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A PUBLICATION OF THE INTERNATIONAL ASSOCIATION OF MILK, FOOD AND ENVIRONMENTAL SANITARIANS, INC. NOVEMBER 1999

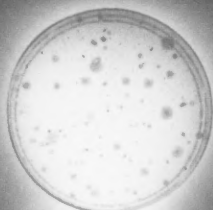
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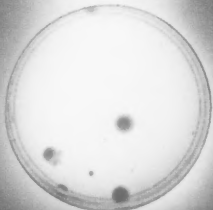
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DFES JOURNAL STAFF

David W. Tharp: *Executive Director*
E-mail: dtharp@iamfes.org

Lisa K. Hovey: *Managing Editor*
E-mail: lhovey@iamfes.org

Donna A. Bahun: *Production Editor*
E-mail: dbahun@iamfes.org

Pam J. Wanninger: *Proofreader*
E-mail: pwanninger@iamfes.org

IAMFES STAFF

David W. Tharp: *Executive Director*
E-mail: dtharp@iamfes.org

Lisa K. Hovey: *Assistant Director*
E-mail: lhovey@iamfes.org

Donna A. Bahun: *Design and Layout*
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E-mail: jcattanach@iamfes.org

Lucia Collison: *Association Services*
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E-mail: dloynachan@iamfes.org

Beth Miller: *Accounting Assistant*
E-mail: bmiller@iamfes.org

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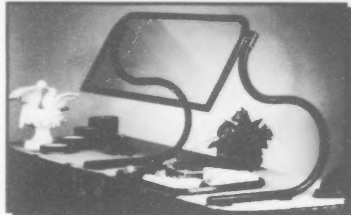
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PRISM Integrated Sanitation Management, 8300 Executive Center Dr., Miami, FL 33166-4680; 305.592.6312

Process Tek, 1991 Big Bend Dr., Des Plaines, IL 60016; 847.296.9312

Qualicon, A DuPont Subsidiary, P.O. Box 80357, Wilmington, DE 19880-0357; 302.695.2262

R-Tech, P.O. Box 64101, St. Paul, MN 55164-0101; 800.328.9687

Raven Biological Labs, 8607 Park Dr., Omaha, NE 68127; 402.593.0781

REMEL, Inc., 12076 Santa Fe Dr., Lenexa, KS 66215-3594; 800.255.6730

Rhodia, Inc., P.O. Box 592, Madison, WI 53701; 800.356.9393

Rochester Midland Corp., 333 Hollenbeck St., Rochester, NY 14621; 716.336.2360

Ross Laboratories, 3300 Stelzer Road, Columbus, OH 43219; 614.624.3785

Seiberling Associates, Inc., 94 North High St., Suite 350, Dublin, OH 43017-1100; 614.764.2817

Silliker Laboratories Group, Inc., 900 Maple Road, Homewood, IL 60430; 708.957.7878

Universal Sanitizers & Supplies, Inc., P.O. Box 50305, Knoxville, TN 37950; 423.584.1936

Warren Analytical Laboratory, 650 'O' St., P.O. Box G, Greeley, CO 80632-0305; 800.945.6669

Weber Scientific, 2732 Kuser Road, Hamilton, NJ 08691-9430; 609.584.7677

West Agro, Inc., 11100 North Congress Ave., Kansas City, MO 64153; 816.891.1528

Zep Manufacturing Co., 1310 Seaboard Industrial Blvd., Atlanta, GA 30318; 404.352.1680

Zylux Corporation, 1742 Henry G. Lane St., Maryville, TN 37801; 423.379.6016

QUOTATIONS

FROM JACK



By JACK GUZEWICH
IAMFES President

“The future looks very bright for the International Association for Food Protection”

If you have not already heard the news, the voting Membership overwhelmingly approved our new Constitution and Bylaws and our new name! The International Association for Food Protection name will be phased in over the next few months, with January 1, 2000 as our official date for the change. The change is intended to reflect the focus of the Members and identify the Association easily.

The International Association for Food Protection's mission will remain “to provide food safety professionals worldwide with a forum to exchange information on protecting the food supply.”

Peter Hibbard, IAMFES Teller Pro tem, reported the following voting results on accepting the amended and restated Constitution: number of ballots cast 1,118; number necessary for acceptance (2/3 of valid votes) 744; number voting yes 1,049; number voting no 67; and invalid votes 2. In other words, 94% of the voting Members voted approval of the changes. By accepting the Constitution and Bylaws the Members were also approving the name change.

The process began early in 1997 to solicit suggestions for a new Association name that would fit with the mission and the Members' interest. The proposed name was brought to the attention of attendees at both the 1997 and 1998 Annual Meetings. On August 3, 1999 at the IAMFES Annual Business Meeting in Dearborn, Michigan, IAMFES Members voted to accept the amended and restated Constitution, which allowed for the change. Ballots were then sent to the full Membership for approval and were returned by September 30, 1999. The ballot count was conducted on October 5, 1999.

I would like to thank the Members of the Executive Board past and present, Jenny Scott, James Dickson, Anna Lammerding, Robert Brackett, Randy Daggs,

Gale Prince, Michael Brodsky, Ann Draughon, Beth Johnson, Lawrence Roth, and John Bruhn) along with Members of the Constitution and Bylaws Committee (Michael Brodsky, Chairperson; Ron Case, Charles Price, and Robert Sanders) and the Tellers Committee (Dee Clingman, Teller Chairperson; Peter Hibbard, Teller Pro tem Chairperson; John Chrisman, Isa Hammad, and Jose Herrera) who worked to make these changes possible. Also I would like to thank the many Association Members who personally expressed their support for the changes to Members of the Executive Board, our staff in Des Moines or myself. Last but certainly not least, I would like to thank David Tharp, our Executive Director, and the staff in Des Moines (Lisa Hovey, Donna Bahun, Julie Cattanach, Lucia Collison, Bev Corron, Karla Jordan, Beth Miller, Pam Wanninger, Tanya Wheeler, and Frank Zuehlke) for their many long hours of work on this project. Without all of you, these changes would not have become a reality.

The future looks very bright for The International Association for Food Protection as we enter the new millennium. Not only do we have a new name, we have growing attendance at our Annual Meeting, growing numbers of manuscripts being submitted for publication in our journals, growing interest in establishing additional international affiliates, and growing Membership. We are building on a solid organization

that has grown from one that focused exclusively on milk safety issues to one that is the leader in addressing microbial food safety issues in all foods. Our organization is unique in bringing together food protection professionals from

industry, academia and government in a forum to exchange the latest research and applied scientific information on protecting the food supply. It is an exciting time to be working in the field of food protection and an exciting time to

be a Member of the International Association for Food Protection. I encourage you to invite your colleagues that are not already Members to join us in what promises to be a time of continued challenges and opportunities.

OFFICIAL NOTICE

I am in receipt of a Tellers report presenting the results of the vote taken on changes to the Constitution of the Association. On August 12, 1999 ballots were mailed to all IAMFES Members to allow you to vote for the amendment and restatement of the IAMFES Constitution that would effectively change the name of the Association to the International Association for Food Protection. It is with great excitement and pleasure that I inform all IAMFES Members that the results of the vote were positive and the name of the Association will be "International Association for Food Protection."

The following information has been taken from the Tellers report:

The count was completed on October 5, 1999.

Votes Cast:	1,118
Valid Votes Cast:	1,116
Number Necessary for Acceptance:	744
Votes For:	1,049
Votes Against:	67
Illegal Votes Received:	<u>2</u> *
Total:	1,118

Peter W. Hibbard, IAMFES Teller Pro tem, signed the report.

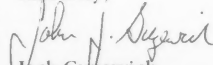
*Note: votes disqualified were not properly signed.

We are currently in a transition phase whereby the new name is being announced, stickers are being affixed to envelopes (announcing our new name), and preparations are under way to convert all materials to read "International Association for Food Protection." Please help publicize our new name by discussing the Association with your colleagues and contacts. Begin referring to the Association by its new name. This will help transition to the new name and will allow for a more unified, well-defined Association for many years to come.

We are excited by the challenge and the opportunities presented with the new Association name. We look forward to growing as we enter the Year of 2000. Effective January 1, 2000 we will be the International Association for Food Protection. Your leadership is needed to help build the Association stronger by encouraging colleagues and associates to join and to become active Members in the Association. This can only benefit each Member in a positive way.

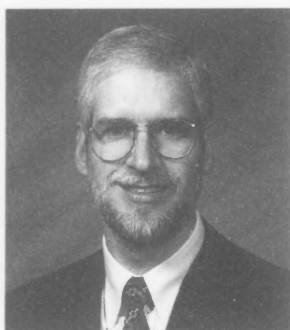
Thank you for your support and I look forward to seeing you at the International Association for Food Protection's Annual Meeting this coming August 6-9 in Atlanta, Georgia.

Sincerely,


Jack Guzewich

COMMENTARY

FROM THE EXECUTIVE DIRECTOR



By DAVID W. THARP
IAMFES Executive Director

“Help spread the news to other contacts that you know are already aware of IAMFES. Initiate conversation about the new name”

This month, I want to report on the IAMFES 86th Annual Meeting and give an update on changing the Association name. First, let's start with the Annual Meeting. In this issue of *Dairy, Food and Environmental Sanitation*, the Annual Meeting is recapped beginning on page 769. If you missed this year's Meeting, the summary will fill you in on what you missed; if you were able to attend, you'll enjoy reliving the Meeting through the narrative!

Once again, it is my pleasure to report on the Annual Meeting, completed last August in Dearborn, Michigan. We had 1,131 attendees, which was just short of last year's record attendance. It was very rewarding to see so many familiar faces along with a great number of new attendees. There were more than 160 new Members joining as a result of the Annual Meeting; that was also just short of our record set in 1998. A new Member reception was held on Saturday afternoon to inform attendees about IAMFES, the Annual Meeting, and committee meetings that were held the following day. First-time attendees were also welcome to attend the reception and learn about the Association and our Annual Meeting.

For 1999, we had a record level of sponsorship received from many fine companies and organizations, for which we are truly thankful. Major supporters included Qualicon, Underwriter's Laboratories, Inc., SC Johnson Professional, NSF International, Eaton Hall Expositions, Warren Analytical Laboratory, Meijer, Inc., Michigan Department of Agricul-

ture, The Pillsbury Company, Gerber Products Company, NESTLÉ USA, Inc., and Rhodia, Inc. In addition to cash sponsorship, 3M Microbiology Products, St. Julian Winery, The Kroger Co., Country Fresh, Dean Foods, and Michigan State University contributed a variety of products or materials for the Meeting. Many other organizations and employers supported speakers' travel to the IAMFES Annual Meeting. Thank you! Thank you to everyone listed above and to all organizations and individuals who helped the 86th Annual Meeting to be a resounding success!

The Michigan Environmental Health Association (MEHA), led by their co-chairpersons Terry Anderson and Chuck Lichon, were well prepared and provided excellent hospitality throughout the Meeting. It was a pleasure to work with Terry, Chuck, and all the Michigan volunteers. What a group of enthusiastic professionals! Another group that gives willingly of their time is the Program Committee. This year, Jeff Farber chaired the Committee and directed their activities. After many hours of dedicated work, the Committee fine-tuned the program to include up-to-date information for presentation to attendees. Thanks to MEHA and the IAMFES Program Committee for contributing to the success of this year's Meeting.

Thanks are extended again this year to the International Life Sciences Institute (ILSI) for their continued support of sponsoring three symposia in Dearborn. We are fortunate to have established an ongoing relationship with ILSI's

Technical Committee on Food Microbiology back in 1993, and we look forward to nurturing the relationship for many, many more years.

As reported earlier, a positive vote was received from Members present at the Annual Business Meeting when presented with a restated and amended Constitution and Bylaws. This prompted a ballot mailing to all Members to register their vote on approving the Constitutional changes. The vote results are reported on page 739 and in President Jack Guzewich's column this month. By approving the Constitution and Bylaws, Members also approved changing the Association name to the International Association for Food Protection.

The passage of this vote and acceptance of the restated and amended Constitution and Bylaws are the culmination of a two-and-

a-half-year process of discussing, receiving feedback, promoting, and voting on the proposed name change. Now begins the notification of our Members, vendors, and suppliers and the many organizations that we share information with on a daily basis.

You might ask, "How can I help?" Let me suggest just three ways: (1) Keep an eye out for your Membership renewal invoice and pay your dues promptly. Note that after the first of the new year, our invoices will say "International Association for Food Protection" and your check should be made payable accordingly. You may have to notify your accounting department of our former name even though it will be on the invoice. (2) Help spread the news to other contacts who are already aware of IAMFES. Initiate conversation about the new name. Make others aware of the positive change. (3) Commit yourself to recruiting a

minimum of two new Members to join the new International Association for Food Protection during the next year. Just look at the potential growth we can achieve if each Member were to share with one or two individuals their enthusiasm for the Association and serve as a mentor for new Members.

To summarize for this month, I want to take this opportunity to thank you for your support of IAMFES and the Annual Meeting in Dearborn, and your overwhelming support in accepting the new name "International Association for Food Protection!" Our staff and the Executive Board are looking forward to the year 2000 and the opportunities for growth with our new name. With your continued support, we will continue to grow and become stronger and we will continue to "Advance Food Safety Worldwide."



August 6-9, 2000
Hilton Atlanta
Atlanta, Georgia

Join us in Atlanta, Georgia for the world's most comprehensive food safety conference. Over 1,200 of the foremost industry, academia and government authorities from around the world will be attending the conference.

The Annual Meeting includes over 250 presentations including symposia, technical sessions, and posters. Learn the current trends and new developments in the industry and how to address issues facing food safety professionals daily.

Proposed Symposia for 2000

- Bioterrorism and Food Protection
- Dairy Plant HACCP
- Surveillance of Foodborne Disease in Latin America and the Caribbean
- Safe Production of Sprouts from Seeds
- HACCP-based Strategies for Seafoods.

Network with industry professionals in the Exhibit Hall. Interact with more than 90 exhibitors displaying the latest testing materials, laboratory equipment, sanitation products, pest control and more!

Plan now to attend the world's leading food safety conference - the 87th Annual Meeting! Visit our Web site at www.foodprotection.org for the latest Annual Meeting information or contact the Association office at 800.369.6337; 515.276.3344; Fax: 515.276.8655; E-mail: info@foodprotection.org.

Good Manufacturing Practices for Improving the Microbiological Quality of Beef Variety Meats

R. J. Delmore, Jr.,² J. N. Sofos,^{1*} K. E. Belk,¹ W. R. Lloyd,³ G. L. Bellinger,⁴ G. R. Schmidt,¹ and G. C. Smith¹

SUMMARY

Bacterial counts and incidence of pathogens were determined for samples of 17 beef variety meats obtained after trimming/washing but before chilling/freezing (Site A) and after chilling/freezing (Site B) during normal production shifts in six packing plants. At Site A, average aerobic plate counts (APC) were highest (5.0-5.2 log CFU/g) for lips, abomasum, and tongue; average total coliform counts (TCC) were highest (2.7-3.4 log CFU/g) for large intestine, abomasum, and small intestine; and average *Escherichia coli* counts (ECC) were highest (2.4-3.2 log CFU/g) for large intestine, small intestine, and abomasum. At Site B, average APC were highest (5.7-6.2 log CFU/g) for flexor tendons, omasum, and lips; average TCC were highest (3.3-3.9 log CFU/g) for flexor tendons, cheek meat, and large intestine; and average ECC were highest (3.0-3.4 log CFU/g) for flexor tendons, large intestine, and cheek meat. APC, TCC and ECC were higher at Site B than at Site A for 15 of the 17 variety meats tested. Average pathogen incidence on variety meats at Site B was 0.0% for *Escherichia coli* O157:H7, 0.8% for *Salmonella* spp., and 4.6% for *Listeria monocytogenes*. During this study, numerous opportunities were identified for development of Good Manufacturing Practices that could improve the microbiological quality of beef variety meats.

