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PERIODICALS
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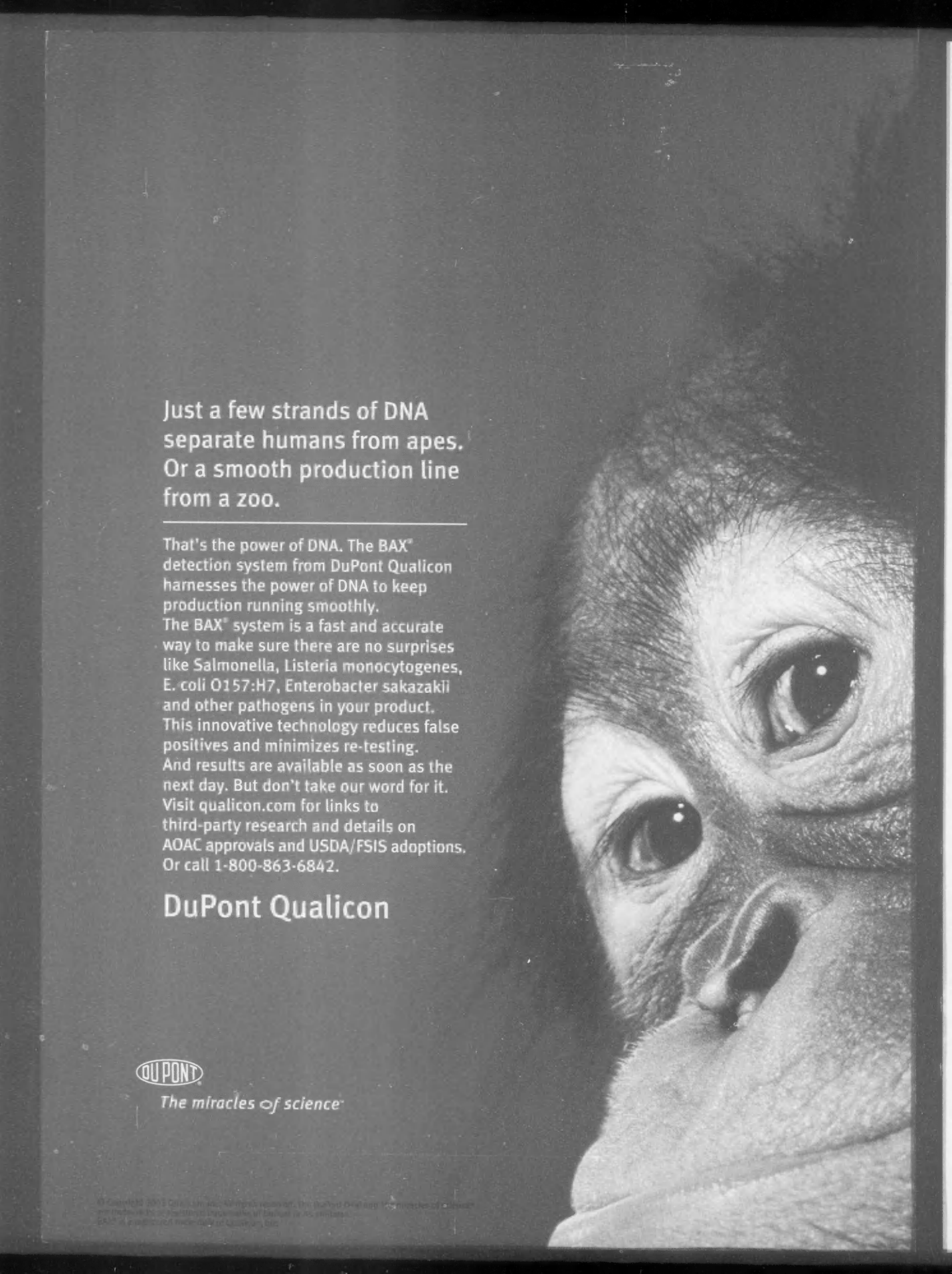
FOOD PROTECTION TRENDS

SCIENCE AND NEWS FROM THE INTERNATIONAL ASSOCIATION FOR FOOD PROTECTION

JANUARY 2004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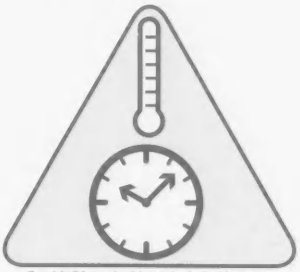
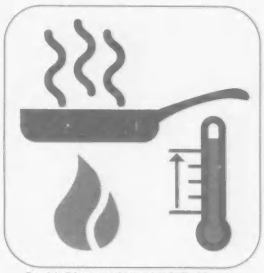
Potentially Hazardous Food



Cooking



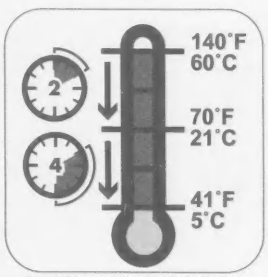
Do Not Work If Ill

Cross Contamination

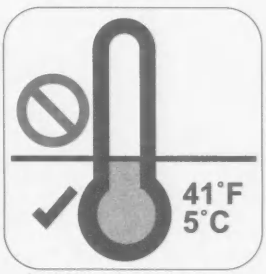
Wash, Rinse, and Sanitize

No bare hand contact

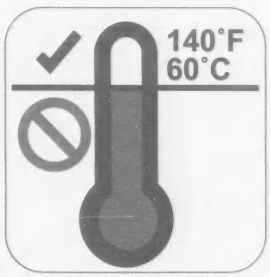
Cooling



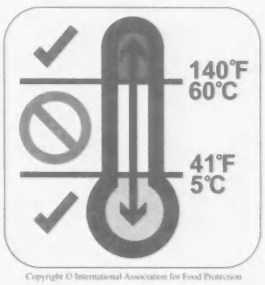
Refrigeration/Cold holding



Hot Holding



Temperature Danger Zone



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ABOUT THE COVER...
Photo courtesy of Photo Disc, *Food Essentials*, Volume 20.

International Association for Food Protection

FOOD PROTECTION TRENDS

VOLUME 24, NO. 1

ARTICLES

ASSOCIATION NEWS

DEPARTMENTS

EXTRAS

A NOTE FROM THE *FPT* SCIENTIFIC EDITOR...

BILL LaGRANGE

Food Protection Trends (*FPT*) is the standard bearer for all International Association for Food Protection (IAFP) members. We encourage you to keep up with news of IAFP and our members through *FPT*. Also please consider preparing a manuscript, based on your professional experiences and research, for possible publication in *Food Protection Trends*. All manuscripts are peer reviewed by two authorities working within the subject area of each submitted manuscript.

During 2003, 39 manuscripts were submitted to IAFP for possible publication in volume 23 of *Food Protection Trends*, the same number submitted in 2002. In 2003, the 12 issues of *FPT* included peer reviewed papers along with all the latest news of IAFP and its members. Of the 39 manuscripts submitted, 32 were accepted for publication or are still out for review. Six of the manuscripts submitted in 2003 were published in volume 23. The remaining approved manuscripts will be published in 2004.

A major goal of the *FPT* Journal Management Committee is to review and publish submitted and approved manuscripts in a timely fashion. There are over 50 members of the *FPT* Editorial Board eager to review submitted manuscripts. So don't hesitate to prepare and submit your paper to IAFP for possible publication in *FPT*. Also keep in mind that if you would like to be a member of the *FPT* Editorial Board please let me know.

WANTED:

The editors are seeking articles of general interest and applied research with an emphasis on food safety for publication in *Food Protection Trends*.

Submit your articles to:

Donna Bahun, Production Editor
Food Protection Trends
International Association for Food Protection
6200 Aurora Ave., Suite 200W
Des Moines, Iowa 50322-2864, USA

Please submit three copies of manuscripts on a disk saved in a rtf format.

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FOOD PROTECTION TRENDS
SCIENCE AND NEWS
FROM THE INTERNATIONAL ASSOCIATION FOR FOOD PROTECTION

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"Instructions for Authors" may be obtained from our Web site at www.foodprotection.org or from Donna A. Bahun, Production Editor, International Association for Food Protection.

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IAFP 2004

J. W. Marriott Desert Ridge Resort

Phoenix, Arizona

August 8-11, 2004

FUTURE ANNUAL MEETINGS

IAFP 2004

AUGUST 8-11

JW Marriott Desert Ridge Resort
Phoenix, Arizona

IAFP 2005

AUGUST 14-17

Baltimore Marriott Waterfront Hotel
Baltimore, Maryland

IAFP 2006

AUGUST 13-16

Telus Convention Centre
Calgary, Alberta, Canada

International Association for Food Protection

FOOD PROTECTION TRENDS

"The mission of the Association is to provide food safety professionals worldwide with a forum to exchange information on protecting the food supply."

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Sustaining Membership provides organizations and corporations the opportunity to ally themselves with the International Association for Food Protection in pursuit of Advancing Food Safety Worldwide. This partnership entitles companies to become Members of the leading food safety organization in the world while supporting various educational programs that might not otherwise be possible. Organizations who lead the way in new technology and development join IAFP as Sustaining Members.

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"PRESIDENT'S" PERSPECTIVE

By PAUL HALL
PRESIDENT

"Invest in our future — our students"

Those of us who are, ahem, "seasoned" food safety professionals may only have distant memories of that youthful enthusiasm and, yes, even "innocence", we had during our undergraduate and graduate days in college. I ask you to take a moment while reading this month's column, to hearken back to that time and recapture that youthful spirit. Wouldn't it be great to sustain that spirit throughout our professional career, and, throughout our personal life? To combine that enthusiastic "can do" spirit with the seasoned experience that comes with time would make no hurdle, however large or small, seem insurmountable. I believe our members from academia who work closely with the students everyday know what I mean.

In my professional position and my position as IAFP President I have the good fortune of interacting with students from a number of universities. I can certainly say that it is one of the activities that I enjoy the most. We are fortunate at IAFP to have a vibrant and active Student Professional Development Group. The mission of the PDG is to provide students of food safety with a platform to enrich their experience as members of IAFP. The goals of the student PDG are manifold:

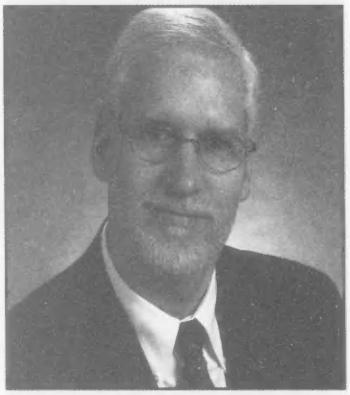
- To provide the opportunity for students to network with peers
- To serve as a resource for food safety employers to seek qualified applicants
- To encourage effective exchange of information on protecting the food supply by fostering relationships at the student level
- To maintain high membership in IAFP by encouraging students to join the Association
- To serve the interests and needs of the students
- To incorporate change according to the interests and needs of the students

The above mission statement and goals are outlined in the Student Member section of the IAFP Web site at www.foodprotection.org. I urge you to take some time to visit the Student Member section of the IAFP Web site. Your Executive Board continues to work hard to support the goals of the Student PDG. For example, the Board, in response to a request from the Student PDG, approved a worldwide, affordable Online membership rate for student members of $48.00 per year. The Board also approved a stipend of up to $1,000.00 per year to be used by Student PDG Officers for travel to IAFP Annual Meetings. IAFP supports the development and dissemination of the Student PDG Newsletter and sponsors a student reception and luncheon at the Annual Meeting. The Student PDG also works on developing and submitting a technical symposium each year at the Annual Meeting. It's a great experience for students to work together and learn about organizing and developing a technical program at our international meeting. Michelle Danyluk at the University of California – Davis is the Student PDG 2004 Chairperson and Renee Raiden, of Virginia Tech, is the 2004 Vice Chairperson. Please introduce yourself and thank them for their leadership and involvement. I know that I personally appreciate their dedication and hard work and I know it will reward them in a number of ways in the future.

Harvey Firestone, the great American businessman, once said, "It is only as we develop others that

we permanently succeed." I truly believe that is vital to the future of our organization and to the future of our profession to invest our resources and time in nurturing and teaching our students. By teaching, I don't just mean the "schoolbook" learning that our academic educators do so well — I believe that the rest of us in industry and government must also play a role in visiting our campuses, supporting a summer intern, or just talking to the students at the Annual Meeting. Share your experiences and insights; the students will appreciate it and it will return dividends to you, as well. One vision that I continue to articulate is to develop the IAFP Foundation Fund to a self-sustaining level of greater than $1.0 million. The proceeds from the Fund could be used, among other things, to support IAFP scholarships for deserving students or to support the travel of students to IAFP Annual Meetings. You can help by making a donation to this fund and encouraging your employer to contribute as well. I urge you to invest in our future — our students. We need to recapture our youthful spirit and secure the safety of our global food for generations to come. Investing in our students is a great way to do this. As always, I welcome your thoughts and comments at phall@kraft.com. Until next month...

"COMMENTARY"
FROM THE EXECUTIVE DIRECTOR



By DAVID W. THARP, CAE
EXECUTIVE DIRECTOR

"January begins a flurry of activity related to IAFP 2004, the Association's 91st Annual Meeting"

This month begins yet another new year. Can you believe that it is now the year 2004? Just four short years ago, we turned the century to the year 2000, now here we are approaching the halfway mark on this decade! One thing for certain, time keeps marching along, faster and faster it seems.

January begins a flurry of activity related to IAFP 2004, the Association's 91st Annual Meeting. The Program Committee meets mid-month to review submitted abstracts and symposia. During this two-day meeting, the entire scientific program for IAFP 2004 comes together. By early February, a tentative program will be available on the IAFP Web site for your review. Additional detail including presenter names and presentation times will be added as we get closer to August and the start of the meeting.

I have two items that you need to be aware of, and then I want to tell you more about the resort in Phoenix. First off, watch your mail (postal service mail) for the Secretary ballot for 2004. Ballots will arrive early in February and are due back at the IAFP office by March 19, 2004. Candidates will be announced late in January on the IAFP Web site and in the February issue of *FPT*. Be sure to vote and exercise your Membership voice when your ballot arrives!

The other item I want to call to your attention is our Call for Awards Nominations (see page 26). Think of your many colleagues who are working day in and day out to protect the public's health. Think about how deserving they are of being recognized. NOW, take time to nominate them for the IAFP Awards! There are six Awards given by IAFP that cover all segments of our Membership. The Awards are titled Industry, Education, Sanitarian, Citation, Laboratorian and International.

In addition to these six Awards, we have the Black Pearl Award for corporate excellence in food safety and quality, the Fellow Award for Members who have contributed to the Association over an extended period of time, and the Honorary Life Membership Award for those Members' dedication to the high ideals of the Association and for their dedicated service to the Association. Surely, you know someone that should be nominated for one of these Awards!

Detailed information on all Awards is available on the IAFP Web site (www.foodprotection.org) by looking under "What's New" and clicking the "Call for Awards Nominations." Nominations are due at the IAFP office by March 15; that gives you plenty of time to submit a nomination, so get busy now!

Now, let's talk further about the JW Marriott Desert Ridge Resort and Spa, the host hotel for IAFP 2004. This is a brand-new, 950 room resort in northeast Phoenix bordering Scottsdale. There is an on-property 24,000 square foot spa for all your relaxation needs along with two 18-hole, championship golf courses (one designed by Arnold Palmer, the other by Nick Faldo). The resort has 4 acres of pool area highlighted by the Lazy River float pool. You will want to extend your stay to take advantage of the lovely pool area!

Even though it will be warm in Phoenix in August, the cool indoor beauty of the Desert Ridge Resort will comfort your mind. It is a beautiful setting in which to hold our Annual Meeting, so plan now to be with IAFP in Phoenix for the best food safety meeting around! You can make your hotel reservations through our Web site (www.foodprotection.org) by going to the Annual Meeting page and clicking "Hotel Information" or by calling 800.228.9290. Be sure to identify

yourself as an IAFP 2004 attendee to receive our special discounted rate.

While you are making your hotel reservation, don't forget to register for the meeting! Online registration is now open (also at the Annual Meeting page on our Web site) or you may complete the registration form on page 47 in this issue.

We look forward to seeing you in Phoenix this summer for a magnificent Annual Meeting! Don't forget to send your Awards nominations and your Secretary ballot to IAFP by the deadline dates.

Best wishes for a happy and prosperous New Year!

