical and cosmetic

products. Alexandre Mérieux, the son of Alain Mérieux, leads this division, which has become number 1 worldwide in industrial microbiology.

Innovations from bioMérieux

bioMérieux's innovations encompass a full range of manual and fully automated microbiology testing solutions, including prepared culture media, the API® and VITEK® 2 Compact identification systems, BacT/ALERT® 3D Microbial Detection System, and airIDEAL® environmental air sampling system. The extensive range of rapid screening tests provided on the VIDAS® automated pathogen detection system has recently been enhanced with a new assay kit for detecting *E. coli* O157:H7, VIDAS UP. This new kit has the most advanced technology available for food pathogen screening: phage recombinant proteins used for the targeted capture of bacteria and to isolate them in a sample.

Increasing microbiology lab automation to enhance workflow is a strategic focus at bioMérieux. Additional automated systems include two key food safety solutions, TEMPO® and DiversiLab®. Based on a unique concept developed by bioMérieux, TEMPO is the first automated quality indicator testing system for the food industry. The system offers enumeration of quality indicators, which are vital in determining overall product hygiene. DiversiLab provides food companies with a rapid, easily implemented and automated bacterial strain typing method, an essential tool in tracking the source of microbial contamination. Rounding out the product portfolio is a distribution agreement with Elisa Systems, adding a full range of allergen tests.

Food professionals are faced with unique challenges in a changing global market. bioMérieux is committed to educating its customers about advances in the field. The company has published the Food Safety Handbook: Microbiological Challenges, an overview of modern approaches to microbiological food safety. More than twenty internationally renowned experts contributed to chapters covering the key issues in food safety today.

IAFP Gold Sustaining Member

Over the years, bioMérieux has built relationships with customers and leaders in the food safety community, including the IAFP Foundation. As an IAFP Gold Sustaining Member, for several years, bioMérieux proudly promotes the Foundation's endeavors to provide a global forum for technical exchange between all sectors of the food safety industry. bioMérieux strives not only to supply food safety and quality solutions for the food industry, but also to be a partner and educator with the food community in ensuring public health.

bioMérieux's food safety and quality solutions can be found at www.biomerieux-usa.com and www.biomerieux-industry.com or by calling 800.634.7656.



Gold Sustaining Member Profile

BIO-RAD

Bio-Rad Laboratories has played a leading role in the advancement of scientific discovery for over 50 years by providing a broad range of innovative products and services to the life science research and clinical diagnostic markets. Founded in 1952 and incorporated in 1957, Bio-Rad has a global team of more than 6,300 employees and serves more than 85,000 research and industry customers worldwide through its global network of operations. Throughout its existence, Bio-Rad has built strong customer relationships that advance scientific research and development efforts and support the introduction of new technology used in the growing fields of genomics, proteomics, drug discovery, food safety, medical diagnostics, and more.

Bio-Rad's Life Science Group develops, manufactures, and markets a wide range of laboratory instruments, apparatus, and consumables used for research in functional genomics, proteomics, and food safety. The group ranks among the top five life science companies worldwide, and maintains a solid reputation for quality, innovation, and commitment to its customers. Bio-Rad's life science products are based on technologies used to identify, separate, purify, and analyze biological materials such as proteins and nucleic acids. Some of these technologies include electrophoresis, imaging, multiplex immunoassay, chromatography, microbiology, bioinformatics, protein function analysis, transfection, amplification, and real-time PCR. Bio-Rad products support researchers in laboratories throughout the world.

The Food Science Division of Bio-Rad Laboratories produces tests for food safety, veterinary diagnostics, water, and TSE (Transmissible Spongiform Encephalopathy)

testing. Bio-Rad has a complete line of RAPID chromogenic media for isolation and detection of *Salmonella*, *E. coli* O157:H7, *Listeria monocytogenes*, *Staphylococcus aureus*, and indicator organisms *Listeria* spp. and coliforms/*E. coli*. Bio-Rad has launched a complete menu of iQ-Check™ real-time PCR test kits for detection of food pathogens with reduced enrichment times. Kits are available for *Salmonella*, *E. coli* O157:H7, *Listeria monocytogenes*, *Listeria* spp., and *Campylobacter*. With the iQ-Check kits, real-time PCR has been adapted to fit the needs of food safety professionals. Two instrument platforms are available, a 48-well thermal cycler for smaller volume labs and a 96-well instrument for high volume users. Bio-Rad has recently launched the iQ-Check high throughput protocol with a one-step extraction in a 96-well plate format, reducing time for results while providing the excellent sensitivity and specificity iQ-Check users have come to trust.



Gold Sustaining Member Profile



Cargill is an international producer and marketer of food, agricultural, financial and industrial products and services. Founded in 1865, the privately-held company employs 159,000 people in 68 countries.



Cargill helps customers succeed through collaboration and innovation. The company is committed to sharing its global knowledge and experience to help meet economic, environmental and social challenges.

Thousands of customers turn to Cargill for innovative solutions across four major market segments:

- **Agriculture** – Cargill buys, processes, and distributes grain, oilseeds, and other commodities to makers of food and animal nutrition products. We also provide crop and livestock producers with products and services.
- **Food** – Cargill provides food and beverage manufacturers, foodservice companies and retailers with high-quality ingredients, meat and poultry products, and health-promoting ingredients and ingredient systems.
- **Health** – Through applied science, Cargill develops health-promoting ingredients and ingredient systems for makers of dietary and pharmaceutical products.

- **Risk Management** – Cargill provides its agricultural, food, financial and energy customers with risk management and financial solutions in world markets.
- **Industrial** – Cargill serves industrial users of energy, salt, starch, and steel products. We also develop and market sustainable products made from agricultural feedstocks.

In the area of food and animal nutrition safety, Cargill seeks to ensure the safety and integrity of its products and the global food systems in which the company and its customers are engaged. Cargill uses public-private partnerships to drive global harmonization of food safety standards. Cargill's food safety programs are based on those developed by the Codex Alimentarius Commission. Cargill is a founding member of SSAFE (Safe Supply of Affordable Food Everywhere). SSAFE—a public-private partnership among global food system companies, international non-governmental organizations (NGOs), intergovernmental organizations, and academia—aspire to be a global catalyst to protect the world's food supply chain.

The company also is committed to using public-private partnerships to develop future food-safety system leaders and was instrumental in launching GIFSL (Global Initiative on Food Systems Leadership). GIFSL is focused on building leadership capacity through experiential learning opportunities that facilitate better communication and coordination to strengthen our collective response to food systems dilemmas.

For more information on Cargill, please visit our Web site at www.cargill.com.



Gold Sustaining Member Profile

The Coca-Cola Company

Established in 1886, The Coca-Cola Company operates in more than 200 countries and markets nearly 500 brands and 3,300 beverage products. These products include regular, diet and light sparkling beverages; and still beverages that include waters, juices and juice drinks, teas and coffees, and energy and sports drinks. We are the world's largest beverage company. Together with Coca-Cola®, recognized as the world's most valuable brand, the Company's portfolio includes 14 billion dollar brands, including Diet Coke®, Fanta®, Sprite®, Coca-Cola Zero®, vitaminwater, Powerade®, Minute Maid®, Simply®, and Georgia® Coffee. Globally, we are the No. 1 provider of sparkling beverages, juices and juice drinks, and ready-to-drink teas and coffees.



We offer more than 800 low- and no-calorie products, and we continue to build our innovation pipeline to meet consumers' needs for enjoyment, nutrition, refreshment and hydration.

The global nature of our business requires that the Coca-Cola system has the highest standards and processes for ensuring consistent product safety and quality. Safety remains first and foremost for the company. Delivering the safety and quality our consumers expect requires consistent and flawless implementation, execution and evaluation of our programs and processes, and a never-ending focus on the continuous improvement of our systems. To that end, The Coca-Cola Management System (TCCMS) is our integrated safety and quality management program, designed to ensure that operations system-wide are held to the same high standards for production and distribution.

TCCMS is backed by a network of food safety and quality professionals, supported in a top-down approach by all leadership throughout the Coca-Cola system. It guides our product safety and quality by integrating and aligning

business and quality objectives with consistent metrics to monitor performance; integrating preventive actions as a management tool, including more rigorous demands when planning new product and service introductions; incorporating Hazard Analysis Critical Control Points (HACCP) programs throughout our system; and defining problem-solving methodologies and tools to drive continuous product safety and quality advances and enhancements.

Consistency and reliability are critical to product safety and quality and to meeting global regulatory requirements and company standards. The global nature of our business requires that the Coca-Cola system has the highest standards and processes for ensuring two key deliverables—product safety and consistent quality—from our concentrate production to our bottling and product delivery. Whether consumers purchase our products in Atlanta or Adelaide, Mumbai or Mexico City, our commitment ensures that our beverages are produced to the same level of safety and quality everywhere and every time.

Our company exists to refresh the world, inspire moments of optimism, create value, and make a positive difference everywhere we engage. Live Positively is our commitment to making a positive difference in the world by redesigning the way we work and live so that sustainability is part of everything we do. Sustainability is woven throughout our business model through a number of important efforts: from productivity and efficiency enhancements to improvements in water and energy use; climate protection; sustainable packaging; active, healthy living initiatives, projects and programs; workplace rights; and community development programs.

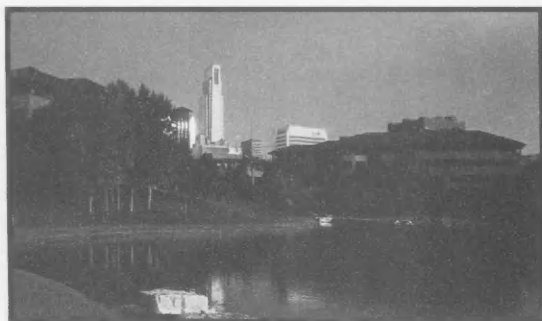
For more information about The Coca-Cola Company, please visit www.thecoca-colacompany.com.



Gold Sustaining Member Profile

ConAgra
Foods®

Since our first bag of flour was sold in 1867, ConAgra Foods has grown from a small Nebraska company into one of America's largest food companies. Today ConAgra Foods is one of North America's leading packaged food companies, with a strong presence in consumer grocery as well as restaurant and foodservice establishments. ConAgra nourishes the lives of its consumers, customers, and employees by providing trusted, brand-name food and quality ingredients, while fostering a workplace that grows talented people and values inclusion. We work every day to find a better way—to make meal time convenient, to help schools provide nutritious meals for students, to improve the communities in which we operate, and more.



ConAgra Foods had net sales of \$11 billion in 2008, with 25,000 employees spanning the globe. The company is organized into two businesses:

- **Consumer Foods**, which manufactures and markets many leading branded products to retail and foodservice customers in the United States and internationally. Among our popular consumer brands are Healthy Choice, Chef Boyardee, Banquet, Hunt's, Hebrew National, PAM, Egg Beaters, Orville Redenbacher's, and Slim Jim.
- **Commercial Foods**, which manufactures and sells a variety of specialty products to foodservice and commercial customers worldwide. Major brands include Lamb Weston, a leading producer of quality frozen potato products and top supplier to foodservice chains and distributors worldwide; ConAgra Mills, a top provider of premium, multi-use flour with the broadest portfolio of whole grain ingredients in the in-

dustry, including such innovations as Ultragrain whole wheat flour and Sustagrain barley; and Gilroy Foods and Flavors, both a leading industrial seasoning and flavor supplier and a leading supplier of vegetables, garlic, onions, and capicum ingredients, including vegetable innovations such as Controlled-Moisture Fire-Roasted Grilled Vegetables and GardenFrost Purees.

ConAgra Foods is proud to be a Gold Sustaining Member of IAFP and we are dedicated to the safety, quality, and wholesomeness of our products. We are committed to the highest possible standards of food safety throughout our operations and are taking demonstrable measures to that end. This includes the consolidation of responsibility for existing and future companywide oversight of food safety initiatives and systems into a single leadership position, and the formation of a Food Safety Advisory Committee of leading independent experts uniquely positioned in the industry to help the company's efforts in this area. ConAgra's mission is simple: One company. One goal. Making the food you love.

For more information on ConAgra Foods, please visit our Web site at www.conagrafoods.com.





Gold Sustaining Member Profile



Leading the Way in Food Safety Science

Fast, accurate results are critical for delivering safer food products for consumers and more profitable growth for food companies. That's why, at DuPont Qualicon, our food safety science is focused on continually developing state-of-the-art technologies that are faster and more accurate. In fact, for more than a decade, we have been revolutionizing food safety.



DuPont Qualicon was the first company to apply PCR technology to food testing with rapid, DNA-based assays for *Salmonella*, *E. coli* O157:H7 and *Listeria monocytogenes*. Our use of automated PCR processing with tableted rather than liquid reagents created a dramatic increase in speed and consistency – helping to usher in a new era of easy-to-use testing methodology.