INTRODUCTION

Variety meats (i.e., edible offal) have traditionally been considered to have poor microbiological quality and a short shelf life when distributed as chilled products (8). Although some variety meats have a high microbial load, the real issue with regard to keeping qualities of variety meats is poor handling techniques and improper temperature control rather than the inherent characteristics of the tissue (7). Hanna et al. (10) studied effects of refrigeration, freezing, and thawing on the microflora of beef liver, kidney, and heart with initial aerobic plate counts of 2.0 to 2.8, 2.5 to 3.0, and 1.7 to 2.9 log CFU/cm², respectively, and reported that microbial counts did not greatly increase when variety meats were promptly and properly refrigerated. Sheridan and Lynch (15) reported that bacterial counts on beef (liver, kidney, heart, tongue, and diaphragm) following overnight (14-h) chilling were as high as 7.9 log CFU/g on liver and 6.6 log CFU/g on tongue. Bacterial counts on variety meats increased following each offal handling procedure (excision, placement on evisceration table, trimming, and overnight chilling), leading Sheridan and Lynch (15) to con-

clude that inappropriate handling and improper chilling were among the most important factors in increasing bacterial levels on beef offal.

Although their microbiological quality may be low, variety meats are of significant economic value for the United States meat industry. Based on United States Department of Agriculture (www.ams.usda.gov) data and meat industry estimates, the value of 17 variety meats from steers was determined to be approximately \$29 wholesale per animal in June 1999. This study determined microbiological profiles of 17 beef variety meats obtained during normal production shifts, from six commercial beef packing plants, after trimming/washing, and during packaging (Site A) and after chilling (Site B). In addition, during the plant visits for sample collection, numerous opportunities were identified for development of Good Manufacturing Practices that could potentially improve the microbiological quality of beef variety meats.

MATERIALS AND METHODS

Beef variety meats and sampling

Products sampled for microbiological analysis included abomasum, cheek meat, flexor tendon, heart, honeycomb tripe, large intestine, lips, liver, mountain chain tripe, omasum, oxtail, rumen tripe, small intestine, sweetbread, tongue, tongue trim, and weasand. Samples of these variety meats were obtained from six beef packing plants in the United States. The selected packing plants harvested steers/heifers and/or cows/bulls, represented a broad geographic area of the United States, were of medium (90 animals per hour) to very large (375 animals per hour) size in slaughter capacity, and were exporters of beef variety meats. Ten samples of each variety meat, as available, were collected from each plant in a three-day period during the summer and fall seasons.

Variety meat samples were obtained at two locations in each packing plant during a normal production shift. These locations were the point at which each variety meat was boxed or racked, after trimming and washing but before chilling or freezing (Site A), and the point at which each variety meat was frozen or chilled and would be ready for shipment (Site B). Five plants froze (-26 to -28°C) most of their variety meats before distribution (12-18 h), and one plant chilled (4.4°C) its product overnight before shipment. Because not all plants routinely produced all 17 variety meats, the number of samples collected during the week of sampling was not the same for all variety meats. In plants where "beef cow variety meats" were labeled differently from "beef variety meats," both were sampled.

Samples were removed from whole, intact variety meats with use of aseptic sampling techniques and with equipment sanitized as follows: The sampling equipment was submerged in 82.2°C water for 10 s and allowed to dry for 10-15 s before use. Samples were placed in a sterile, labeled bag (Whirl-Pak®, Nasco, Ft. Atkinson, WI), held under refrigeration (1.7-4.4°C) during sample collection, packaged in pre-chilled insulated shipping containers with chemical refrigerant packs not in direct contact with the samples, and sent within 8 h of collection via overnight air express carrier to the microbial testing laboratory.

Microbiological analyses

Upon receiving samples, the microbiological laboratory measured the temperature of the samples in each box by inserting a thermometer probe between two packages without puncturing them. Any temperature-abused samples (samples >4°C) were to be discarded, but none were identified in this study. Variety meats were aseptically removed from the sample bag and placed on sterile aluminum foil, after which portions for analysis were cut with a sterile scalpel. Sizes of portions to be analyzed for each

product were: for abomasum, heart, honeycomb tripe, liver, and rumen tripe, a 10 cm × 10 cm piece; for cheek meat and tongue trim, about 200 g; for large intestine, mountain chain tripe, small intestine, and weasand, a 20-cm-long piece; for flexor tendon, one whole tendon (12-cm long, 200 g in weight); for lips, 1/2 of a lip, cut transversely; for omasum, 1/4 of an omasum; for oxtail, about 3 cm from the base of the tail; for sweetbread, 1/2 of a whole sweetbread; and for tongue, 1/4 of the top surface, about 0.5 cm deep.

Samples were weighed to allow calculation of log bacterial counts/g of product. A surface rinsing procedure was employed to dislodge bacteria from the irregular surface of each variety meat. A measured quantity (100 ml) of a buffer diluent (Butterfield's phosphate buffer, BPB, Difco Laboratories, Detroit, MI) was added to each sample in the Whirl-Pak® bag, which was then sealed, and the samples were rinsed with a rocking motion for 30 shakes (approximately 1 min).

Samples from both plant sites, A and B, were evaluated for aerobic plate counts (APC), total coliform counts (TCC), and *Escherichia coli* counts (ECC), using BPB and Petrifilm™ (3M Microbiology Products, St. Paul, MN). Petrifilm™ plates for quantifying APC were incubated for 48 h at 35°C, and colonies were counted manually. The colonies growing on Petrifilm® *E. coli* Count plates were counted manually after 24 h (ECC) and 48 h (TCC) of incubation at 35°C, according to instructions provided by the supplier. Only the samples taken from Site B were evaluated for the presence of *Salmonella* spp., using procedures described in the FSIS-USDA Microbiology Laboratory Guidebook (4), while samples were analyzed for *Listeria monocytogenes* according to the method of McClain and Lee (13). Presence of *E. coli* O157:H7 on variety meat samples was determined using an enzyme immunoassay (Biocontrol®, Bothell, WA).

TABLE 1. Aerobic plate counts of beef variety meats at bagging prior to chilling/freezing (A) and ready to ship following chilling/freezing (B)

Variety meat	Number of samples	Aerobic Plate Counts (log CFU/g)			
		A		B	
		Min-Max	Mean	Min-Max	Mean
Abomasum	20	3.0-7.1	5.1	3.6-7.1	5.1
Cheek meat	58 (A); 60 (B)	1.0-6.2	4.5	3.7-7.3	5.2
Flexor tendon	20	3.4-4.7	3.9	4.6-7.1	6.2
Honeycomb tripe	60	2.5-7.3	4.4	2.8-7.4	5.1
Heart	70	1.7-6.7	3.0	2.4-7.1	4.2
Large intestine	30	2.7-7.1	4.7	3.1-7.0	4.9
Lips	72 (A); 70 (B)	2.9-6.4	5.2	4.2-7.3	5.7
Liver	70	1.6-5.6	3.4	2.7-7.2	4.5
Mt. chain tripe	20	2.5-6.4	4.1	3.8-6.8	5.0
Omasum	40	2.2-6.4	3.9	3.3-7.4	6.0
Oxtail	70	1.5-6.0	3.9	2.3-7.1	4.7
Rumen tripe	70	2.1-7.3	3.8	1.0-7.4	4.9
Sweetbread	30	3.1-6.5	4.2	2.5-7.0	4.3
Small intestine	30	2.5-6.1	4.5	2.3-6.5	4.4
Tongue	70	2.9-6.5	5.0	3.1-7.4	5.6
Tongue trim	40	1.8-6.9	3.6	2.0-7.3	4.3
Weasand	60	1.0-7.1	4.5	3.4-7.0	5.0

Observations concerning in-plant sanitation and handling practices

During in-plant data collection, extensive notes were taken regarding the preparation and handling procedures used to harvest, process, and chill/freeze variety meats. These were used, along with information gained from many hours of in-plant observation, to identify procedures/practices that have the potential to improve the microbiological quality of variety meats.

Statistical analysis

Bacteriological counts were transformed into log CFU/g before computing means and performing

statistical analysis. Data were analyzed using analysis of variance (ANOVA) and the general linear model (GLM) procedures of SAS[™] (14). When results of F-tests were significant ($P \leq 0.05$), differences between treatment least squares means were separated using pairwise *t*-tests.

RESULTS AND DISCUSSION

Extent of microbiological contamination

As expected, counts (log CFU/g) for individual beef variety meats were highly variable (Tables 1 to 3). The APC of weasand, rumen tripe, and cheek meat samples were the

most variable at site A, ranging in log CFU/g from 1.0 to 7.1, from 2.1 to 7.3, and from 1.0 to 6.2, respectively (Table 1). The lowest average APC were detected on heart (3.0), and liver (3.4), while the highest average APC were found on lips (5.2), abomasum (5.1), and tongue (5.0). Tongue (1.2), heart (1.3), rumen tripe (1.4), and omasum (1.4) had the lowest average TCC, while the highest average TCC were found on large intestine (3.4), abomasum (2.7), and small intestine (2.7). The lowest average ECC were obtained from tongue (0.9), sweetbread (0.9), and flexor tendon (1.0), while the highest average ECC were obtained from large intestine (3.2), small intestine (2.5), and abomasum (2.4).

TABLE 2. Total coliform counts of beef variety meats at bagging prior to chilling/freezing (A) and ready to ship following chilling/ freezing (B)

Variety meat	Number of samples	Total Coliform Count			
		A		B	
		Min-Max	Mean	Min-Max	Mean
Abomasum	20	1.0 - 6.0	2.7	1.1 - 5.1	3.0
Cheek meat	58 (A); 60 (B)	0.9 - 4.8	2.2	1.6 - 6.3	3.5
Flexor tendon	20	0.6 - 3.2	1.7	0.6 - 6.0	3.9
Honeycomb tripe	60	0.8 - 6.3	1.9	1.0 - 6.3	2.5
Heart	70	0.7 - 3.6	1.3	0.9 - 4.9	2.2
Large intestine	30	1.9 - 5.7	3.4	1.6 - 5.9	3.3
Lips	72 (A); 70 (B)	1.0 - 4.9	2.2	1.1 - 6.0	3.2
Liver	70	0.9 - 3.7	1.8	0.8 - 6.4	2.6
Mt. chain tripe	20	0.8 - 2.1	1.6	0.8 - 5.1	2.5
Omasum	40	0.9 - 3.1	1.4	0.9 - 6.5	2.9
Oxtail	70	0.3 - 4.7	2.0	0.9 - 5.3	2.7
Rumen tripe	70	0.7 - 3.8	1.4	0.9 - 4.6	2.2
Sweetbread	30	0.6 - 4.0	1.9	0.5 - 5.1	2.1
Small intestine	30	1.0 - 5.1	2.7	1.2 - 5.7	2.5
Tongue	70	0.6 - 4.8	1.2	0.7 - 6.6	2.0
Tongue trim	40	0.8 - 5.8	1.7	0.9 - 5.0	2.4
Weasand	60	1.0 - 6.0	2.4	1.1 - 6.2	2.9

As had been hypothesized, most average microbiological populations were numerically higher at Site B than Site A (Tables 1 to 3). At Site B, the APC of rumen tripe and tongue trim were the most variable, ranging from 1.0 to 7.4 for tripe and 2.0 to 7.3 for tongue, respectively (Table 1). The lowest average APC were detected on heart (4.2), sweetbread (4.3), and tongue trim (4.3), and the highest average APC were found on flexor tendon (6.2), omasum (6.0), and lips (5.7). The lowest average TCC (Table 2) were obtained from

tongue (2.0) and sweetbread (2.1) and the highest average TCC from flexor tendon (3.9), cheek meat (3.5), large intestine (3.3), and lips (3.2). The lowest average ECC (Table 3) were for sweetbread (1.3) and tongue (1.4), while the highest average ECC were obtained from flexor tendon (3.4) and large intestine (3.2). Hanna et al. (10) stored beef livers, kidneys and hearts from packing plants at 2°C and reported increases of 0.20 to 1.72 log CFU/cm² for APC at five days of storage in 8 of 9 comparisons. The results

indicate that greater care must be exercised and good manufacturing practices must be followed to prevent bacterial proliferation between the time of packaging/boxing and the point at which the boxed product is chilled/frozen.

Traditionally, variety meats have been regarded as being of intrinsically poor microbiological quality but, although that may be true of head meats, unavoidably contaminated by bacteria from the mouth and gullet, it is not true of other variety meats (9). The poor micro-

TABLE 3. *Escherichia coli* counts of beef variety meats at bagging prior to chilling/freezing (A) and ready to ship following chilling/ freezing (B)

Variety meat	Number of samples	<i>Escherichia coli</i> Count			
		A		B	
		Min-Max	Mean	Min-Max	Mean
Abomasum	20	1.0 - 6.0	2.4	1.0 - 4.9	2.7
Cheek meat	58 (A); 60 (B)	0.9 - 4.6	1.6	0.9 - 6.3	3.0
Flexor tendon	20	0.6 - 1.7	1.0	0.6 - 6.0	3.4
Honeycomb tripe	60	0.8 - 6.3	1.4	0.7 - 6.3	1.8
Heart	70	0.7 - 3.2	1.1	0.8 - 4.7	1.8
Large intestine	30	1.9 - 5.2	3.2	1.3 - 5.7	3.2
Lips	72 (A); 70 (B)	1.0 - 4.9	1.7	1.1 - 4.9	2.6
Liver	70	0.9 - 2.8	1.5	0.8 - 6.4	2.2
Mt. chain tripe	20	0.8 - 2.1	1.4	0.8 - 5.1	2.3
Omasum	40	0.8 - 2.1	1.1	0.9 - 6.5	2.3
Oxtail	70	0.2 - 4.7	1.5	0.4 - 5.3	2.1
Rumen tripe	70	0.7 - 2.0	1.1	0.9 - 4.2	1.7
Sweetbread	30	0.5 - 1.6	0.9	0.5 - 3.7	1.3
Small intestine	30	1.0 - 5.1	2.5	1.2 - 5.7	2.4
Tongue	70	0.6 - 3.6	0.9	0.7 - 4.4	1.4
Tongue trim	40	0.8 - 5.0	1.3	0.9 - 4.9	1.6
Weasand	60	1.0 - 5.1	2.0	1.0 - 5.7	2.4

biological condition often found in variety meats commonly results from inadequately controlled cooling processes (11). Slow cooling is often inevitable in commercial processes because offals are collected into bulk containers or into large boxes, which are assembled in stacks before being subjected to chilling or freezing (8). Even in freezers of high refrigerative capacities, product at the centers of large containers or stacks will cool only slowly (1), affording opportunities for large increases in bacterial numbers. Rapid freezing, as with cryo-

genic liquids, will result in only small reductions of bacterial numbers, but slow freezing, as will be inevitable with boxed product, can be expected to result in reductions in the numbers of Gram-negative bacteria of an order of magnitude or more (2, 9).

Hygienic situations are more often mismanaged in the cooling of variety meats than in the cooling of carcasses (9). If variety meats are hung on racks so that their surfaces are allowed to dry, bacterial numbers would be expected to decline (9). When bacterial numbers de-

cline because of surface drying, the decrease in *E. coli* counts is larger than the decrease in total counts, because of the greater sensitivity to drying of Gram-negative than of Gram-positive organisms (9, 12). Unfortunately, most variety meats are collected into bulk containers or packed into boxes soon after being separated from the carcass, with some types, notably head meats, commonly being washed with cold water before they are packed (9).