ARTICLES

Food Protection Trends, Vol. 24, No. 1, Pages 14-19

6200 Aurora Ave., Suite 200W, Des Moines, IA 50322-2864

International Association for Food Protection

Use of Microbial Modeling and Monte Carlo Simulation to Determine Microbial Performance Criteria on Plastic Cutting Boards in Use in Foodservice Kitchens

DONALD W. SCHAFFNER,* SAMANTHA SITHOLE, and REBECCA MONTVILLE
Food Science Department, Rutgers University, 65 Dudley Road, New Brunswick, NJ 08901

SUMMARY

Many foodservice food safety regulation and consumer information bulletins advise frequent cutting board changes. However, few published data are available on microbial contamination rates of in-use cutting boards. The objective of this research was to determine microbial contamination rates, over time, on cutting boards being used in a real foodservice setting. Twelve different cutting boards were tested at five-minute intervals, over a two-week period, both before use and as they were used to chop various vegetables and raw meats. More than 400 individual observations were made during the two-week period. Food type, area of the cutting board, and sampling time did not influence the rate of bacterial increase over time. Change in bacterial population for each five-minute interval ranged from a decrease of 4 log colony forming units (CFU)/4 cm^2 to an increase of 13 log CFU/4 cm^2. The median increase was 3 log CFU/4 cm^2 per 5-minute interval. The logistic distribution (2.42, 1.22) was chosen to describe the data and was used to create a simple simulation of cutting board contamination over time. Simulation results were used to investigate the relationship between guidelines for cutting board cleanliness and four different frequencies for cutting board change. The simulation predicts that cutting boards used for 15 minutes will contain < 20 log CFU/4 cm^2 most of the time. Cutting boards used for 45 minutes would contain < 40 log CFU/4 cm^2 more than 99% of the time. Cutting boards used for 60 minutes will usually pass a microbial criterion of 50 log CFU/4 cm^2.

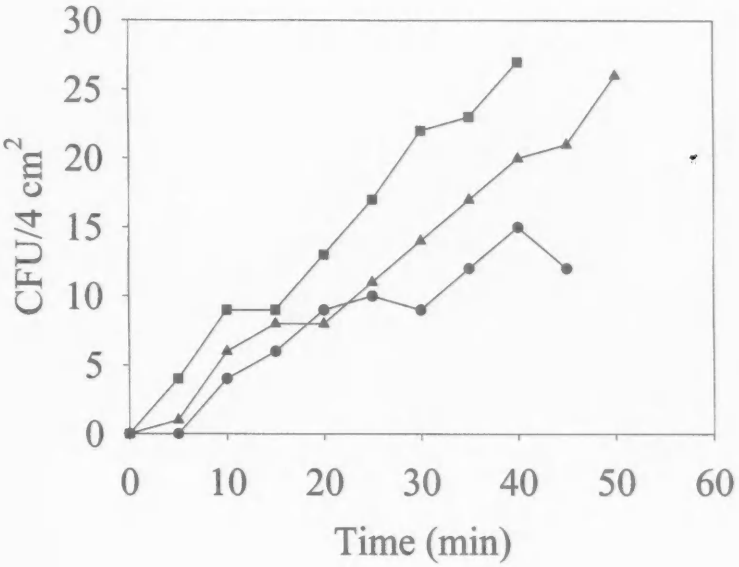
A peer-reviewed article

*Author for correspondence: Phone: 732.932.9611 ext. 214; Fax: 732.932.6776;
E-mail: schaffner@aesop.rutgers.edu

TABLE 1. Current Rutgers Division of Dining Services guidelines on allowed levels of microbial contamination on surfaces (CFU/4 cm²)

Condition	Stored	In use
Acceptable	< 5	< 20
Some Concern	5 – 10	20 – 40
High Concern	> 10	> 40

FIGURE 1. Typical data demonstrating the increase in bacterial populations on plastic cutting boards in use in a food service kitchen over time. Each symbol represents results from a different experiment



INTRODUCTION

A foodservice food safety program has been in place at Rutgers University since 1973 *(3, 8, 9)*. This program was instituted in response to a large food poisoning outbreak in one university dining hall. Since its creation, the program has been highly effective in preventing the occurrence of any other reported cases of food poisoning linked to university foodservice operations.

One feature of this food safety program is a surface sanitation guideline that specifies the amount of microbial contamination allowed on food contact surfaces. Although the program guidelines are known to be rigorous, we have always believed that a conscientious foodservice manager could achieve them with reasonable effort. As part of a complete re-evaluation of the program, we have been reviewing the current guidelines to see if they are in fact both reasonable and achievable. Specifically, we became interested in how frequently a cutting board would need to be changed to meet the guidelines shown in Table 1.

Many foodservice food safety regulations and consumer information bulletins advise frequent cutting board changes. Bacterial recovery and transfer of artificially inoculated pathogens have been demonstrated in numerous studies *(1, 5, 6, 10, 11)*. Zhao and others were able to recover *Enterobacter aerogenes* from plastic cutting boards up to 4 hours after inoculation and Abrishami and others *(1)* were able to recover *Escherichia coli* up to 24 hours after inoculation. Transfer rates ranged from 1 to 55% from *E. aerogenes*-contaminated cutting boards to lettuce *(4)*. However, few published data are available on microbial contamination rates of in-use cutting boards.

The objective of this research was to quantify the increase in microbial contamination, over time, on cutting boards used in a real foodservice setting. This quantitative data was then described by mathematical models and incorporated into a Monte Carlo simulation. Results of the Monte Carlo simulation were used to evaluate two different microbial performance criteria for cutting board sanitary quality and the effect of the frequency of cutting board changes on the ability of a foodservice operation to meet those criteria.

METHODS

Twelve different cutting boards were tested over a two-week time period in a dining hall kitchen at Rutgers University. Boards were sampled in five general locations (top left, bottom left, center, top right, and bottom right), each location having an area approximately 4 cm², before and during use. A dining hall employee chopped a variety of vegetables and raw meats (as part of regular food preparation) on the cutting board. Five locations on each cutting board were sampled every five minutes during food preparation.

TABLE 2. Summary of the effect of food type on bacterial increase on plastic cutting boards in use in foodservice kitchens

Food	Number of observations	Change in total bacterial count (CFU/4 cm²)	
		Average	Variance
Beef	34	3.50	7.23
Cabbage	10	2.00	5.11
Carrots	34	1.97	6.03
Chicken	24	2.04	3.69
Cucumbers	14	2.43	5.49
Fish	25	2.08	5.58
Greens	46	2.09	3.06
Mushrooms	15	1.80	10.17
Onions	20	2.85	4.13
Peppers	32	2.13	5.27
Pork	25	2.52	3.26
Potatoes	38	2.26	5.55
Tomatoes	44	2.00	5.81

TABLE 3. Summary of the effect of cutting board location on bacterial increase on plastic cutting boards in use in foodservice kitchens

Location	Number of observations	Change in total bacterial count (CFU/4 cm²)	
		Average	Variance
Rear left	65	2.38	5.58
Rear right	65	2.06	2.21
Center	65	2.20	5.32
Front left	83	2.36	7.09
Front right	83	2.39	5.83

Testing continued for up to 55 minutes, depending upon the length of time the cutting board was in use. Sterile "Con-Tact-It" adhesive tape (Birko Corporation, Henderson, CO) was used to transfer bacteria from the cutting board to total plate count (TPC) agar (Difco, Detroit, MI). The tape was pressed onto the board, then touched onto TPC agar. Plates were incubated for 24 h at 35°C before enumeration. For purposes of comparison, it would be helpful to note that 10 colonies from the adhesive contact transfer would be equivalent to 70 to 80 colonies on a 4 in² agar contact plate *(9)*. More than 400 individual observations were made during the two-week period.

Analysis of Variance (ANOVA) was conducted using Excel (Microsoft, Redmond, WA). Counts were transformed into frequency histograms by use of Excel and fit to a variety of statistical distributions using BestFit (Palisades Corporation, Newfield, NY). A Monte Carlo simulation was run using 1,000 iterations in @risk (Palisades Corporation, Newfield, NY).

RESULTS

Figure 1 shows a summary of typical data collected in these experiments. Microbial counts generally are at or close to zero colony forming units (CFU)/4 cm² at the start of use, increasing steadily over time. Out of 37 observations of "clean" cutting boards before use, 18 (48%), had counts above zero, ranging from 1 to 7 CFU/4 cm². All "clean" cutting boards had some areas with 0 CFU/4 cm² and some areas with 1 CFU/4 cm² or greater. In some cases, the counts did not increase from one time interval to the next, and in rare instances, the counts decreased from one time interval to the next.

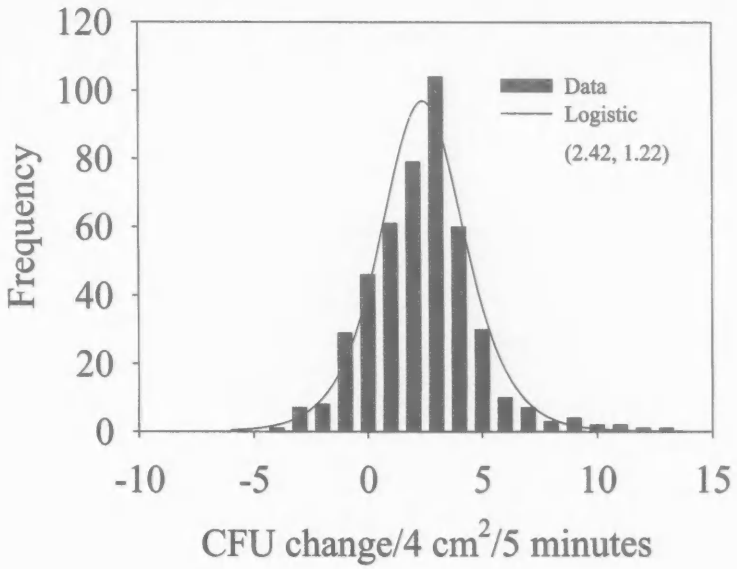
A summary of the ANOVA results for differences in CFU increases on cutting boards as influenced by food type is found in Table 2. Changes in bacterial populations ranged from 1.8 CFU/4 cm² for mushrooms to 3.5 CFU/4 cm² for beef. The changes in bacterial populations for most other foods fell between 2 and 2.5 CFU/4 cm². Analysis of Variance (ANOVA) found that the differences in CFU increase on cutting boards was not significantly influenced by food type ($P = 0.29$).

ANOVA results examining the influence of cutting board location sampled can be found in Table 3. A total of 65 observations were made for rear right, rear left, and center,

TABLE 4. Summary of the effect of sampling time on bacterial increase on plastic cutting boards in use in foodservice kitchens

Sampling time (min)	Number of observations	Change in total bacterial count (CFU/4 cm²)	
		Average	Variance
5	39	2.44	7.30
10	39	1.87	3.48
15	39	2.15	4.34
20	39	2.49	4.15
25	39	3.18	7.05
30	39	2.18	6.41
35	39	2.00	4.21
40	39	2.26	3.72
45	32	1.84	6.85
50	12	2.83	7.24
55	5	1.80	2.70

FIGURE 2. Logistic distribution, with parameters $\alpha = 2.49$ and $\beta = 1.2168$ (solid line) fit to more than 400 observations (grey bars) describing the change in microbial populations on plastic cutting boards in use, in a food service kitchen



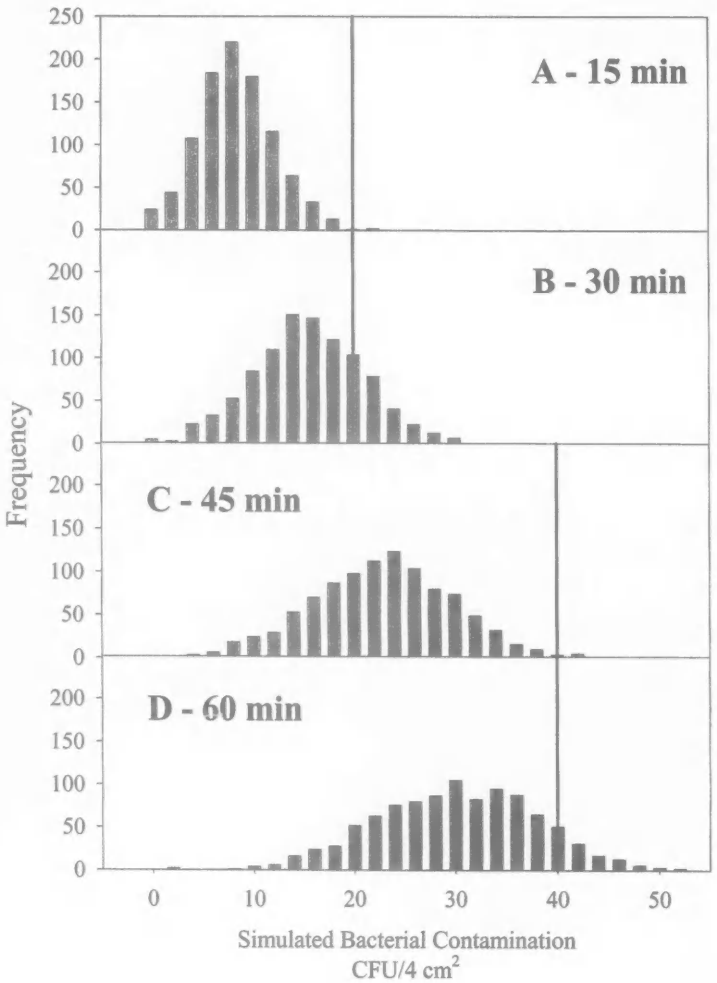
and 83 observations for front right and front left. Average change in contamination ranged from 2.06 (rear right) to 2.39 (front right) CFU/4 cm². ANOVA showed that contamination increases over time were not significantly influenced by cutting board location ($P = 0.90$).

ANOVA results on the influence of sampling time can be found in Table 4. Sampling times from 5 to 40 minutes had a total of 39 observations each, while times longer than 40 minutes had progressively fewer observations. Average change in contamination ranged from 1.80 (55 min) to 3.18 (25 min) CFU/4 cm². ANOVA showed that contamination increases over time were not significantly influenced by sampling time ($P = 0.39$).

When all the data were considered together (regardless of food being chopped, time, area of cutting board sampled, or sampling time) the change in bacterial population for each five-minute interval ranged from a maximum decrease of 4 CFU to a maximum increase of 13 CFU. The mode (most common) increase was 3 CFU per 5 minute interval (Fig. 2), while the median increase was 2 CFU per 5 minute interval (analysis not shown). When counts were transformed into frequency histograms and fit to a variety of statistical distributions, the logistic distribution with parameters $\alpha = 2.49$ and $\beta = 1.22$ provided an acceptable goodness of fit (Fig. 2).

The logistic distribution was used in a simulation of contamination on a cutting board over time. The results are shown in Figure 3. Figure 3A shows the distribution of populations on a cutting board after 15 minutes of use. The data ranged from 0 to 22 CFU/4 cm², with only 21% of the simulated results falling above the 20 CFU/4 cm² in-use guideline. The simulation results for cutting board contamination after 30, 45, and 60 minutes of use are shown in 3B, 3C and 3D, respectively. As duration of

FIGURE 3. Results of a 1000 iteration Monte Carlo simulation, describing the bacterial population per 4 cm^2 on cutting boards after 15 minutes (A), 30 minutes (B), 45 minutes (C) or 60 minutes (D) of use. Lines are shown at 20 CFU per 4 cm^2 (Panels A and B) or 40 CFU per 4 cm^2 (Panels C and D)



use increased, the range of contamination increased, shifting to higher contamination levels, as expected. After 30 minutes of simulated use, about 16% of the virtual cutting boards had contamination levels in excess of 20 CFU/4 cm^2. When the simulated duration of use was increased to 45 minutes, most of the virtual cutting boards exceeded the guidelines of 20 CFU/4 cm^2, but only a very small percentage (0.41%) contained more than 40 CFU/4 cm^2. When the simulation was extended to 60 minutes, about 7% of the virtual cutting boards contained more than 40 CFU/4 cm^2. A very small percentage (0.51%) had counts above 50 CFU/4 cm^2.