Meeting a Global Need

For years, leading food companies and government testing labs around the world have relied on the genetics-based BAX® System to quickly and accurately detect pathogens such as *Salmonella*, *E. coli* O157:H7, *Listeria* spp., *Listeria monocytogenes*, *Campylobacter*, *Staphylococcus aureus* and more. The USDA Food Safety and Inspection Service has adopted the BAX® System for meat and poultry testing, and government testing agencies in Canada, Brazil, China, Japan, Russia and other parts of the world have validated the BAX® System as an approved testing method to help protect their food supply and their citizens.

The BAX® System has been certified by independent authorities such as AOAC and the French Association of Normalization (AFNOR). What's more, the BAX® System has been included in the newly launched Emergency Response Validation (ERV) program of the AOAC Research Institute, a program designed to respond immediately to emerging food contamination crises.

Delivering Innovations Year after Year

While we're proud to have been a part of food safety history, we're always looking ahead to provide the next breakthrough in food safety science – with technological advances and new assays that make food testing faster, more accurate and more convenient.

One example is the BAX® System Real-time PCR Assay for *Vibrio*. This automated rapid method utilizes probe-based chemistry to detect three species of *Vibrio* – *V. cholerae*, *V. parahaemolyticus* and *V. vulnificus* – in the same sample, with results in less than 24 hours.

Our most recent innovation is the BAX® System real-time PCR assay for detecting *E. coli* O157:H7 with same day results. Developed in collaboration with the USDA Agricultural Research Service, this highly accurate assay detects all known *E. coli* O157:H7, including rough strains. AOAC Research Institute has certified the test as a Performance TestedSM method for detecting *E. coli* O157:H7 in real-world sample sizes of raw ground beef, beef trim, lettuce and spinach.

With cutting-edge technology, we are developing increasingly faster, more sensitive tests for pathogens and spoilage organisms. From sophisticated analytical platforms to soluble packets of enrichment media, DuPont Qualicon is a company you can trust to deliver the technology innovations you need to reduce risk, react to issues quickly and ultimately deliver the safest food possible to consumers.

For additional information, contact DuPont Qualicon, ESL Bldg 400, P.O. Box 80400, Wilmington, DE 19803, Phone: 800.863.6842 or 302.695.5300, Qualicon.com





Gold Sustaining Member Profile

ECOLAB®

Based in St. Paul, Minnesota, Ecolab is the leading global provider of cleaning, food safety and health protection products and services. Around the world, it operates directly in 70 countries, employing more than 26,000 associates, and reaching customers in 100 other countries through distributors, licensees and export operations.

Founded in 1923, Ecolab serves customers in a variety of markets, including foodservice, hospitality, healthcare, and food and beverage processing industries, helping them to achieve cleaner, safer and healthier environments. Ecolab uses an integrated systems approach to food safety and brand protection issues. Innovative solutions such as automated product dispensing systems, specialized solid detergents, and EPA-registered sanitizers combine with Ecolab's promise of service excellence to provide customers with uncompromised cleanliness and operational efficiency in any market.

At the start of the food chain, Ecolab associates provide customers with premium cleaning and sanitation products, programs, and expertise in food production environments. Ecolab also provides complete udder health, hoof management, and fly control programs for dairy production facilities.

Reducing pathogens and other microbial counts on food surfaces in the processing stage, meanwhile, improves the quality and shelf life of food products such as meat, poultry, seafood, fruits and vegetables. These patented food surface treatments are effective solutions for minimizing microbial contamination during processing.

Contamination at any point in a food processing operation can shut down plant operations, costing customers time and money. Therefore, Ecolab also pro-

vides custom-designed programs to meet the individual needs of food and beverage processing plants, as well as foodservice and food retail businesses. The emphasis is on sanitation, structural concerns within a facility, and preventative exclusion services for pests in every aspect of the food production process.

Once the food supply reaches foodservice vendors, Ecolab offers numerous high-quality, patented product solutions to help prevent many of the leading causes of foodborne illnesses. These include products to improve employee hygiene practices and sanitize the kitchen equipment used to prepare or serve food, as well as high-performance detergents and cleansers to sanitize every surface within a facility. In fact, Ecolab personnel hygiene programs provide comprehensive, worker-focused hygiene systems including hand cleaners and sanitizers, doorway sanitizing systems for food processors, state-of-the-art, no-touch dispensers, and employee training.

Finally, Ecolab provides a comprehensive intervention program that focuses on compliance. Ecolab's quality assurance food safety management program helps customers establish a routine program of self-inspection, provide comprehensive employee training, and conduct periodic independent audits to help identify areas in need of improvement. It also brings Ecolab's commitment to its customers full circle.

For more information visit www.ecolab.com.



Gold Sustaining Member Profile

Kellogg's[®]

Since 1906, Kellogg Company has been committed to delivering high-quality, wholesome, and great-tasting food to consumers around the world. Today, this mission of our founder, W.K. Kellogg, remains a guiding principal for our company. The year 2010 would have marked Mr. Kellogg's 150th birthday, and we are proud to continue furthering his legacy of building a stronger business while also serving the needs of our consumers, employees, society, and the environment.

As part of our continued efforts to build a stronger Kellogg, we maintain an unwavering focus on the long-term health of our business by delivering sustainable, dependable growth. Kellogg products are now manufactured in 18 countries and marketed in 180 countries around the world. And with 2009 sales of nearly \$13 billion, we are the world's leading producer of cereal and a leading producer of convenience foods, including cookies, crackers, toaster pastries, cereal bars, fruit-flavored snacks, frozen waffles, and veggie foods.

Kellogg products are designed to meet a wide range of consumer preferences, tastes and needs. Consumers worldwide have come to enjoy a variety of Kellogg brands including Kellogg's[®], Keebler[®], Pop-Tarts[®], Eggo[®], Cheez-It[®], All-Bran[®], Mini-Wheats[®], Nutri-Grain[®], Rice Krispies[®], Special K[®], Chips Deluxe[®], Famous Amos[®], Sandies[®], Austin[®], Club[®], Murray[®], Kashi[®], Bear Naked[®], Morningstar Farm[®], Gardenburger[®], and Stretch Island[®].

Our company is on a continuous journey to strengthen the nutrition profile of our foods without sacrificing taste or quality. We recently reformulated several of our most popular cereals – Kellogg's Froot Loops[®], Kellogg's Corn Pops[®], Kellogg's Rice Krispies[®], Kellogg's Cocoa Krispies[®] and Kellogg's Apple Jacks[®] – to reduce the sugar and sodium content. We're also adding fiber to many of our most popular cereals, and by the end of 2010, the majority of Kellogg's ready-to-eat cereals in the United States and Canada will be at least a good source of fiber.

In addition to our nutrition efforts, the quality and safety of our foods are, and have always been, our highest priority. We have long believed that prevention is the key to food safety, so that potential sources of contamination are identified and properly addressed before they become actual food safety problems. Kellogg has extensive systems and processes in place to ensure that our products meet our strict food safety standards.

Looking ahead, Kellogg also recognizes the importance of ensuring an adequate supply of food for the world's growing population. This requires the efficient use of increasingly scarce natural resources. Since 2005, we have decreased our energy use, greenhouse gas emissions, and water use per metric tonne of food produced by 5.7, 8.9 and 7.4 percent, respectively, and decreased total waste sent to landfill by 41.5 percent per metric tonne of food produced. Important to this progress is our focus on transportation-related energy use and CO₂ emissions. For example, we have decreased by 40 percent per-case fuel in our U.S.-operated truck fleet by designing more efficient routes, restricting idling time, and other efforts. We also recently increased the amount of product on each truck to reduce miles and save fuel. In addition, Kellogg has worked with contract carriers to reduce diesel fuel consumption by 39 percent compared to 2005, or 10.9 million gallons per year.

In addition to our environmental stewardship initiatives, social responsibility has played a key role in our company's heritage. We remain committed to investing in our communities and assisting those in need. As part of this commitment, in June 2009, Kellogg made the unprecedented donation of an entire day's worth of U.S. cereal production – 55 million servings – to Feeding America, the nation's largest hunger-relief organization. Kellogg also supports the development and promotion of school-based breakfast programs in the U.S., and sponsors breakfast clubs in a number of countries where government-sponsored breakfast programs do not exist – which serve millions of morning meals to young people every year.

To learn more about Kellogg Company's efforts in the marketplace, workplace, environment, and communities where we operate, we invite you to read our Corporate Responsibility Report at www.kelloggcompany.com/CR. For additional information on Kellogg Company, visit www.kelloggcompany.com.



Gold Sustaining Member Profile



The combination of Kraft Foods and Cadbury creates a global powerhouse in snacks, confectionery and quick meals.

With annual revenues of approximately \$50 billion, the combined company is the world's second largest food company, making delicious products for billions of consumers in more than 160 countries. The combined company's portfolio includes 11 iconic brands with revenues exceeding \$1 billion – Oreo, Nabisco and LU biscuits; Milka and Cadbury chocolates; Trident gums; Jacobs and Maxwell House coffees; Philadelphia cream cheeses; Kraft cheeses, dinners and dressings; and Oscar Mayer meats. Another 70+ brands generate annual revenues of more than \$100 million.

Innovation is a primary ingredient of our success as we reinvent our iconic brands and create new pro-

duct platforms. Every day, more than 2,000 employees in Research, Development & Quality help invent delicious foods that meet consumers' needs and lifestyles. One of our core values is to inspire trust, and our highest priority is the safety and quality of our products. Kraft Foods is a leader in food safety, including how we work with our suppliers to ensure we meet regulatory requirements and the highest standards. Our team also uses consumer data to continuously improve our products' quality and taste to be truly delicious.

Kraft Foods (www.kraftfoodscompany.com; NYSE: KFT) is a member of the Dow Jones Industrial Average, Standard & Poor's 500, Dow Jones Sustainability Index and Ethibel Sustainability Index.



Gold Sustaining Member Profile

life
technologies™

Life Technologies Corporation is a global biotechnology tools company dedicated to improving the human condition. Created by the combination of Invitrogen Corporation and Applied Biosystems Inc., our systems, consumables and services enable researchers to accelerate scientific exploration, driving to discoveries and developments that make life even better. The company's technologies advance science by extending the reach of scientists in academic, pharmaceutical, and clinical laboratories, and through applications such as forensics, animal health, and food and environmental testing. With sales of more than \$3.3 billion in 2009, Life Technologies employs approximately 9,000 people, serves 75,000 customers in 160 countries, and possesses a rapidly growing intellectual property estate of approximately 3,900 patents and exclusive licenses.



Life Technologies is committed to protecting and improving human health by providing innovations to help ensure the quality and safety of foods. Through its Applied Biosystems line of molecular biology systems, Life Technologies is the leading provider of real-time PCR systems and was the co-inventor of the 5' nuclease assay, a PCR analysis technique using TaqMan® products for measuring gene expression. The company has leveraged its assay design, sequencing and bioinformatics expertise to develop highly specific assays for the food pathogen

testing market. The Applied Biosystems Food Pathogen Detection System uses real-time PCR and TaqMan® assays to identify pathogens at the molecular level, enabling quick and accurate detection of contaminants in materials ranging from environmental samples to food and finished products. The Applied Biosystems Food Pathogen Detection System is a complete testing solution, including sample prep, assays, instruments and software – all designed to work together.

Life Technologies offers the most comprehensive global technical service and support organization available. The company's field application specialists are experienced in quality and safety testing in environmental, food and finished product applications, and provide expert assistance to customers in their laboratories, over the phone, and online.

For more information on how we are making a difference, please visit our Web site at <http://www.lifetechnologies.com>. Follow Life Technologies on Twitter@LIFECorporation and on Facebook. For more information on the Applied Biosystems Food Pathogen Detection System, please visit www.appliedbiosystems.com/foodsafety.



Gold Sustaining Member Profile



Maple Leaf Foods is Canada's largest meat, meals, and bakery company with three of the top Canadian retail brands as well as leading market positions in North American frozen par-baked bread and in the U.K. through our specialty bakery business. With sales of \$5.2 billion in 2009, the company employs 23,500 people worldwide and operates more than 90 facilities across North America and the United Kingdom.

Maple Leaf Foods operates three core businesses:

Our Meat Products Group comprises leading Canadian retail brands in fresh and prepared meats. Product lines include *packaged meats*; *ready-to-cook* and *ready-to-serve meal products*; and *value-added fresh pork, poultry, and turkey*. We market these products primarily in Canada, the U.S., Mexico, and Japan.