Most variety meats have a surface pH above 6.0, which presents a favorable environment for growth

of microflora (9); thus, during cooling, bacterial growth will be restrained only by temperature and by the anaerobic conditions that develop within the mass of bulked offals (5). When temperatures remain close to, or above, 30°C, growth of *E. coli* is favored over that of other organisms (9) and a flora dominated by *E. coli* develops (6); as temperatures are lowered, growth of lactic acid bacteria is favored (9).

Effects of sampling site (Site A or Site B), plant, and the sampling site-by-plant interaction on bacterial counts (APC, TCC and ECC) of the 17 variety meats were determined (not presented in tabular form). There were statistically significant ($P \leq 0.05$) differences between sites for 40 of 51 comparisons, and for 48 of 51 comparisons of counts, when significant differences occurred, means were higher at Site B than at Site A. Significant differences in counts between plants demonstrated that possibilities exist for improving the bacteriological quality of beef variety meats, perhaps by improving Sanitation Standard Operating Procedures and by employing Good Manufacturing Practices in the handling of such products or by combining these changes with the use of bacterial decontamination systems (17).

Escherichia coli O157:H7 was not isolated from any of the 830 variety meat samples tested in this study, whereas *Salmonella* spp. occurred most frequently on mountain chain tripe (5.0%), sweetbread (3.3%), and tongue trim (2.5%) and least frequently on abomasum, flexor tendon, heart, honeycomb tripe, large intestine, lips, omasum, small intestine, tongue, and weasand, all of which had 0.0% incidence of *Salmonella* spp. (Table 4). *Salmonella* spp. were detected on 7 of the 17 variety meat products, for an overall rate of 0.8%. *Listeria monocytogenes* was present on 9 of 17 variety meat products, and incidence was highest on abomasum (15.0%), cheek meat (15.0%), lips (14.3%), mountain chain tripe

(10.0%), and oxtail (10%). Data for incidence of foodborne pathogens on beef variety meats suggest that in-plant sanitation and hygiene practices must be improved to lower the occurrence of *L. monocytogenes*, process control must be improved to lessen the probability of finding *Salmonella* spp., and decontamination treatments must be identified and used to further reduce the likelihood of detecting and transmitting foodborne pathogens to consumers in boxed variety meats.

Hanna et al. (10) characterized the microflora on beef livers, kidneys, and hearts obtained from packing plants and found a host of bacteria, including *Staphylococcus* and *Streptococcus*. *Salmonella* spp. were found on 40.3% of beef hearts, 68.9% of beef lungs, and 28.9% of beef rums from a central market in Germany (16). No *Yersinia enterocolitica* were present on 40 samples of beef hearts, tongues, and kidneys from a packing plant in Baltimore, MD (18).

It is important to identify improved Good Manufacturing Practices and/or bacteriological decontamination systems that are capable of improving the microbiological quality of problematic variety meats. Special attention must be paid to reducing APC on lips, cheek meat, flexor tendon, omasum, tongue, and weasand, especially at Site B, TCC on large intestine, cheek meat, and lips, especially at Site B, and ECC for abomasum, large intestine, lips, liver, small intestine, weasand, cheek meat, honeycomb tripe, and rumen tripe at both Sites A and B. Improvements in Good Manufacturing Practices need to be identified at every step of preparation and handling during harvesting, processing and chilling/freezing of beef variety meats, especially—but not exclusively—those that have direct contact with feed and/or the products of feed digestion (ingesta). In addition, bacteriological decontamination systems need to be identified that can be used to remove or inactivate the bacteria present on beef variety meats because of natural occurrence or inadvertent contamination.

Observations concerning in-plant sanitation and handling practices

Handling procedures, presence of microbiological decontamination techniques, and overall plant sanitation practices used in various plants were documented during sample collection. From these observations, several areas of opportunity to improve the microbiological quality of beef variety meats were identified. Changes in procedures and practices could substantially improve the bacteriological quality of these byproducts. In the discussion that follows, some items that warrant attention are identified. In general, most of the variety meat processing systems produced very acceptable finished products but, in some of these systems, opportunities exist to improve sanitation and handling procedures and Good Manufacturing Practices.

Product transfer chutes. Many plants used stainless steel chutes to transfer variety meats from the slaughter floor to the variety meat processing area. These chutes may become contaminated from "dirty" (microbiologically or physically) variety meats and are usually in an environment that can be very warm (21-38°C), conditions which may allow bacteria to proliferate on the chute surfaces during a single production shift and contaminate variety meats that later travel down the same chute. Possible solutions to this problem include redesigning the handling system to replace chutes with a chain system to move product and installing an organic acid drip or spray system that will both facilitate product movement down the chute and reduce attachment of bacteria to the chute surface.

Fresh product holding time. Some products (e.g., weasand and flexor tendon) were held too long on the slaughter floor before being transported to the processing area, and products were sometimes held too long on the processing floor, waiting for personnel to become available to process or move them. This holding time, in a less-than-

TABLE 4. Incidence of specific pathogens on each of 17 beef variety meats in nine plants

	<i>Escherichia coli</i> O157:H7			<i>Salmonella</i> Species		<i>Listeria</i> <i>monocytogenes</i>	
	n	Positive ¹	%	Positive ¹	%	Positive ¹	%
Abomasum							
Samples	20	0	0	0	0	3	15.0
Plants	2	0	0	0	0	1	50.0
Cheek meat							
Samples	60	0	0	1	1.7	9	15.0
Plants	6	0	0	1	16.7	4	66.7
Flexor tendon							
Samples	20	0	0	0	0	0	0
Plants	2	0	0	0	0	0	0
Heart							
Samples	70	0	0	0	0	0	0
Plants	6	0	0	0	0	0	0
Honeycomb tripe							
Samples	60	0	0	0	0	1	1.7
Plants	6	0	0	0	0	1	16.7
Large intestine							
Samples	30	0	0	0	0	0	0
Plants	3	0	0	0	0	0	0
Lips							
Samples	70	0	0	0	0	10	14.3
Plants	6	0	0	0	0	4	66.7
Liver							
Samples	70	0	0	1	1.4	0	0
Plants	6	0	0	1	16.7	0	0
Mt. chain tripe							
Samples	20	0	0	1	5.0	2	10.0
Plants	2	0	0	1	50.0	1	50.0
Omasum							
Samples	40	0	0	0	0	0	0
Plants	4	0	0	0	0	0	0

TABLE 4. *continued*

Oxtail							
Samples	70	0	0	1	1.4	7	10.0
Plants	6	0	0	1	16.7	1	16.7
Rumen tripe							
Samples	70	0	0	1	1.4	0	0
Plants	6	0	0	1	16.7	0	0
Small intestine							
Samples	30	0	0	0	0	1	3.3
Plants	3	0	0	0	0	1	33.3
Sweetbread							
Samples	30	0	0	1	3.3	0	0
Plants	3	0	0	1	33.3	0	0
Tongue							
Samples	70	0	0	0	0	2	2.9
Plants	6	0	0	0	0	1	16.7
Tongue trim							
Samples	40	0	0	1	2.5	3	7.5
Plants	4	0	0	1	25.0	1	25.0
Weasand							
Samples	60	0	0	0	0	0	0
Plants	6	0	0	0	0	0	0
Total							
Samples	830	0	0	7	0.8	38	4.6

¹Number of positive samples from those tested or number of plants with at least one positive sample.

ideal environment, maximizes the potential for multiplication of bacteria that may be present from human handling. Product holding time limits on the slaughter and processing floor must be implemented and enforced at all times. Until ambient temperatures in both slaughtering/dressing and variety meat processing areas are reduced to make them less favorable for bacterial proliferation, variety meats must be held on the floor for the shortest time possible.

This does not mean that products should be processed as fast as possible with no regard to other considerations, but that variety meats cannot be allowed to remain in a lug or other container for a lengthy time while waiting to be processed.

Personal equipment sanitation. In many cases, no areas were available in which employees could adequately clean their aprons, gloves, knives, and other personal equipment. As a result, equipment

could become encrusted with blood and product residue. In general, rubber or latex, not cotton, gloves should be, and are, commonly employed; cotton gloves may be used inside rubber gloves. Use of rubber or latex gloves is a good practice for reducing the spread of contamination among beef products in a plant, provided that they are washed often enough to keep their surfaces clean and sanitary. Specific areas must be provided in which employees can

adequately wash and clean their personal equipment such as knives, gloves, etc. This area must be large enough so that all employees moving from work stations to a break room or cafeteria can have space in which to clean their equipment thoroughly before returning to work.

Sterilizers. Hot water "sterilizers" at temperatures above 82.5°C are used extensively in meat processing plants for quick decontamination of knives and other hand-held equipment. In many instances, sterilizers either were not present or were not being used continuously or correctly in the variety meat processing area. Some sterilizers had inadequate water levels, with large amounts of visible contamination present, and some were located in areas that were not close enough to be used effectively by employees. Sterilizers must contain adequate water to allow for complete immersion of the whole knife. Most importantly, sterilizers must be located so that employees can reach and readily use them. Employees should be instructed to use sterilizers regularly and should be educated in their correct use.

Cross-contamination. Some variety meats (e.g., tripe) were processed with hot water and chemicals and were most likely cleaner after processing than when they were being removed from the animal. However, as these products were being removed from the scalding they were sometimes cross-contaminated. In several instances, blood from the head-meat workup tables was allowed to contaminate scalded tripe, and/or over-spray from the washing of other products came in contact with the scalded tripe. Variety meats that have been scalded or cleaned must not be allowed to come into contact with contaminated materials such as blood or water splashed from the floor or with contaminated facilities and/or equipment.

Condensation. Condensate on overhead surfaces in the variety meat processing area can be a source of bacteriological contamination

during production (19). It is common policy to attempt to remove condensate by wiping the overhead surfaces with sponges or mops. In some instances, it was observed that air hoses, connected to long pipes, were used to blow the condensate from the surfaces. These removal techniques can cause contamination if the sponges and mops are not clean and/or if blowing of the condensate allows it to fall onto product or facility/equipment surfaces. Condensate should never be blown from overhead surfaces when product is present. This condensate, which can contain bacteria, could contaminate the product and present a food safety hazard. Condensate can be wiped from surfaces with a sanitized disposable sponge attached to a pole with a spring clamp. Using a sanitized sponge will prevent spreading of additional bacteria from a previously contaminated sponge. Use of a mop should be avoided unless the mop can be suitably sanitized. Most importantly, the cause of the condensation should be eliminated or minimized through proper design, airflow, venting or temperature control.

Pallet spacing and freezers. Many well maintained high-velocity blast freezers were operating successfully, effectively reducing the core temperature of a pallet of variety meats in an acceptable period of time. However, other freezers were overstocked with product, with the result that airflow around the hot product was severely restricted. In addition, it was observed on one occasion that the mechanism used for transporting boxed product to the freezer failed and, because of that, finished product was exposed to room temperatures for approximately 2 h. Pallets must be placed in the freezer promptly and in a manner that will allow for maximum airflow around the product. Ideally, boxes to be stored frozen would be frozen (via a spiral chilling type system) before palletization.

Scaling. Certain variety meats are scaled to obtain a catch weight, whereas others are scaled to obtain a fixed net weight. For products that are to be labeled, in a container and to a predetermined net weight, amounts of a product in that container must be adjusted to arrive at the correct weight, either by removing or adding pieces of product. It is a common procedure in the scaling area to hold small quantities of products for use in achieving a specific net weight. These products sometimes were left too long and/or without proper refrigeration in the scaling area; such protocol is likely to compromise the microbiological quality of products. If containers are labeled based upon a predetermined net weight, then the small pieces of product that are stockpiled in the processing area and used to achieve the acceptable weight should not be stored at, or near, the scaling area for extended periods of time. Using small pieces of product that have been temperature-abused, handled extensively, and generally mistreated is likely to contaminate other product.

Rack sanitation. Stainless steel racks are very commonly used for hanging, or suspending, oxtail, liver, and tongue during cooling. This procedure is appropriate because it allows for airflow around the product and thus increases the cooling rate. However, most of the plants that used this system had no provisions for cleaning the racks after removal of chilled product, which could lead to contamination of variety meats. In most instances, the main obstacle to proper cleaning was the shortage of racks; after chilled product was removed, there was not adequate time to clean the rack before reloading it with fresh product. All equipment, including racks, must be thoroughly cleaned and sanitized before being reloaded with more variety meats.

Rework. Rework can be derived from many sources, including damaged boxes in the plant and returned goods. In many plants, specific policies dictated that any rework product must be handled before the end of the shift. However, some plants had no formal rework policy, and

product that was several days old was placed in boxes with a new day's production and labeled as such. Immediate disposition of rework must be made a priority. Rework from boxes whose integrity has been compromised and product that has come in contact with pallets must be discarded.

Large intestine. Personnel in several plants reported problems of fecal contamination on the fat side of the large intestine, which occurred when the large intestine was flushed with water, when it sometimes broke or split so as to allow ingesta to contaminate the product. It is practically impossible to remove ingesta, once present, from the fat side of the large intestine. If the intestines break during flushing, attempts to remove the ingesta are futile; the product should be considered inedible and discarded.

Hand inspection. Several plants used a series of repeated manual piece-by-piece inspections to detect visible defects in products such as check meat and lips. In many cases, this type of inspection was conducted with little regard for cross-contamination. In some plants, little attention was paid to the cleaning of gloves as the worker moved from one box to another, and workers were not careful about handling cardboard boxes with gloved hands. Piece-by-piece inspection may be warranted when it assures removal of bone chips or physical defects from the product, but specific precautions must be taken if every piece of product in a box is going to be physically handled. Latex or rubber gloves must be continuously washed and sanitized or decontaminated, and, to minimize spreading contamination, in no instance should the outside of a box be touched with gloves and then the product be handled without the gloves being sanitized between the two operations.

Handling. Several plants made use of a chain, often referred to as a pluck chain, to transport variety meats from the slaughter floor to the processing area. Use of pluck chains

allows products to be treated as individual units, minimizing cross-contamination. However, in most systems, this advantage was negated because the products were knocked off the chain and piled up on a table for further processing. It would be advantageous if all variety meats were treated as separate units throughout the entire processing sequence, although some products, such as lips and sweetbread, are too small to be handled in this manner. Some plants used a pluck chain to carry liver to the processing area, where it was removed from the hook and placed on a contaminated table, in a pile with other livers that were to be trimmed. In contrast, other plants trimmed the liver on the inspection table, transported it via a pluck chain to the packaging area, bagged it on the chain (using a bag to remove the liver), and then boxed it; this latter process unquestionably decreases possibilities of cross-contamination.

Work areas. Two areas that presented problems with regard to working environment were temperature and work surfaces. It is reasonable to expect that a processing room in which the ambient temperature is approximately 21-27°C and working surfaces that are covered with meat residue may negatively impact the bacteriological quality of the products they contact. With improvements that have occurred in refrigeration technology, serious consideration should be given to use of refrigeration to reduce the ambient temperature in variety meat processing rooms. In addition, work surfaces must be cleaned and sanitized at periodic intervals (every 2-3 h in some plants). Regular cleaning of work surfaces will help prevent the growth of bacteria and can minimize cross-contamination of beef variety meats.

Clean-up procedures. During breaks in production, including mealtimes, and sometimes during the work-shift, it was customary to wash down the production area with water. Product in the produc-

tion area while such washing was performed was usually covered with plastic sheets. During these clean-up periods, considerable quantities of aerosols were created, and water from cleaning could splash on product. Because aerosols and splash-water may contain bacteria that can contaminate the product, variety meats must be removed from the production area before water is used for clean-up purposes. Regular clean-up protocols and procedures are essential to producing clean products, but every effort must be made to prevent contamination of beef variety meats by the clean-up procedures themselves.