DISCUSSION

All cutting boards were found to have at least 1 CFU in one or more of the five areas sampled before use. Although boards are not expected to be sterile, cutting board sanitation could still be improved. Cutting board used in Rutgers University dining halls were machine washed between uses with hot water and detergent, using automatic dishwashing equipment. Abrishami and others *(1)* demonstrated that machine-washing with cold water and no detergent reduced artificially inoculated *E. coli* on used plastic cutting board surfaces by 4.52 log_{10}CFU. Welker and others *(10)* demonstrated that machine washing with hot water and detergent completely removed *E. coli* from plastic boards. Since washing appears to be quite effective in reducing bacterial contamination on cutting boards, it is likely that cutting boards are subject to low levels of contamination during storage after washing. There is also evidence that air drying of plastic boards accelerates bacterial death rates *(2)*. If cutting boards were washed, re-contaminated and then stored wet, it is possible that this contributed to bacterial survival and/or growth.

Bacterial counts on the cutting boards changed over time, generally starting at or close to zero colony forming units (CFU)/4 cm^2 and then increasing steadily over time. In some cases the counts did not increase from one time interval to another, and in an occasional rare instance, the counts decreased from one time interval to another. Because of the time scale (i.e., sampling at 5-min intervals) these changes are not likely due to microbial growth, which would not occur this rapidly at room temperature. Instead, we believe these changes in bacterial populations on the cutting boards are due to transfer from the foods being prepared. Since these raw foods generally have high bacterial loads, and the cutting boards are relatively clean, the net transfer is from the food to the cutting board.

The type of food being chopped had no effect on the increase in bacterial populations over time. This

could be related to an inverse relationship between transfer rates and starting concentration, which has been investigated by our lab *(7)*. We have observed that when bacterial populations on source surfaces are high, transfer rates are proportionally low, and conversely when concentrations are low, transfer rates are high. For example, even though raw beef may have higher bacterial populations than potatoes, if transfer rate is inversely proportional to the starting concentration, a greater percentage of bacteria would be transferred from potato than from beef. It is possible that if a food with a very low bacterial count (e.g., cooked chicken) were to be chopped on a cutting board, a difference in the rate of change would be observed. Overall, the mean and median increases per 4 cm^2 over 5 minutes were very low. Previous research *(4)* has shown transfer rates between cutting boards and food to be as low as 0.60% and as high as 45%, with a mean near 10%.

CONCLUSIONS

Our simple simulation can be used as a tool to investigate cutting board policy changes for dining halls. For example, the current microbial guideline for an in-use piece of equipment is < 20 CFU/4 cm^2. According to our simulation, if cutting boards are in use for 15 minutes or less, they will meet this guideline most of the time. Since changing a cutting board every 15 minutes is not practical in most foodservice kitchens, other guidelines should be considered. For example, a less stringent guideline of 40 CFU/4 cm^2 would allow use of cutting boards for up to 45 minutes. Cutting boards in use for 45 minutes would meet the guideline more than 99% of the time. Finally, if managers wished to adopt a guideline that insured that cutting boards used more than 60 minutes had increasingly greater chance of failing a sanitary guideline then an appropriate sanitary microbial criterion of 50 CFU/4 cm^2 should be adopted.

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International Association for Food Protection.

Food Allergens: Effectively Managing Processing Risks

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SUMMARY

The numbers are daunting: Twenty thousand people are treated annually in the United States for food allergies, and the number of people with food allergies is growing worldwide. One hundred to 200 people die each year in the United States from food allergy-related reactions. Twenty-five percent of US food manufacturers do not accurately list ingredients, often omitting well-known allergens from product labels.

Faced with these foreboding statistics and costly product liability claims associated with food allergens, increasing numbers of companies are making allergen management programs a vital component of their in-plant quality systems to minimize contamination risks and protect consumers.

INTRODUCTION

Over 20,000 people are treated in US health care facilities for food allergies every year; another 100–200 people die from allergy-related reactions *(5)*. Despite strict allergen labeling laws, the Food and Drug Administration (FDA) reported that as many as 25% of manufacturers fail to accurately list ingredients on product labels, often omitting well-known allergens *(1)*.

The number of people with food allergies is growing in developed and developing countries (six to seven million adults and children in the US alone). Over 170 foods have been documented as causing allergic reactions, but eight substances (Table 1) and their by-products are responsible for 90% of all allergenic reactions to foods, or to allergens in general *(4)*.

It's impossible for manufacturers to safeguard consumers from every allergen known to man. Consumers, too, bear responsibility and must carefully read product labels for allergenic ingredients. But in view of the risk of damaging product liability claims and costly recalls caused by mislabeling of foods and inadvertent cross-contact of ingredients, manufacturers should develop an allergen management program to minimize their risks and protect consumers.

ALLERGEN PROGRAM BLUEPRINT

To develop an effective management program, every aspect of the manufacturing operation must be evaluated for the presence or risk of allergens. The following checklist, compiled from a host of reputable resources, provides manufacturers with a condensed program blueprint:

A peer-reviewed article

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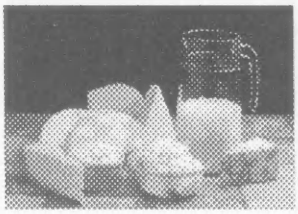
TABLE I. Leading food allergens

- **Milk and milk products**
- **Eggs**
- **Legumes**
- **Tree nuts**
- **Wheat**
- **Crustaceans**
- **Fish**
- **Mollusks**



Master ingredients

First and foremost, develop a master list of all ingredients in your facility, including processing aids — spices, flavorings, additives, and colorings — and specify those that are allergens or contain allergens. Your list should state which of your finished products are produced with allergenic ingredients and processing aids.

Suppliers and raw materials

Make special note to learn if your suppliers use processing aids that are allergenic. Require your suppliers to have a documented allergen control program in place, and specify that a letter guaranteeing that purchased ingredients are free of undeclared allergens must accompany all supplier shipments.

Receiving and storage

Allergen-containing ingredients must be transported with care. Allergens should be shipped in clearly marked, sealed containers and be physically separated from non-allergens. Receiving personnel should visually inspect all shipments for damaged containers and spillage.

Ideally, allergenic ingredients should be identified with a mark or tag, e.g., a big red "A", and isolated from allergen-free products in storage. If space limitations preclude this, a distance of at least four feet must be maintained between allergens and allergen-free products. Allergenic ingredients should also be stored below non-allergenic products.

Production and scheduling

Dedicate processing equipment, personnel, and production lines to allergenic products to prevent cross-contact. If this is not a viable option in your plant, production scheduling is a constructive alternative for management:

- Schedule long runs of products containing allergens to minimize changeover.
- Segregate production so that allergen-containing product is produced on separate days of the week. If this is unfeasible, run allergen-free products before allergen-containing products.
- Schedule sanitation activities immediately following the production of allergenic products to help reduce the risk of allergenic residue being transferred to new products.

Rework

Use color-coded tags to identify and record when reworked product with allergenic substances is produced, where it is stored, which product it is reworked back into, and when it is added back into the line. These precautionary steps will help you minimize cross-contact.

Labeling and packaging

Make sure correct packaging materials are used. Obsolete packaging materials should be immediately discarded. Packaging materials must be stored in a designated area and not mixed with other labels. The accuracy of labels should be confirmed against the product's declared ingredients.

The FDA has published labeling compliance guidelines for manufacturers *(2)*. "Plain language" or common terms for allergens are strongly recommended for use on all product labels. Product specification or formulation changes should be immediately reflected on labels.

Cleaning and sanitation

Cleaning and sanitation is the final component of allergen control. Under FDA mandates, sanitation schedules and SSOPs must be followed and documented. To help meet the "visually clean standard" employed by the FDA during sanitation program inspections, crews should disassemble equipment as necessary and focus on hard-to-clean areas, such as seals, o-ring seats, and bearings, to optimize cleaning and sanitizing.

Verification tools

The preceding section provided a primer of the elements contained in an effective allergen management program. Depending on the size of your facility and factors specific to your operation, implementing a program can be filled with complexities and challenges that were not addressed in this overview.

If you need assistance, work with a recognized expert to help you successfully implement your program and verify its effectiveness through the use of three essential tools: auditing, testing, and employee training.

Auditing

It's important and necessary to audit your suppliers on a regular basis to assess the effectiveness of their allergen control program. In addition, all of your facilities should be audited to ascertain compliance with your internal program.

Testing

Testing is crucial to evaluate the effectiveness of cleaning and sanitizing procedures in preventing cross-contact. Analytical laboratories can assist you in developing a comprehensive testing program and provide you with data that will allow you to pinpoint problem areas and institute corrective actions. Commercial test kits employing ELISA (enzyme-linked immunosorbent assay) technology are also readily available to manufacturers *(3)*.

Employee training

Even minute amounts of allergens can induce mild to severe allergic attacks in susceptible individuals. This important message must be conveyed to employees in company-sponsored training. Employees must understand the eight major allergens, financial ramifications of recalls, potential areas of cross-contact in the plant environment, and the importance of accurately declaring ingredients on product labels.

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FOOD PROTECTION TRENDS

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Paper in book

West, D. I., and L. B. Bullerman. 1992. Physical and chemical separation of mycotoxins from agricultural products, p. 52–57. *In* J. E. Smith (ed.), Mycotoxins and animal feeding stuffs, vol. 4. CRC Press, Boca Raton, FL.

Book by author(s)

Pitt, J. I., and A. D. Hocking. 1997. Fungi and food spoilage. Blackie Academic and Professional, London.

Book by editor(s)

Doyle, M. P., L. R. Beuchat, and T. J. Montville (ed.). 1997, Food microbiology: fundamentals and frontiers. ASM Press, Washington, D.C.

Patent

Hussong, R. V., E. H. Marth and D. G. Vakaleris. 1964. Manufacture of cottage cheese. U.S. Pat. 3,117,870. Jan. 14.

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When submitting electronic figures, the preferred formats are TIFF or EPS. The following native application file formats are also acceptable: Adobe Photoshop, Adobe Acrobat, Illustrator, PowerPoint, Word, Excel, InDesign, PageMaker, and QuarkXPress. The resolution required for halftone and color images is a minimum of 300 pixels per inch (ppi); line art should be 1,200 ppi. Please note that images that are in JPEG or GIF format will be 72 dpi and not acceptable for printing. Digital color files must be submitted in CMYK mode. The following media are accepted: 3 1/2" Floppy Disk, Zip Disks, Jazz Disks, CD-ROM, DVD. Large files should be compressed with StuffIt or WinZip if possible. When submitting electronic figures, hard copies must also be submitted.

Labeling of figures. All Figures should be labeled lightly on back, using a soft pencil or a typed adhesive label. Labeling should include:

- figure number,
- last name of author(s),
- title of manuscript,
- the manuscript number (on revised copies),
- identification of the top of the figure.

COMMON ABBREVIATIONS

Frequently used acceptable abbreviations may be used (i.e., using *wt* for the word *weight*, or *s* for the word *second*). For further details on abbreviations see the current edition of the *CBE Style Manual* or *ASM Manual of Style*. Note that a period is used with some but not all abbreviations.

Authors may also contact the Production Editor if they are not sure about acceptable abbreviations.

REPRINTS

Reprints of an article may be ordered by the author. An order form for reprints will be sent to the corresponding author. Reprints may be ordered with or without covers, in multiples of 25. Reprint costs vary according to the number of printed pages in the article.

CORRESPONDING ADDRESS

International Association for Food Protection
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Food Protection Trends
6200 Aurora Avenue, Suite 200W
Des Moines, IA 50322-2864, USA
Phone: 800.369.6337; 515.276.3344
Fax: 515.276.8655
E-mail: info@foodprotection.org

Award Nominations

The International Association for Food Protection welcomes your nominations for our Association Awards. We encourage both Members and non-members to nominate deserving professionals. Nomination criteria is available on the association's Web site at www.foodprotection.org or contact the office at 800.369.6337 or 515.276.3344.

Nominations deadline is March 15, 2004. You may make multiple nominations. All nominations must be received at the IAFP office by March 15, 2004.

- Persons nominated for individual awards must be current IAFP Members. Black Pearl Award nominees must be a company employing current IAFP Members. NFPA Food Safety Award nominees do not have to be IAFP Members.
- Previous award winners are not eligible for the same award.
- Executive Board Members and Awards Committee Members are not eligible for nomination.
- Presentation of awards will be during the Awards Banquet at IAFP 2004 — the Association's 91st Annual Meeting in Phoenix, Arizona on August 11, 2004.

Eugene Frey, Awards Committee Chairperson

International Association for Food Protection®

6200 Aurora Avenue, Suite 200W
Des Moines, IA 50322-2864, USA
Phone: 800.369.6337 ▪ 515.276.3344
Fax: 515.276.8655
E-mail: info@foodprotection.org
Web site: www.foodprotection.org

Nominations will be accepted for the following Awards:

Black Pearl Award — Award Showcasing the Black Pearl

Presented in recognition of a company's outstanding achievement in corporate excellence in food safety and quality.

Sponsored by Wilbur Feagan and F&H Food Equipment Company.

Fellow Award — Distinguished Plaque

Presented to Member(s) who have contributed to IAFP and its Affiliates with quiet distinction over an extended period of time.

Honorary Life Membership Award — Plaque and Lifetime Membership in IAFP

Presented to Member(s) for their devotion to the high ideals and objectives of IAFP and for their service to the Association.

Harry Haverland Citation Award — Plaque and $1,000 Honorarium

Presented to an individual for years of devotion to the ideals and objectives of IAFP.

Sponsored by Silliker, Inc.

Harold Barnum Industry Award — Plaque and $1,000 Honorarium

Presented to an individual for outstanding service to the public, IAFP and the food industry.

Sponsored by Nasco International.

Educator Award — Plaque and $1,000 Honorarium

Presented to an individual for outstanding service to the public, IAFP and the arena of education in food safety and food protection.

Sponsored by Nelson-Jameson, Inc.

Sanitarian Award — Plaque and $1,000 Honorarium

Presented to an individual for outstanding service to the public, IAFP and the profession of the Sanitarian.

Sponsored by Ecolab, Inc., Food and Beverage Division.

Maurice Weber Laboratorian Award — Plaque and $1,000 Honorarium

Presented to an individual for outstanding contributions in the laboratory, recognizing a commitment to the development of innovative and practical analytical approches in support of food safety.

Sponsored by Weber Scientific.

International Leadership Award — Plaque, $1,000 Honorarium and Reimbursement to Attend IAFP 2004

Presented to an individual for dedication to the high ideals and objectives of IAFP and for promotion of the mission of the Association in countries outside of the United States and Canada.

Sponsored by Unilever, Safety and Environmental Assurance Centre

NFPA Food Safety Award — Plaque and $3,000 Honorarium

Presented to an individual, group, or organization in recognition of a long history of outstanding contribution to food safety research and education.

Sponsored by National Food Processors Association.