The North American and U.K. operations of Maple Leaf's Bakery Products Group also have leading brands and market shares. The fresh bakery business produces nutritious fresh bakery products such as whole wheat, organic and multi-grain breads, rolls, and artisan breads. We also own Olivieri Foods, Canada's largest maker—and leading brand—of fresh pasta and sauce products. The frozen bakery business is a major North American producer and distributor of frozen unbaked, par-baked, and fully-baked bread products for retail and foodservice customers. Our U.K. operation is one of Europe's leading specialty bakeries, producing bagels, croissants, in-store bakery products, and snacks.

Our Agribusiness Group provides raw material and essential services to Maple Leaf's fresh and prepared meats facilities. This includes raising hogs to provide approximately 20% of our fresh pork processing requirements. Maple Leaf is also one of Canada's largest recyclers of animal

by-products into value-added products such as animal feeds and amino-acid supplements, and is a significant producer of clean-burning commercial biofuels.

Food safety is our top strategic priority across our meats and bakery facilities. In keeping with our commitment to becoming a global leader in food safety, we are moving further ahead with the implementation of our three-year food safety strategy. Our plan not only encompasses every aspect of our food production, but also sets global standards of excellence for ourselves and our suppliers. In 2009, we completed a food safety audit of all our food production plants, invested \$12.5 million in food safety enhancements and trained people across our prepared meats plants in our new food safety protocols. We also held our first annual Food Safety Symposium, which included presentations from industry, government, and scientific experts on global best practices in *Listeria*, established our Food Safety Advisory Council and continued to achieve GFSI certification at our frozen bakery operations.

Driving higher levels of growth through innovation is one of our core objectives, and we have launched important initiatives to accelerate this growth, including opening our ThinkFOOD! Centre in early 2009. As the foremost food innovation centre in Canada, the facility is designed to drive collaboration between our product development teams and our customers.

For more information on Maple Leaf Foods, visit www.mapleleaf.com.



Gold Sustaining Member Profile



PEPSICO



**PERFORMANCE
WITH PURPOSE**

Human • Environment • Talent

With annual revenues of nearly \$60 billion and more than 275,000 employees worldwide, PepsiCo's people are united by our unique commitment to sustainable growth, called "Performance with Purpose." In recognition of its continued sustainability efforts, PepsiCo was named for the third time to the Dow Jones Sustainability World Index (DJSI World) and for the fourth time to the Dow Jones Sustainability North America Index (DJSI North America) in 2009. For more information, please visit www.pepsico.com.

The safety and integrity of our products is our single highest priority. It's our duty as a responsible company. People buy our brands because they know they can count on consistent quality – every time. We follow very rigorous standards of safety and quality. Our policies ensure strict adherence to all applicable regulations and legislation.

At every level of PepsiCo, we take great care to ensure that the highest standards are met in our manufacturing processes. We strive for excellence because our consumers expect and deserve nothing less. The PepsiCo Product Integrity Council provides strategic and technical guidance on product integrity.

PepsiCo is committed to providing safe, wholesome products and protecting equity in our brands, trademarks and goodwill. PepsiCo products meet a broad variety of needs and preference – from fun-for-you treats to healthy eats. The company has stated, as part of its Performance with Purpose vision, that it is committed to delivering solid financial performance while focusing its efforts in the areas of Human Sustainability (its products and the communities it serves), Environmental Sustainability, and Talent Sustainability (attracting and retaining the best qualified and most committed workforce).

For more information on PepsiCo, please visit our Web site at www.pepsico.com.



Gold Sustaining Member Profile

SGS

SGS is the world's leading inspection, verification, testing and certification company. SGS is recognized as the global benchmark for quality and integrity. With over 59,000 employees, SGS operates a network of about 1,000 offices and laboratories around the world. Partnering with SGS allows customers to mitigate risks in safety and quality of their final product and regulatory compliance.



The protection of brand image and development of brand loyalty is of primary importance to food growers, producers, processors, and retailers. Without effective supply chain management relating to food safety and quality systems, a company is at risk of producing defective and contaminated products which can lead to food scares, poisoning outbreaks, damaging product recalls, huge legal costs, and loss of both public image and market share.

Customers can maximize their returns by ensuring that risks and uncertainties are addressed by SGS's talented professionals who understand their needs for safety and quality across:

- Primary Production
- Packing and Processing
- Transportation and Shipping
- Distribution and Storage
- Retail and Food Service

Based on consultative meetings with your team, SGS adapts the following core services to meet your needs in North America and around the world:

- Inspection Services – SGS inspects and verifies the quantity, weight, and quality of traded goods. Inspection typically takes place at the manufacturer's/processor's premises, at the time of loading, or at the destination during discharge/off-loading.

- Testing Services – SGS tests product safety, quality and performance against various health, safety and regulatory standards. SGS operates state-of-the-art laboratories on or close to the customer's premises. We continue to invest in world-class testing capabilities. Our network of laboratories and capabilities are now structured to optimize cross lab synergies, to create specialized competence centers, to share best practices, and to develop new testing methods for client and network benefit.
- Certification and Audit Services – SGS certifies that products, systems, or services meet the requirements of standards set by governments (e.g., U.S. FDA Seafood HACCP), standard owners (e.g., BRC, SQF, IFS, Dutch HACCP, FSSC 22000, Global Gap and others), or by SGS customers including GMP and HACCP-based standards. SGS also develops and certifies its own standards including Animal Welfare, C-TPAT and Corporate Social Responsibility.
- Consulting & Technical Support Services – SGS is a leading provider of Private Label Programs for U.S. and international retailers. We develop testing protocols for all major food categories. We offer Seed Services, Laboratory Research, Fertility Management, and Specialty Testing. SGS provides comprehensive training workshops on various topics including food hygiene, GMP and HACCP food safety and quality management systems, and food safety standards.

North American Resources

SGS has an established network of microbiological and chemical, food and agri-product testing labs, GMP/HACCP and GFSI auditors, inspectors, training centers, and key account managers. Our professionals are actively involved in local IAFFP chapters, and are leading spokespersons for the food safety industry including FDA Seafood Certification, Fresh Produce, and Private Label Programs.

For more information, visit www.foodsafety.sgs.com or call 973.575.5252.



Gold Sustaining Member Profile



Today as part of Institut Mérieux, Silliker is the leading internationally-accredited food testing and consulting network, with over 45 locations in 16 countries. CEO and President Philippe Sans leads the company in its quest to provide the most comprehensive solutions to help guarantee product quality and safety, protect individual brands, and reduce the risk of financial loss for suppliers, manufacturers, retailers, and food service companies.



Our services include:

- **Laboratory Services.** Utilizing state-of-the-art technologies and the latest validated methods, Silliker microbiologists and chemists can handle routine and complex analytical requests with fast, accurate and responsive service. At the core of our expertise, we offer a unique range of microbiology services to help companies solve issues throughout the food chain. Our services include analyses for spoilage/process indicator organisms and pathogens. Serving various sectors of the supplement, food, and feed industries, we offer a broad spectrum of chemistry services ranging from nutrient analyses to contaminant testing. All Silliker laboratories meet or exceed ISO 17025, an international standard that assures testing laboratories maintain a well-defined quality system and the necessary technical competencies to generate

reliable test results. Our laboratories have specific internal quality requirements and performance programs in place to further assure the competency of our testing services.

- **Auditing.** With years of experience in almost every food industry environment and segment of the food chain, Silliker auditors can help retailers, distributors, and food-service companies identify potential risks in their safety programs and adhere to industry and regulatory standards.
- **Consulting.** Highly knowledgeable and skilled Silliker consultants provide companies with professional, expert services to improve quality assurance programs, reduce the risk of product recalls, and find practical, workable solutions to science-based problems.
- **Education and Training.** Silliker public short courses, training videos, online learning programs, customized training programs, and learning management solutions provide upper management and line workers with multi-level tools to put recognized food safety principles into immediate action.
- **Research.** From shelf life and challenge studies to microbial identifications, the Silliker Food Science Center provides a host of expert studies to help companies assure product safety and quality.

For its abundant contributions to food science, Silliker has been the recipient of numerous industry honors including the International Association for Food Protection's Black Pearl Award.

To learn more about the Silliker international network, please log on to www.silliker.com.



Gold Sustaining Member Profile



VLM Foods is a global, full-service privately held company with the expertise to source and supply food products worldwide.

By maintaining a strong network of solid worldwide contacts, VLM's highly-skilled and knowledgeable staff offers buyers and suppliers access to an in-depth understanding of global markets and cultures, strict compliance with food safety regulations, key transportation information, and financing insight.

VLM Foods has two general business lines: the export of meat and poultry products from North America to overseas markets and global trading of frozen processed fruits and vegetables. Based in Montreal, Canada, VLM also has operations in China and Australia. VLM Australasia is tasked with marketing processed fruits and vegetables in Australia but also inter-Asian business. VLM China is fundamentally a procurement and quality control company.

Our strategy in China has been to engage in close partnership with our suppliers. Thanks to an experienced team of purchasing agents, QCs and logistics specialists, VLM China ensures tight supervision and control over the quality and safety of the food products we deliver to our customers. Our quality control inspectors travel all year long through various facilities to supervise the production from pre-planting to final packaging.

We work exclusively with proven facilities that are certified by accredited international auditors. We also audit

each of our processors several times each year and carry second-party audits. Our QC team undergoes continuous professional development with various accredited auditing firms. VLM collaborates with our vendors in training opportunities on food safety hygiene and GMPs. We invest in monitoring equipment, such as X-ray machines on vegetable packing lines used in our suppliers' facilities.

In addition, we also have a testing monitoring program for pesticides, microbiology, heavy metals, melamine, and allergens at third-party laboratories. These measures not only complement our suppliers' testing methods but also provide VLM an unparalleled advantage in our food safety program. Samples are collected both by our suppliers and by our inspectors on their routine visits.

As a responsible trade chain stakeholder, VLM participates in private sector and government initiated trade-chain security programs. We are members of the International Association for Food Protection (IAFP) and the Chinese Inspection Quarantine Association (CIQA), as well as numerous trade associations. As part of our commitment to food protection, we've attended and sponsored the International Food Safety Summit held in Beijing, China for the past three years.





NEW MEMBERS

AUSTRALIA

Jill Anderson
Silliker
Blackburn

Robert C. Dawson
Foodsafe Risk Management Pty. Ltd.
Collum Beach, Queensland

AUSTRIA

Luciano Luvison
Sadia GmbH
Vienna

BELGIUM

Jan Welberg
Cargill
Mechelen

CANADA

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Maple Leaf Foods
Port Perry, Ontario

Visvalingam Jeyachchandan
University of Manitoba
Winnipeg, Manitoba

Sophie Roy
Universite Laval
Quebec

Claudia Solis-Rivera
University of Guelph
Guelph, Ontario

John M. Wendell
Grand River Foods
Cambridge, Ontario

CHINA

Xianming Shi
Shanghai Jiao Tong University
Shanghai

DENMARK

Annemarie Gunvig
Danish Meat Research Institute
Roskilde

GERMANY

Ron Wacker
CLF GmgH
Friedrichsdorf

HUNGARY

Csaba Nemeth
Corvinus University of Budapest
Budapest

IRAN

Hamed Ahari
Nano Technical Co.
Tehran

IRELAND

Orla Condell
UCD, Belfield
Dublin

Shane P. Cooney
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Dublin

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De Puebla
Puebla

Dulce Avila-Vega
Universidad Autonoma De Queretaro
Queretaro

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Guadalajara, Jalisco

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Cholula, Puebla

Rafael C. Marfil
Sinerfil, S.A. de C.V.
Tlalnepantla

J. Jesus Padilla-Frausto
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Palmerston North, Manawatu

John Mills
AgResearch Ltd.
Hamilton

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Seoul National University
Seoul

Jea-Hee Jeong
Chung-Ang University
Anseong-Si, Gyeonggi-Do

Kim JuHui
Kyung Hee University
Seoul

Bo-Yeon Kim
Chung-Ang University
Ansung-Si

Hyun Suk Kim
Dongguk University
Seoul

Joon Kim
Samsung Everland
Yongin-si, Gyeonggi-Do

Min-Ju Kim
Chung-Ang University
Anseong-Si, Gyeonggi-Do

Sang-Won Kim
Dongguk University
Seoul

Sun-Young Kim
Konkuk University
Seoul

Byung-Jin Na
Chung-Ang University
Ansung



NEW MEMBERS

SPAIN

Rosa Aznar
University of Valencia
Burjasot

Estrella E. N  n  ez-Delicado
Universidad Cat  lica San Antonio
de Murcia
Murcia

SWITZERLAND

Helen Huber
Vetsuisse Faculty University of Zurich
Institute for Food Safety & Hygiene
Zurich

TAIWAN

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Fu Jen Catholic University
Xingzhuang City, Taipei