In summary, this study has identified a variety of manufacturing practices that could be modified to enhance the microbiological quality of beef variety meats. Additional improvements in microbiological quality could be achieved through application of decontamination interventions similar to those employed on carcasses (3, 6, 17).

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ABOUT THE AUTHORS

Author Delmore was formerly at Colorado State University and is presently affiliated with Clougherty Packing Company, Los Angeles, CA. Authors Sofos, Belk, Schmidt and Smith are at the Center for Red Meat Safety, Department of Animal Sciences, Colorado State University, Fort Collins, CO. Author Lloyd is at U.S. Meat Export Federation, Denver, CO and author Bellinger is at IDEXX Food Safety Laboratory, San Antonio, TX. ¹Center for Red Meat Safety, Department of Animal Sciences, Colorado State University, Fort Collins, CO 80523-1171; ²Clougherty Packing Company, Los

Angeles, CA 90058-0870; ³U.S. Meat Export Federation, Denver, CO 80265; ⁴IDEXX Laboratory, San Antonio, TX 78216, *Phone: 970.491.7703; Fax: 970.491.0278; E-mail: jsofos@ceres.agsci.colostate.edu.

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An Assessment of Livehaul Poultry Transport Container Decontamination

Lewis Carr,^{1*} Christos Rigakos,² Glen Carpenter,³ Gerry Berney,⁴ and Sam Joseph²

SUMMARY

An international study of fifteen plants was conducted to determine the effectiveness of attempts by processors and transporters to clean and decontaminate live haul poultry containers at the processing plant. Based on the high percentage of plants with *Salmonella* (75%) and coliform (93%) positive cultures obtained from containers prior to washing and postwashing (83% and 100%, respectively), it was surmised that transport containers are usually not properly decontaminated after live haul to the processing plant. The cleaning and decontamination process is complicated by the presence of heavy manure and feather residues, which can be contaminated with numerous viral and bacterial disease-causing agents, including *Salmonella* spp. In some instances, vehicle contamination is disregarded; even when treated, the vehicles usually remained positive for *Salmonella* (100%) and coliforms (100%). Much of the decontamination and/or washing of containers and vehicles is cosmetic, resulting essentially in non-removal of bacteria, which may be transmitted from farm to farm and to the processing plant. The results essentially showed that the systems, if available and used, were providing inadequate decontamination.

INTRODUCTION

Salmonella is one of the most important foodborne pathogens recognized in the United States today. Estimates of prevalence range from 2 million to 12 million cases per year, with approximately 3,800 fatalities (2, 4, 6). Overall costs of these illnesses are estimated at twenty-two billion dollars per year (2). Most of these cases are attributed to contaminated poultry. Clearly, it would be economically advantageous to establish interventions to reduce or eliminate *Salmonella* in poultry. Although controls can be established at numerous critical control points in the food chain from farm to table, the studies reported here focus on live haul transportation and eventual container and vehicle cleaning and decontamination. Previous studies have confirmed the presence of *Salmonella* in large numbers on transport containers after arrival at processing plants. Jones et al. found *Salmonella* positive samples from approximately 30% of the transport vehicles at their ultimate destinations (3). Rigby et al. (5) discovered that presumably *Salmonella*-free birds placed in naturally contaminated coops and exposed for 24 h became contaminated under simulated transport conditions.

Previously, we reported on studies in which we used a model crate washing system to decontami-

Figure 1. Portiolly loaded livehoul transport containers on truck bed

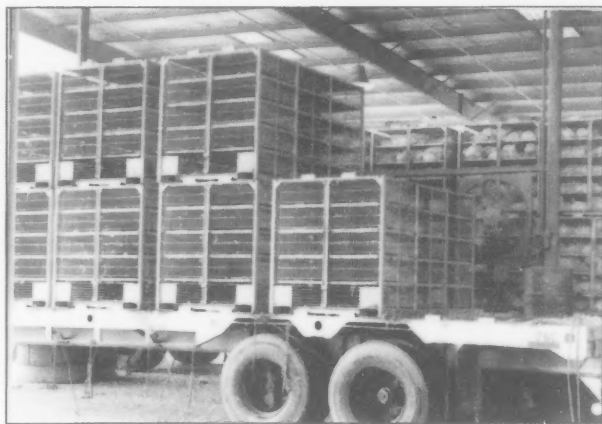


Figure 2. Livehoul transport units fully loaded on truck bed after cleaning and sanitizing process

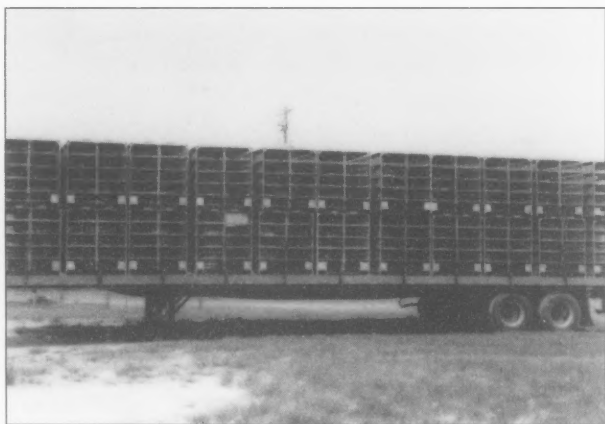


Figure 3. Cleaned and sanitized livehoul crates on truck bed



nate container material samples (1). It was found that conditions of 43°C and 1000 ppm chlorine (sodium hypochlorite) were sufficient to kill *Salmonella* on galvanized steel and fiberglass surfaces (1). These findings led to the conclusion that decontamination of live haul containers is possible. Before attempting to develop a prototype for the rapid, effective cleaning and decontamination of poultry transport containers, we decided to evaluate a large number of poultry processing plants in a national and international study to determine if their washing/decontamination systems were being used successfully. Obviously, if we were to find that the systems were performing adequately, further development on our part would be unnecessary.

Fifteen plants have been surveyed, eleven nationally and four internationally, and none of their systems appeared to be functioning satisfactorily. Basically, either *Salmonella*, coliforms, or both, were detected on transport units in all plants surveyed.

MATERIALS AND METHODS

In the method developed for collecting and processing samples from poultry processing plants, the following materials and procedures were used at each plant in collecting samples:

Three basic types of live haul containers were sampled at various plants: transport containers (Fig. 1 and 2), chicken crates (Fig. 3), and drawer modules (not shown). Generally, only one type of container was used at a particular plant.

Each individual involved with sample collection practiced biosecurity by using latex gloves, boots, hair nets, and lab coats or body suits during the swabbing (Fig. 4).

Swab samples were collected with sterile forceps (Fig. 5).

A 7.62 cm × 7.62 cm, sterile gauze pad was dipped into sterile Phosphate Buffered Saline (PBS) and then was used to swab the bottom edge (approximately 375 cm²) of the transport units and the trailer beds (Fig. 5).

TABLE 1. Percentage of *Salmonella* Positive Samples from Plants 1-15**Percent Positive Samples**

Samples	Plant 1	Plant 2	Plant 3	Plant 4	Plant 5	Plant 6	Plant 7	Plant 8	Plant 9	Plant 10	Plant 11	Plant 12	Plant 13	Plant 14	Plant 15
Units Prior to Washing	0% (0/19) ^a	50% (5/10)	70% (7/10)	20% (2/10)	100% (20/20)	100% (15/15)	50% (5/10)	0% (0/10)	28% (2/7)	58% (7/12)	10% (1/10)	33% (4/12)	0% (0/12)	0% (0/6)	31% (5/16)
Units After Washing	0% (0/5)	25% (3/12)	100% (10/10)	60% (12/20)	95% (18/19)	100% (15/15)	40% (8/20)	10% (1/10)	57% (4/7)	67% (8/12)	92% (11/12)	ND	ND	0% (0/15)	ND
Truck Bed Prior to Washing	0% (0/7)	40% (4/10)	90% (9/10)	60% (6/10)	100% (2/2)	ND	90% (9/10)	10% (1/10)	50% (3/6)	50% (6/12)	50% (5/10)	42% (5/12)	17% (1/6)	ND	30% (3/10)
Truck Bed After Washing	ND ^b	ND	100% (8/8)	100% (10/10)	100% (2/2)	ND	90% (9/10)	20% (2/10)	50% (1/2)	ND	70% (7/10)	ND	ND	0% (0/10)	ND
Recycled Water	ND	100% (2/2)	ND	0% (0/2)	50% (1/2)	100% (4/4)	67% (2/3)	ND	0% (0/2)	50% (1/2)	50% (1/2)	ND	0% (0/4)	ND	ND

^a=The number of positive samples over the total of samples collected and cultured.

^bND=Not determined; samples were not collected.

Figure 4. Fully loaded livehoul transport containers before processing**Figure 5.** Sample collection from livehoul transport container

The gauze pad was placed into a container with a sterile transport medium (Cary-Blair, DIFCO Laboratories, Detroit, MI) and returned to our laboratories for processing.

Laboratory procedures (Fig. 6) were as follows: One-third of the gauze was used to inoculate a MacConkey agar plate for the isolation of coliforms and another one-third to inoculate an XLT-4 agar plate for isolation of *Salmonella*. Both plates were streaked through four quadrants. The plates were incubated at 37°C for 24 h, after which they were read and the results recorded. These plates were then held for an additional 48 h for further incubation, and results were recorded at 24-h intervals.

The remaining one-third of the gauze was placed into 30-50 ml of Tetrathionate broth (TT broth, Becton-Dickinson Laboratories, Cockeysville, MD) at 37°C for 24 h for primary enrichment of *Salmonella*. A loopful of broth was then streaked on an XLT-4 agar plate (DIFCO) through four quadrants and incubated at 37°C for 24 h, after which the plates were read and the results recorded. The plates were then held for an additional 48 h, and results were recorded.

The original TT-broth enrichments were held at room temperature (23 to 25°C) for two weeks for a secondary enrichment, after which 1.0 ml of TT-broth culture was inoculated into 30-50 ml of TT-broth, which was then incubated at

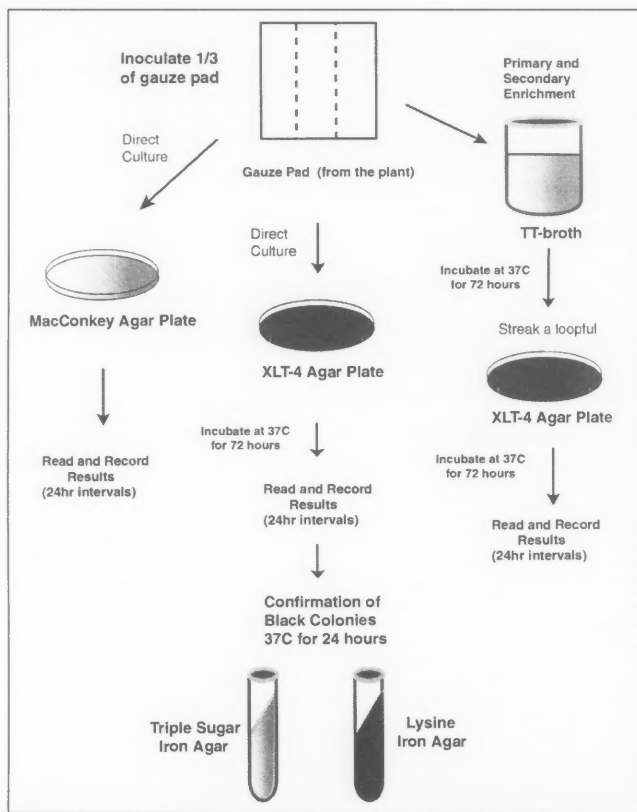
TABLE 2. Percentage of Coliform Positive Samples from Plants 1-15

Percent Positive Samples															
Samples	Plant 1	Plant 2	Plant 3	Plant 4	Plant 5	Plant 6	Plant 7	Plant 8	Plant 9	Plant 10	Plant 11	Plant 12	Plant 13	Plant 14	Plant 15
Units Prior to Washing	79% (15/19) ^a	100% (10/10)	100% (10/10)	100% (10/10)	100% (20/20)	100% (15/15)	100% (10/10)	100% (10/10)	100% (7/7)	100% (12/12)	100% (10/10)	92% (11/12)	78% (14/18)	100% (6/6)	ND
Units After Washing	100% (5/5)	67% (8/12)	100% (10/10)	100% (20/20)	95% (18/19)	100% (15/15)	100% (20/20)	100% (10/10)	100% (7/7)	100% (12/12)	100% (12/12)	ND	ND	ND	ND
Truck Bed Prior to Washing	100% (7/7)	100% (10/10)	90% (9/10)	100% (10/10)	100% (2/2)	ND	100% (10/10)	100% (10/10)	100% (6/6)	100% (12/12)	100% (10/10)	92% (11/12)	67% (4/6)	ND	ND
Truck Bed After Washing	ND ^b	ND	75% (6/8)	100% (10/10)	100% (2/2)	ND	100% (10/10)	90% (9/10)	100% (2/2)	ND	100% (10/10)	ND	ND	ND	ND
Recycled Water	ND	100% (2/2)	ND	50% (1/2)	100% (2/2)	100% (4/4)	100% (3/3)	ND	100% (2/2)	100% (2/2)	100% (2/2)	ND	50% (2/4)	ND	ND

^a=The number of positive samples over the total of samples collected and cultured.

^bND=Not determined; samples were not collected.

Figure 6. Schema for *Salmonella* and coliform detection



37°C for 24 h. If indicated, further processing of the secondary and primary enrichments followed the same confirmation procedure to be described under "confirmation."

Suspect black colonies on XLT-4 agar plates were confirmed by using Triple Sugar Iron agar (TSI) and Lysine Iron agar (LIA) slants. The confirmation for coliforms was accomplished by screening for colonies that produced acid from lactose on the surface of the MacConkey agar plate.

RESULTS

Prior to washing, transport containers at eleven of the fifteen plants were positive for *Salmonella*, with numbers of positive samples ranging from 10% to 100%, and coliform cultures were positive at fourteen of the fifteen plants, where positive samples ranged from 79% to 100%. Containers at one plant were not tested for coliforms.

After washing, transport containers at ten of twelve of the plants were positive for *Salmonella*, with numbers of positive samples ranging from 10% to 100%, and coliform cultures were positive for eleven of the plants, with numbers of positive samples ranging from 67% to 100%. Containers at four plants were not tested for coliforms.