Criteria available at www.foodprotection.org

Past Awardees

BLACK PEARL AWARD

Sponsored by Wilbur Feagan and F & H Food Equipment Company, Springfield, Missouri

1994 – H-E-B Grocery Company, San Antonio, Texas
1995 – Albertson's Inc., Boise, Idaho
1996 – Silliker Laboratories Group, Inc., Homewood, Illinois
1997 – Papetti's of Iowa Food Products, Inc., Lenox, Iowa
1998 – Kraft Foods, Inc., Northfield, Illinois
1999 – Caravelle Foods, Brampton, Ontario, Canada
2000 – Zep Manufacturing Company, Atlanta, Georgia
2001 – Walt Disney World Company, Lake Buena Vista, Florida
2002 – Darden Restaurants, Orlando, Florida
2003 – Wegmans Food Markets, Inc., Rochester, New York

FELLOWS AWARD

1998 – Larry Beuchat, Lloyd Bullerman, Frank L. Bryan Michael P. Doyle, Harry Haverland, Elmer M. Marth, and Edmund A. Zottola
1999 – A. Richard Brazis, Michael H. Brodsky, James M. Jay, Robert T. Marshall, Lawrence A. Roth, and Earl O. Wright
2000 – John C. Bruhn, Cameron R. Hackney, Bruce E. Langlois, and Lloyd O. Luedecke
2001 – Ann Draughon and Ewen C. D. Todd
2002 – David Fry
2003 – Robert B. Gravani

HONORARY LIFE MEMBERSHIP AWARD

1957 – J. H. Shrader
1958 – H. Clifford Goslee
1959 – William H. Price
1960 – None Given
1961 – Sarah Vance Dugan
1962 – None Given
1963 – C. K. Johns and Harold Macy
1964 – C. B. and A. L. Shogren
1965 – Fred Basselt and Ivan Parkin
1966 – M. R. Fisher
1967 – C. A. Abele and L. A. Black
1968 – M. P. Baker and W. C. Frazier
1969 – John Faulkner
1970 – Harold J. Barnum
1971 – Wiliam V. Hickey
1972 – C. W. Dromgold and E. Wallenfeldt
1973 – Fred E. Uetz
1974 – H. L. Thomasson and K. G. Weckel
1975 – A. E. Parker
1976 – A. Bender Luce
1977 – Harold Heiskell
1978 – Karl K. Jones
1979 – Joseph C. Olson, Jr.
1980 – Alvin E. Tesdal and Laurence G. Harmon
1981 – Robert M. Parker
1982 – None Given
1983 – Orlowe Osten
1984 – Paul Elliker
1985 – Patrick J. Dolan, Franklin W. Barber, and Clarence K. Luchterhand
1986 – John G. Collier
1987 – Elmer Marth and James Jezeski
1988 – Kenneth Whaley and Paul J. Pace
1989 – Earl Wright and Vernon Cupps
1990 – Joseph E. Edmondson
1991 – Leon Townsend and Dick B. Whitehead
1992 – A. Richard Brazis and Harry Haverland
1993 – None Given
1994 – Ken Kirby
1995 – Lloyd B. Bullerman and Robert T. Marshall
1996 – Richard C. Swanson
1997 – Frank L. Bryan
1998 – H. V. Atherton and David D. Fry
1999 – Sidney E. Barnard, Michael H. Brodsky, Charles W. Felix, and James L. Smith
2000 – William L. Arledge and Robert L. Sanders
2001 – John G. Cerveny, Robert Tiffin, and Edmund A. Zottola
2002 – Warren S. Clark, Jr.
2003 – Randall A. Daggs and Lloyd. O. Luedecke

HARRY HAVERLAND CITATION AWARD

Sponsored by Silliker, Inc. Homewood, Illinois

1951 – J. H. Shrader and William B. Palmer
1952 – C. A. Abele
1953 – Clarence Weber
1954 – C. K. Johns
1955 – R. G. Ross
1956 – K. G. Weckel
1957 – Fred C. Baselt
1958 – Milton R. Fisher
1959 – John D. Faulkner
1960 – Luther A. Black
1961 – Harold S. Adams
1962 – Franklin W. Barber
1963 – Merle P. Baker
1964 – W. K. Moseley
1965 – H. L. Thomasson
1966 – J. C. Olson, Jr.
1967 – William V. Hickey
1968 – A. Kelley Saunders
1969 – Karl K. Jones

1970 – Ivan E. Parkin
1971 – L. Wayne Brown
1972 – Ben Luce
1973 – Samuel O. Noles
1974 – John C. Schilling
1975 – A. Richard Brazis
1976 – James Meany
1977 – None Given
1978 – Raymond A. Belknap
1979 – Harold E. Thompson, Jr.
1980 – Don Raffel
1981 – Henry V. Atherton
1982 – None Given
1983 – William B. Hasting
1984 – Elmer H. Marth
1985 – Ralston B. Read, Jr.
1986 – Cecil E. White
1987 – None Given
1988 – Carl Vanderzant
1989 – Clem Honer
1990 – None Given
1991 – Frank Bryan
1992 – Ewen C. D. Todd
1993 – Robert C. Tiffin
1994 – Sidney E. Barnard
1995 – Charles W. Felix
1996 – Joseph J. Disch
1997 – Earl O. Wright
1998 – Anna M. Lammerding
1999 – John C. Bruhn
2000 – Ann Draughon
2001 – Robert B. Gravani
2002 – John G. Cerveny
2003 – Larry R. Beuchat

EDUCATOR-INDUSTRY AWARD

1973 – Walter A. Krienke
1974 – Richard P. March
1975 – K. G. Weckel
1976 – Burdet H. Heinemann
1977 – Elmer H. Marth
1978 – James B. Smathers
1979 – Joseph Edmondson
1980 – James R. Welch
1981 – Francis F. Busta

In 1982, this award was split into the Educator Award and the Harold Barnum Industry Award.

HAROLD BARNUM INDUSTRY AWARD

Sponsored by Nasco International, Fort Atkinson, Wisconsin

1982 – Howard Ferreira
1983 – C. Dee Clingman
1984 – Omer Majerus
1985 – William L. Arledge
1986 – Hugh C. Munns
1987 – J. H. Silliker
1988 – Kenneth Kirby
1989 – Lowell Allen
1990 – Roy Ginn
1991 – Thomas C. Everson
1992 – Ronald Case
1993 – David D. Fry
1994 – R. Bruce Tompkin
1995 – Damien A. Gabis
1996 – Dane T. Bernard
1997 – John G. Cerveny
1998 – None Given
1999 – Russell S. Flowers
2000 – Kenneth Anderson
2001 – William H. Sperber
2002 – None Given
2003 – Fred A. Weber

EDUCATOR AWARD

Sponsored by Nelson-Jameson, Inc. Marshfield, Wisconsin

1982 – Floyd Bodyfelt
1983 – John Bruhn
1984 – R. Burt Maxcy
1985 – Lloyd B. Bullerman
1986 – Robert T. Marshall
1987 – David K. Bandler
1988 – Edmund A. Zottola
1989 – Vernal Packard
1990 – Michael Stiles
1991 – William E. Sandine
1992 – William S. LaGrange
1993 – Irving J. Pflug
1994 – Kenneth R. Swartzel
1995 – Robert B. Gravani
1996 – Cameron R. Hackney
1997 – Purnendu C. Vasavada
1998 – Ronald H. Schmidt
1999 – Eric A. Johnson
2000 – Susan S. Sumner
2001 – Larry R. Beuchat
2002 – Douglas L. Marshall
2003 – John N. Sofos

SANITARIAN AWARD

Sponsored by Ecolab Inc., Food and Beverage Division, St. Paul, Minnesota

1952 – Paul Corash
1953 – E. F. Meyers
1954 – Kelley G. Vester
1955 – B. G. Tennent
1956 – John H. Fritz
1957 – Harold J. Barnum
1958 – Karl A. Mohr
1959 – William Kempa
1960 – James C. Barringer
1961 – Martin C. Donovan
1962 – Larry Gordon
1963 – R. L. Cooper
1964 – None Given
1965 – Harold R. Irvin
1966 – Paris B. Boles
1967 – Roger L. Stephens
1968 – Roy T. Olson
1969 – W. R. McLean
1970 – None Given
1971 – Shelby Johnson
1972 – Ambrose P. Bell
1973 – None Given
1974 – Clarence K. Luchterhand
1975 – Samuel C. Rich
1976 – M. W. Jefferson
1977 – Harold Bengsch
1978 – Orlowe Osten
1979 – Bailus Walker, Jr.

1980 – John A. Baghott
1981 – Paul Pace
1982 – Edwin L. Ruppert
1983 – None Given
1984 – Harold Wainess
1985 – Harry Haverland
1986 – Jay Boosinger
1987 – Erwin P. Gadd
1988 – Kirmon Smith
1989 – Robert Gales
1990 – Leon Townsend
1991 – James I. Kennedy
1992 – Dick B. Whitehead
1993 – Lawrence Roth
1994 – Charles Price
1995 – Everett E. Johnson
1996 – Leon H. Jensen
1997 – Randall A. Daggs
1998 – Terry B. Musson
1999 – Gloria I. Swick
2000 – Norris A. Robertson, Jr.
2001 – O. D. "Pete" Cook
2002 – Dan Erickson
2003 – None Given

MAURICE WEBER LABORATORIAN AWARD

Sponsored by Weber Scientific, Hamilton, New Jersey

2001 – Elizabeth M. Johnson
2002 – Mansel W. Griffiths
2003 – J. Stan Bailey

INTERNATIONAL LEADERSHIP AWARD

Sponsored by Kraft, Foods Glenview, Illinois

2002 – Thomas A. McMeekin
2003 – Alexander von Holy

DEVELOPING SCIENTISTS AWARDS

Sponsored by the Foundation Fund, Des Moines, Iowa

1986 –	1st	Christine Bruhn
	2nd	Elliott T. Ryser
	3rd	Eileen M. Rosenow
	4th	Lisa M. Flores
	5th	Kamal M. Kamaly
1987 –	1st	R. K. Lindenthal
	2nd	Elliott T. Ryser
	3rd	Kathleen M. Knutson
	4th	A. A. Airoldi
	5th	Michelle M. Schaack
1988 –	1st	A. A. Airoldi
	2nd	Stephen Ingham
	3rd	Douglas Marshall
	4th	B. J. Overdahl
	5th	P. K. Cassiday
1989 –	1st	Nancy Nannen
	2nd	Diane West
	3rd	David Baker
	4th	Karl Eckner
	5th	Hassan Gourama
1990 –	1st	Bob Roberts
	2nd	Anna Lammerding
	3rd	Hassan Gourama
	4th	Anna Lambert
	5th	Mona Wahby
1991 –	1st	Andrea O. Baloga
	2nd	Elaine D. Berry
	3rd	J. Eric Line
	4th	Donna Williamson
	5th	Keith R. Schneider
1992 –	1st	Gary J. Leyer
	2nd	Janice M. Baker
	3rd	Kyle Sashara
	4th	Lynn McIntyre
	5th	Kwang Yup Kim
1993 –	1st	Randall K. Phebus
	2nd	J. Eric Line
	3rd	David H. Toop
	4th	Lee-Ann Jaykus
	5th	Tom Yezzi
1994 – Oral	1st	J. David Monk
	2nd	Charles Powell
	3rd	Nandini Natraja
Poster	1st	Ratih Dewanti
	2nd	Jitu R. Patel
	3rd	Chen-Jang Liu
1995 – Oral	1st	Maria Nazarowec-White
	2nd	Peter Bodnaruk
	3rd	Tina S. Schwach
Poster	1st	James D. Schuman
	2nd	Willie Taylor
	3rd	Wei Tan
1996 – Oral	1st	Abbey Nutsch
	2nd	M. Rocelle S. Clavero
	3rd	Robert Williams
Poster	1st	Rod Worobo
	2nd	John Czajka
	3rd	Sherri Kochevar
1997 – Oral	1st	Doris D'Souza
	2nd	Paris Leggitt
	3rd	Kunho Seo
Poster	1st	Lisa Lucore
	2nd	Soraya Rosenfield
	3rd	Jeffrey Semanchek
1998 – Oral	1st	Peter J. Taormina
	2nd	Brian Shofran
	3rd	Amanda E. Whitfield
Poster	1st	Aysegul Eyigor
	2nd	Ronald D. Smiley
	3rd	Jianming Ye
1999 – Oral	1st	Susan Abraham
	2nd	Peter J. Taormina
	3rd	Robert L. Sudler, Jr.

Poster	1st	Ziad W. Jaradat
	2nd	Kazue Takeuchi
	3rd	Yongsoo Jung
2000 – Oral	1st	Peter Taormina
	2nd	Nathanon Trachoo
	3rd	Madonna Cate
Poster	1st	William Weissinger
	2nd	Marlene Janes
	3rd	Robert Williams
2001 – Oral	1st	Marsha Harris
	2nd	Shin-Hee Kim
	3rd	Robert Williams
Poster	1st	Jarret Stopforth
	2nd	Yong Soo Jung
	3rd	Revis Chmielewski
2002 – Oral	1st	Tam Mai
	2nd	Maha Hajmeer
	3rd	Leslie Thompson
Poster	1st	Kimberly Lamar
	2nd	Kidon Sung
	3rd	Julie Jean
2003 – Oral	1st	Lynette Johnson
	2nd	Spring Younts-Dahl
	3rd	Crystal Ngutter
Poster	1st	Maria Romero
	2nd	Clint Johnson
	3rd	Pascale Pierre

NFPA FOOD SAFETY AWARD

Sponsored by The National Food Processors Association, Washington, District of Columbia

1998	Food Research Institute at the University of Wisconsin-Madison, Madison, Wisconsin
1999	Michael P. Doyle
2000	Elmer H. Marth
2001	R. Bruce Tompkin
2002	Nelson Cox
2003	Katherine M. J. Swanson

SAMUEL J. CRUMBINE AWARD

Sponsored by the Conference for Food Protection in cooperation with American Academy of Sanitarians; Association of Food and Drug Officials; Foodservice & Packaging Institute, Inc.; International Association for Food Protection; International Food Safety Council; National Association of County and City Health Officials; National Environmental Health Association; NSF International; and Underwriters Laboratories, Inc.

1955	Cowlitz-Wahkiakum County Department of Public Health, Washington New York City Department of Public Health, New York City, New York
1956	Tulsa City-County Department of Public Health, Tulsa, Oklahoma Macon-Bibb-Jones County Department of Public Health, Georgia
1957	San Jose Department of Public Health, San Jose, California San Diego County Department of Public Health, San Diego, California
1958	Spokane County Department of Public Health, Spokane, Washington Los Angeles County Department of Public Health, Los Angeles, California
1959	San Diego County Department of Public Health, San Diego, California Salt Lake City Department of Public Health, Salt Lake City, Utah
1960	Marion County Department of Public Health, Salem, Illinois San Bernardino County Department of Public Health, San Bernardino, California
1961	Albuquerque Environmental Health Department, Albuquerque, New Mexico Philadelphia County Department of Public Health, Philadelphia, Pennsylvania
1962	Rocky Mount Department of Public Health, Rocky Mount, North Carolina Seattle-King County Department of Public Health, Seattle, Washington
1963	Hamilton County Department of Public Health, Cincinnati, Ohio Lake County County Department of Public Health, Waukegon, Illinois
1964	Orange County Department of Public Health, Santa Ana, California
1965	Spokane County Department of Public Health, Spokane, Washington Albuquerque Environmental Health Department, Albuquerque, New Mexico
1966	Imperial County Department of Public Health, El Centro, California Jefferson County Department of Public Health, Birmington, Alabama
1967	Salt Lake City Department of Public Health, Salt Lake City, Utah
1974	Lexington-Fayette County Department of Public Health, Lexington, Kentucky
1975	None given
1976	Region VI Department of Public Health, Roswell, New Mexico
1977	Los Angeles County Department of Public Health, Los Angeles, California
1978	Arlington County Department of Public Health, Arlington, Virginia
1979	Suffolk County Department of Public Health, Riverhead, Virginia
1980	Allegheny County Department of Public Health, Pittsburgh, Pennsylvania
1981	Nassau County Department of Public Health, Mineola, New York
1982	Winnebago County Department of Public Health, Rockford, Illinois
1983	Pima County Department of Public Health, Tucson, Arizona
1984	Southeastern District Department of Public Health, Idaho
1985	Montgomery County Department of Public Health, Dayton, Ohio
1986	Tri-County Department of Public Health, Colorado
1987	Snohomish Health District, Everett, Washington
1988	San Bernardino County Department of Public Health, San Bernardino, California

1989 Albuquerque Environmental Health Department, Albuquerque, New Mexico
1990 San Joaquin County Environmental Health Division, Stockton, California
1991 Tacoma-Pierce County Health Department, Tacoma, Washington
1992 Boulder County Health Department, Boulder, Colorado
1993 Allegheny County Pennsylvania Health Department, Pittsburgh, Pennsylvania
1994 Du Page County Health Department, Wheaton, Illinois
1995 None given
1996 Snohomish Health District, Everett, Washington
1997 Madison Department of Public Health, Madison, Wisconsin
1998 Clark County Health District, Las Vegas, Nevada
1999 Lake County Health Department, Waukegan, Illinois
2000 Olmsted County Public Health Services, Rochester, Minnesota
2001 Maricopa County Environmental Health, Phoenix, Arizona
2002 None Given
2003 County of Santa Clara Department of Environmental Health, San Jose, California

C. B. SHOGREN MEMORIAL AWARD

1972 – Iowa Affiliate
1973 – Kentucky Affiliate
1974 – Washington Affiliate
1975 – Illinois Affiliate
1976 – Wisconsin Affiliate
1977 – Minnesota Affiliate
1978 – None Given
1979 – New York Affiliate
1980 – Pennsylvania Affiliate
1981 – Missouri Affiliate
1982 – South Dakota Affiliate
1983 – Washington Affiliate
1984 – None Given
1985 – Pennsylvania Affiliate
1986 – None Given
1987 – New York Affiliate
1988 – Wisconsin Affiliate
1989 – Georgia Affiliate
1990 – Texas Affiliate
1991 – Georgia Affiliate
1992 – Georgia Affiliate
1993 – New York Affiliate
1994 – Illinois Affiliate
1995 – Wisconsin Affiliate
1996 – Wisconsin Affiliate
1997 – Florida Affiliate
1998 – Ontario Affiliate
1999 – Wisconsin Affiliate
2000 – Michigan Affiliate
2001 – Florida Affiliate
2002 – Florida Affiliate
2003 – Ontario Affiliate

NEW MEMBERS

BARBADOS

Edward B. Massiah
Hipac Ltd., Bridgetown

CANADA

David Toop
Unilever
Belleville, Ontario

COSTA RICA

Fernando Jimenez
Global Kemical S.A.
Alajuela

GREECE

Efi Economou
Delta Ice Cream S.A.
Athens

INDIA

Deepak P. Gadre
Gadre Marine Export
Ratnagiri, Mahrashtra

ITALY

Marcello Trevisani
University of Bologna
Bologna

UNITED STATES

ARMED FORCES

Leslie Fuhrmann
Veterinary Laboratory
APO, AE

CALIFORNIA

Janell M. Percy
Farm Fresh Direct, LLC
Bermuda Dunes

HAWAII

John J. Kaneko
PacMar, Inc.
Honolulu

IOWA

Armitra L. Jackson
Iowa State University
Ames

Dennis J. Murphy
State of Iowa
Waukon

KANSAS

Karen Purvis
Ellis Co. Env. Office
Hays

NEBRASKA

Joyce C. Wert
Michael Foods, EPC
Wakefield

NEW YORK

John Skaly
Perfex Corporation
Poland

Kathleen A. Stanley
BJ's Wholesale Club, Inc.
Setauket

NORTH DAKOTA

Terry E. Ludlum
Fargo Cass Public Health
Fargo

OHIO

Jeffrey T. LeJeune
Ohio State University
Wooster

TENNESSEE

Joel M. Storck
Corky's BBQ
Memphis

VIRGINIA

Brooke M. Hettenhouser
Virginia Tech
Blacksburg

WASHINGTON

Su-sen Chang
Washington State University
Pullman

Robert E. Brackett Named New Director of CFSAN

Commissioner of Food and Drugs Mark B. McClellan, M.D., Ph.D., has announced Dr. Robert E. Brackett as the new Director of the Food and Drug Administration's Center for Food Safety and Applied Nutrition (CFSAN).