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Muhammad Ihsanullah Qamar
Rotana Hotel Management
Corporation, Ltd.
Dubai

UNITED STATES

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Rebecca Hepworth
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Marietta

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Brittany Porter
Iowa State University
Ames

KANSAS

Yousef Alsaadi
Kansas State University
Manhattan

LOUISIANA

Genevieve Edwards
Louisiana State University
Baton Rouge

MASSACHUSETTS

Brian Campbell
Hans Kissle LLC
Haverhill

MICHIGAN

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New Boston

MINNESOTA

Jason J. Boeck
General Mills, Inc.
Minneapolis

Pierre P. Frumholtz
Cargill Animal Nutrition
Hopkins

MISSOURI

Kurt Wiese
Nestle Purina Pet Care
St. Louis



NEW MEMBERS

NEBRASKA

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ConAgra Foods
Omaha

Paul McBride
ConAgra Foods
Omaha

Paul P. Nielsen
Wimmer's Meat Products
West Point

NEW HAMPSHIRE

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Durham

NEW JERSEY

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Geneva

Allison Jeffrey-Guy
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Amityville

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The Ohio State University
Wooster

Kaedra Wetzel
The Ohio State University
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Coppell

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North Atlantic Veterinary Command
Clifton

Teresa B. Hileman
Altria Client Service
Richmond

WASHINGTON

Robert D. Cox
BON DENTE
Lynden

WISCONSIN

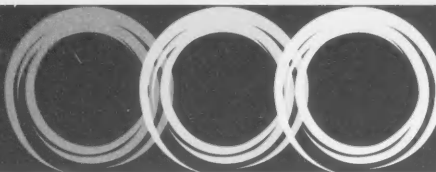
Regina Whitemarsh
University of Wisconsin-Madison
Madison

NEW SILVER SUSTAINING MEMBER

Rich Products Corporation

Adam C. Borger
Buffalo, NY

WHAT'S HAPPENING IN FOOD SAFETY



3-A SSI Introduces New Knowledge Center Video Resources

3-A Sanitary Standards, Inc. (3-A SSI) announces a major expansion of its on-line technical resources with the opening of a revamped Knowledge Center and new video resources. The new Knowledge Center offers a broad and comprehensive array of resources on hygienic design, 3-A Sanitary Standards and 3-A Accepted Practices, the 3-A Symbol program and related licensing requirements.

The new video gallery includes five titles which are available for download at no charge. The new video titles and approximate run times include:

- **More Than Just a Symbol: The 3-A Story (10:38)**—This is a great introduction to the organization 3-A Sanitary Standards, Inc. and the 3-A Symbol licensing program.
- **Essentials of Sanitary Design: The 3-A Format and Style Manual (2:12:50)**—For those seeking an in-depth understanding of sanitary design criteria, this is a comprehensive review of the elements common to 3-A Sanitary Standards and 3-A Accepted Practices.
- **The Certified Conformance Evaluator and the TPV Inspection Overview (9:10)**—This short video offers a good primer to the requirements for the credential 'Certified Conformance Evaluator' required for an independent professional to conduct a Third Party Verification (TPV) inspec-

tion. A general overview of the TPV inspection required for 3-A Symbol authorization is also presented.

- **Trust But Verify: The TPV Inspection for 3-A Symbol Authorization (53:44)**—This presentation takes you from start to finish in the Third Party Verification (TPV) inspection. While this demonstration covers a sample centrifugal pump, the inspection process is similar for other types of equipment covered by a 3-A Sanitary Standard.
- **Maintaining 3-A Symbol Integrity: Reporting Alleged Non-conformance (10:37)**—This is a short but important review of how issues of alleged non-conformance of 3-A Symbol authorization should be handled. While the oversight for conformance rests with the licensee, other parties can and should help watch for products in possible non-conformance to protect the integrity of the 3-A Symbol.

The video resources include links to other relevant resources on the 3-A SSI Web site and outlines of the presentation material contained in the video, all free of charge. The new video resources were designed as high-value, user-friendly tools to introduce all interested parties to the 'value of 3-A', from understanding the fundamentals of hygienic design to the details of a typical TPV inspection, which is required for authorization to use and display the 3-A Symbol.

The new Knowledge Center is available on the 3-A SSI Web site at www.3-a.org or go directly to www.3-a.org/resource/index.html.

Associations Recognized for Long Commitment to Consumer Food Safety Education

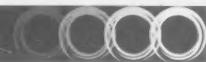
Seven associations were recognized for more than 10 years of participation and \$2.5 million in cumulative contributions to the nonprofit US Partnership for Food Safety Education (the Partnership) at the 2010 Food Safety Education Conference.

The associations honored are the American Egg Board (AEB), American Dietetic Association (ADA), Food Marketing Institute (FMI) Foundation, National Chicken Council (NCC), National Pork Board (NPB), National Turkey Federation (NTF) and Produce Marketing Association (PMA).

"The enduring commitment of these organizations, together with the federal government and consumer advocates, has enabled the Partnership to teach millions of Americans of all ages the essential measures to keep their food safe," said Shelley Feist, executive director of the Partnership. "They made it possible for the Partnership to develop and launch FightBAC[®], Be Food Safe and other free programs for public health and nutrition educators."

The Partnership has developed several education campaigns, including: FightBAC[®] – teaches the four core safe food-handling practices: Clean hands and surfaces often; Separate to avoid cross-contamination; Cook food to safe internal temperatures as measured with a food thermometer; and Chill – refrigerate foods promptly. More information is available at www.fightbac.org.

Be Food Safe – developed by the Partnership to involve retailers in consumer food safety education.



The program complements USDA's Be Food Safe campaign.

Additional campaigns and materials were developed around topics including safe produce handling, holiday food safety (www.holiday-foodsafety.org) and recall basics (www.recallbasics.org) for consumers. These campaigns include consumer resources such as brochures, graphics, fact sheets, newsletters and multimedia presentations.

The Partnership works closely to develop and disseminate campaigns with its contributing partners and federal liaisons at the U.S. Department of Agriculture (USDA), U.S. Food and Drug Administration (FDA) and the Centers for Disease Control and Prevention (CDC).

In a statement before food safety educators, Ms. Feist noted the "exceptional, long-term commitment and investment in preventive health education" made by the food industry associations. AEB, FMI, NCC and PMA have participated consistently as contributing partners in each of the 14 years since the Partnership was founded in 1997.

Trade associations, public interest, consumer and scientific organizations with direct involvement in securing, maintaining and promoting a safe and secure food supply for consumers are invited to participate in the Partnership as contributing members.

NSF International 2010 Food Safety Leadership Award Winners

NSF International recipients of the 2010 Food Safety Leadership Awards received their awards at the 2010 Food Safety Summit in Washington, D.C.

NSF created the Food Safety Leadership Awards (FSLA) program to encourage the development of innovative technologies and learning programs that advance food safety efforts.

Each year, NSF solicits nominations from throughout the food safety community and convenes an independent panel of food safety experts from academia, industry and the regulatory community to select the winners. Nominations are evaluated on creativity, innovation, design and the contributions made to the advancement of food safety. This year, six individuals or organizations will be recognized in the categories of outstanding innovation in: "Training," "Equipment Design," "System Improvement," and "Education."

The 2010 Food Safety Leadership Award Winners:

Innovation in Training, California Strawberry Commission Food Safety Team.

After developing one of the first commodity-specific food safety guidelines, the California Strawberry Commission (CSC), a state government agency that represents growers, shippers and processors of California strawberries conducted an industry-wide food safety risk assessment to review the entire production chain throughout the state. This assessment identified key areas of potential food safety risk. They then updated the CSC Food Safety Program using best practices from the produce industry and providing effective food safety training programs and instructional materials. The end result was a new program called "Food Safety Practices for Strawberry Harvest Workers."

Innovation in Equipment Design, FoodSafe Team, Intralox.

In the past four decades, Intralox has grown from a small conveyor belt manufacturer to a global provider of conveying solutions. During this time, the company has developed a worldwide reputation for ethical and responsible business practices.

Innovation in System Improvement, Royal Commission for Jubail and Yanbu.

The Royal Commission for Jubail and Yanbu in Saudi Arabia was

established in 1975 to help develop the physical and social infrastructure needed to grow the cities of Jubail and Yanbu. As part of this mission, the Royal Commission designed a program to ensure food safety among the workforce and for residents. The Commission was able to spur an increase in public health and food safety awareness throughout the community by implementing a Hazard Analysis Critical Control Points (HACCP) food safety management system.

Innovation in System Improvement, Southern Nevada Health District.

Prior to 1999, Nevada was one of 11 states in the nation that had a Hepatitis A incidence rate of more than two times the national average. Hepatitis A is most commonly transmitted through contaminated food or drinking water. At its peak in 1997, more than 4,500 cases were reported in Clark County.

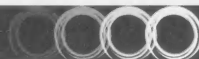
Innovation in Education, William Marler, Managing Partner, Marler Clark, LLP, PS.

For over 17 years, foodborne illness attorney Bill Marler has helped thousands of people suffering from serious disabilities caused by foodborne illness. Using the power of information, Mr. Marler devotes his time and effort to keeping awareness high by way of the Internet, media, public appearances and newsletters.

Innovation in Education, Catherine H. Strohbehn, Ph.D. RD, CP-FS, Hotel, Restaurant, and Institution Management (HRIM) Extension Specialist and Adjunct Associate Professor, Iowa State University.

Throughout the last decade, Dr. Catherine Strohbehn has conducted educational outreach efforts on the topics of food safety, food safety systems and human resources. Among her many accomplishments on the local, national, and international front is the SafeFood® food safety program.

This year's awardees were selected by a distinguished panel of food safety experts.



The 2010 Food Safety Leadership Award Expert Panel of Jurors:

Mary M. Adolf, MS, RD, Former President and Chief Operating Officer of the National Restaurant Association Educational Foundation.

John Farquharson, Founder and former President of the International Food Safety Council.

Lee-Ann Jaykus, President-Elect, International Association for Food Protection.

Ernest M. Julian, Ph.D., Chief of the Office of Food Protection for the Rhode Island Department of Health.

Don Schaffner, Ph.D., Extension Specialist in Food Science and Professor at Rutgers University.

Ewen C. D. Todd, Ph.D., Director of the Food Safety Policy Center and Professor at National Food Safety & Toxicology Center for Michigan State University.

David M. Theno, Ph.D., CEO, Gray Dog Partners, Inc. Foods Consulting Business. Former Senior Vice President of Quality and Logistics for Jack in the Box Inc.

Ronald S. Klein, Program Manager, Food Safety and Sanitation, Alaska Department of Environmental Conservation.

Jim Mann, Founder of The Handwashing Leadership Forum® and creator of Handwashing For Life®.

FDA Cracks Down on Labeling Violations

Commissioner Margaret Hamburg has announced a major and broad initiative to increase FDA enforcement against illegal claims on food labeling, including unauthorized Nutrient Content Claims, health claims, and all drug and disease claims.

FDA is also committed anew to cracking down on technical violations on both the front of package labeling and on nutrition facts panels. FDAImports.com, LLC, a US-based FDA consulting practice owned

by Benjamin England, a 17 year FDA veteran with over 20 years of practical FDA labeling compliance experience, believes that this is the beginning of a major effort to stop imported foods, imported beverages, and imported dietary supplements in their tracks before they are able to reach US consumers.

"The easiest violation for FDA to find is a labeling violation," says England at FDAImports.com. "FDA does not have to test the product to find the problem. The inspector just looks at the label," he continued. Food labeling, beverage labeling and dietary supplement labeling requirements can be highly technical, as several dozen domestic and foreign food and beverage manufacturers learned.

FDA recently issued more than 15 "Warning Letters" to major food and beverage manufacturers on February 22, 2010 and an additional, such as Dreyers Grand Ice Cream, Inc., Gorton's, Inc., Schwan's Consumer Brands, Beech-nut, Spectrum Organic Products, Inc., Nestle, Inc., Sunsweet Growers, POM Wonderful, Pompeian, Inc., and Diamond Food, Inc.

FDA seems particularly focused upon food labels that bear false or misleading claims about fat content in foods, which are a type of nutrient content claims. These content claims dominated FDA's warning letters, including allegations that well-known food and beverage makers and distributors were improperly using words such as "light", "cholesterol free," "plus" and "good source" in food labels without meeting the strict regulatory criteria that apply to such claims.

In a bit more nuanced move, FDA attacked "antioxidant" claims for food ingredients and nutrients. FDA's position is that an "antioxidant" claim amounts to an implied nutrient content claim. Apparently the agency is prepared to back up its position by threatening enforce-

ment action. FDA clearly believes the consumer is influenced by nutrient content claims on food and beverage labels, which is good for food and beverage companies. But, in FDA's view, with influence comes responsibility.