Figure 7. Percent *Salmonella* positive samples detected from transport containers and truck beds

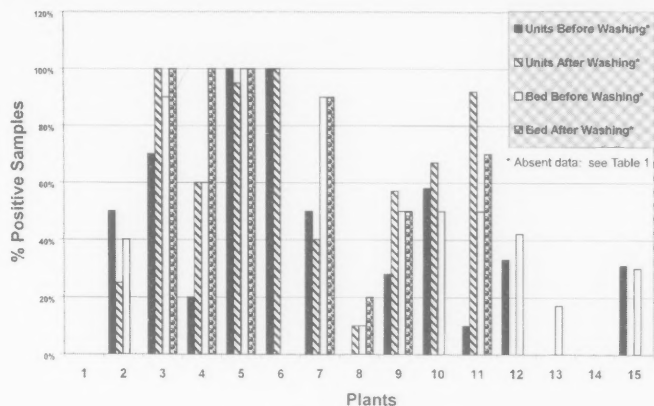


Figure 8. Percent coliform positive samples detected from transport containers and truck beds

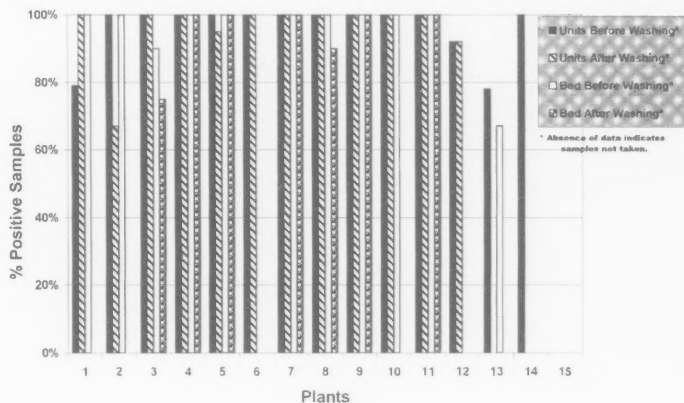


Figure 9. Percent *Salmonella* positive samples from transport container wash water

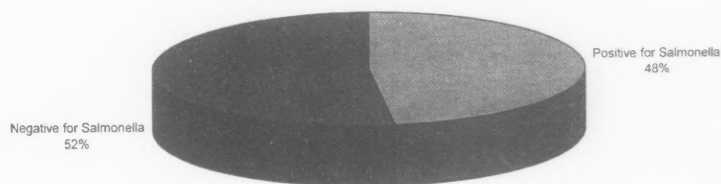
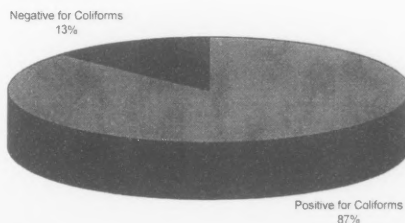


Figure 10. Percent coliform positive samples from transport container wash water



Prior to washing, truck beds from twelve of the thirteen plants tested were positive for *Salmonella*, with numbers of positive samples ranging from 10% to 100%, and coliform cultures were positive for twelve plants tested, with numbers of positive samples ranging from 67% to 100%. Truck beds at three plants were not tested for coliforms.

After washing, truck beds at all seven of the plants tested were positive for *Salmonella* (7/7) with numbers of positive samples of each truck ranging from 20% to 100%, and coliform cultures of samples from the same beds were positive (7/7) with numbers of positive samples ranging from 75% to 100%.

Recycled water samples from six of nine plants tested were positive for *Salmonella* (67%), and nine of nine were positive for coliforms (100%). Variable numbers of samples were tested at the different plants, and in some cases, water was not tested (Tables 1 and 2). Of the total samples tested for *Salmonella*, 11 of 23 were positive (48%) (Fig. 9) and for coliforms, 20 of 23 of those tested (87%) were positive (Fig. 10).

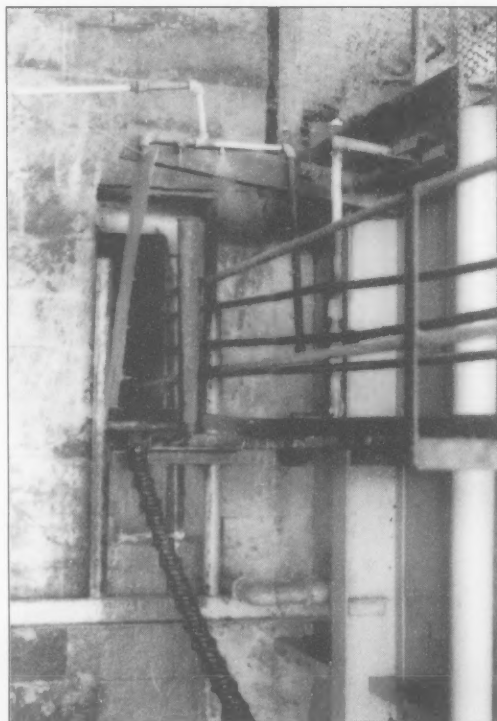
DISCUSSION

Samples were collected from prewashed and, where appropriate, postwashed containers and truck beds at fifteen processing plants. Prewash and postwash samples from the truck bed were taken at similar locations on all of the surveyed trucks. In most instances, truck beds were heavily covered with manure and feathers (Fig. 11). Generally, the plants had custom-made washing units, each somewhat different in design, varying from single to multiple stage operations. At one plant, the treatment consisted of a single pipe from which water was sprayed on the containers; it should be noted that the systems at most of the other plants were superior to this one (Fig. 12). Similarly, when transport vehicle beds were washed or washed and decontaminated, the treatments used either high pressure hoses (Fig. 13) or drive-through truck wash bays (fre-

Figure 11. Manure and feathers on truck bed



Figure 12. Livehaul container washing system



quently after re-loading of the containers) (Fig. 14).

Comparison of prewash and postwash results showed that the washing systems did not perform adequately. The prewashed units had considerable contamination by coliforms. After the units were washed, the number of units positive for *Salmonella* declined generally, but not significantly. In some cases, the number of postwashed units positive for *Salmonella* surpassed the number of positive prewashed units, possibly because the organisms were resuscitated in the presence of moisture or the units were contaminated by exposure to recycled wash water. Also, the truck beds, which were heavily contaminated with *Salmonella*, did not show drastic reduction of *Salmonella* after washing. Similarly, washing the truck bed did not seem to significantly reduce or eliminate the number of *Salmonella* positive samples. The ability of *Salmonella* to survive in dry fecal material has been previously documented (data not shown) and can possibly be attributed to biofilm production.

The results show that the washing systems tested were not effective in the reduction or elimination of *Salmonella* or coliforms. Several factors might account for the inadequacy of these systems. One was the water pressure of the washing system. Low pressure did not generate enough force to remove debris (microbial carriers) from the units or the truck beds. Another concern was the effectiveness of the anti-bacterial agents used in the washing systems, especially when recycled, and possibly contaminated water was used. Improvements are needed in the systems to eliminate these problems.

Although it is commendable that some efforts are being made to decontaminate carcasses and processing equipment at critical points, minimization of pathogens on poultry brought into the processing plant should be an essential element of good management practices. Proper decontamination of transport units will be an important step in accomplishing this objective.

Figure 13. Washing and sanitizing truck bed



Figure 14. Livehaul transport containers and truck washing system



CONCLUSIONS

Although successful implementation of effective container washing and decontamination can be a successful intervention for reducing the transmission of *Salmonella*, and possibly other pathogenic agents, from farm to farm, present practices appear to be inadequate for accomplishing these objectives.

Viability of *Salmonella* may be attributed to biofilm production, which presents a significant challenge to reduction/elimination.

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ABOUT THE AUTHORS

¹Department of Biological Resources Engineering, University of Maryland, College Park, MD 20742, Phone: 410.651.9111, Fax: 410.651.9187; E-mail: LC5@umail.umd.edu; ²Department of Microbiology, University of Maryland, College Park, MD 20742; ³Cooperative Extension Service, North Carolina State University, Pittsboro, NC 27312; and ⁴Agricultural Marketing Service, US Department of Agriculture, Washington, D.C. 20250.

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Presented at the IAMFES Annual Meeting Opening Session

Food Safety in the 21st Century

F. Käferstein¹ and M. Abdussalam²

The global importance of food safety is not fully appreciated by many public health authorities. Epidemiological surveillance has demonstrated a constant increase in the prevalence of foodborne illness. Moreover, there have been some devastating outbreaks of salmonellosis, cholera, enterohemorrhagic *Escherichia coli* infections, hepatitis A, and other diseases in both developed and developing countries. Cholera and other diarrheal diseases, traditionally considered to be spread by water or person-to-person contact, are in fact largely foodborne. In the industrialized countries up to 10% of the population may suffer annually from foodborne diseases (1).

There has been considerable public interest in transgenic foods, toxic chemicals in food, the irradiation of foodstuffs, and the possible risk of transmission of "mad cow" disease through the consumption of beef. Food safety is likely to receive increasing attention in the 21st century, especially as some global changes, already in progress, are likely to have predominantly adverse effects in this field. Urbanization, alterations in microbial and other ecological systems, and diminishing supplies of food and fresh water are among the factors in question. A much more serious challenge is foreseeable, however, in connection with changes resulting directly in the degradation of sanitation and the immediate human environment.

EVOLVING INFLUENCES

Demographic changes

Within two decades the human population is predicted to reach 8.5 billion, 80% of which is expected to be in developing countries (2). This compares with 5.8 billion in 1996. This tremendous increase and the uneven distribution can be expected to cause serious problems of food security and safety, environmental degradation, large-scale migration from rural to urban areas and from poor or richer countries, and significant changes in ecosystems.

In industrialized countries the proportion of people aged over 60 years is predicted to rise from 17% now to

25% by 2025. A similar phenomenon is occurring in the developing countries. Such change is likely to lead to acute socioeconomic problems and the emergence of many people with reduced resistance to diseases, including foodborne diseases.

Environmental hazards

The risk of foodborne disease is substantially heightened by biological and chemical contamination of areas where food is produced, processed, and consumed. Population growth, unplanned migration from rural to urban areas, and consequent slum formation are bound to increase pollution. Drinking water supplies and waste disposal systems come under intensified pressure in such circumstances, particularly in developing countries, and the risk of spread of foodborne pathogens is thereby exacerbated.

The incidence of foodborne infections and intoxications is significantly influenced by temperature (3). Substantial increases in such infections have been reported in temperate regions experiencing long, hot summers. The United Nations Intergovernmental Panel on Climate Change has forecast that the average temperature will rise by about 1.1°C and 3.1°C over 1995 levels by 2030 and 2090, respectively. The global effect on foodborne disease and other aspects of human health is unpredictable, because the relationships involved are complex and multifactorial. However, an association has been established between the prevalence of cholera and dysentery and the oceanic phenomenon known as El Niño. This underlines the need for accurate forecasts of this and other phenomena so that preventive measures can be taken against the diseases concerned.

Toxic chemicals released into the environment by industrial processes and agricultural practices may enter the human food chain. When small quantities are present in food, the effects on health are thought to be minimal. Nevertheless, there is concern in this area, one reason being that pesticides are known to suppress the immune system in experimental animals. Pesticides have been found in human tissues, notably fat, in developing as well

as developed countries, but their effect on the human immune system has not been thoroughly studied. Even so, they are likely to act as immune suppressants in humans (4). The use of agricultural chemicals and the release of industrial wastes are likely to increase during the next few decades, given the pressure of population increase. The consequences could well be serious, especially among some 20 million children in developing countries whose resistance to disease is diminished by malnutrition (2).

Social and behavioral factors

Poverty and inequity are the principal factors contributing to poor health. Indeed, poverty has been called the world's deadliest disease (5). With regard to food safety, the gap between privileged and unprivileged groups may seem less marked than in other areas because foodborne diseases are quite prevalent in rich societies as well as in poor ones. However, people in rich societies generally suffer from mild diseases that persist because of hazardous lifestyles (preference for raw foods, mishandling of foods, etc.), whereas in poor communities the serious, life-threatening diseases such as infant diarrhea, cholera, typhoid fever, and fluke infection are still quite prevalent and cause high levels of mortality. Between a fifth and a quarter of the world's population exists in absolute poverty; the proportion is increasing (6) and is likely to continue doing so. Poverty can be expected to be the principal challenge to equity in health care, including the control of foodborne diseases.

Behavior and lifestyle have a strong bearing on foodborne diseases (7). The risky practice of eating shellfish and other foods in the raw state is increasingly common in affluent societies, where consumers are demanding minimally processed foods with long shelf lives, no preservatives, and low salt and sugar content (8). Under such conditions, pathogens are likely to multiply to dangerous levels, even at refrigerator temperatures, and the probability of infection and intoxication thereby increases. Consumer concerns about food irradiation, an affordable means of rendering food safe, even in the raw state, are likely to decline in the next century because of the intrinsic merits of the technology and the efforts of health educators.

Scientific and technological progress

There is a prospect of intensive husbandry being used to grow transgenic plants and animals that are resistant to pests and diseases, thus reducing the need for chemical control. The increasing use of aquaculture for the production of fish should make it possible to apply safety measures more effectively now that reliable food safety advice is available for this area of production (9-11).

The expansion of international and interregional trade in human and animal foodstuffs can be expected to increase the risk that contaminants will be carried for long distances. Simple and rapid screening methods should be developed for the detection of pathogens in

such products, together with innovative approaches to their application in the interest of food safety. It will also be necessary to develop simplified methods for the diagnosis of foodborne diseases in humans and to use them in worldwide surveillance.

During the 20th century, the tried and tested methods of preventing food contamination and rendering contaminated foods safe, among them cooking, pasteurization, sterilization, and fermentation, have been improved. Newer methods, such as irradiation, microwave cooking, and high-pressure treatment, have been developed. Further progress in this area will undoubtedly be made in the future. Information technology offers the prospect of revolutionizing health education, the exchange of epidemiological data, and the training of health professionals (2). Finally, the large-scale use of solar power as a non-polluting, low-cost renewable energy source should help to increase food safety in some parts of the world by making cheap energy for refrigeration more widely available.

A worldwide threat

Foodborne diseases are mostly caused by bacteria, viruses, helminths, and fungi. The available evidence suggests that these diseases are more prevalent in developing countries than in developed countries. Serious foodborne diseases such as cholera, typhoid fever, and liver fluke infection, virtually eliminated in developed countries, are still common in the developing world.

Foodborne diseases are evidently increasing in both developed and developing countries. The reasons for this are not fully understood. It is clear, however, that the problem is compounded because of expanding international trade in foodstuffs and the movement of vast numbers of people across national boundaries in various capacities (12). Greater international cooperation is needed to deal with this matter.

It is expected that the surveillance network for these diseases will cover most countries by 2020. The curve of prevalence should level off first in those countries where surveillance is already being carried out and the public authorities are becoming aware of the significance of foodborne diseases.

Foodborne infections and intoxications figure prominently among the new diseases and infections discovered in the last few decades. They include campylobacteriosis; *Cyclosporidium*, *Cyclospora* and enterohemorrhagic *E. coli* infections; and listeriosis. In addition, there are new strains of *Vibrio cholerae* and drug-resistant strains of several enteric pathogens, particularly *Salmonella* and, possibly, *Helicobacter pylori*. New foodborne diseases can be expected to appear in the coming millennium.

Control strategies

The cooperation of various disciplines and sectors is essential if food safety is to be achieved. In a national administration they may come under different ministries, for instance those of health, agriculture, the environment,

trade, and education. A strong food safety agency is needed to bring about cooperation between government departments, nongovernmental organizations, and community leaders. Such an agency should be independent of trade and economic interests and should report, ideally, to the health ministry (13). Unfortunately, in most countries it is likely to take many years to establish the required mechanisms.

On the scientific side, it is vital to set up surveillance systems (14) for foodborne diseases and to monitor food for contaminants. Some of the methods used in laboratory and other surveillance procedures are costly and need highly skilled professionals, who are unavailable in many developing countries. Simpler and less expensive tests should be developed so that required information for assessing and combating foodborne hazards can be obtained at low cost. In the United States, active surveillance of foodborne listeriosis followed by control measures led to a reduction of 48% in mortality attributable to this infection (15).

Appropriate technologies have to be applied at suitable points in the food chain. The aims are to prevent the entry of pathogens into food and drinking water, to prevent their growth, and to inactivate them where necessary.

Legislation is required, but on its own it cannot yield the desired results. Increased reliance has to be placed on the compliance of food handlers, managers of food establishments, consumers, and others educated in what has to be done to achieve food safety. The information revolution can be expected to increase the coverage achieved in this field. Health education in relation to food safety should be one of the principal tasks of primary health care networks.