Since June 2001, Dr. Brackett has been in charge of food safety and security at CFSAN, where he has been responsible for food safety policy issues and for coordinating new food safety programs. In addition, he represents CFSAN on counter-terrorism efforts and co-chairs the National Advisory Committee on Microbiological Criteria for Foods – all while maintaining an active research program on foodborne pathogens.

Dr. Brackett joined FDA in March 2000, serving as senior microbiologist in CFSAN's Office of Plant and Dairy Foods and Beverages.

Dr. Brackett was born in Wisconsin and received a B.S. degree in bacteriology from the University of Wisconsin. He also earned M.S. and Ph.D. degrees in food microbiology from the same university. He has published more than 200 articles in scientific journals and has made numerous presentations at national and international scientific meetings as well as before industry groups.

Dr. Brackett will replace Joseph A. Levitt, Esq. "As a staff attorney, Commissioner's chief of staff, deputy center director, and center director, Joe has clearly had a unique and lasting impact on the health of Americans," said Dr. McClellan. "With a career-long commitment to improving America's health and strengthening FDA, Joe leaves our food and nutrition center as a world class organization, ready to meet the challenges ahead."

Levitt's tenure as center director at CFSAN was marked by continuing productivity increases, as a result of innovative and clear management and a rigorous process for setting and achieving priorities. Since 1998, CFSAN has strengthened its capacity to carry out its mission by recruiting a cadre of scientific and regulatory experts, who have helped position the center to deal more effectively with the many public health challenges it faces.

Catherine Nnoka Promoted to Associate Director of ILSI North America

ILSI North America is pleased to announce Catherine Nnoka's promotion to associate director, program head, food safety.

In this position, Catherine will develop a new effort to enhance ILSI North America's activities on food safety — an effort that builds on current work of the Food Microbiology and Food Toxicology and Safety Assessment technical committees.

DPC® Elects New Officers at the 2003 Annual Meeting

The Dairy Practices Council® held its annual meeting November 5–7, 2003. New officers were elected for 3-year terms with Jeffrey Bloom, JohnsonDiversey, Inc. being elected as president and Don Breiner, Land O'Lakes, Inc. being elected as vice president. Two new board members were elected — Kelly Wedding, USDA milk market administrator office, Louisville, KY and Dr. Jose Bicudo, University of Kentucky, Lexington, KY. Terry Musson agreed to another three-year contract as executive vice president.

Dr. John Partridge, Michigan State University, East Lansing, MI and Albert Trace, Dairy Marketing Services, Saegertown, PA were re-elected to serve a second 3-year term on the Board.

The remainder of the DPC® Board are William Zepp, Maryland Department of Health and Mental Hygiene; George Jones, Indiana State Board of Animal Health; Norris Robertson, Food and Drug Administration; Rebecca Piston, Garelick Farms of Maine; Bebe Zabilansky, Bruns Bros. Process Equipment; and Dr. Michael Schutz, Purdue University.

3-A Sanitary Standards Inc. Names New Chair

3-A Sanitary Standards, Inc. (3-A SSI) has named Stephen N. Perry, Ph.D., chair of the board of directors. Perry is senior vice president of the International Association of Food Industry Suppliers (IAFIS).

3-A SSI is the national organization formed in 2002 to initiate a new Third Party Verification program for equipment manufactured to 3-A Standards, modernize the 3-A Standards development process, and expand the recognition and use of 3-A Standards and Accepted Practices. The five Founding Members include the American Dairy Products Institute (ADPI), the International Association of Food Industry Suppliers, the International Association for Food Protection (IAFP), the International Dairy Foods Association (IDFA), and the 3-A Sanitary Standards Symbol Administrative Council. The leadership of 3-A SSI includes representation from the Food & Drug Administration (FDA), the US Department of Agriculture

(USDA), and the chairperson of the 3-A Steering Committee.

Schlegel Chosen as New IAFIS President

The International Association of Food Industry Suppliers (IAFIS) Board of Directors announced that Stephen C. Schlegel became the association's new president, effective December 1, 2003. Schlegel served as vice president and director of corporate development for Hixson Architects/Engineers in Cincinnati, OH, and as chairman of the IAFIS Board of Directors. In order to assume IAFIS, chief staff position, Schlegel resigned from the association's board. He replaces Charles W. Bray, who left IAFIS for another opportunity after a six-year tenure.

During his 18-year career at Hixson, Schlegel was responsible for its strategic business units, service product development, marketing and new business development. He was also a member of Hixson's Board of Directors. Schlegel has been involved with IAFIS throughout his tenure at Hixson, serving on the IAFIS Board of Directors for the past six years, as a member of its Executive Committee and as chairman since 2001. He has also served as co-chair of the Worldwide Food Expo Executive Committee and as chair of the IAFIS Strategic Planning Committee.

"I am pleased and excited to play a pivotal role in the future of IAFIS. The strong performance of this year's Worldwide Food Expo and the association's solid financial health contribute to IAFIS' potential going forward. My goal is to grow IAFIS' member services in order to offer increased opportunities for food industry suppliers to succeed in the competitive marketplace," says Schlegel.

Sargento's Lou Gentine Elected IDFA, NCI Chairman

International Dairy Foods Association (IDFA) and its three constituent organizations, the Milk Industry Foundation (MIF), National Cheese Institute (NCI) and the International Ice Cream Association (IICA) elected new officers and board members at their annual business meetings held in conjunction with Worldwide Food Expo 2003.

Lou Gentine, chairman and CEO of Sargento Foods, Inc., has been elected chair of both IDFA and NCI.

Geoff Covert, senior vice president of the manufacturing division of the Kroger Co. was elected MIF chair; and Paul Kruse, vice president and general counsel, Blue Bell Creameries L.P., has been elected to chair IICA.

Lawrence Lynch, CAE Appointed President of National Registry

The National Registry of Food Safety Professionals announced the appointment of Lawrence Lynch, CAE to the position of president. Lynch will immediately assume leadership of the organization and will be responsible for overall administration as well as working with the board of directors to plan and execute strategic growth initiatives for the organization.

Prior to joining the National Registry, Lynch founded Integrated Organization Management Solutions, a provider of management consulting services to trade and professional associations.

Larry also served as director of the renown Disney Institute, which developed and provided professional development programs at Walt Disney World, Disneyland, and Disneyland Paris. Larry's strong association management background prior to joining Disney contributed to the successful development of a series of new conferences and alliances with the American Society of Association Executives and Meeting Professionals International.

As an association executive, Larry spent nearly 13 years leading a variety of associations including the Florida Veterinary Medical Association, where he served as executive director and led the Florida Veterinary Medical Association as they won an "Associations Advance America" recognition for their animal relief program following Hurricane Andrew; The Pennsylvania Institute of CPAs, where he led their Foundation for Research and Education; and the National Paperbox and Packaging Association, where he served as managing director. In 2002, Larry was named a Fellow by the American Society of Association Executives.

Chr. Hansen Appoints Technical Sales Representative for Dairy

Karen Olks joins Chr. Hansen, Inc. as technical sales representative for the company's dairy customers in the Northwest, covering Washington, Oregon, Idaho, Utah and parts of California. Ms. Olks was formerly employed with International BioProducts, Inc. where she worked as an account manager supporting customers nationwide in the quality control lab supply market. She has also held positions as product manager at Stockpot, Inc., and SKW Biosystems, Inc. where she managed a line of dairy flavor ingredients.

Her previous experience also includes quality control at Morning Glory Dairy in DePere, WI. Ms. Olks is a graduate of University of Wisconsin-Stout where she studied food science and business.

3-A Sanitary Standards Announces Plans to Expand into Pharmaceutical Industry

3-A Sanitary Standards, Inc. (3-A SSI) has announced its plans to launch a major new program to develop new equipment standards for pharmaceutical industry applications.

The new standards, to be called P3-A Standards, represent the first major expansion of 3-A Standards outside of the dairy and food processing industry. The development of new P3-A Standards will bring new assurance to pharmaceutical equipment buyers, equipment fabricators and regulatory authorities that equipment built to P3-A Standards meets specific criteria for hygienic design and cleanability.

3-A Standards, which originated in the 1920s, have grown and evolved to meet the critical sanitation requirements of today's dairy and food processing industry. 3-A Standards exist today for nearly 70 different types of equipment used throughout the production system. Conforming equipment may display the widely recognized 3-A symbol, which certifies that machinery meets the 3-A standards in hygienic design and cleanability.

A new P3-A Steering Committee will oversee general project management and the designation of task groups to draft the new standards for use in the domestic and international pharmaceutical industry. The committee will follow the essential requirements of the American National Standards Institute (ANSI) in developing the new standards.

"The Steering Committee agreed the pharmaceutical industry needs new ways to streamline capital equipment project specification time and assure compliance with sanitary codes and principles," explains 3-A SSI executive director Tim Rugh. "Having common equipment standards applied across site locations will help pharmaceutical companies in many ways, and it will enhance acceptance by inspection authorities."

3-A SSI Chairman Steve Perry, of the International Association of Food Industry Suppliers (IAFIS), adds, "This new project represents the first major initiative to expand 3-A standards outside the area of dairy and food processing. It's a major milestone for the organization. The proven standards we have developed for hygienic design and sanitation can be easily adapted to the pharmaceutical industry, where they will benefit equipment suppliers, manufacturers, and regulatory officials."

The new 3-A SSI was organized to expand the use of 3-A Standards and to enhance the recognition of 3-A Standards. The organization recently launched a new Third Party Verification (TPV) program to verify conformance 3-A standards, and a similar program will be designed for the new P3-A Standards.

American Meat Institute Honors Silliker, Inc. with Prestigious 2003 Supplier-of-the-Year Award

The American Meat Institute (AMI) recently honored Silliker, Inc. with its 2003 Supplier-of-the-Year Award. The food testing and consulting organization shared the award with co-recipient Ecolab.

"Silliker has contributed significantly to what is undoubtedly the industry's greatest challenge: food safety," said AMI chairman Richard Searer in presenting the award to Dr. Russell S. Flowers, president and CEO of Silliker, Inc., during the AMI Chairman's Gala at the Field Museum of Chicago.

As a supplier to the meat and poultry industry for over three decades, Silliker provides a broad spectrum of expert services, ranging from analytical testing to employee training, to industry groups and companies. Silliker, a respected food safety and quality advocate, has also made substantial contributions in the form of microbial testing procedures and methodologies to the AMI Foundation's highly regarded *Listeria* control workshop.

"Peer recognition, without question, is the highest accolade that service companies can achieve. In recent years, the meat industry has achieved noteworthy gains in food safety. We're looking forward to helping the industry build upon this achievement by continuing to provide exemplary services and forging stronger collaborative working relationships," said Dr. Flowers.

Top Honors Go to Cal Poly at 82nd Collegiate Contest

The team from California Polytechnic State University earned top honors at the 82nd Collegiate Dairy Products

Evaluation Contest, ranking first in the All Products category. Sponsored by the IAFIS Foundation, this year's contest was held on October 31 on the floor of the Food, Dairy & Beverage Exhibition Hall at Worldwide Food Expo '03 in Chicago. A November 1 awards breakfast honored all the winning teams and individual students.

Teams of undergraduate and graduate students from 17 colleges and universities in the United States and Canada evaluated six categories of dairy foods: milk, cottage cheese, ice cream, butter, cheddar cheese and yogurt. The contest is designed to encourage students to hone their sensory evaluation skills and to pursue their interest in food and dairy industry careers.

The contest has been sponsored by IAFIS since 1930. Other sponsors include the American Dairy Science Association, the US Department of Agriculture (USDA) and the Dairy Recognition and Education Foundation. These groups provide oversight of the contest criteria and rules, and the scoring and judging of the contest.

The IAFIS Foundation funds the $2,000 Shirley Seas Memorial Scholarship, which is awarded to the university that places first in the All Products category. Cal Poly is this year's Shirley Seas Memorial Scholarship winner, with Coach Will Gillis taking Coach of the Year Award honors.

The Joe Larson Merit Award, which includes $500 and a plaque, was granted to Ruth Ann Milbrandt of South Dakota State University. The Larson Award rewards an individual for demonstrating key attributes necessary for industry leadership, rather than for technical placement in the contest.

The top five students in the All Products category win a lifetime membership, funded by the IAFIS Foundation, to the National Dairy Shrine. The Dairy Shrine records notable contributions to the development of the dairy industry. This year's winners are (in order): Carrie Swoope, Mississippi State; Kyle Conley, Cal Poly; Carolina Machado, Cal Poly; Ruth Ann Milbrandt, South Dakota State University, and Alfred Soares, Jr., Cal Poly.

The graduate student placing first in the All Products graduate student competition received the First Place Genevieve Christen Graduate Student All Products Award. This year's winner is Ananya C. Biswas of South Dakota State University.

For more results from the 82nd Collegiate Contest, visit the contest Web site at: www.ams.usda.gov/dairy/cdpec/contstand.htm.

Risk Assessment Reinforces That Keeping Ready-to-Eat Foods Cold May be the Key to Reducing Listeriosis

The Food and Drug Administration (FDA) of the Department of Health and Human Services (HHS) has released the risk assessment on the relationship between foodborne listeriosis and human health. This scientific analysis outlines clear measures industry, retailers and consumers can take to dramatically reduce the risk of this foodborne pathogen. The FDA regulates nearly all foods except for meat and poultry–based foods (and some egg-based products), which are regulated by the Food Safety and Inspection Service (FSIS) of the US Department of Agriculture (USDA). The past several years have seen continuing improvement in the control of *Listeria monocytogenes*, the pathogen that causes listeriosis, in a wide variety of ready-to-eat foods. For example, this assessment follows an October 2003 FSIS release of findings indicating a "25 percent drop in the percentage of positive *Listeria monocytogenes* samples and a 70 percent decline compared with years prior to the implementation of the Hazard Analysis Critical Control Points (HACCP) system." Much of the reduction is associated with new regulatory steps and a variety of actions taken by the food industry to address the presence of *Listeria monocytogenes* in their products.