The agency is also taking issue with improper or missing percentage juice claims, which leave the consumer with a false impression that a juice blend with added flavor is a 100% juice. Not unsurprisingly, FDA found illegal and fraudulent disease and drug claims on a number of food labels and labeling (including product labels and product Web sites). What might be more surprising is FDA finding these claims in places industry is not used to FDA looking – advertising and internet marketing materials.

Wet-vacuum Sampling System from Microbial-Vac Systems, Inc. Receives Letter of No Objection from USDA/FSIS

The USDA/FSIS has issued a Letter of No Objection to Microbial-Vac Systems, Inc. (MSI) for the use of their wet-vacuum microbial sampling system in USDA inspected facilities. This sampling device will improve the safety of our food by collecting a better sample for pathogenic detection.

MSI is the manufacturer of a wet-vacuum sampling device (the M-Vac) that has been demonstrated to be a robust alternative to the current gold-standard method of excision on beef trim and other meat surfaces. In addition to meat surfaces, the M-Vac has also shown sampling superiority over sponging and swabbing techniques on environmental and product surfaces. A better sample leads to greater detection of pathogens before they get into the food supply.

According to Jared Bradley, president and CEO of MSI, "The

M-Vac collects a more representative microbial sample from any environmental surface, making it the best collection method on the market. It also collects bacteria off product surfaces, including beef trim, which allows for an extremely effective, more efficient, and non-destructive product sample for meat packers and other food processors."

The excision method for sampling beef trim has long been considered the most effective. The validations conducted with the M-Vac have demonstrated that it is not statistically different from excision in collecting bacteria, even at extremely low levels of contamination. The M-Vac is easy to use and will increase consistency of surface area per sample and repeatability between users. Mr. Bradley stated, "The M-Vac will now give beef packers and processors another approach by which they can sample beef trim in an equally effective, yet more efficient manner." In addition to the improvements in the plant, the M-Vac sample will also improve lab processes. It collects a cleaner, easier sample to process and it requires much less enrichment media than excision samples. It also eliminates the need to dispose of excised meat samples due to its liquid collection.

FMI Names Pamela Stegeman Vice President of Business Planning and Development

The Food Marketing Institute (FMI) is pleased to announce the appointment of Pamela Stegeman to the newly created position of vice president, business planning and development.

Ms. Stegeman will be responsible for leading, developing and integrating the value creation, revenue generation, new business and community development activities for FMI. She will focus on business development, sales planning

and execution, integrated marketing effectiveness, existing product and services integration and client relationship building.

"Pam brings a breadth of experience that will be tremendously helpful to FMI as we create and develop new business opportunities for the organization," said FMI President and Chief Executive Officer Leslie G. Sarasin. "Our goal is to enhance the value proposition FMI presents to its members and to assist them in meeting the needs of their customers. Pam will play an integral role as part of our strategic plan."

Ms. Stegeman joins FMI from the Pet Industry Joint Advisory Council where she served as president. She also served in various roles during her eight years at the Grocery Manufacturers Association, including vice president, supply chain and technology.

Previously, she served as vice president of marketing at U.S. Office Products Company; senior marketing manager, new products marketing and global business development for Colgate-Palmolive Corporation; and management positions at Sprint Corporation and The Procter & Gamble Company.

Ms. Stegeman earned a BA from Hamilton College and an MBA from Cornell University's Johnson Graduate School of Management. She has also participated in the executive education program at the University of Virginia's Darden Graduate School of Business Administration.

Gerald Wojtala Named Executive Director of the International Food Protection Training Institute

The International Food Protection Training Institute (IFPTI) announced that Gerald Wojtala was named executive director. Mr. Wojtala has served as IFPTI's acting executive

director since December 1, 2009. He will also continue as a member of the Board of Directors for IFPTI.

Mr. Wojtala joined IFPTI after a 26-year career with the State of Michigan. In his most recent position as deputy director of the food dairy division with the Michigan Department of Agriculture, he managed the food protection programs in Michigan and was responsible for liaison with lawmakers on legislative issues. Mr. Wojtala is also the recent past president of the Association of Food and Drug Officials (AFDO), an international non-profit organization recognized as a leading voice in shaping the regulatory playing field of the future. He is also a current lead instructor with the National Center for Biomedical Research and Training, Academy of Counter-Terrorist Education at Louisiana State University.

Prior to government service, Mr. Wojtala worked as a microbiologist in Detroit. He is a long-standing member of the Institute of Food Technologists and a delegate to the Conference on Food Protection. Mr. Wojtala received the FDA Commissioner's Special Citation for his role in investigating an outbreak of Hepatitis A among school children from the consumption of strawberries and also for managing the response to the Power Blackout of 2003 that occurred in the NE United States. He has worked with Michigan's apple industry in efforts to implement safe cider production practices and with the Michigan food processing industry on process water discharge issues. Mr. Wojtala recently coordinated a multi-agency, four-state effort to assess food safety transportation practices and response.

Mr. Wojtala holds a degree in microbiology from Eastern Michigan University and graduate work in food science at Wayne State University.

INDUSTRY PRODUCTS



Biochrom Ltd.

Multichannel Microplate Reader with UV Capability from Biochrom Ltd.

For speed and flexibility in a Microplate Reader, the Biochrom Asys Expert Plus range of instruments fits the bill. Multichannel optics deliver rapid analysis times covering the range 340–800 nm.

This instrument enables Life Science researchers to run a variety of different microplate assays including “UV assays” such as the measurement of changes in the absorbance of NADH at 340 nm.

The Expert Plus can be used with flat, round and v-bottomed plates. Four shaking modes ensures complete mixing of solutions, allows cells to stay in suspension, homogenizes colored solutions and provides an equal, stable liquid meniscus in all wells.

These stand-alone microplate readers can store up to 120 methods, and the results of up to 100 plates. Control Plus Software enables the user to download results to an external PC for data storage, manipulation and printing, or to

upload programs from the PC to the instrument to save hands-on time.

Assay formulas can include qualitative or quantitative assays, outlier elimination, transformation, and standard curve construction (cubic, point to point, spline and 4 parameter curve fits), using factors and floating cut-off.

Biochrom Ltd.

+44.0.1223.427811

Cambridge, United Kingdom

www.biochrom.co.uk

SDIX Food Pathogen Test Gains Third-party Validation for European Markets

Strategic Diagnostics Inc., now doing business as SDIX, has announced its RapidChek® SELECT™ *Salmonella* test system has received AFNOR VALIDATION certification as an alternative method for detecting *Salmonella* within 24 hours from various samples – including meat, seafood, vegetables, eggs, dairy, feed, and environmental.

This validation enables European customers who are required to follow ISO testing methods to confidently use RapidChek SELECT *Salmonella*, thereby benefiting from its ability to rapidly and accurately detect this dangerous food pathogen.

The AFNOR VALIDATION process is an internationally recognized European third party certification that validates alternative food testing methods according to the EN ISO 16140 protocol. The AFNOR VALIDATION mark certifies that a multi-phase validation study, by approved expert laboratories approved for

AFNOR Certification, has demonstrated equivalent results between the RapidChek SELECT *Salmonella* system and the ISO standardized method.

The general conditions under which this mark is granted meet all of the requirements of European regulation (EC) 2073/2005 relating to the microbiological criteria applicable to foodstuffs, thereby giving it European recognition.

The RapidChek® SELECT system is an easy, accurate, flexible, and rapid food pathogen detection technology. It combines the simplicity of lateral flow test strips with SDIX's proprietary, patented phage-based enrichment and immuno-detection tools to significantly enhance both specificity and sensitivity of testing and enable improved pathogen detection.

Tim Lawruk, SDIX food safety marketing manager said, “Improving productivity and accuracy of tests is a major goal for effective global food testing. This certification and the AFNOR mark demonstrate SDIX's commitment to provide the global food market with superior, complete pathogen testing solutions that provide rapid and accurate results. This study represents independent, empirical data and validation to support these benefits for our customers as they continue their efforts to provide safe food to European consumers.”

Colin LeGood, SDIX manager of distribution and business development for Europe and Asia Pacific said, “SDIX's investment in obtaining the AFNOR VALIDATION demon-

See also by Elizabeth H. Treadwell, “I read about it in Food Protection Trends” 1

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INDUSTRY PRODUCTS

strates our commitment to serving the international food pathogen testing markets. This certification again highlights the technical capabilities of the RapidChek SELECT *Salmonella* system which SDIX can translate into financial advantages for the food industry.”

SDIX
302.456.6789
Newark, DE
www.sdix.com

Life Technologies Kit Receives Industry Validation for Detection of *Salmonella*

Life Technologies Corporation has announced that its Applied Biosystems MicroSEQ® *Salmonella* spp. Detection Kit has been validated by the AOAC Research Institute for detection of the bacteria *Salmonella*. This validation from one of the world's leading food industry standards organizations is expected to enable more effective monitoring of the food supply for *Salmonella* contamination and help ensure food safety.

Salmonella is one of the most common causes of foodborne illness, according to the U.S. Centers for Disease Control and Prevention. The bacterium can contaminate a wide variety of foods including meats, poultry, dairy products, eggs, fruits and vegetables, even during and after processing steps. Examples of foods contaminated in wide-spread outbreaks of *Salmonella* include peanut butter, and more recently black pepper used in salami and Italian sausage. This most recent *Salmonella* outbreak sickened hundreds in the United States and prompted a recall of over 1.2 million pounds of ready-to-eat salami earlier this year.

The MicroSEQ *Salmonella* spp. Detection Kit has been validated by the AOAC Research Institute for use with 11 different food sample types, and for both high and low-throughput testing workflows. This validation meets the stringent pathogen detection requirements of many companies and testing organizations responsible for safeguarding food supplies.

“The safety of our food supply has become an increasingly important issue, and food companies and food testing organizations are seeking validated tools and methods to help protect public health,” said Dr. Sharon Brunelle, a technical consultant, AOAC Research Institute. “Life Technologies has demonstrated that the MicroSEQ *Salmonella* spp. Detection Kit performs as well or better than the ISO reference method for a variety of foods, earning Performance Tested MethodsSM certification from the AOAC Research Institute.”

The MicroSEQ *Salmonella* spp. Detection Kit is part of a complete pathogen detection workflow based on proven Applied Biosystems technology, and optimized for use with the Applied Biosystems 7500 Fast Real-Time PCR System. The rapid pathogen detection workflow requires only small amounts of sample to ensure detection of *Salmonella* in less than 18 hours, as compared to several days with conventional methods. It includes options for low and high-throughput sample preparation and streamlined data analysis software. Use of the kit is simplified by a recent innovation that combines fast real-time PCR-based molecular technology in a lyophilized – or dried – format that reduces the handling of samples, and the chances of contamination.

“We expect the AOAC validation of our MicroSEQ *Salmonella* spp. Detection Kit will give food industry professionals great confidence in the results of molecular tests for the presence of this bacterium in food samples,” said Brian Kim, general manager, Applied Molecular Testing for Life Technologies. “Utilizing this kit along with our AOAC Research Institute validated kit for detection of *Listeria monocytogenes* will help government agencies and industry professionals to ensure that food supplies are protected from these harmful pathogens.”

Life Technologies Corporation
760.603.7200
Carlsbad, CA
www.lifetechnologies.com



Teledyne Tekmar

Teledyne Tekmar Introduces New Waters-only Autosampler Instrument

Teledyne Tekmar has introduced a new analytical instrument to the market, the AQUATek 100 Waters-only Autosampler. The AQUATek 100 is a purge and trap autosampler that automates the

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sample preparation steps for the analysis of liquid samples utilizing a fixed volume sample loop filled using a pressurization gas. Two independent volume programmable internal standards are then added to the sample and the entire aliquot is transferred to the Purge and Trap for compound concentration and subsequent separation and detection using a GC/GC-MS quantification system.

This instrument replaces our very successful AQUATEk 70 Autosampler that was released several years ago. "The AQUATEk 100 brings to market the latest engineering enhancements that have been employed in our newer sample preparation lines," said Thomas Hartlein, product line manager. "In addition, newer materials in the field of inertness and advanced intelligent software controls have been incorporated. These features combined with greater vial capacity and increased sample handling speed will offer our customers greater flexibility and increased throughput to help their production needs all while maintaining a low cost of ownership," added Mr. Hartlein.

While this autosampler may be considered a replacement for the current waters-only autosampler, several new productivity enhancing features have been added. The AQUATEk offers 30% more sample capacity than the previous model. Auto blanking allows customers to use more vial positions for actual samples rather than required quality control, since blanks can be generated from the built in water reservoir. The standard vial cooling system allows samples to be chilled to 10°C prior to analysis should the customer require this protocol for method compliance.