Food contamination and the control of foodborne diseases have become a transnational challenge that can be met only if international cooperation is strengthened in the following areas:

- The surveillance of foodborne diseases should become a global activity, individual components of which should operate effectively at country level while regional programs provide coordination. In parallel there should be early warning systems concerned with the potential for the transnational spread of foodborne diseases and food contaminants. In this context it is to be hoped that the International Health Regulations, now under revision, will become a powerful legal instrument.
- National food safety control systems should be strengthened within national public health sectors. This requires international and bilateral technical cooperation. The bilateral development agencies and the development banks should join others active in this field, e.g., FAO and WHO. Improved coordination and cooperation are

needed between government sectors and between governments, industry, consumers, and nongovernmental organizations.

- Public health and food control laboratories should be enabled to monitor contaminants in food and to assist in the identification of contaminants causing disease. Much closer collaboration between these laboratories and clinical laboratories should therefore be fostered. The international donor community should assist developing countries in this task.
- Risk assessment should be undertaken to an increased extent in order to establish food safety standards both nationally and internationally. International cooperation is needed to assist developing countries with the integration of risk analysis into national food safety control programs. WHO should intensify its efforts on the application of risk assessment for the development of standards for biological hazards in food.
- Culture-specific health education is essential for food preparers and schoolchildren.

It is highly probable that food safety will decline in the first two or three decades of the 21st century because of unfavorable environmental and human factors. Matters should improve thereafter, thanks to scientific and technological progress, if there is a recognition that food comes not only within the sphere of agriculture and trade but also within that of public health.

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ABOUT THE AUTHORS

¹Distinguished Visiting Scientist, Food and Drug Administration, and the Food Safety and Inspection Service, Joint Institute for Food Safety and Applied Nutrition, 200 C Street S.W. HFS-6, Washington, D.C. 20204-0001, USA; ²Adviser to the former Programme of Food Safety and Food Aid, World Health Organization, 1211 Geneva 27, Switzerland.

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Reflections from the Past

Address of the President

C. A. Abele

1944 Annual Meeting International Association of Milk Sanitarians
Chicago, Illinois
November 2, 1944

Members of the International Association of Milk Sanitarians, Guests and Friends:

Until comparatively recently, it has been customary for the presiding officer of the Association to deliver a presidential address at some time during the course of the meeting. Several of my immediate predecessors in the office of President have spared the assembled members this ordeal, possibly because they deemed the lack of such an address no serious deprivation. I have decided to revive the custom, however, because of the opportunity it affords to present to the membership a summarized accounting of the activities of the administration since the last meeting, and to offer for your consideration certain suggestions for future policy and action.

The two years which have elapsed since the St. Louis Meeting have been unusually difficult for practically all of us. This is not a bid for sympathy, for every one of us appreciates the degree and extent of the uprooting and the greater sacrifices which have been made by those of our associates who are now in the Armed Forces of our Country. It is not necessary to elaborate on the increased

difficulties of milk control which have resulted from decrease in the dairy farm population, increase in the size of herds and production, shortages of dairy and agricultural equipment and supplies, restricted supplies of gasoline and tires, mandatory rearrangements of truck routes, and depletion of the staffs of control and quality improvement organizations. We are not yet through the woods, but the going appears to be slightly better. It is possible that we are growing accustomed and habituated to the adverse aspects of the situation; or, on the other hand, it may be that we are learning how to meet the problems with which we are confronted.

It appears to me that the very tangible difficulties inherent in milk quality control during the past several years are resulting in the evolution of better methods and procedures. If that impression is correct, the bitter experiences and troubles of recent years will have been a blessing in disguise. If it is demonstrated that, with depleted inspection staffs—or, what constitutes the same thing, limited automobile travel—the desired milk quality can be maintained by greater emphasis upon platform inspections and tests, or by more frequent laboratory

examination of the finished product, associated with an organized program of instruction of producers and handlers, all along the line, we may expect the development of a trend toward these latter means of attaining and maintaining milk quality and safety. I think a trend—at least in thought—in that direction is becoming evident. If it is discovered that one or more of the tools we have been using for the determination of milk quality is inadequate or inaccurate, we have the choice of discarding it, or of endeavoring to improve it; we should not continue to use it in its current inadequate form. One of the discussions scheduled for this meeting pertains to such a matter.

From the standpoint, then, of development in the practical approach to the attainment of desired milk quality and safety, the difficulties of the past several years have not been a total debit. Instead, these difficulties have, I suspect, shaken many of us out of a complacency which is said to be the first indication of an approaching complete crystallization of point of view and opinion.

While the war years have, in a way, been marked by beneficial developments in milk control principles and practices, it can hardly be said—truthfully—that they have been characterized by an inspiring upsurge in the activities of Association committees. Standing committees were appointed—as is customary. I sympathize deeply with those who accepted or retained chairmanships, and have nothing less than respect for those who were so conscientious as to decline membership on a committee because the press of routine vocational activities upon their time would handicap or prevent participation in committee activities. The situation was so grave and discouraging that it was deemed preferable to disband one committee—"Applied Laboratory Methods," in the work of which practical studies and observations are essential—rather than to continue the committee on a purely nominal status. The latter alternative had too much of the appearance of condoned inactivity, and might have set a troublesome precedent.

I would like to propose, for the benefit of my successors, that any member of this Association, or an affiliate, who would like to participate in a committee project, be fully privileged to write the President to that effect, and to name his committee preference. In that manner committee chairmen will be assured of enthusiasm on the part of some members, at least, of their committees; and the task of the President will be simplified and facilitated. Approval of such a custom or example of Association etiquette would advance the ultimate welfare of the

Association by providing a means for new and relatively unknown members to take an active part in committee activities, and to bring their lights out from under a bushel.

On the credit side of the ledger, as the report of the Secretary will announce, will be found a healthy increase in membership, resulting mainly from the affiliation of five state associations with the International Association. These are: Associated Illinois Milk Sanitarians, Iowa Association of Milk Sanitarians, Michigan Association of Dairy and Milk Inspectors, New York Association of Milk Sanitarians, and Wisconsin Milk Sanitarians Association.

This very worthy policy of the Association—the provision for affiliation of local organizations of likeminded individuals with this Association—may develop into a problem which should be seriously studied in advance. Restaurant and food sanitarians are also becoming organization-minded, with a national association and a journal as their ultimate objective. Many of these restaurant sanitarians are also milk sanitarians, because of their employment in health departments of counties or small municipalities. One such local organization of restaurant sanitarians has inquired about affiliation with this Association. From the standpoint of increased membership and revenue, affiliations by such organizations would have certain advantages. The complications must also be considered, however. Such organizations will certainly desire the publication in the *Journal of Milk Technology* of papers devoted to restaurant and food sanitation. An occasional such paper will not lead to the implication that the title of our *Journal* is a misnomer. But, if, as the affiliated associate membership of the Association becomes progressively larger, the *Journal* is to carry a progressively increasing proportion of papers on food sanitation, both the name of this Association and the title of the *Journal*, and the characters of both, will inevitably become subject to appropriate change. Whether such a change—ultimately, if not soon—is desirable is a question open to debate. I urge that you give it mature consideration, from both the International Association and state organization aspects, for it is a question to which an answer must be available when called for. The Executive Board should know your aggregate opinion.

At the St. Louis Meeting it was proposed from the floor of the business session that the Association create, for a deserving candidate, a scholarship in milk sanitation in a recognized school. I have given this matter much thought since the St. Louis Meeting, and have come to the conclusion that the proposal

is not practical. I question the ability of all of us to agree upon the choice of the school we would honor by creating such a scholarship; the selection of a candidate for the scholarship presents several problems; and, at best, we will have benefited only one individual, in whom few, if any, of us will have other than an extremely impersonal interest.

It seems to me to be preferable that available funds of the Association be expended in the conduct of Association business. Some of the standing committees should meet once or more during the interim between Annual Meetings; the Advisory Committee to the War Production Board has been called to two meetings in Washington during its lifetime; members should not be expected and required to defray their expenses to such meetings, nor should the Association expect to command their services at the expense of the organizations by which they are employed. I, therefore, recommend that, when the Executive Board approves the holding of a committee meeting, the Secretary-Treasurer may be authorized to pay the expenses or part thereof of committee members in attendance at such meetings; with the proviso that such an understanding shall not apply to committee meetings held in connection or conjunction with an Annual Meeting of the Association. (The approval of this recommendation may encourage some of you to apply for committee appointments.)

A number of manufacturers of dairy supplies publish one or more pamphlets each year, which are intended to be of an educational and instructional, as well as advertising, nature. Health departments prepare and distribute instructional literature, and produce motion picture or strip films. Some are good and effective; some are not so effective; and there are some... So what—you might ask.

For two whole years I have been trying to think of means for building the prestige of this Association—to make it a concrete entity, with influence that cannot be denied nor ignored. We have a considerable number of past presidents who, in the main, became lookers-on in Association affairs at the expiration of their terms. Let us put those who are not already serving in some capacity to work on a committee to receive, review, and judge pamphlets, motion pictures, strip films, and other vehicles of instruction, on the basis of subject matter, approach, style, and whatever other criteria it may be desirable to establish, to the end that the Association may issue Awards of Merit to those which are worthy. In the course of time, if such a committee functions effectively, an Award of Merit from this Association will be much sought after, and its attainment a mark

of distinction. Such an award might include the privilege of imprinting a statement or seal on the undistributed copies, or reprints, of the recipient publication.

I recommend that the Executive Board and incoming President be authorized to make provision for, and to appoint, such a Committee on Awards.

There are two features of this meeting which are not included in the printed programs. The first is a demonstration of milk straining on the farm, and a display of strainer discs and strainers, in the Century Room, on the 19th floor of this hotel, on Friday evening. I am able to assure you that this display and demonstration will more than repay you for the long elevator trip—for which no priorities nor reservations are required—or for foregoing some other form of big-city entertainment. Notices of the time and place of this feature of the meeting will be posted conspicuously. The second unlisted feature is a demonstration of properly and improperly constructed and assembled plumbing, in which the nature of cross-connections, the causes and remedies of siphonage, and other conditions of interest to sanitarians are shown. All those who deal with water supplies and sewage disposal in milk plants will find this demonstration of much interest. The demonstration is unique; there is only one other, smaller installation in the whole country. Glass piping and colored solutions make the demonstration almost completely visual. The demonstration will be held Saturday afternoon, and transportation will be furnished.

Some of those in attendance may wish to see installations of specific types of milk plant equipment while in the city. If you will make your desires known, by contacting me or leaving a note at the Registration Desk, the necessary arrangements will be made.

The speakers have been requested to limit the time of their papers, so that time is available for ample discussion. Many of you have come far to attend this meeting. If you hear something you do not understand, ask the speaker to explain it. If he makes a statement with which you do not agree, feel free to rise and express your views. In the interests of the greatest benefit to all present, I shall request that speakers from the floor come forward, identify themselves, and use the microphone. Nothing detracts so forcibly from the success of a meeting as the inability of those in one part of the audience to hear what a speaker is saying. C. A. Abele

Reprinted from *Journal of Milk Technology*, Vol. 7, 1944.

Report of Secretary

C. S. Leete

International Association of Milk Sanitarians October 14, 1944

The annual meeting of this Association for the year 1943, although scheduled, was canceled, upon the urgent request of the Director of the Office of Defense Transportation. The Executive Board realized that there were many problems, both local and national, which were confronting milk sanitarians, and that a meeting of the Association might remedy some existing problems and unsatisfactory situations. However, the federal request appeared to be so urgent that the Board believed that the best interests of the nation would be served by canceling the meeting.

Those problems which were confronting us in 1943 are still before us. Some have become more acute. Others, unpredictable, have arisen. Many of these relate directly to the safety and quality of milk supplies which are being used by members of our armed forces, by workers in vital industries, and by civilian populations.

It is generally recognized and accepted that the best and most practical way to attack a problem is not by long and cumbersome correspondence, but by personal conferences and discussions between those individuals and interests who are concerned, especially between those who are entrusted with the responsibility of working out satisfactory solutions.

The Office of Defense Transportation, again this year, asked that no conventions be held unless they were vital to the successful prosecution of our military efforts. The Executive Board considered this request. It was the unanimous opinion of the Board that the problems now confronting the members of our Association were of such a nature that it would be a disservice to the industry and to all

organizations having contact with the industry, if the Association did not use every implement available and make every effort possible to solve these problems. It is the sincere belief of the Executive Board that in holding this convention we are conforming to the wishes and policy of the O.D.T. The participation by all members in the deliberations of this meeting has resulted in fully carrying out the purpose of this convention.

The membership of the Association, as of October 14, 1944, was 1,665, of which 337 were active members. Since our 1942 meeting we have accepted 708 new members. It is interesting to note that three charter members are still active in the Association, namely, J. A. Gamble, Philadelphia, PA; H. N. Parker, Jacksonville, FL; and W. H. Price, Detroit, MI.

The *Journal of Milk Technology* has continued to hold its enviable position as an outstanding dairy publication. The Editor and Managing Editor have carried on successfully under adverse conditions.

Various committees have continued to function even under severe handicaps.

It is a pleasure to report to the Association that as a result of the action taken at the 1942 meeting, relative to affiliation of local or state associations of milk sanitarians with the International, the following associations have become affiliated with this Association:

- The Associated Illinois Milk Sanitarians
- The Iowa Association of Milk Sanitarians
- The Michigan Association of Dairy and Milk Inspectors
- The New York State Association of Milk Sanitarians
- The Wisconsin Milk Sanitarians Association

To your Secretary, it appears that both the International and local or state associations will make their biggest contribution to the industry, and will be able to complete their best work through close cooperation. The problems of one are the problems of the other. An international or national problem is only a local problem which encompasses a greater area. This large area does complicate a problem, yet, when it is fully resolved, it is found that the individual is the one affected. Continued and extended efforts for cooperation between local and state associations and the International should result in a clearer and more comprehensive understanding of our problems than would be possible if each individual or organization worked separately.

Everyone has been called upon to give more and more of his time and services to activities outside his usual field of work. Without a doubt there is no one here but who would do more if he could. Under these conditions, those members who have been called upon to accept added responsibilities in the interests of the Association have responded to an extent that is surprising.

Your President has taken a most active interest and participation in matters pertaining to the Association, especially as they related to affiliations and membership. He, with his local committee, has planned this convention.

The Editor and the Managing Editor of the *Journal of Milk Technology* deserve the sincere appreciation of the Association for the excellent work they have carried out.

Various committees have given time and study to various problems. Their reports have added considerable to our knowledge of particular subjects.

There are many members who, as individuals, have contributed to the Association's program and work. To all these, your Secretary, speaking for the Association, is sincerely grateful.

Based upon correspondence and personal conferences between members and the Secretary

during the past two years, it is your Secretary's opinion that among the many interests which will receive the attention of the Association, three should be carefully studied and considered. They are:

1. The study and, if warranted, the approval of proposed equipment;
2. The consideration of expanding the scope of the Association to include persons whose duties are those of sanitarians, and who are not milk specialists,
3. The study of a program which would result in a closer bond between affiliate associations and the International.

It is most gratifying to know that during this convention those three problems have received consideration and are being studied.

There seems to be every reason why the Association should continue to advance. Cooperation such as has existed between the association and other groups and individuals having the same interests, aims, and ideals can only result in satisfactory solutions of problems which are confronting all of us. C. S. Leete

Secretary-Treasurer

Summarized Financial Statement to October 14, 1944

Receipts

Cash on hand October 7, 1943	\$1,866.92
Annual dues	<u>3,001.39</u> *
Total	\$4,868.31
* \$1.11 Exchange	

Disbursements

Including payments to the <i>Journal of Milk Technology</i> and affiliated associations	<u>\$2,451.70</u>
Balance	\$2,416.61

Reprinted from *Journal of Milk Technology*, Vol. 7, 1944.