The FDA risk assessment shows that controlling the growth of *Listeria monocytogenes* in ready-to-eat foods is the key to preventing listeriosis, a serious infection in humans. Two simple practices can further reduce the risk of illness or outbreaks from the *Listeria monocytogenes* by more than 50 percent. One practice is to keep refrigerated foods stored at 40°F. The other practice is to use perishable items that are precooked or ready-to-eat as soon as possible. Similar reductions in the risk of listeriosis from the consumption of higher risk foods can also be achieved by reformulating products so that they no longer support the growth of the microorganism, a food safety strategy that some in industry have already undertaken.

"This risk assessment clearly demonstrates that manufacturers, retailers, and consumers alike can all take simple actions to drastically reduce the risk of listeriosis," said Mark B. McClellan, M.D., Ph.D., FDA Commissioner. "To minimize the risk of this foodborne illness,

perishable and ready-to-eat foods should be transported, offered for sale, kept at 40°F, and used as quickly as possible. Food manufacturers should build on their progress to reformulate and monitor susceptible foods to prevent significant levels of *Listeria monocytogenes*."

The initiative included 23 separate risk assessments and analysis of the relative risks of serious illness and death associated with consumption of 23 types of ready-to-eat foods. It also included public comments received on the draft risk assessment that was completed in 2001. Some of the data for the risk assessment was provided by the USDA's Food Safety and Inspection Service. FDA is working closely with USDA, the US Centers for Disease Control and Prevention (CDC), and other health authorities to combat foodborne illnesses such as listeriosis.

This new scientific information will allow FDA to improve the effectiveness of food safety programs, technological advances in the production of foods and regulatory actions to ensure that this risk to the public is minimized in the future.

The risk assessment evaluated the risks associated with many foods including these food categories: seafood, produce, meats, dairy products and deli-type salads. In examining these closely, FDA showed that five factors are important in measuring the public health impact to consumers from foodborne listeriosis. These factors are: (1) amounts and frequency of consumption of a ready-to-eat food; (2) frequency and levels in a ready-to-eat food; (3) potential of the food to support growth of the bacterium during refrigeration; (4) refrigerated storage temperature; and (5) duration of refrigerated storage before consumption. Therefore, FDA will focus on these factors, individually and as a group, to develop an action plan to identify additional measures to reduce the risks of listeriosis. The action plan will consist of the following:

1. Guidance for processors, retailers, and food service/institutional establishments;
2. Training/technical assistance;
3. Consumer and health care provider information and education;
4. Enforcement and regulatory strategies;
5. Disease surveillance and outbreak response; and
6. Research needs.

The results of the risk assessment reinforce past studies that foodborne *Listeria monocytogenes* is rare and declining, but potentially life threatening when illness occurs. Initially estimating that *Listeria monocytogenes* causes 2,500 serious illness and 500 deaths each year, the CDC's Food Net program has recorded over a 40 percent decrease in the incidence of foodborne *Listeria monocytogenes* infections during the past five years. Foodborne illness caused by listeriosis in pregnant women can result in miscarriage, fetal death, and severe illness or death of a newborn infant. Others at risk for severe illness or death are older adults and those with weakened immune systems.

To more fully inform manufacturer, retailers and consumers, FDA, FSIS, and CDC scheduled a public meeting on December 4, 2003, at which time the risk assessment was presented and the public had an opportunity to ask questions or offer comments related to the results and interpretation of the risk assessment.

The risk assessment reemphasizes that *L. monocytogenes* grows at refrigerator temperatures above 40°F and this increases the risk of listeriosis; therefore, in the interim, FDA and CDC are advising all consumers to store ready-to-eat foods at 40°F or lower, and to consume perishable and ready-to-eat items soon as possible.

The following additional advice is provided for pregnant women, older adults, and people with weakened immune systems as who are at higher risk for foodborne disease, including listeriosis.

Do not eat hot dogs and luncheon meats, unless they are reheated until steaming hot.

Do not eat soft cheese such as Feta, Brie, and Camembert cheeses, blue-veined cheeses, queso blanco, queso fresco, and Panela unless it is labeled as made with pasteurized milk.

Do not eat refrigerated pates or meat spreads. Canned or shelf-stable pates and meat spreads may be eaten.

Do not eat refrigerated smoked seafood, unless it is contained in a cooked dish, such as a casserole. Refrigerated smoked seafood, such as salmon, trout, whitefish, cod, tuna, or mackerel, is most often labeled as "nova-style," "lox," "kippered," "smoked," or "jerky." The fish is found in the refrigerator section or sold at deli counters of grocery stores and delicatessens. Canned or shelf-stable smoked seafood may be eaten.

Do not drink raw (unpasteurized) milk or eat foods that contain unpasteurized milk.

Of note, the recommendation not to eat soft cheese unless it is labeled as made with pasteurized milk reflects a change from previous consumer advice for at-risk consum-

ers not to eat soft cheese at all. Newer data about the contamination of cheese indicates that the risk is not in all soft cheeses, but specifically in cheese made from unpasteurized milk. This reflects the efforts of the dairy industry and FDA during the past several years to develop effective programs to control *Listeria monocytogenes* in soft cheeses.

Finally, this risk assessment is an important milestone and tool in better understanding this foodborne hazard and making substantial and significant steps to reduce its adverse impact on the public health. Accordingly, FDA is acting under its responsibility to protect the public health and is on target to achieve the Administration's overall Healthy People 2010 goals for national health promotion and disease prevention, to reduce foodborne listeriosis by 50 percent by the end of the year 2005.

The risk assessment is available on the FDA Web site at www.cfsan.fda.gov, www.foodsafety.gov, and at www.foodriskclearinghouse.umd.edu.

USDA Announces New Food Safety and Security Guidelines for Consumers

Do you know what to do or who to call to report possible food tampering? Do you know how long to safely keep canned tomatoes, versus meat and vegetables? What are the right temperatures for cooking chicken, beef and lamb? And do you know the four food handling rules to minimize the chances you or your family will experience foodborne illness? The answers to these questions — and many more — can be found in the United States Department of Agriculture's new publication, *Food Safety and Food Security: What Consumers Need to Know*.

"This Administration is dedicated to protecting our nation's food supply," said Agriculture Secretary Ann M. Veneman. "This brochure provides consumers important and useful information to help them keep food safe." The brochure, developed by USDA's Food Safety and Inspection Service, will be available in both English and Spanish. It provides useful tips for safe food preparation and for keeping foods safe from contamination. In a concise and easy-to-follow format, *Food Safety and Food Security: What Consumers Need to Know*, lays out comprehensive and practical information about safe food handling practices, foodborne illness, product recalls, keeping foods safe during an emergency and reporting suspected instances of food tampering.

"Our food safety professionals have condensed vitally important information covering many topics into a 15-page reference manual," said FSIS Administrator Dr. Garry L. McKee, at an appearance at the annual meeting of the American Public Health Association. "In addition to practical information on safe food handling and cooking tips, the brochure also describes the extensive programs FSIS has instituted to prevent and respond to deliberate threats. We want consumers to be assured that we are on alert every day in every meat, poultry and egg products plant in America." *Food Safety and Food Security: What Consumers Need to Know* is part of FSIS' continuing effort to protect public health by preventing and responding to contamination of the food supply throughout the farm-to-table continuum. It is the latest in a series of food security guidelines issued by FSIS.

In May 2002, FSIS prepared and distributed the FSIS Security Guidelines for Food Processors to assist federal and state inspected plants that produce meat, poultry and egg products in identifying ways to strengthen their biosecurity protection. In August 2003, the Agency published *FSIS Safety and Security Guidelines for the Transportation and Distribution of Meat, Poultry and Egg Products*, recommendations to ensure the security of food products through all phases of the distribution process. USDA also produced guidelines for agricultural producers and food providers to help them increase security measures.

Since Sept. 11, 2001, USDA has implemented an extensive program to secure American agricultural production and protect consumers. USDA has approximately 7,600 personnel at federally inspected food establishments nationwide and should add another 80 positions this year. These individuals are trained to look for signs that may suggest intentional contamination and adulteration of meat, poultry and egg products. This workforce is comprised of consumer safety inspectors, consumer safety officers, compliance officers and veterinarians.

USDA has added 18 new veterinarian positions supporting the agricultural quarantine inspection staff at borders, ports of entry and on farms to ensure that strong preparedness programs are in place. Furthermore, USDA has added 20 new food import surveillance officers to ports of entry to strengthen its re-inspection program for imported meat and poultry.

One of the most important steps taken to secure American agricultural production and the food supply was the "Select Agents Rule" mandated by the Agriculture Bioterrorism Protection Act of 2002. USDA and the US Department of Health and Human Services issued complementary regulations that established new safeguards for the possession, use and transfer of certain toxins and biological agents. These safeguards reduce the chance of terrorists acquiring dangerous pathogens and toxins. USDA is also in the process of creating networks that will increase laboratory capacity to enable a rapid and sufficient response to animal health emergencies, including foot and mouth disease and other foreign animal diseases.

As our first line of defense, USDA employees play a vital role in protecting the nation's agricultural production and food supply. Employees who are knowledgeable and well trained in emergency preparedness and response are key to this effort.

USDA has participated in several drills at the federal and state levels to test and improve response procedures. These drills have proven valuable in identifying vulnerabilities and assisting with interagency coordination. USDA has also partnered with states, universities and tribal lands to increase their homeland security prevention, detection and response efforts.

USDA provided funding for those efforts and is currently developing rapid tests for agents that pose the most serious threats to our agricultural system.

For additional information about food safety and security in English and Spanish, consumers can call the toll-free USDA Meat and Poultry Hotline at 1.888.MPHotline (1.888.674.6854); for the hearing-impaired (TTY) 1.800.256.7072.

The Hotline is staffed by food safety experts weekdays from 10 a.m. to 4 p.m. Eastern time. Food safety recordings can be heard 24 hours a day using a touch-tone phone. The media may contact the USDA Meat and Poultry Hotline at 301.504.6258. E-mail inquiries may be directed to MPHotline.fsis@usda.gov. Additional information can be found at www.usda.gov.

Beef Industry Leaders Roll Out Standardized Beef Safety Practices: Documented Best Practices Will Serve as the Industry Blueprint for Making Beef Even Safer

Leaders from every sector of the nation's beef industry have released industry-wide standards for best safety and management practices.

The Beef Industry Food Safety Council (BIFSCo) compiled and reviewed the written practices to help the industry reach its goal of reducing and eventually eliminating *E. coli* O157:H7 from beef. Funded by beef producers with checkoff dollars, BIFSCo brings together representatives from all sectors of the beef industry — including cow/calf producers, feedlot operators, packers, processors, retailers and foodservice operators — to battle the industry's most complex food safety issues as one cohesive unit.

"This is unprecedented in our industry. Companies and operations that are otherwise competitors have come together to share their best work and create a blueprint for the entire beef industry based on what we know as beef manufacturers to be highly effective at reducing *E. coli* O157:H7," said Dave Theno, Jack-in-the-Box senior vice president of quality and logistics. "The bottom line is an already safe product will become even safer for consumers."

These Best Practices were compiled from the safety and management practices of individuals and groups who are already applying them in their own operations and making great strides in combating foodborne pathogens and other food safety issues. The Best Practices provide concise, practical, universal strategies to industry professionals across the country.

"We believe our safety systems are strongest when individual solutions are linked so that every sector is erecting the right, most effective hurdles," said James O. Reagan, Ph.D., chairman of the BIFSCo Steering Committee and National Cattlemen's Beef Association vice president of research and knowledge management. "As an industry, we are committed to the integration of all sectors because this is what will help us win our battle against foodborne pathogens."

Earlier this year at the checkoff-funded *E. coli* Summit held in San Antonio, TX, more than 200 beef industry leaders from all sectors of the industry collectively pledged to reduce and eventually eliminate *E. coli* from US beef. Since the Beef Industry *E. coli* Summit in January, industry working groups in collaboration with BIFSCo have been working to develop and finalize the Best Practices released.

"As an industry, our collective goal has always been to produce wholesome, safe beef for each and

every family using the best science and technology available," said Tim Biela, BIFSCo Steering Committee member and Texas American Foodservice vice president of food safety and quality assurance.

"Now, by putting our industry's best practices on paper for everyone to see and share, we will be even more effective at achieving that goal." Specifically, the Best Practices offer guidelines for processing and handling of raw ground beef products as well as slaughter and fabrication safety measures. In the next few months, additional Best Practices will be completed, which will cover the beef production, retail and foodservice segments of the industry.

All of the Best Practices are available on the BIFSCo Web site as they are completed (www.bifsco. org). These are living documents that will be updated and reviewed as scientific and technological advances are made.

INDUSTRY PRODUCTS

Safeline Metal Detection

Safeline Introduces Metal Detection Systems That Meet 3-A Sanitary Standards and USDA Requirements

Safeline introduces a range of metal detection systems that meet the latest 3-A Sanitary Standards and USDA requirements. Additionally, Safeline manufactures its metal detection systems to meet HACCP and FDA requirements as well as exceed NEMA 4X/IP66 washdown specifications. Available as options on all its field-proven conveyorized metal detectors and pipeline systems, Safeline meets or exceeds the most stringent sanitary demands of dairy, meat and other food processing industries while supplying solutions that minimize metal contamination in packaged or loose products.

With stainless steel construction, continuously welded joints free of imperfections, the system design meets requirements for sanitary product contact surfaces as well as exceeds the criteria for a variety of additional sanitary standards. The Safeline Extreme detector enclosure is built to withstand repeated high temperature, high pressure washdown. Safeline has designed its detectors to be impervious to water intrusion, moisture and dust.

All Safeline metal detectors offer advanced, microprocessor-based technology that incorporates digital-signal processing. The metal detectors all feature an automatic set-up that adjusts to optimum performance by simply passing a few sample products down the line. Automatic Balance Control (ABC) maintains the highest sensitivity levels despite temperature fluctuations, electronic aging and product build-up. Safeline minimizes false rejects with a rigid coil system that virtually eliminates vibration interference.

Safeline Metal Detection
813.889.9500;
www.metaldetection.com
Tampa, FL

BBL™ CHROMagar™ O157, a New Chromogenic Formulation, Differentiates *E. coli* O157 from Other *E. coli* Strains on the Primary Plate

BD Diagnostic Systems announces the immediate availability of BBL™ CHROMagar™ O157, a chromogenic medium with a highly specific enzymatic reaction that isolates and presumptively identifies *E. coli* O157. Designed for the testing of human, food or environmental samples, BBL™ CHROMagar™ O157 can differentiate *E. coli* O157 from other *E. coli* strains. A chromogenic reaction creates mauve-colored colonies of *E. coli* O157. Other *E. coli* strains will either be inhibited or grow as blue to blue-green colonies. Also, unlike MacConkey-based media, BBL™ CHROMagar™ O157 detects sorbitol-negative and positive strains — with fewer false positives than the MacConkey-based media. With fewer false positives, other costs can be reduced as well with BBL™ CHROMagar™ O157, such as latex agglutination, subculturing and biochemical identification. Confirmatory tests are necessary for definitive identification.

With BBL™ CHROMagar™ O157 the lab technologist may save 24 to 48 hours in obtaining final results as compared to conventional MacConkey-based media. In addition, most *Proteus*, *Pseudomonas* and *Aeromonas* strains are inhibited by this medium. BBL™ CHROMagar™ O157 is also compatible with latex reagent test kits.

BBL™ CHROMagar™ O157 is the latest addition to the BBL™ CHROMagar™ Orientation, BBL™ CHROMagar™ Candida, BBL™ CHROMagar™ Salmonella and BBL™ CHROMagar™ Staph aureus.

BD Diagnostic Systems
410.316.4261;
www.bd.com;
Sparks, MD

DuPont Qualicon BAX® System Approved by Health Canada

The BAX® system, a genetics-based diagnostic tool from DuPont Qualicon, has been approved by Health Canada as an analytical method for detecting *Salmonella*, *Listeria monocytogenes* and *E. coli* O157:H7 in a variety of foods.

Health Canada is the federal department that provides national leadership in developing health policy, enforcing health regulations, and promoting disease prevention. "We're pleased to include the BAX® system in our Compendium of Analytical Methods, which food companies throughout Canada use for approved pathogen testing procedures," said Don Warburton, food microbiologist at Health Canada's Evaluation Division, Bureau of Microbial Safety.

According to the World Health Organization (WHO), foodborne diseases are a widespread and growing public health problem. Salmonellosis is a major problem in most countries. Infections due to enterohemorrhagic *E. coli* and listeriosis, with severe, sometimes fatal consequences, are counted among the most serious of emerging foodborne infections. In industrialized countries, up to 30 percent of the population suffers from foodborne illness each year.