These features are standard on the AQUATEk 100 and offer customers greater capabilities. The AQUATEk 100 is an example of Teledyne Tekmar's continuing focus on new innovation as well as producing instruments that provide customers with solutions for productivity and margin enhancement.

Teledyne Tekmar is a leader in the design and manufacturing of analytical instrumentation for the laboratory. Tekmar provides productivity-enhancing instrumentation and solutions to a number of industries including Environmental (drinking water and wastewater), Pharmaceutical, Food and Beverage, Forensics and Toxicology, Petrochemical, and Polymers/Plastics.

The company's world-renowned Volatile Organic Compound (VOC) product line includes systems for Gas Chromatography (GC) Sample Introduction, High-Throughput Purge and Trap sample concentration, Static and Dynamic Headspace analysis, and Sample Automation.

Teledyne Tekmar's line of Total Organic Carbon (TOC) and Total Nitrogen (TN) Analyzers provides unparalleled accuracy, precision, throughput and robustness for water samples varying in quality from semiconductor-grade to municipal wastewater. All of the company's pharmaceutical instruments have available 21 CFR Part 11 software tools for compliance needs, as well as validation documentation, services and training.

Teledyne Tekmar
800.874.2004
Mason, OH
www.tekmar.com



Mettler Toledo

Mettler Toledo Secure Standard Preparation with One Click™ Weighing Solutions

Mettler Toledo introduces One Click™ Weighing Solutions powered by LabX. These solutions are complete product bundles consisting of an Excellence XP/XS Balance, corresponding accessories and the new LabX 2010 software. One Click™ Standard Preparation offers fast, secure and easy standard and sample preparation with full user guidance on the balance.

Users are guided through the standard preparation procedure with instructions on the balance touchscreen. The user only needs to input the sample ID and respond to the commands on the balance. The One Click™ Weighing Solution performs all calculations and documentation automatically and hence the time to prepare a standard solution is reduced from around 15 minutes to less than four.

To start the application, the user simply presses the One Click™ shortcut on the balance touchscreen. The comprehensive guidance ensures the SOP is followed exactly. Flask labels can be printed automatically as part of the procedure and ensures that no essential information is omitted. All data is saved

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to ensure full traceability and results can be printed automatically at the end in a personalized report to fulfill documentation requirements.

The first One Click™ Weighing Solutions focus on common weighing procedures performed every day in many laboratories. In addition to Standard and Sample Preparation, LabX 2010 contains methods for Loss on Drying and Sieve Analysis. All methods are started with a One Click™ shortcut on the instrument and benefit from the increased process security provided by LabX 2010. The complete solution can be tailored to meet individual process requirements e.g., selection of the correct balance. LabX 2010 has built in design tools to allow customization of the library methods or development of new methods.

Mettler Toledo
614.438.4511
Columbus, OH
www.mt.com

EnviroBootie™, Simplified Salmonella Recovery from Hardy Diagnostics

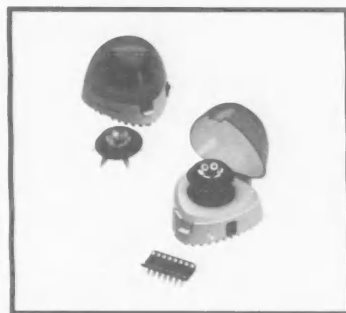
Hardy Diagnostics, an ISO certified biomedical firm, is pleased to announce the release of EnviroBootie™, a sterile, pre-moistened fabric bootie that is hydrated with double-strength skim milk broth used for the recovery of *Salmonella* spp. from the environment. The EnviroBootie™ worn by the technician, while walking through the hen house, allows for the easy yet effective collection of environmental

samples. The plastic cup allows for the secure transport, addition of pre-enrichment broth, incubation, subculture, and eventual disposal (by autoclaving) of samples in a single container.

Egg-associated salmonellosis is an important worldwide public health concern, and monitoring *Salmonella* contamination at the farm level is an important step in resolving this potential public health problem. The bacterium, *Salmonella* Enteritidis (SE), can infect the ovaries of healthy hens and contaminate their eggs before the hard shell has formed. SE can grow undetected inside perfectly normal-appearing eggs, and result in illness when these raw or undercooked eggs (or associated egg products) are consumed.

To reduce the risks of *Salmonella* contamination in livestock shelters, many government agencies and members of the egg industry have taken steps to decrease the potential for SE outbreaks. Farm-based environmental monitoring for SE is required as part of the egg safety program developed by the FDA. The program was implemented to prevent SE from contaminating eggs on the farm, thereby reducing the risk of human illness of outbreaks associated with contaminated eggs. Environmental testing is also used in USDA tracebacks from foodborne SE outbreaks in an effort to control the spread of this bacterium.

Hardy Diagnostics
800.266.2222
Santa Maria, CA
www.HardyDiagnostics.com



Hoefer, Inc.

Hoefer, Inc. Has Introduced a New Mini Centrifuge

The new mini centrifuge unit is compact, easy-to-use and designed to meet the wide range of applications found in research.

The Hoefer Mini Centrifuge comes complete with two rotors—a 6 place rotor for 1.5 ml tubes and a PCR Strip rotor. Adapters are included to allow the 6 place rotor to also accommodate 0.5 or 0.4 ml tubes. The small footprint requires less than six inches of bench space.

At 6000 rpm/2000 g, the Hoefer Mini Centrifuge is perfect for quickly spinning down samples, micro-gel filtration applications and micro-volume biological fluid centrifugation. The fast acceleration and braking make it perfect for these quick spins.

The Hoefer Mini Centrifuge automatically shuts off when the lid is opened but there is also an on/off switch as well so the lid can be closed without starting the unit. The Hoefer Mini Centrifuge is CE marked.

Hoefer, Inc.
800.227.4750
Holliston, MA
www.Hoeferinc.com

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Ivan Parkin Lecture

Improving Food Safety from Farm to Table: Fostering Prevention and Building Partnerships

MICHAEL R. TAYLOR

Deputy Commissioner for Foods
U.S. Food and Drug Administration
Washington, D.C.

At the Opening Session
Sunday, August 1
6:00 p.m. - 7:30 p.m.



Mr. Michael R. Taylor was named Deputy Commissioner for Foods at the U.S. Food and Drug Administration (FDA) in January 2010. He is the first individual to hold the position, which was created along with a new Office of Foods in August 2009. Mr. Taylor is leading FDA efforts to develop and carry out a prevention-based strategy for food safety; plan for new food safety legislation; and ensure that food labels contain clear and accurate information on nutrition.

Mr. Taylor joined the FDA in July 2009, as Senior Advisor to the Commissioner of Food and Drugs, with responsibility for overseeing the planning and implementation of food safety reform at FDA.

From June 2000 until joining FDA, Mr. Taylor worked in academic and research settings as a research professor at The George Washington University School of Public Health and Health Services, a professor at the University of Maryland's School of Medicine, and a senior fellow at Resources for the Future.

Mr. Taylor has served in government as Administrator of USDA's Food Safety and Inspection Service (1994–1996), Deputy Commissioner for Policy at the Food and Drug Administration (1991–1994), and FDA Staff Lawyer and Executive Assistant to the FDA Commissioner (1976–1981).

In the private sector, he established and led the food and drug law practice at King & Spalding (1981–1991 and November 1996–September 1998) and was Vice President for Public Policy at Monsanto Company (October 1998–January 2000).

Mr. Taylor has served on several National Academy of Sciences committees studying food-related issues. Until joining the FDA, he was a senior fellow with The Partnership to Cut Hunger and Poverty in Africa and a board member of Resolve, Inc. and the Alliance to End Hunger.

Mr. Taylor received his law degree from the University of Virginia and his B.A. in Political Science from Davidson College.

John H. Silliker Lecture

Understanding Foodborne Microorganisms, A Matter of Perspective

ROBERT L. BUCHANAN, PH.D.

Director and Professor, Center for Food Safety and Security Systems
College of Agriculture and Natural Resources
University of Maryland
College Park, Maryland

Wednesday, August 4
4:00 p.m. - 4:45 p.m.



Dr. Robert L. Buchanan received his B.S., M.S. M. Phil, and Ph.D. degrees in Food Science from Rutgers University, and post-doctoral training in Mycotoxicology at the University of Georgia. Since then, he has had over 30 years of experience teaching and conducting research in food safety, first in academia, then with the USDA Agricultural Research Service and the Food and Drug Administration.

Dr. Buchanan recently joined the faculty of the University of Maryland as Professor and Director of the new Center for Food Safety and Security Systems. His scientific interests are diverse and include extensive experience in predictive microbiology, quantitative microbial risk assessment, microbial physiology, mycotoxicology, and food safety systems. He has published over 400 manuscripts, book chapters, and abstracts on a wide range of subjects related to food safety, and has given hundreds of invited lectures on five continents.

Additionally, he is one of the co-developers of the widely used USDA Pathogen Modeling Program, and served on the boards of editors of several journals.

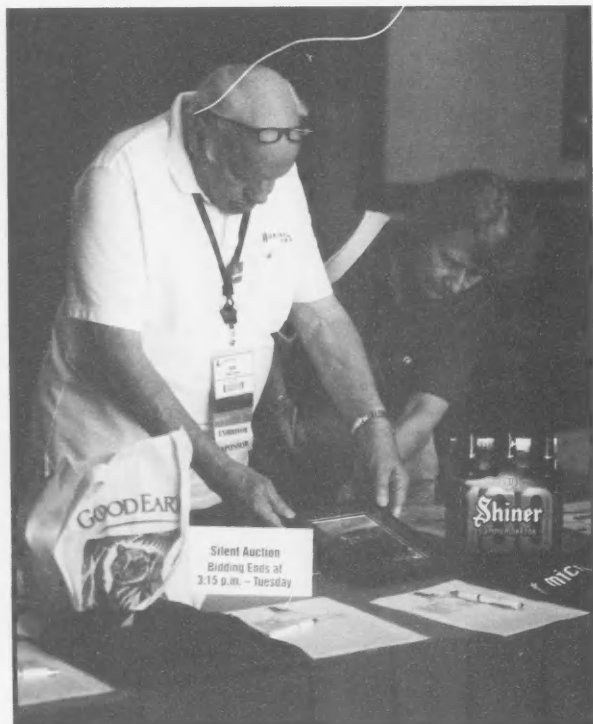
Dr. Buchanan holds an ongoing interest in the development of science-based public health policy. He served as the FDA Center for Food Safety and Applied Nutrition's Senior Science Advisor, as the Director of the CFSAN Office of Science, the FDA Lead Scientist for the U.S. Food Safety Initiative, and as Deputy Administrator for Science with the USDA Food Safety and Inspection Service.

Dr. Buchanan served on numerous national and international advisory bodies, including as the U.S. Delegate to the Codex Alimentarius Commission Committee on Food Hygiene and a permanent member of the International Commission on Microbiological Specification for Foods. Dr. Buchanan also served as a member of the National Academy of Science's Institute of Medicine Committee on Emerging Microbial Threats, the National Advisory Committee on Microbiological Criteria for Foods, and numerous international expert consultations for the FAO and WHO. Dr. Buchanan received numerous national and international honors and is a Fellow of both the American Academy for Microbiology and the Institute of Food Technologists.



Contribute to the Silent Auction!

Proceeds from the Silent Auction Benefit the IAFP Foundation



Support the Foundation by donating an item today. A sample of items donated last year included:

- Hand Dipped Premium Chocolate Truffles
- Borden Glass Milk Bottles
- Georgia Gift Basket
- *The Texas Cowboy Kitchen* Cookbook
- Hand Painted Armadillo
- *Down Home with the Neelys* Cookbook
- Margaritaville Frozen Concoction Maker
- New York State Maple Syrup
- Ontario Ice Wine
- *Food Safety Culture* Book
- Tetley Tea Gift Set
- Cultured Pearl and Lemon Quartz Necklace
- Holstein Leather Jacket

To donate an item go to our Web site at www.foodprotection.org and complete the Silent Auction Donation Form or contact Donna Gronstal at dgronstal@foodprotection.org +1 515.276.3344; +1 800.369.6337





IAFP 2010 Preliminary Program

SUNDAY, AUGUST 1

Opening Session – 6:00 p.m.

Ivan Parkin Lecture – Improving Food Safety from Farm to Table: Fostering Prevention and Building Partnerships, Michael R. Taylor, Deputy Commissioner for Foods, U.S. Food and Drug Administration, Washington, D.C.