Scenes from the 86th Annual Meeting



It was a great time in Dearborn... and with the help of the Michigan Environmental Health Association, the IAMFES 86th Annual Meeting was a great success. Under the direction of Terry Anderson and Chuck Lichon, the Local Arrangements Committee provided volunteers to help the meeting run smoothly and welcomed us to the Automobile Capitol of the World. IAMFES commends the Michigan Local Arrangements for their efforts.



The 1999 meeting once again showed how IAMFES is continuing to grow and expand. Over 1,100 food safety professionals from around the world gathered in Dearborn, Michigan, August 1-4 for the IAMFES 86th Annual Meeting. Countries represented included the United States, Mexico, Canada, Australia, Belgium, Brazil, Denmark,

England, France, Germany, Japan, Korea, The Netherlands, New Zealand, Norway, Philippines, Saudi Arabia, Singapore, Sweden, Switzerland, Taiwan, Thailand, and Turkey.



This year's meeting featured more than 250 scientific presentations, which included symposia, technical sessions, and poster sessions. Representatives from 84 companies exhibited equipment and services related to food safety. The Exhibit Hall provided networking opportunities during session breaks and planned social events.

Pre-meeting Workshops

To provide additional educational opportunities for attendees, IAMFES again conducted pre-meeting workshops. This year's workshops provided the opportunity to learn about how to conduct a simulated outbreak investigation and the process of risk assessment conducted to address the risk of *Salmonella Enteritidis* in shell eggs.

Frank Bryan conducted the workshop entitled "Procedures to Investigate Foodborne Illness." Don Schaffner from Rutgers University and four leading experts in the field conducted a risk assessment workshop, "An Insider's Look at Microbial Risk Assessment."



Annual Meeting Program

Sunday was filled with meetings of committees, professional development groups and task forces. Members met to set goals and programs for the next year. Minutes of these meetings can be found on page 783.



President Robert Brackett opened the 86th Annual Meeting Sunday evening. Keith Creagh, Deputy Director, Michigan Department of Agriculture, welcomed attendees to the state of Michigan and the city of Dearborn. The Opening Session featured the induction of six long-time IAMFES Members as IAMFES Fellows to recognize their service to the Association. This year's Fellows are: A. Richard Brazis, Michael H. Brodsky, James M. Jay, Robert T. Marshall, Lawrence A. Roth, and Earl O. Wright. President Brackett, along with Past President Gale Prince, thanked the new Fellows for their time and commitment to IAMFES.

The Ivan Parkin Lecture highlighted the Opening Session. Dr. Fritz Käferstein, of the FDA/USDA Joint Institute for Food Safety and Applied Nutrition at the University of Maryland, delivered the lecture during the Opening Session on Sunday evening. His subject was "Global Food Safety in the 21st Century." The Opening Session concluded with a Cheese and Wine Reception in the exhibit hall for all attendees.



The Annual Meeting program included detailed presentations from around the world, including 16 symposia, four technical sessions with 46 presentations, 95 presentations comprising three poster sessions, and the General Session. Topics ranged from Globalization of Foodborne Disease, Science-Based Criteria for Harmonizing Food Safety Regulations, Dairy Plant Quality and Safety Programs, HACCP in Retail Operations, and The Seafood Safety Initiative.

IAMFES is continually grateful for the support other organizations have provided for our program. In addition to thanking individual companies, universities, and agencies that support presenters, we wish to thank



International Life Sciences Institute, N.A., National Food Processors Association, and the IAMFES Foundation Fund for their support of the Annual Meeting Program.

A late breaking session, "Food Safety: Strategies for the Future," was held Monday to

gather input on the President's Council on Food Safety Strategic Plan. The General Session entitled "Anatomy of a Multi-state USA Listeriosis Outbreak: Issues, Insights and Take-home Messages" was held Tuesday afternoon.

Presentations during the General Session included Molecular Typing of *Listeria monocytogenes* in US Outbreaks, Martin Wiedmann, Cornell University; Epidemiology of *Listeria* Outbreak, Paul Mead, CDC; and Industry Perspective of *Listeria* Outbreak, Dane Bernard, NFPA. This session reflected issues of

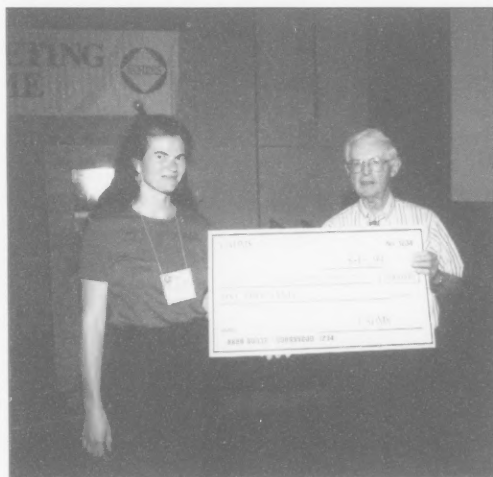




immense interest to many in the food protection industry.

Following the General Session, the IAMFES Annual Business

Meeting was held. The meeting included reports from Committee Chairpersons, President Robert Brackett, and David Tharp, IAMFES Executive Director. During the meeting, Members voted to accept the amended and restated Constitution and Bylaws. Upon a full Membership ballot approval from the Members for the Constitutional change, the Association will change its name to the "International Association for Food Protection." For additional details on the Business Meeting, see the minutes on page 783.



On Wednesday evening, IAMFES honored excellence in food safety by individuals and organizations. Awards presented were: Affiliate Awards, C. B. Shogren Award, Samuel J. Crumbine Award, NFPA Food Safety



Award, Developing Scientist Awards, Sanitarian Award, Educator Award, Harold Barnum Industry Award, Harry Haverland Citation Award, Honorary Life Membership Awards, and the Black Pearl Award. The evening concluded with the gavel presentation to the Incoming President, Jack Guzewich. Robert Brackett's year as President was commemorated with a plaque presentation.



Annual Meeting Social Events

Some of the most memorable events of the Annual Meeting happen at the social events after the daylong sessions. Members and their guests took a trip back into history at Greenfield Village for the Monday Night Social Event. Everyone enjoyed the tour of the village, antique carousel ride, dinner, and the chance to spend the

evening with friends. Baseball enthusiasts were treated to a Detroit Tigers game, while



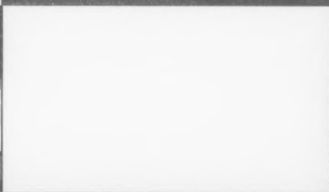
wine enthusiasts were tempted by an evening in Canadian wine country on Tuesday night. Day tours for spouses and companions included tours of the Great Lakes and Motor City, Henry Ford's and Edsel Ford's homes, and a day in Canada.

The 1999 Annual Meeting again proved that IAMFES is the leading food safety organization in the world! Thanks to all who participated in making this year's meeting a great success! See you next year in Atlanta, Georgia!





ANNUAL
MEETING
SCENES



The Annual Meeting
was held in
Dearborn, Michigan
August 1-4, 1999



IAMFES Past Presidents who were present at the 1999 Awards Banquet. Front row, left to right: David Fry, Robert Marshall, Gale Prince, Robert Brackett, Robert Gravani. 2nd row, left to right: Robert Sanders, Henry Atherton, Ann Draughon, Dee Clingman. Back row, left to right: Michael Doyle, Michael Brodsky, Harry Haverland, Earl Wright, Sidney Barnard, A. Richard Brazis, and Harold Bengsch.



The following individuals were very much involved with the proposed name change of the Association. Front row, left to right: Gale Prince, Robert Brackett, Elizabeth Johnson, Lawrence Roth. Back row: left to right: Jack Guzewich, Michael Brodsky, Ann Draughon, Jenny Scott, James Dickson, and John Bruhn.



1999 Award Winners

BLACK PEARL AWARD

Caravelle Foods

Brampton, Ontario, Canada

IAMFES President Robert Brackett (right) and Past President Gale Prince (left) pose with Alan Greenspan (right center) and Ron Osborne (left center) of Caravelle Foods, the 1999 recipient of the Black Pearl Award. Sponsored by Wilbur Feagan and F & H Food Equipment Company.



The Black Pearl Award, sponsored by Wilbur Feagan and F&H Food Equipment Company, recognizes a company for its outstanding commitment to, and achievement in, corporate excellence in food safety and quality. This year's recipient is Caravelle Foods.

Caravelle Foods has been producing hamburgers for Mc Donald's Restaurants of Canada for over twenty-five years. Two plants, one in Brampton, Ontario, and the other in Spruce Grove, Alberta, supply over 1,200 McDonald's across Canada. Not only is a food safety program important to Caravelle Foods, but it impacts their beef suppliers. Several years before HACCP-based food safety programs were being adopted, Caravelle Foods was analyzing their suppliers' products and developing microbiological profiles for each one. Supplier plant visits were started in the 1980s and a checklist was developed to evaluate best practices and relevant quality assurance data. This information helped suppliers improve the general quality of beef produced.

Caravelle Foods, along with some of their raw material suppliers, was influential in the development of the Food Safety Enhancement Program (FSEP). In 1996, the company was selected



to work on a pilot project for adoption of all aspects of FSEP. The project was a success and Caravelle Foods received official recognition of its HACCP-based FSEP Program by the Canadian Federal Government in November 1996 – the first in North America.

Although Caravelle Foods assigns the highest priority to its quality assurance program, emphasis is also placed on business practices. Caravelle has incorporated many energy conservation measures into its daily functions. It supports, and participates in several research projects and encourages educational programs through employment of college co-op and intern students in its laboratories.

Truly, Caravelle Foods is a company well poised to embrace the new millennium.

Honorary Life Membership Awards were presented to (left to right) Sidney Barnard; Charles Felix; James Smith; Gale Prince, IAMFES Past President; Michael Brodsky; and Robert Brackett, IAMFES President. Robert and Gale presented this award at the Awards Banquet.



HONORARY LIFE MEMBERSHIP

Honorary Life Membership is bestowed upon long-time Members with dedication to the high ideals of IAMFES and its mission. The following were this year's recipients.

Sidney Barnard

State College, Pennsylvania, USA

Mr. Barnard has dedicated many years of service and devotion to the ideals and objectives of IAMFES. Since 1964, Mr. Barnard served on many Committees, with a particular interest and expertise in the Dairy Quality and Safety Professional Development Group (PDG) as well as the Applied Laboratory Methods PDG. He was instrumental in establishing the IAMFES Audiovisual Library and

contributed several of its offerings. He also played a key role in starting *Dairy and Food Sanitation*, now known as *Dairy, Food and Environmental Sanitation*. Throughout his active years, Mr. Barnard has submitted numerous articles to the publication and has served on the *Dairy, Food and Environmental Sanitation Management Committee*. He also served as President of the IAMFES Executive Board in 1986.

Mr. Barnard is credited with over 32 years of extension work in addition to seven years of experience with dairy cooperatives. For 40 years, he has written a newsletter, directed to dairymen, field and dairy laboratory staff, and he currently writes a newsletter for dairy and food workers and information providers.

Michael H. Brodsky

Thornhill, Ontario, Canada

Mr. Brodsky has made several contributions to the high ideals of IAMFES and its mission since he joined the Association in 1972. He served as the Local Arrangements Chairperson for the IAMFES 79th Annual Meeting in Toronto, Ontario, Canada in 1992. In 1994, Mr. Brodsky was elected Secretary of the IAMFES Executive Board by the IAMFES Membership. He served as President of the IAMFES Executive Board in 1997 and completed his term in 1998 as Past President. Mr. Brodsky remains active in the Association through his participation in the Annual Meeting and his roles as Chairperson of both the Past Presidents' Advisory Committee and the Constitution and Bylaws Committee. Most recently, as Chairperson of the Constitution and Bylaws Committee, he helped revise the Constitution and Bylaws to more adequately reflect the Association and incorporate the proposed name, International Association for Food Protection.

Mr. Brodsky was recently appointed General Manager of the Mississauga, Ontario, facility of Silliker Laboratories of Canada. He remains active in several other local, national and international scientific committees.

Charles W. Felix

Leesburg, Virginia, USA

Mr. Felix's association with IAMFES began in the mid-1960s when, as Associate Editor of the *Health Officers' News Digest*, he began to cover and report on IAMFES Annual Meetings. Since that time he has assumed many roles at the Annual Meetings, including Exhibitor and Presenter. Mr. Felix was active in the food protection and environmental Committees of IAMFES and assisted in the development and maintenance of the IAMFES Audiovisual Library. For years, he presented the ceremonial gavel to incoming Presidents at the Annual Awards Banquet. Mr. Felix has contributed articles to *Dairy, Food and Environmental Sanitation* and *Journal of Food Protection* and, at the invitation of the Executive Board, he conducted an analysis of the Journals' publishing procedures.

Prior to his recent retirement, Mr. Felix provided state and local sanitarians with an important link to environmental health developments and association activities through his position as Editor of *Environmental News Digest*, published by the Foodservice & Packaging Institute, and his own monthly newsletter, *Food Protection Report*.

James L. Smith

North Wales, Pennsylvania, USA

Dr. Smith's accomplishments reflect his dedication to the ideals and goals of IAMFES. Over the years, he has organized several informative symposia, which form the foundation of IAMFES' highly successful Annual Meetings. His numerous articles in various areas of microbial food safety published in the *Journal of Food Protection* are referenced throughout the scientific community. Dr. Smith provides his expertise to colleagues through his mentoring. Prior to submitting manuscripts for publication in the *Journal of Food Protection*, colleagues often turn to him for his comprehensive review and constructive advice.

In 1990, Dr. Smith retired from active research at the Eastern Regional Research Center (ERRC) in Philadelphia. Although retired, he still remains active at ERRC as a Collaborating Scientist, specializing in writing review articles on foodborne illnesses.

Chris Remus (left) from DiverseyLever presents John Bruhn (right) with the 1999 Harry Haverland Award. Sponsored by DiverseyLever/US Food Group.



HARRY HAVERLAND CITATION AWARD

John C. Bruhn

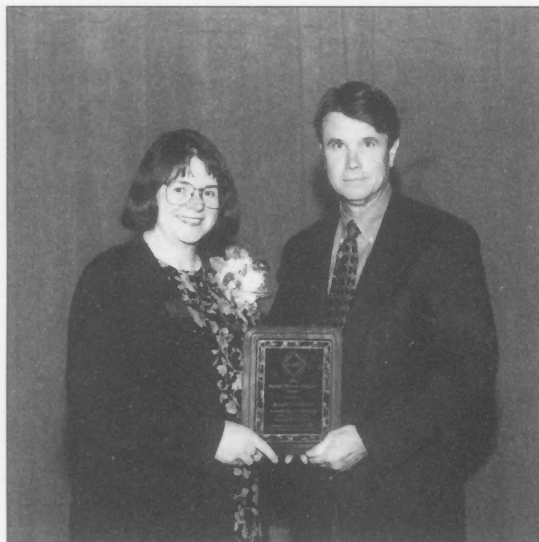
Davis, California, USA

The Harry Haverland Citation Award is presented to an IAMFES Member for years of devotion to the ideals and objectives of IAMFES. Dr. John C. Bruhn is the recipient of the 1999 Harry Haverland Citation Award.