The BAX® system uses advanced molecular technology to detect target bacteria in raw ingredients, finished food products and environmental samples. In addition to *Salmonella*, *E. coli* O157:H7 and *Listeria monocytogenes*, assays are available for detecting *Listeria* genus and *Enterobacter sakazakii*. The automated system is user-friendly and fits easily onto a laboratory bench top. Introduced in November, 2000, hundreds of automated BAX® systems are already in use by governments, food companies and laboratories around the world.

DuPont Qualicon
302.695.5211;
www.qualicon.com;
Wilmington, DE

Torrey Pines Scientific, Inc.

Torrey Pines Scientific New Programmable Variable Speed Orbital Mixing Dry Bath

Torrey Pines Scientific, Inc. announces its new EchoTherm™ Models SC20 Digital and SC25 fully programmable dry baths. These orbital mixers provide chilling and heating and are ideal for use with biological and other samples.

The Model SC20 is the simple digital unit and the Model SC25 is the fully programmable unit having 5-program memory capacity. Both units have a temperature range from -10°C to 100°C and incorporate a variable speed orbital mixer which allows for mixing and controlling temperature of samples simultaneously. Both units have 30-day count down timers with alarm and auto-off, data logger, and RS232 I/O port.

The SC20 and SC25 accommodate accessory sample blocks available for 0.2, 0.5, 1.5, and 15 ml centrifuge tubes, 2 ml vials, 20 ml scintillation vials, PCR tubes and plates, 96-well and 384-well assay plates of all shapes and other blocks for various sizes of test tubes. The units are Peltier driven, control to 1°C, mix from 200 to 1,000 rpm and have a backlit two-line alphanumeric display.

Both models are excellent molecular biology tools and can be used to run temperature/time profiles, unattended restriction digestions or ligations, automatic enzyme reactions and deactivations, storing oocytes at 17°C, storing DNA libraries at the workstation, and for replacing messy ice buckets and more. Both units come complete with instructions and universal bench top power supply for use anywhere in the world. They are UL, CSA and CE compliant.

Torrey Pines Scientific, Inc.
760.471.9100;
www.torreypinesscientific.com;
San Marcos, CA

Ecolab Introduces Kool Klene™ QD

Ecolab announces the development of a unique formula for use in refrigeration and freezer environments down to -20°F. Whether it's enhancing quality assurance efforts, promoting worker safety, or proving its versatility, the development of Kool Klene QD provides warehouse freezer floors with a solution that has shortened drying time over traditional cold surface cleaners.

In a challenge issued by a customer, Ecolab was asked to create a product that could help decrease the drying time once the cleaner is applied to the floor with recirculating floor scrubbers. The competitive product that the customer was using took 1.5 hours to dry.

The Ecolab team conducted testing at the customer's warehouse facility where the competitive product was being used. The floors were cleaned using Kool Klene QD and after 15 minutes, the main freezer was

95 percent dry. After 30 minutes, it was completely dry.

Kool Klene QD has good solvency, surfactants, and moderate alkalinity and is also low-foaming, which is important for recirculation within the scrubbers. The new product rinses freely from surfaces and leaves not sticky or slippery residues. It can be used on a broad range of common environmental surfaces, including tile, block, concrete, aluminum, black iron and stainless steel.

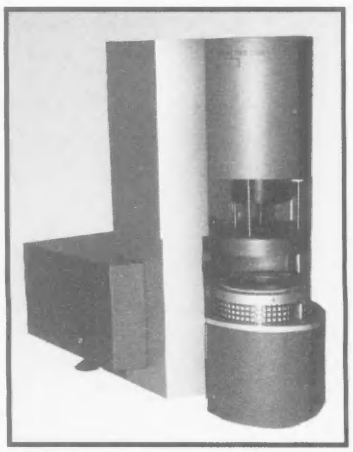
Ecolab Inc.
651.293.2549;
www.ecolab.com;
St. Paul, MN

EMD Chemicals Announces the Launch of Its New AQUASTAR® Range of Products for Karl Fischer Titration

EMD Chemicals launched a range of newly formulated Aquastar® Karl Fischer Reagents recently at the Gulf Coast Conference in Galveston, TX. The new reagents are safer and demonstrate a marked improvement in performance. To accompany the new reagent line, EMD Chemicals also had on display their two new Karl Fischer titrators: the Aquastar® AQV 33 Volumetric KF titrator and the Aquastar® AQC 34 Coulometric KF titrator. Both titrators are manufactured by Mettler-Toledo and as part of a recently signed joint sales and marketing agreement will be supported by Mettler Toledo both from a technical application and service standpoint.

These new products offer the very latest in performance and safety. The new Reagent formulations have been developed by EMD's parent company, Merck KGaA, Darmstadt Germany using the technology found in the new Aquastar® Karl Fischer titrators. And because the new Aquastar® titrators are fully supported with validation packages and in-house instrument maintenance and service support from Mettler-Toledo, chemists now have access to a totally integrated solution for their Karl Fischer applications.

EMD Chemicals, Inc.
800.222.0342;
www.emdchemicals.com;
Gibbstown, NJ



ATS RheoSystems

ATS RheoSystems New for Melt Rheology and Dynamic Mechanical Analysis

ATS RheoSystems has introduced the DYNALYSER, a modular research level rheometer system designed specifically to address the challenging and diverse testing needs and requirements of the serious rheologist.

The DYNALYSER is designed for testing any rheologically significant materials such as thermoplastics, thermosets, elastomers, semi-solids and fluid systems. This instrument will perform steady, transient, and dynamic shear measurements using parallel plate, cone and plate, couette, rectangular torsion, dynamic tension, and other fixtures.

The operation and evaluation software supplied is based on the Windows XP operating system, providing a convenient platform for system networking and instrument operation. For precise control of sample temperature, DYNALYSER offers an environmental control system with a novel, indirect heated and cooled oven which provides a temperature range from -180° to +500°C.

ATS RheoSystems
609.298.2522;
www.atsrheosystems.com;
Bordentown, NJ

Lambda Solutions' New High Performance Near Infra-red Fiber Probe

Lambda Solutions, Inc. introduces its Model LSI-NIR-VT, near infrared vector probe. This fiber optic device is designed for diffuse reflectance spectroscopy and will interface with most existing FTIR, AOTF and dispersive spectrometers, requiring high sensitivity and dynamic range. A serial port interface for system automation is also available.

The vector probe is ideally suited for process and quality control applications in the chemical, agricultural, food and pharmaceutical industries. The design of the unit allows for ease of use in repetitive testing environments.

A proprietary optic design allows for exceptionally low internal light reflection and high light collection efficiency ensuring high signal to noise characteristics.

The LSI-NIR-VT is constructed of stainless steel, PVC and polyamide for durability. The cable length is standard at 2 meters but is also available with custom fiber lengths.

Lambda Solutions, Inc.
781.478.0170;
www.lambdasolutions.com;
Waltham, MA

Welch Rietschle Thomas

New from Welch Self-Cleaning Dry Vacuum Pump System™

Welch's self-cleaning dry vacuum system is ideal to use with rotary evaporators for stripping low-boiling-point solvents such as pentane, alcohol, or methylene chloride or for concentrators.

The system's two-stage, flexible diaphragm pump resists chemical vapors thanks to fluorinated plastics used on all wetted surfaces — including the diaphragm itself. The pump operates without oil, delivering a vacuum to 9 Torr (12 mbar) with a free air displacement of 34L/min (1.2 CFM). In addition, the self-cleaning purge automatically runs for two minutes at shutdown to rid pump of residue — ensuring a longer service life and reducing downtime.

Other added protective features include a glass inlet separator that helps prevent the pump from ingesting liquids or particulates; a gas ballast or vent switch to minimize condensation when pumping heavy vapor loads; and an exhaust separator that collects any liquid droplets or particulates flushed from the pump during the purge cycle.

In addition, adjustable bleed valve mounted directly on the system lets you regulate the vacuum level, while a dial pressure gauge permits monitoring of set value — a feature especially useful when pumping low-boiling solvents to minimize foaming or bumping within flask (handles flasks up to 5L).

Welch Rietschle Thomas
847.676.8800;
www.welchvacuum.com;
Skokie, IL

National Beef Packing Co. New Technology Naturally Protects Beef from Harmful Bacteria

National Beef has implemented a new, natural food safety technology that will further protect consumers from harmful bacteria that may be present in meat, including *E. coli* O157:H7, *Salmonella* and *Listeria*.

The technology, branded under the name Activin™, involves the use of an activated form of lactoferrin, a natural protein that is credited with protecting infants from bacteria while their immune system is developing. Lactoferrin also is naturally present in beef. By discovering how to activate the lactoferrin molecule, scientists were able to mimic its bacteria-fighting properties on the surface of beef.

"We are fully committed to providing consumers with the safest, most wholesome and nutritious beef possible. The ability to use a natural ingredient to further protect consumers against harmful bacteria is a significant step not only for National Beef, but for our entire industry as well," said John R. Miller, chief executive officer of National Beef.

According to Miller, Activin will be included as the final step of the company's existing food safety interventions. The system includes an electrostatic application of Activin™, followed by a water rinse, to detach any remaining pathogenic bacteria from the meat surface.

Research results prove Activin protects beef against *E. coli* O157:H7, *Salmonella*, *Listeria*, and more than 30 other types of pathogenic bacteria. It does not influence the nutritional qualities of beef products or affect its taste, texture, color, or aging qualities.

Activin was researched and developed by aLF Ventures, LLC, of Salt Lake City, UT. It has been fully approved for use during processing by the US Department of Agriculture (USDA). It has also received generally-recognized-as-safe (GRAS) status from the US Food and Drug Administration (FDA).

While the use of Activin will make beef products safer, consumers also are encouraged to follow proper food safety procedures at home. "Consumers should be diligent about food safety at home. This includes handling food properly and making sure food is cooked to the recommended temperature," said Janet Anderson, director of the Safe Food Institute and associate professor, Utah State University. For a complete guide to food safety at home, visit www.fightbac.org.

National Beef Packing Co. LLC
816.713.8631;
www.nationalbeef.com;
Kansas City, MO

IMPORTANT! Please read this information before completing your registration form.

MEETING INFORMATION

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

Registration includes:

- Technical Sessions
- Symposia
- Poster Presentations
- Ivan Parkin Lecture
- Exhibit Hall Admittance
- Cheese and Wine Reception
- Exhibit Hall Reception
- Program and Abstract Book

4 EASY WAYS TO REGISTER

Complete the Attendee Registration Form and submit it to the International Association for Food Protection by:

Online: www.foodprotection.org

Fax: 515.276.8655

Mail: 6200 Aurora Avenue, Suite 200W,
Des Moines, IA 50322-2864, USA

Phone: 800.369.6337; 515.276.3344

The early registration deadline is July 7, 2004.
After this date, late registration fees are in effect.

REFUND/CANCELLATION POLICY

Registration fees, less a $50 administration fee and any applicable bank charges, will be refunded for written cancellations received by July 23, 2004. No refunds will be made after July 23, 2004; however, the registration may be transferred to a colleague with written notification. Refunds will be processed after August 16, 2004. **Event and tour tickets purchased are nonrefundable.**

International Association for Food Protection®

EXHIBIT HOURS

Sunday, August 8, 2004	8:00 p.m. – 10:00 p.m.
Monday, August 9, 2004	9:30 a.m. – 1:30 p.m. 3:00 p.m. – 6:30 p.m.
Tuesday, August 10, 2004	9:30 a.m. – 1:30 p.m.

DAYTIME TOURS

Saturday, August 7, 2004	
Sedona and Verde Valley Tour (Lunch included)	8:00 a.m. – 4:00 p.m.
Sunday, August 8, 2004	
City Tour and Old Town Scottsdale (Lunch included)	10:00 a.m. – 3:00 p.m.
Monday, August 9, 2004	
Desert Botanical Garden and Heard Museum Tour (Lunch included)	8:00 a.m. – 1:00 p.m.
Tuesday, August 10, 2004	
Frank Lloyd Wright – Taliesin West Tour	8:00 a.m. – 12:00 p.m.
Wednesday, August 11, 2004	
Southwestern Cooking Class (Lunch included)	10:30 a.m. – 1:00 p.m.

EVENING EVENTS

Saturday, August 7, 2004	
Diamondbacks Baseball Game	6:00 p.m. – 10:00 p.m.
Sunday, August 8, 2004	
Opening Session	7:00 p.m. – 8:00 p.m.
Cheese and Wine Reception *Sponsored by Kraft Foods North America*	8:00 p.m. – 10:00 p.m.
Monday, August 9, 2004	
Exhibit Hall Reception	5:00 p.m. – 6:30 p.m.
Monday Night Social at Rawhide Western Town	6:30 p.m. – 10:00 p.m.
Wednesday, August 11, 2004	
Awards Banquet Reception	6:00 p.m. – 7:00 p.m.
Awards Banquet	7:00 p.m. – 9:30 p.m.

GOLF TOURNAMENT

Saturday, August 7, 2004	
Golf Tournament Nick Faldo-designed Championship Golf at Wildfire Golf Club	6:00 a.m. – 11:00 a.m.

HOTEL INFORMATION

For reservations, contact the hotel directly and identify yourself as an IAFP 2004 attendee to receive a special rate of $139 per night, single/double or make your reservations online. This special rate is available only until July 7, 2004.

JW Marriott Desert Ridge Resort
5350 E. Marriott Dr.
Phoenix, Arizona 85054
Phone: 800.228.9290 • Fax: 480.293.3738
Web site: www.marriott.com/phxdr
(Group Code INTINTA)

Attendee Registration Form

International Association for Food Protection®
6200 Aurora Avenue, Suite 200W
Des Moines, IA 50322-2864, USA
Phone: 800.369.6337 • 515.276.3344
Fax: 515.276.8655
E-mail: info@foodprotection.org
Web site: www.foodprotection.org

Name (Print or type your name as you wish it to appear on name badge) _____ Member Number: _____

Employer _____ Title _____

Mailing Address (Please specify: ❒ Home ❒ Work) _____

City _____ State/Province _____ Country _____ Postal/Zip Code _____

Telephone _____ Fax _____ E-mail _____

❒ Regarding the ADA, please attach a brief description of special requirements you may have. Member since: _____

❒ IAFP occasionally provides Attendees' addresses (excluding phone and E-mail) to vendors and exhibitors supplying products and services for the food safety industry. If you prefer NOT to be included in these lists, please check the box.

PAYMENT MUST BE RECEIVED BY JULY 7, 2004 TO AVOID LATE REGISTRATION FEES

REGISTRATION FEES:	MEMBERS	NONMEMBERS	TOTAL
Registration (Awards Banquet included)	$ 365 ($415 late)	$ 555 ($605 late)	_____
Association Student Member (Awards Banquet included)	$ 75 ($ 85 late)	Not Available	_____
Retired Association Member (Awards Banquet included)	$ 75 ($ 85 late)	Not Available	_____
One Day Registration:* ❒ Mon. ❒ Tues. ❒ Wed.	$ 200 ($225 late)	$ 305 ($330 late)	_____
Spouse/Companion* (Name): _____	$ 55 ($ 55 late)	$ 55 ($ 55 late)	_____
Children 15 & Over* (Names): _____	$ 25 ($ 25 late)	$ 25 ($ 25 late)	_____
Children 14 & Under* (Names): _____	FREE	FREE	_____
*Awards Banquet not included			

EVENTS:		# OF TICKETS	
Golf Tournament – Faldo Championship Golf Course (Saturday, 8/7)	$ 105($115 late)	_____	_____
Diamondbacks Baseball Game (Saturday, 8/7)	$ 26 ($ 36 late)	_____	_____
Student Luncheon (Sunday, 8/8)	$ 5 ($ 15 late)	_____	_____
Monday Night Social at Rawhide Western Town (Monday, 8/9)	$ 42 ($ 52 late)	_____	_____
Children 14 and under	$ 37 ($ 47 late)	_____	_____
Awards Banquet (Wednesday, 8/11)	$ 50 ($ 60 late)	_____	_____

DAYTIME TOURS: (Lunch included in daytime tours except on Tuesday)			
Sedona and Verde Valley Tour (Saturday, 8/7)	$ 90 ($100 late)	_____	_____
City Tour and Old Town Scottsdale (Sunday, 8/8)	$ 55 ($ 65 late)	_____	_____
Desert Botanical Garden and Heard Museum Tour (Monday, 8/9)	$ 78 ($ 88 late)	_____	_____
Frank Lloyd Wright – Taliesin West Tour (Tuesday, 8/10)	$ 70 ($ 80 late)	_____	_____
Southwestern Cooking Class (Wednesday, 8/11)	$ 65 ($ 75 late)	_____	_____

PAYMENT OPTIONS: ❒ VISA ❒ MasterCard ❒

❒ Check Enclosed

Credit Card # _____

Name on Card _____

Signature _____

TOTAL AMOUNT ENCLOSED $_____
US FUNDS on US BANK

Expiration Date _____

JOIN TODAY AND SAVE!!!
(Attach a completed Membership application)

❒ Check box if you are a technical, poster, or symposium speaker.