MONDAY, AUGUST 2

Poster Session

- Antimicrobials
- Seafood
- Risk Assessment
- Novel Laboratory Methods
- Beverages and Water
- Sanitation
- Epidemiology
- Communication Outreach and Education
- Dairy and Other Food Commodities

Morning

Symposia

- Data Deluge, Interacting Players, and Complex Networks in Food Sciences - Computational Tools to Tackle Food-related Complexities
- Global Water Shortages: Their Impact on Water Safety and Quality
- Microbiological Environmental Testing and Validation: Leading Edge Issues for Low-moisture Foods
- Human Pathogens Associated with Edible Plants
- Government, Academic, and Industry Collaborations to Advance the Development and Use of Microbiological Risk Assessments
- Converging Industry Initiatives on Traceability
- Ripple or Tsunami? Riding the Regulatory Wave to Safer Bottled Water and Water Beverages

Roundtable

- Research Needs a Roundtable: Retail and Foodservice Food Safety

Technical Session

- Applied Laboratory and Novel Laboratory Methods

Afternoon

Symposia

- Buy Local? Addressing the Safety Issues Behind Green Food Trends
- Less Recognized and Presumptive Pathogens: What Now, What Next?
- What's Been Keeping You Up at Night? – Selected Unanswered Food Safety Questions
- 'Ingredient' is a Ten-letter Word for Financial Disaster
- Good Agricultural Practices and the Small Scale Producer: What's Really Going on Out There?
- Flour Food Safety: The Changing Landscape – *E. coli* O157:H7

Technical Sessions

- Pathogens, Sanitation and Seafood
- Antimicrobials and Microbial Food Spoilage

TUESDAY, AUGUST 3

Poster Session

- Applied Laboratory Methods
- Microbial Food Spoilage
- Non-microbial Food Safety
- General Microbiology
- Pathogens
- Food Toxicology

Morning

Symposia

- Risk-based Design of Thermally Processed Foods – A Look into the Future

- European Concept on Hygiene Monitoring in the Food Supply Chain – 'Farm-to-Fork' Concept in Practice
- National Institute of Food and Agriculture Showcase
- The *Salmonella* Smorgasbord: The Problem with Too Many Choices
- Food Packaging Technology: Opportunities and Challenges That Enhance Food Safety
- Non-O157:H7 *E. coli*: An Increasing International Concern
- Global Product Safety Harmonization: Exploring the Comparative Differences of International Policies

Technical Sessions

- Produce
- Meat and Poultry

Afternoon

Symposia

- The Emergence of Non-culture Diagnostics and Their Impact on Global Foodborne Disease Surveillance
- Way before the Fork: Impact of Pre-harvest Management Programs and Supply Chain Influences on the Control of Shiga Toxin-producing *E. coli* Contamination in Beef
- Food and Food Environment Test Considerations in View of Changing Regulations
- Human Noroviruses: Attribution, Transmission, and Control
- Advances in Detection Technologies to Address Food Safety and Food Defense Needs

Technical Sessions

- Produce and Communication Outreach and Education
- Risk Assessment and Epidemiology

WEDNESDAY, AUGUST 4

Poster Session

- Produce
- Meat and Poultry

Morning

Symposia

- Global Issues and Impact of Gluten Allergy and Celiac Disease
- Foodborne Disease Outbreak Update
- Food Safety in Developing Countries
- Setting the Science-based Agenda for Co-management of Watershed Quality and Produce Safety
- A Practical Approach to Risk Communication: Engaging Stakeholders and the Public
- Maintaining Consumer and Market Continuity during Animal Disease Outbreaks

Afternoon

Symposia

- Bacterial Toxins: A Past or an Emerging Issue for Food and Beverage Safety?
- WHO's Epidemiological Approach to Estimating Foodborne Diseases – WHO FERG
- Tools for Predictive Microbiology and Microbial Risk Assessment
- Issues in the Production and Manufacture of Nuts and Nut-containing Products: Nuts to Produce
- Risk Benefit Analysis of Food Production and Consumption
- New Definitions in Imported Seafood Safety

4:00 p.m. — 4:45 p.m.

John H. Silliker Lecture – Understanding Foodborne Microorganisms, A Matter of Perspective, Robert L. Buchanan, Ph.D., Director and Professor, Center for Food Safety and Security Systems, University of Maryland, College Park, MD



Activities

SATURDAY, JULY 31

COMMITTEE MEETINGS

2:30 p.m. - 5:00 p.m.

WELCOME RECEPTION

5:00 p.m. - 6:30 p.m.

Sponsored by Eurofins Scientific

SUNDAY, AUGUST 1

COMMITTEE MEETINGS

7:00 a.m. - 5:30 p.m.

STUDENT LUNCHEON (ticket required)

12:00 p.m. - 1:30 p.m.

EDITORIAL BOARD RECEPTION (by invitation)

4:30 p.m. - 5:30 p.m.

OPENING SESSION AND IVAN PARKIN LECTURE

6:00 p.m. - 7:30 p.m.

CHEESE AND WINE RECEPTION

7:30 p.m. - 9:30 p.m.

Sponsored by Kraft Foods, Inc.

MONDAY, AUGUST 2

COMMITTEE AND PDG CHAIRPERSON

BREAKFAST (by invitation)

7:00 a.m. - 9:00 a.m.

EXHIBIT HALL LUNCH

12:00 p.m. - 1:00 p.m.

Sponsored by Johnson Diversey

EXHIBIT HALL RECEPTION

5:00 p.m. - 6:00 p.m.

Sponsored by DuPont Qualicon

TUESDAY, AUGUST 3

EXHIBIT HALL LUNCH

12:00 p.m. - 1:00 p.m.

Sponsored by DNV

BUSINESS MEETING

12:15 p.m. - 1:00 p.m.

EXHIBIT HALL RECEPTION

5:00 p.m. - 6:00 p.m.

Sponsored by 3M Food Safety

PRESIDENT'S RECEPTION (by invitation)

6:00 p.m. - 7:00 p.m.

WEDNESDAY, AUGUST 4

JOHN H. SILLIKER LECTURE

4:00 p.m. - 4:45 p.m.

AWARDS RECEPTION AND BANQUET

6:00 p.m. - 9:30 p.m.

IAFP JOB FAIR

Sunday, August 1 through Wednesday, August 4

Employers, take advantage of the opportunity to recruit the top food scientists in the world! Post your job announcements and interview candidates.

TOURS

IAFP has partnered with Southern California Gray Line to offer daily sightseeing tours to all major Southern California attractions. Specialty tours include LA/Hollywood and San Diego/Tijuana city tours, OC beaches, shopping excursions, movie stars' homes and Catalina Island. Book your tours now at www.grayline-anaheim.com with your special IAFP discount coupon available under 'Special Promotions.' Or visit the IAFP Registration Desk once you arrive in Anaheim to arrange your tours.

FOUNDATION GOLF TOURNAMENT

Saturday, July 31

Tustin Ranch Golf Club

6:30 a.m. - 2:00 p.m.

This championship 18-hole Ted Robinson designed course is unique to Orange County and extremely popular. Experience breathtaking scenery, sparkling lakes and cascading falls at this course. Voted the *Best Orange County Golf Course 2009* by the readers of the *Orange County Register* and 4-Star recipient of *Golf Digest Magazine's Places to Play*.

Your registration fee helps to support the IAFP Foundation.





General Information

REGISTER ONLINE

Register online at www.foodprotection.org.

REGISTRATION

Register to attend the world's leading food safety conference.

Full Registration includes:

- Program Book
- Welcome Reception
- Ivan Parkin Lecture
- Cheese and Wine Reception
- Technical Sessions
- Poster Presentations
- Symposia
- Roundtables
- Exhibit Hall Admittance
- Exhibit Hall Lunch (Mon. & Tues.)
- Exhibit Hall Reception (Mon. & Tues.)
- John H. Silliker Lecture
- Awards Banquet

GUEST REGISTRATION

Guest registration includes:

- Welcome Reception
- Ivan Parkin Lecture
- Cheese and Wine Reception
- Exhibit Hall Admittance
- Exhibit Hall Lunch (Mon. & Tues.)
- Exhibit Hall Reception (Mon. & Tues.)

Please note that Guest registration applies to those individuals who are not employed in the food safety arena.

PRESENTATION HOURS

Sunday, Aug. 1

Opening Session 6:00 p.m. – 7:30 p.m.

Monday, Aug. 2

Symposia & Technical Sessions 8:30 a.m. – 5:00 p.m.

Tuesday, Aug. 3

Symposia & Technical Sessions 8:30 a.m. – 5:00 p.m.

Wednesday, Aug. 4

Symposia & Technical Sessions 8:30 a.m. – 3:30 p.m.

Closing Session 4:00 p.m. – 4:45 p.m.

FOUNDATION GOLF TOURNAMENT

Saturday, July 31

Tustin Ranch Golf Club 6:30 a.m. – 2:00 p.m.
Benefiting the IAFP Foundation

EVENING EVENTS

Sunday, Aug. 1

Opening Session 6:00 p.m. – 7:30 p.m.

Cheese and Wine Reception 7:30 p.m. – 9:30 p.m.

Sponsored by Kraft Foods

Monday, Aug. 2

Exhibit Hall Reception 5:00 p.m. – 6:00 p.m.

Sponsored by DuPont Qualicon

Tuesday, Aug. 3

Exhibit Hall Reception 5:00 p.m. – 6:00 p.m.

Sponsored by 3M Food Safety

Wednesday, Aug. 4

Awards Banquet Reception 6:00 p.m. – 7:00 p.m.

Awards Banquet 7:00 p.m. – 9:30 p.m.

SPECIAL EVENTS

Tuesday, Aug. 3

NFPA Alumni and Friends Reception at Buca di Beppo
7:30 p.m. – 9:30 p.m.

EXHIBIT HOURS

Sunday, Aug. 1 7:30 p.m. – 9:30 p.m.

Monday, Aug. 2 10:00 a.m. – 6:00 p.m.

Tuesday, Aug. 3 10:00 a.m. – 6:00 p.m.

HOTEL INFORMATION

A special rate of \$149 per night is available at the Hilton Anaheim. Reservations can be made from the IAFP Web site. The Hilton Anaheim is adjacent to the Anaheim Convention Center where the sessions, exhibits and events will be held.

CANCELLATION POLICY

Registration fees, less a \$50 administration fee and any applicable bank charges, will be refunded for written cancellations received by July 16, 2010. No refunds will be made after July 16, 2010 however, the registration may be transferred to a colleague with written notification. Refunds will be processed after August 9, 2010. Event and extra tickets purchased are nonrefundable.



International Association for
Food Protection

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Web site: www.foodprotection.org



Workshops

IAFP Workshops will be held at or depart from the Hilton Anaheim

<p>WORKSHOP 1</p> <p>Characterization and Identification of Spoilage-causing Fungi: A Hands-on Workshop</p> <p>Friday and Saturday July 30–July 31 8:00 a.m. - 5:00 p.m.</p>	<p>WORKSHOP 2</p> <p>Microbial Challenge Testing for Foods</p> <p>Friday and Saturday July 30–July 31 8:00 a.m. - 5:00 p.m.</p>
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REGISTRATION — (Payment must be received by July 16, 2010 to avoid late registration rates.)
Cancellations received by July 16 will be refunded, less a \$50.00 administrative fee. No refunds will be made after this date.

	<u>Early Rate</u>	<u>Late Rate</u>		<u>Early Rate</u>	<u>Late Rate</u>
Member	\$615.00	\$690.00	Member	\$480.00	\$555.00
Non-Member	\$715.00	\$790.00	Non-Member	\$580.00	\$655.00

Student rates available, contact Julie at jcattanach@foodprotection.org for more information.

Workshop 1 – Characterization and Identification of Spoilage-causing Fungi: A Hands-on Workshop

Friday, July 30 and Saturday, July 31 • 8:00 a.m. – 5:00 p.m.

Laboratory Host:

Dr. Anuradha Prakah, Chapman University

Description:

Mitigating the risks of yeasts and mold contamination remains a constant battle within certain segments of the food and beverage industry. Molds and yeasts cause significant food spoilage losses and mycotoxigenic molds pose significant food safety/regulatory hazards. Fungal identification is a scientific challenge requiring both art and technical expertise. There are a limited number of scientists who understand and have developed the art of fungal identification to a sound science. This workshop provides attendees a unique opportunity to interact first-hand with a group of experts, learning the best practices for isolating different fungi as well as the basics of classical identification methods. This workshop will also cover current molecular methods that are used to identify yeast and mold. Fifty percent of the workshop will involve live demonstration and a direct hands-on experience in a laboratory setting.

Note: Workshop participants will meet each day at the Hilton Anaheim and be transported to laboratory facilities at Chapman University.

Topics:

- Cultural Methods and Mold Identification
- Method Demonstrations Including Molecular Tools for Mold Identification
- Case Studies

Instructors:

Emilia Rico, BCN Research Laboratories, Inc.

Frank Burns, DuPont Qualicon

Shawn Johnson, Universal Sanitizers Inc.

Dave Pincus, bioMérieux, Inc.