EXHIBITORS DO NOT USE THIS FORM

COMING EVENTS

FEBRUARY

- **1–4, National Mastitis Council 43rd Annual Meeting,** Charlotte, NC. For more information, call 608.663.1255 or www.nmconline.org.
- **9–13, PRODEXPO,** Moscow's Krasnaya Presnya Exhibition Center, Moscow, Russia. For more information, contact Tobitha Jones at 202.690.1182; E-mail: tobitha.jones@fas.usda.gov.
- **12–13, FSIS Verification of HACCP Plans,** Atlanta, GA. For more information, call 800.355.0983; E-mail: fpi@nfpa-food.org.
- **17, HACCP: A Management Summary,** Guelph Food Technology Centre, Guelph, Ontario, Canada. For more information, contact Marlene Inglis at 519.821.1246; E-mail: minglis @gftc.ca.
- **17–19, Kentucky Association of Milk, Food and Environmental Sanitarians,** Clarion Hotel, Louisville, KY. For more information, contact Sue Jewell at 859.371.2278.
- **19–20, ASI Principles of HACCP Workshop,** Las Vegas, NV. For more information, call Jeanette Huge at 800.477.0778 ext. 113; E-mail: jhuge@asifood.com.
- **19–22, BIOFACH 2004,** Nuremerg, Germany. For more information, contact Sharon Cook at 202.720.3425; E-mail: sharon.cook@usda.gov.
- **23–26, California Association of Dairy and Milk Sanitarians Dairy Industry Conference,** Montebello Country Club/ Hilton Garden Inn, San Clemente, CA. For more information, contact John Bruhn at 530.752.2192.
- **24–25, Food Safety Focus Asia, 2004,** Queen Sirikit National Convention Center, Bangkok, Thailand. For more information, contact Alison Burdass at 44.0.1377.256316; E-mail: conf@positive action.co.uk.

MARCH

- **2–4, Basic HACCP,** Washington, D.C. For more information, call 800.355.0983; E-mail: fpi@nfpa-food. org.
- **4–5, ASI Lead Auditor Workshop,** St. Louis, MO. For more information, call Jeanette Huge at 800.477.0778 ext. 113; E-mail: jhuge@asifood.com.
- **8–9, HACCP I: Documenting HACCP Prerequisites,** GFTC, Guelph, Ontario. For more information, contact Marlene Inglis at 519.821.1246; E-mail: minglis@gftc.ca.
- **9–11, Basic HACCP in Spanish,** Miami, FL. For more information, call 800.355.0983; E-mail: fpi@nfpa-food. org.
- **15–16, Managing Allergens in Food Processing Establishments,** Washington, D.C. For more information, call 800.355.0983; E-mail: fpi@nfpa-food. org.
- **15–16, Microbiology IV: Sampling and Interpreting Results,** GFTC, Guelph, Ontario. For more information, contact Marlene Inglis at 519.821.1246; E-mail: minglis@gftc.ca.
- **17–19, Food Safety Summit and Expo,** Washington, D.C. For more information, call 800.746.9646 or www.foodsafetysummit.com.
- **17–19, Idaho Environmental Health Association Annual Educational Conference,** BSU Convention Center, Boise, ID. For more information, contact Jim Lane at 208.734.5900, x309.
- **18, HACCP for the Hospitality Industry,** GFTC, Guelph, Ontario. For more information, contact Marlene Inglis at 519.821.1246; E-mail: minglis@gftc.ca.
- **25–26, ASI Food Safety Training Workshop,** Baltimore, MD. For more information, call Jeanette Huge at 800.477.0778 ext. 113; E-mail: jhuge@asifood.com.
- **25–28, IAFIS 2004 Annual Conference,** Camelback Inn Marriott Resort, Golf Club and Spa, Scottsdale, AZ. For more information, call 703.761.2600 or E-mail: info@iafis.org.
- **29–31, First World Congress on Organic Food:** *Meeting the Challenges of Safety and Quality for Fruits, Vegetables, and Grains,* Kellogg Hotel and Conference Center, Michigan State University, East Lansing, MI. For more information, E-mail: mitzelf3@cvm.msu.edu.
- **31– April 2, Missouri Milk, Food and Environmental Health Association Annual Educational Conference,** Ramada Inn Convention Center, Columbia, MO. For more information, contact Linda Haywood at 417.829. 2788.

APRIL

- **16–21, Conference for Food Protection,** San Marcos Resort, Chandler, (Phoenix) AZ. For more information, call Trevor Hayes at 408.848.2255; E-mail: TWHgilroy@aol.com.

MAY

- **15–20, IFFA Delicat,** Frankfurt, Germany. For more information, contact Dirk Ebener at 770.984.8016; E-mail: info@usa.messefrankfurt.com.
- **18–19, Pennsylvania Association of Milk, Food and Environmental Sanitarians Annual Meeting,** Nittany Lion Inn, State College, PA. For more information, contact Gene Frey at 717.397.0719.
- **26, Metropolitan Association for Food Protection Annual Spring Meeting,** Rutgers, Cook College, New Brunswick, NJ. For more information, contact Carol Schwar at 908.689.6693.

JUNE

- **7–11, 5th World Congress Foodborne Infections and Intoxications,** Berlin, Germany. For more information, call 49.30.8412.1939; E-mail: officewk5 @bfr.bund.de.
- **18–25, International Workshop/ Symposium on Rapid Methods and Automation in Microbiology XXIV,** Kansas State University, Manhattan, KS. For more information, contact Debbie Hagenmaier at 800.432.8222; E-mail: debbieh@ksu.edu; outside USA call 785.532.5575.

IAFP UPCOMING MEETINGS

AUGUST 8-11, 2004
Phoenix, Arizona

AUGUST 14-17, 2005
Baltimore, Maryland

AUGUST 13-16, 2006
Calgary, Alberta, Canada

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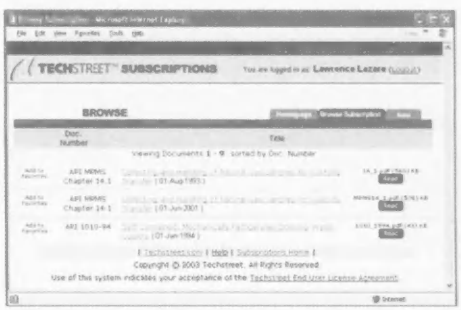

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IT'S A FACT

Publish your upcoming meetings in the Coming Events section of *FPT.*

E-mail Donna Bahun
at dbahun@foodprotection.org
or call 800.369.6337.

ADVERTISING INDEX

Is Your Program Crumbine Material? Put it to the Test!

The Samuel J. Crumbine Consumer Protection Award for Excellence in Food Protection at the Local Level is seeking submissions for its 2004 program. The Crumbine Award is given for excellence and continual improvement in a comprehensive program of food protection at the local level. Achievement is measured by:

- Sustained improvements and excellence over the preceding four to six years;
- Innovative and effective use of program methods and problem solving to identify and reduce risk factors that are known to cause foodborne illness;
- Demonstrated improvements in planning, managing, and evaluating a comprehensive program; and
- Providing targeted outreach; forming partnerships; and fostering communication and information exchange among regulators, industry and consumer representatives.

All local government health units in the United States and Canada are encouraged to apply, regardless of size, whether "small," "medium" or "large."

The Award is sponsored by the Conference for Food Protection, in cooperation with the American Academy of Sanitarians, American Public Health Association, Association of Food and Drug Officials, Foodservice & Packaging Institute, Inc., International Association for Food Protection, International Food Safety Council, National Association of County & City Health Officials, National Environmental Health Association, NSF International, and Underwriters Laboratories, Inc.

For more information on the Crumbine Award program, and to download the 2004 criteria and previous winning entries, please go to www.fpi.org or call the Foodservice & Packaging Institute at (703) 538-2800. **Deadline for entries is March 15, 2004.**

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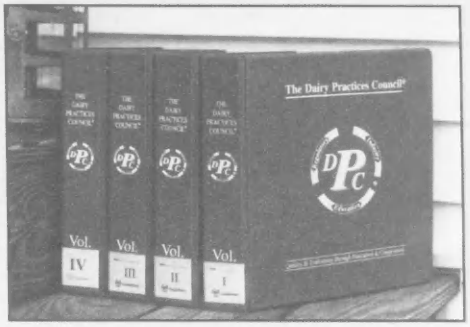
Vol. 66 | **December 2003** | **No. 12**

* Asterisk indicates author for correspondence.



IAFP Offers "Guidelines for the Dairy Industry" from The Dairy Practices Council®

This newly expanded Four-volume set consists of 70 guidelines.

1 Planning Dairy Freestall Barns
2 Effective Installation, Cleaning, and Sanitizing of Milking Systems
3 Selected Personnel in Milk Sanitation
4 Installation, Cleaning, & Sanitizing of Large Parlor Milking Systems
5 Directory of Dairy Farm Building & Milking System Resource People
6 Natural Ventilation for Dairy Tie Stall Barns
7 Sampling Fluid Milk
8 Good Manufacturing Practices for Dairy Processing Plants
9 Fundamentals of Cleaning & Sanitizing Farm Milk Handling Equipment
10 Maintaining & Testing Fluid Milk Shelf-Life
11 Sediment Testing & Producing Clean Milk
12 Tunnel Ventilation for Dairy Tie Stall Barns
13 Environmental Air Control and Quality for Dairy Food Plants
14 Clean Room Technology
15 Milking Center Wastewater
16 Handling Dairy Products from Processing to Consumption
17 Prevention of & Testing for Added Water in Milk
18 Fieldperson's Guide to High Somatic Cell Counts
21 Raw Milk Quality Tests
22 Control of Antibacterial Drugs & Growth Inhibitors in Milk and Milk Products
23 Preventing Rancid Flavors in Milk
24 Troubleshooting High Bacteria Counts of Raw Milk
25 Cleaning & Sanitation Responsibilities for Bulk Pickup & Transport Tankers
27 Dairy Manure Management From Barn to Storage
28 Troubleshooting Residual Films on Dairy Farm Milk Handling Equipment
29 Cleaning & Sanitizing in Fluid Milk Processing Plants
30 Potable Water on Dairy Farms
31 Composition & Nutritive Value of Dairy Products
32 Fat Test Variations in Raw Milk
33 Brucellosis & Some Other Milkborne Diseases
34 Butterfat Determinations of Various Dairy Products
35 Dairy Plant Waste Management
36 Dairy Farm Inspection
37 Planning Dairy Stall Barns
38 Preventing Off-Flavors in Milk
39 Grade A Fluid Milk Plant Inspection
40 Controlling Fluid Milk Volume and Fat Losses
41 Milkrooms and Bulk Tank Installations
42 Stray Voltage on Dairy Farms
43 Farm Tank Calibrating and Checking
45 Gravity Flow Gutters for Manure Removal in Milking Barns
46 Dairy Odor Management
48 Cooling Milk on the Farm
49 Pre- & Postmilking Teat Disinfectants
50 Farm Bulk Milk Collection Procedures
51 Controlling the Accuracy of Electronic Testing Instruments for Milk Components
53 Vitamin Fortification of Fluid Milk Products
54 Selection of Elevated Milking Parlors
54S Construction Materials for Milking Parlors
56 Dairy Product Safety (Pathogenic Bacteria) for Fluid Milk and Frozen Dessert Plants
57 Dairy Plant Sanitation
58 Sizing Dairy Farm Water Heater Systems
59 Production and Regulation of Quality Dairy Goat Milk
60 Trouble Shooting Microbial Defects: Product Line Sampling & Hygiene Monitoring
61 Frozen Dessert Processing
62 Resources For Dairy Equipment Construction Evaluation
63 Controlling The Quality And Use Of Dairy Product Rework
64 Control Points for Good Management Practices on Dairy Farms
65 Installing & Operating Milk Precoolers Properly on Dairy Farms
66 Planning A Dairy Complex - "100+ Questions To Ask"
69 Abnormal Milk - Risk Reduction and HACCP
71 Farmers Guide To Somatic Cell Counts In Sheep
72 Farmers Guide To Somatic Cell Counts In Goats
73 Layout of Dairy Milk Houses for Small Ruminant Operations
78 Biosecurity for Sheep and Goat Dairies
80 Food Allergen Awareness In Dairy Plant Operations
83 Bottling Water in Fluid Milk Plants
100 Food Safety in Farmstead Cheesemaking
103 Approving Milk and Milk Product Plants for Extended Runs

IAFP has agreed with The Dairy Practices Council to distribute their guidelines. DPC is a non-profit organization of education, industry and regulatory personnel concerned with milk quality and sanitation throughout the United States. In addition, its membership roster lists individuals and organizations throughout the world.

For the past 34 years, DPC's primary mission has been the development and distribution of educational guidelines directed to proper and improved sanitation practices in the production, processing, and distribution of high quality milk and milk products.

The DPC Guidelines are written by professionals who comprise six permanent task forces. Prior to distribution, every guideline is submitted for approval to the state regulatory agencies in each member state. Should any official have an exception to a section of a proposed guideline, that exception is noted in the final document.

The guidelines are renown for their common sense and useful approach to proper and improved sanitation practices. We think they will be a valuable addition to your professional reference library.

If purchased individually, the entire set would cost $327. We are offering the set, packaged in four looseleaf binders for $245.00.

Information on how to receive new and updated guidelines will be included with your order.

To purchase this important source of information, complete the order form below and mail or fax (515-276-8655) to IAFP.

Please enclose $245 plus $17 shipping and handling for each set of guidelines within the U.S. Outside U.S., shipping will depend on existing rates. Payment in U.S. $ drawn on a U.S. bank or by credit card.

Name _____ Phone No. _____

Company _____

Street Address _____

City, State/Province, Code _____

VISA/MC/AE No. _____ Exp. Date _____

AUDIOVISUAL LIBRARY ORDER FORM

The use of the Audiovisual Library is a benefit for **Association Members only.** Limit your requests to five videos. Material from the Audiovisual Library can be checked out for 2 weeks only so that all Members can benefit from its use.

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Web Site: www.foodprotection.org

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First Name _____ M.I. _____ Last Name _____

Company _____ Job Title _____

Mailing Address _____

Please specify: ❒ Home ❒ Work

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Telephone # _____ Fax # _____

E-Mail _____ Date Needed _____

PLEASE CHECK BOX NEXT TO YOUR VIDEO CHOICE

(Allow 4 weeks minimum from date of request.)

DAIRY

- ❒ D1180 10 Points to Dairy Quality
- ❒ D1010 The Bulk Milk Hauler: Protocol & Procedures
- ❒ D1030 Cold Hard Facts
- ❒ D1040 Ether Extraction Method for Determination of Raw Milk
- ❒ D1060 Frozen Dairy Products
- ❒ D1070 The Gerber Butterfat Test
- ❒ D1080 High-Temperature, Short-Time Pasteurizer
- ❒ D1090 Managing Milking Quality
- ❒ D1100 Mastitis Prevention and Control
- ❒ D1105 Milk Hauler Training
- ❒ D1110 Milk Plant Sanitation: Chemical Solution
- ❒ D1120 Milk Processing Plant Inspection Procedures
- ❒ D1125 Ohio Bulk Milk Hauling
- ❒ D1130 Pasteurizer – Design and Regulation
- ❒ D1140 Pasteurizer – Operation
- ❒ D1150 Processing Fluid Milk (slides)

ENVIRONMENTAL

- ❒ E3010 The ABCs of Clean – A Handwashing & Cleanliness Program for Early Childhood Programs
- ❒ E3020 Acceptable Risks?
- ❒ E3030 Air Pollution: Indoor
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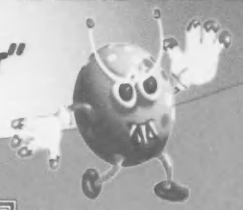

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