Organizers:

Julie Castro, Pepsico
Mangesh Palekar, Kraft Foods, Inc.

Intended Audience:

This course is aimed at microbiologists working in academia or the food and beverage industry who want to gain a better understanding of the types and challenges of fungal contamination in food and beverage products. The main purpose of the workshop is to provide attendees the opportunity to gain hands-on experience and expertise in a live wet lab setting for the identification of industrially significant yeasts and molds.

Workshop 2 – Microbial Challenge Testing for Foods

Friday, July 30 and Saturday, July 31 • 8:00 a.m. – 5:00 p.m.

Description:

The food industry routinely uses challenge testing to determine whether a specific food requires time and temperature control for safety, or is suitably formulated. When laboratory testing is used to support a change in how the product is handled in a food establishment (e.g., refrigerated to unrefrigerated holding, extending shelf life, increasing ambient temperature storage or eliminating the need for date marking), the data are submitted to a state or local regulatory agency or directly to the FDA in the form of a variance application for approval. Food establishments or manufacturers submitting laboratory data to support their proposals must ensure the study is appropriate for the food and pathogen of concern and incorporate the necessary elements into the study to yield a valid design and conclusion. Because of the many questions raised by regulatory and industry professionals about the appropriate use of challenge studies, the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) was asked to provide guidance on the topic of challenge studies and their use. This workshop will present the NACMCF report and instructors will guide the students through use of the material in the report to develop actual challenge study protocols based on NACMCF recommendations.

Topics:

- Overview of challenge study design (purpose of study, product description, product assessment, pathogens of concern, sampling intervals, test conditions, other controls, pass/fail criteria).
- Introduction to models and their use (examples of models, applicability of models to different foods, pathogen growth ranges used in modeling programs).
- Purpose of study, product description and assessment (purpose of the study, time/temperature control, lethality, formulation efficacy, product, ingredients, preparation, storage, pH and water activity).
- Pathogens of concern (selection criteria, ecology and epidemiology, use of models and the literature, inactivation study parameters).
- Sampling intervals and test conditions (growth vs. inactivation studies, strain selection, inoculation methods, packaging, sample size and replicates).
- Other controls and pass/fail criteria (surrogates, un-inoculated controls, pass/fail criteria selection and limitations of study).

Instructors:

Kathy Glass, University of Wisconsin-Madison
Linda Harris, University of California-Davis
Don Schaffner, Rutgers, The State University of New Jersey

Organizer:

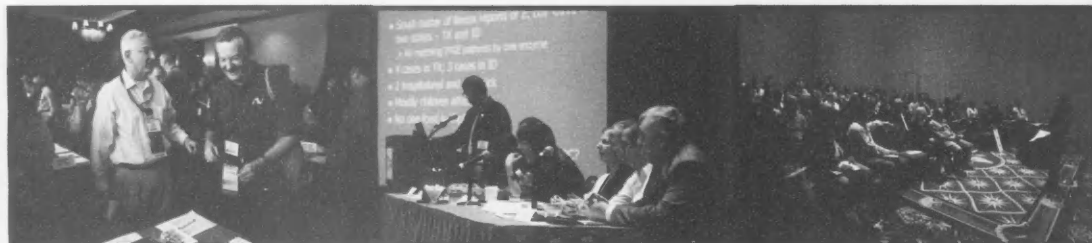
Don Schaffner, Rutgers, The State University of New Jersey

Intended Audience:

Food industry professionals, testing lab personnel and regulators

One of the best conferences of the year... many ideas and useful information taken away. Good combination of regulatory, scientific and best practices.

Sharon P. Wood
H-E-B
San Antonio, Texas



REGISTRATION RATES

REGISTRATION FEES	MEMBERS	NONMEMBERS
Registration	\$ 445 (\$ 495 late)	\$ 665 (\$ 715 late)
Association Student Member	\$ 80 (\$ 90 late)	Not Available
Retired Association Member	\$ 80 (\$ 90 late)	Not Available
One Day Registration* <input type="checkbox"/> Mon. <input type="checkbox"/> Tues. <input type="checkbox"/> Wed.	\$ 240 (\$ 265 late)	\$ 370 (\$ 395 late)
Guest* (Name): _____	\$ 60 (\$ 60 late)	\$ 60 (\$ 60 late)
Children 15 & Over* (Names): _____	\$ 25 (\$ 25 late)	\$ 25 (\$ 25 late)
Children 14 & Under* (Names): _____	FREE	FREE
*Awards Banquet not included		
Additional Awards Banquet Ticket - Wednesday, 8/4	\$ 55 (\$ 65 late)	\$ 55 (\$ 65 late)
Student Luncheon - Sunday, 8/1	\$ 10 (\$ 15 late)	
ADDITIONAL FEES		
FOUNDATION GOLF TOURNAMENT		
Tustin Ranch Golf Club - Saturday, 7/31	\$ 195 (\$ 225 late)	\$ 195 (\$ 225 late)
SPECIAL EVENTS		
NFPA Alumni and Friends Reception	\$ 35 (\$ 45 late)	\$ 35.00 (\$ 45 late)
ABSTRACTS		
Annual Meeting Abstracts (citable publication to be distributed in Anaheim)	\$ 30	\$ 30
PRE-MEETING WORKSHOPS		
Workshop 1-Characterization and Identification of Spoilage-causing Fungi: A Hands-on Workshop	\$ 615 (\$ 690 late)	\$ 715 (\$ 790 late)
Workshop 2-Microbial Challenge Testing for Foods	\$ 480 (\$ 555 late)	\$ 580 (\$ 655 late)

Register online at www.foodprotection.org



PHONE: +1 515.276.3344



FAX: +1 515.276.8655

COMING EVENTS

JULY

- **1-2, The Molecular Methods in Food Microbiology Symposium and Workshop Series**, Fort Collins, CO. For more information, contact Kendra Nightingale at Kendra.Nightingale@ColoState.edu or go to <http://ansci.colostate.edu/content/view/808/112/>.
- **5-8, Society for Applied Microbiology's Summer Conference**, Brighton, UK. For more information, call +44 (0)1234 761752 or go to www.sfam.org.uk.
- **14-16, NACCHO Annual Meeting**, Marriott Memphis Downtown, Memphis Cook Convention Center, Memphis, TN. For more information, go to www.naccho.org.
- **17-21, IFT 2010 Annual Meeting and Food Expo**, McCormick Place, Chicago, IL. For more information, go to www.am-fe.ift.org/cms/.
- **18-20, FPSA Process Expo - 2010**, McCormick Place, Chicago, IL. For more information, call 703.761.2600 or go www.fpsa.org.
- **21, Ohio Association for Food Protection Affiliate Meeting**, Youngs Jersey Dairy, Yellow Springs, OH. For more information, contact Gloria Swick-Brown at 614.466.7760 or go to www.ohiofoodprotection.org.
- **24-28, Society for Nutrition Education's Annual Conference**, Reno, NV. For more information, go to www.sne.org.
- **27, Australian Association for Food Protection Annual Meeting**, Sebel Albert Park, Melbourne, Australia. This meeting will be held during the Australian Institute of Food Science and Technology (AIFST) 43rd Annual Convention. For more information, contact Sandy Hume at sandy.hume@as.biomerieux.com.
- **28-29, U.S. Food Labeling Workshop**, Lansing, MI. For more information, contact Mary Anne Verleger at 517.355.8295 or go to www.iflr.msu.edu/label.html.

- **30-31, IAFP Workshops**, Hilton Anaheim, Anaheim, CA. For more information, go to www.foodprotection.org.

AUGUST

- **1-4, IAFP 2010 Annual Meeting**, Anaheim Convention Center, Anaheim, CA. For more information, go to www.foodprotection.org.
- **10-14, HACCP Prerequisite Workshop**, SpringHill Suites Marriott, Sanford, FL. For more information, call 407.290.2754 go to www.newsflow.com.
- **18-19, 5th Innovative Foods Conference: Higher Valued Foods (FIESTA 2010)**, Melbourne, Australia. For more information, go to www.innovativefoods2010.com.
- **25-26, 2010 BioPro Expo**, Cobb Galleria Centre, Atlanta, GA. For more information call 800.332.8686 or go to www.tappi.org.
- **30-Sept. 3, FoodMicro 2010**, Copenhagen, Denmark. For more information, go to www.foodmicro.dk/.

SEPTEMBER

- **9, Georgia Association for Food Protection Fall Meeting**, Russell Research Center, Athens, GA. For more information, contact Pam Metheny at 678.450.3061; E-mail: pam.metheny@waynefarms.com.
- **9, Quebec Food Protection Association Annual Meeting**, Quebec City, Canada. For more information, contact Julie Jean at 418.656.2131 ext. 13849; E-mail: julie.jean@fsaa.ulaval.ca.
- **13-15, International Dairy Show**, Dallas Convention Center, Dallas, TX. For more information, go to www.dairyshow.com.
- **21-23, New York State Association for Food Protection 87th**

Annual Meeting, Syracuse, NY. For more information, contact Janene Lucia at 607.255.2892; E-mail: jgg@cornell.edu.

- **21-24, IAFP's Latin American Symposium of Food Safety**, Bogota, Colombia. For more information, go to www.acta.org.co/Congreso2010%20Ingles.php.
- **22-23, Wisconsin Association for Food Protection Joint Education Conference**, Holiday Inn, Eau Claire, WI. For more information, go to www.wafp-wi.org.
- **22-24, Kansas Environmental Health Association Fall Conference**, Great Wolf Lodge, Kansas City, KS. For more information, go to www.e-keha.org.
- **22-24, Labelmaster's 5th Annual Symposium for Dangerous Goods Shipping Instructors**, Embassy Suites Hotel, Chicago, IL. For more information, call 800.621.5808 ext. 2201 or go to www.airregs.com/conferences.
- **22-24, Washington Association for Food Protection Annual Conference**, Campbell's Resort, Lake Chelan, WA. Contact Stephanie Olmsted at 206.660.4594 or go to www.waffp.org.
- **28-29, Arkansas Association for Food Protection Annual Meeting**, Tyson Foods, Springdale, AR. For more information, contact Mike Sostrin at 479.277.8641 or go to <http://arkafp.org>.

OCTOBER

- **5-6, Iowa Association for Food Protection Annual Conference**, Quality Inn & Suites, Ames, IA. For more information, contact Lynn Melchert at 563.599.2394 or E-mail lynn.melchert@swissvalley.com.
- **7-8, 10th Annual GLOBAL G.A.P. Conference**, London, UK. For more information, go to www.summit2010.org.
- **13-14, Metropolitan Association for Food Protection Fall**

COMING EVENTS

Seminar, Douglass Student Center, Rutgers University, New Brunswick, NJ. For more information, contact Carol Schwar at cschwar@co.warren.nj.us or go to www.metrofoodprotection.org.

- **17–20, Food Microbiology Symposium**, River Falls, WI. For more information, go to www.uwrf.edu/afs-all/institutes/foodmicro/.
- **26–28, North Dakota Environmental Health Association Annual Conference**, Bismarck, ND.

For more information, go to www.ndeha.org.

NOVEMBER

- **1–3, PACK Expo International 2010**, McCormick Place, Chicago, IL. For more information, contact Amy Riemer at 978.475.4441 or go to www.packexpo.com.
- **6–10, American Public Health Association Annual Meeting and Expo**, Denver, CO. For more information, go to www.apha.org/meetings/.

- **10–11, China International Food Safety and Quality Conference & Expo**, Shanghai, Longemont Hotel, P.R.C. For more information, go to www.chinafoodsafety.com.

DECEMBER

- **9–10, 2nd Food Safety Congress**, Military Museum, Istanbul, Turkey. Organized by the Turkish Food Safety Association. For more information, go to www.ggd.org.tr.

IAFP UPCOMING MEETINGS

AUGUST 1-4, 2010
Anaheim, California

JULY 31-AUGUST 3, 2011
Milwaukee, Wisconsin

JULY 22-25, 2012
Providence, Rhode Island

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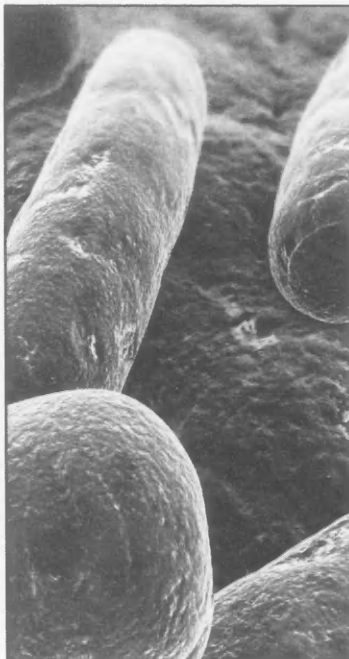
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