Dr. Bruhn has been an active Member of IAMFES since 1969. He has been a Chairperson for the *Dairy, Food and Environmental Sanitation* Management Committee and the Affiliate Council. He is a Member of the Editorial Boards of *Dairy, Food and Environmental Sanitation* and the *Journal of Food Protection* and has been involved with several other Committees, including the 3-A Standards Committee and the Undergraduate Recognition Committee. Dr. Bruhn has organized many symposia for the IAMFES Annual Meetings and was the recipient of the IAMFES Educator Award in 1983. He has also been active in the California Affiliate by serving many years as delegate to the Affiliate Council.

Dr. Bruhn received his B.S. in food science from Michigan State University in 1962. He received his Ph.D. in 1968 from the University of California-Davis in dairy bacteriology. His research and educational programs for the dairy industry have emphasized factors related to the quality and safety of raw milk, processed milk, and dairy foods.

IAMFES Vice President Jenny Scott (left) honors Russell Flowers (right) with the Harold Barnum Award. Sponsored by Nasco International.



HAROLD BARNUM INDUSTRY AWARD

Russell S. Flowers
Homewood, Illinois, USA

The Harold Barnum Industry Award is presented to an IAMFES Member for outstanding service to the public, IAMFES, and the food industry. Dr. Russell S. Flowers is this year's recipient of the Harold Barnum Industry Award.

Dr. Flowers is President and Chief Executive Officer of Silliker Laboratories Group, Inc. and a leading researcher, lecturer, and writer on the development of rapid methods for the detection of foodborne pathogens, laboratory quality assurance, and control of microbial contamination in foods and food processing environments.

Dr. Flowers received his B.S. and M.S. from North Carolina State University and his Ph.D. from the University of Illinois. Prior to joining Silliker in 1979, he served as an Assistant Professor of Microbiology at the University of Arizona. He has authored or co-authored numerous scientific refereed research articles and given hundreds of seminars and scientific presentations to professional and trade associations.

Dr. Flowers is a member of several professional societies, including the International Association of Milk, Food and Environmental Sanitarians, AOAC International, the American Society for Microbiology, Institute of Food Technologists, and the International Commission on Microbiological Specifications for Foods. He has been the recipient of several prestigious honors within these various associations.

IAMFES Secretary James Dickson (left) presents Eric Johnson (right) with the Educator Award. Sponsored by Nelson-Jameson, Inc.



EDUCATOR AWARD

Eric A. Johnson
Madison, Wisconsin, USA

The IAMFES Educator Award is presented to an IAMFES Member for outstanding service to the public and IAMFES through work in the education field of food safety. Dr. Eric A. Johnson is this year's recipient of the Educator Award.

Dr. Johnson received his B.S. in fermentation science in 1976, and his M.S. in food science in 1978, from the University of California-Davis. In 1980, he entered graduate school at M.I.T., where he obtained his Sc.D. in food microbiology in 1983. During his doctoral program, he studied thermophilic clostridia, industrial and food fermentations, biochemical engineering, and bacterial physiology. He studied as a postdoctoral research associate at Harvard Medical School from 1983 to 1985.

Dr. Johnson is currently a Professor in the Department of Food Microbiology and Toxicology at the University of Wisconsin-Madison. His current research program involves the study of foodborne pathogens, particularly *Clostridium botulinum*, development of preservation systems for foods, and use of botulinum toxin as a pharmaceutical. He has published more than 100 peer-reviewed papers and 20 chapters on food and industrial microbiology.

Tom Boufford, Ecolab, Inc. presents Gloria Swick with the Sanitarian Award. *Sponsored by Ecolab, Inc., Food and Beverage Division.*



SANITARIAN AWARD

Gloria I. Swick

New Lexington, Ohio, USA

The IAMFES Sanitarian Award is presented to an IAMFES Member for outstanding service to the public, IAMFES, and the profession of the Sanitarian. Ms. Gloria I. Swick is this year's recipient of the Sanitarian Award.

Ms. Swick, M.S.A., R.S., a graduate of the Ohio State University, has a B.S. in agriculture, with majors in biological science, animal science, and agricultural education. She earned her M.S. in administration with a concentration in health services administration from Central Michigan University.

As Perry County Health Commissioner, Ms. Swick has a weekly newspaper column and speaks throughout the area, in addition to performing administrative duties and inspections. She is a mentor to young sanitarians and

has made the Perry County Health Department a training agency for the State Board of Sanitarian Registration of Ohio. She is a member of the following: Planning Commission, Local Emergency Planning Committee, Board of Directors for Six County Inc. Mental Health Counseling Centers, Chairperson of the Policy Advisory Committee of the CFLP Solid Waste District, OEHA, AOHC, SEO-CEO, and OPHA.

As an active Member of IAMFES since 1991, Ms. Swick has served on several IAMFES Committees and Professional Development Groups. She has given presentations at two IAMFES Annual Meetings and served as the Ohio Delegate to the Affiliate Council for the past eight years. Ms. Swick has also been a member of the Ohio Association of Milk, Food and Environmental Sanitarians (OAMFES) since 1985 and served on their Board for eight years.

Developing Scientist Oral Winners (left to right): Kathleen Glass, Developing Scientist Competition Committee Chairperson; Susan Abraham (1st Place); Peter Taormina (2nd Place); and Robert Sudler (3rd Place).



Developing Scientist Poster Winners (left to right): Kathleen Glass, Developing Scientist Competition Committee Chairperson; Ziad Jaradat (1st Place); Kazue Takeuchi (2nd Place), and Yongsoo Jung (3rd Place).



IAMFES Vice President Jenny Scott (center) and Dane Bernard (right) from National Food Processors Association present Michael Doyle (left) with the NFPA Food Safety Award.



NFPA FOOD SAFETY AWARD

Michael P. Doyle

Griffin, Georgia, USA

The National Food Processors Association's (NFPA) Food Safety Award honors an individual, group, or organization for pre-eminence in, and outstanding contributions to, the field of food safety. This year's honored recipient is Dr. Michael P. Doyle.

Dr. Doyle is a Regents Professor of Food Microbiology, Director of the Center for Food Safety and Quality Enhancement, and Head of the Department of Food Science and Technology at the University of Georgia. He is an active researcher in the area of foodborne bacterial pathogens and works closely with the food industry on issues related to the microbiological safety of foods. His research has focused on the study of mechanisms of pathogenicity, the development of methods for pathogen detection, and the identification of means to control or eliminate pathogens from foods.

Dr. Doyle is a graduate of the University of Wisconsin-Madison, where he received his B.S. in bacteriology and M.S. and Ph.D. in food microbiology. He serves on several committees of many scientific organizations and has served as a scientific advisor to many groups, including the World Health Organization and International Life Sciences Institute-North America. He has published more than 300 scientific publications, and has been Editor of two authoritative books, *Foodborne Bacterial Pathogens* and *Food Microbiology: Fundamentals and Frontiers*, and has given more than 300 presentations at national and international scientific meetings. In addition, he has received several research awards from academic and national scientific organizations, has been elected a Fellow of the American Academy of Microbiology, and has been awarded several name lectureships.

Robert Brackett (left) presents this year's Crumbine Award to Lake County Health Department. Accepting the award is Thaddeus Koeune (right).



THE CRUMBINE AWARD

The Crumbine Award recognizes excellence and continued improvement in a comprehensive program of food protection at the local level. The winner of the 1999 Samuel J. Crumbine Consumer Protection Award is the Lake County Health Department in Waukegan, IL.

Lake County's program was recognized for its forward-thinking approach to hands-on commitment to education and training in its 24-hour foodborne illness hotline.

This year's sponsors include: The Conference for Food Protection in cooperation with The American Academy of Sanitarians; The Association of Food and Drug Officials; The Foodservice & Packaging Institute, Inc.; The International Association of Milk, Food and Environmental Sanitarians, Inc.; The International Food Safety Council; The National Association of County and City Health Officials; The National Environmental Health Association; NSF International; Public Health Foundation Enterprises, Inc.; and Underwriters Laboratories, Inc.

Affiliate Council Chairperson Beth Johnson (left center) presents awards to the following Affiliate representatives: Charles Price (left), Illinois Affiliate; Joe Disch, (right center), Wisconsin Affiliate; John Bruhn (right), California Affiliate. (Not pictured: Kansas Affiliate and Wyoming Affiliate.)



Beth Johnson awards the Iowa Affiliate a plaque for the Best Annual Meeting for Affiliates; the award was accepted by William LaGrange.



**Membership Achievement Award
for Affiliates**

(Highest Percentage Increase)

Awarded to: Kansas Association
of Sanitarians

**Membership Achievement Award
for Affiliates**

(Highest Number Increase)

Awarded to: California Association
of Dairy & Milk Sanitarians

**Best Communications Materials
for Affiliates Award**

Awarded to: Wyoming Environmental Health
Association

**Best Education Conference
for Affiliates Award**

Awarded to: Associated Illinois Milk, Food
& Environmental Sanitarians

**Best Annual Meeting
for Affiliates Award**

Awarded to: Iowa Association of Milk,
Food & Environmental Sanitarians, Inc.

Minutes

of the IAMFES 86th Annual Business Meeting August 3, 1999 Dearborn, Michigan

President-Elect Jack Guzewich welcomed attendees and introduced President Robert Brackett.

President's Report: President Robert Brackett reported on programs and activities of IAMFES over the past year. He cited numerous accomplishments and advancements made during his Presidency. President Brackett encouraged Member involvement and recognized the dedication of members of the Executive Board. He thanked all members who served on Committees, Professional Development Groups and Task Forces during the last year, and also thanked the IAMFES staff for their work on behalf of the Association.

President Brackett indicated that the Association's negative fund balance stood at \$70,000 at the beginning of the fiscal year and with good results for the current year, the negative fund balance should remain at approximately \$40,000. He also noted that 60-to-70% of the membership took advantage of the discount program to renew their membership. An increase of 618 new Members has occurred since last year's Annual Meeting, including 118 new international Members. President Brackett welcomed the British Columbia Affiliate, the newest IAMFES Affiliate.

Technical accomplishments cited by President Brackett included the successful completion of a Risk Assessment workshop during the past year; indexing of JFP in Index Medicus; the improved and enhanced IAMFES Web site; the revised Foodborne Procedures manual, and the reduced shipping time required for international mailings.

Call to Order: The Annual Business Meeting of the International Association of Milk, Food and Environmental Sanitarians was called to order by President Robert Brackett at 4:15 p.m. at the Hyatt Regency Dearborn Hotel in Dearborn, Michigan. A quorum, as defined by the IAMFES Constitution, was determined to be present.

Moment of Silence: President Brackett asked those present to observe a moment of silence in memory of departed colleagues.

Parliamentarian Shirley Brodbeck was introduced, and her role was explained.

Minutes: Minutes from the IAMFES 85th Annual Business Meeting were approved as they appeared in the November 1998 *Dairy, Food and Environmental Sanitation*.

Teller's Report: Ann Draughon reported results of the election of Anna Lammerding for Secretary during the 1999-2000 year. Authorization to destroy all ballots was approved on a motion made by Michael Brodsky and seconded by Richard Brazis.

Executive Director's Report: David Tharp reported on IAMFES office operations and plans for the next year. David noted that international subscribers are receiving their journals within a two-week time period instead of in two-to-three months. He also noted that IAMFES changed printers for the *Journal of Food Protection*, to Allen Press in Lawrence, Kansas.

David reported that additional information has been added to the IAMFES Web site, and a link for the *Journal of Food Protection* has been established to the Allen Press Web site. Future Web site expansion and developments are expected.

A Statement of Activity for the General Fund showing results for the year ending August 31, 1998 was distributed. A six-year trend for revenue and expense was also distributed and discussed.

David expected the Association would complete the year ending August 31, 1999 with net revenues exceeding the projected budget.

JFP Management Committee Report: Anna Lammerding, Chairperson of the *Journal of Food Protection* Management Committee reported on advances made during the last year. Her report stated that 20% more manuscripts were submitted during 1998, and that the turnaround time for authors decreased to approximately nine months from submission to publication.

Anna summarized recommendations to the Executive Board. These include to research delivery of the Journal on-line. The Committee expects indexing in Index Medicus to increase exposure for the Journal. The commercialism policy recommended last year was approved and is now part of the Author Instructions. Anna welcomed Don Conner as the new Chairperson

of the JFP Management Committee and Isabele Walls as the new Vice Chairperson. She also reported that John Sofos was re-appointed as scientific editor to a four-year term.

DFES Management Committee Report:

O.D. (Pete) Cook, Chairperson of *Dairy, Food and Environmental Sanitation* Management Committee, reported on advances made during the last year. Twenty-four manuscripts were received for the Journal last year, and a new "Thoughts on Food Safety" column was introduced. After approval last year, a policy on commercialism was enacted for *DFES* and added to the Author's Instructions.

A summary of recommendations to the Executive Board was presented. These included formulation of a business plan and a modified publication schedule.

Foundation Fund Report: Harry Haverland reported on programs supported by the IAMFES Foundation. He thanked Members and Sustaining Members for their support of the Foundation and this year's silent auction participants, which raised more than \$2,700. Harry reported a Foundation goal of raising \$100,000 by the year 2000, and said last year showed the highest levels of contributions to date. The California Affiliate presented the Foundation with a donation check for \$1,000.

Affiliate Council Report: Beth Johnson reported on this year's Affiliate Council Meeting. Three newsletters were published and mailed to delegates and Affiliate Officers during the last year.

New Affiliate officers elected were: Randy Daggs, Affiliate Council Chairperson, and Fred Weber, Affiliate Council Secretary.

Unfinished Business: No Unfinished Business was brought before the Annual Business Meeting.

New Business:

- British Columbia Affiliate - Clive Kingsbury accepted the Affiliate Charter on behalf of the British Columbia Food Protection Association, which became the 34th IAMFES Affiliate.
- **Constitution and Bylaws Amendments** - President Brackett presented a revised and amended Constitution and Bylaws to the Membership. He explained that the Executive Board requested the Constitution and Bylaws Task Force to review the Constitution and Bylaws and make modifications as they relate to changing the name of the Association to the "International Association for Food Protection." He further explained that the Executive Board passed resolutions at the April 1999 Executive Board meeting as is required before Members vote on Constitutional changes. A motion to accept the revised and amended Constitution and Bylaws was made by Dean Cliver and seconded by Ewen Todd. After a short discussion, the motion passed. President Brackett asked David Tharp, Executive Director to prepare and distribute a full Membership ballot. Results of the Membership vote will be reported in the November 1999 issue of *DFES*.
- Student Organization - Scott Burnett, a University of Georgia Student Member, asked the Association to consider establishing an IAMFES Student Organization. President Brackett agreed to follow up on the request.

Adjournment: President Brackett adjourned the meeting at 5:15 p.m.

Respectfully Submitted,

James Dickson, Secretary

Visit our Web site
at www.iamfes.org

Highlights

of the Executive Board Meeting July 30 - August 5, 1999 Dearborn, Michigan

Following is an unofficial summary of Executive Board actions from the IAMFES Executive Board Meeting:

Approved the following:

- Minutes of April 17-19, 1999 Executive Board Meeting.
- Minutes of July 2, 1999 Executive Board Conference Phone Call.
- Affiliate Charter for the British Columbia (Canada) Food Protection Association.
- Establishment of a Task Force to study IAMFES' relationship with the 3-A processes.

Discussed the following:

- E-mail votes taken since the April Executive Board Meeting.
- Communication Update: Journals remain on schedule, manuscript submission for both publications continues to increase, processing time has decreased, commercialism policy now included in Author Instructions.
- Membership Update: Membership continues to outpace 1998, 1997 and 1996 levels, new Members come from industry (61%), government (21%), and education (16%), overall demographics similar at 58%, 22% and 17% respectively.
- Advertising Update: Ad sales continue to improve, Exhibit Hall space sales met goals, sponsorship for Annual Meeting shows large increase over 1998.
- Financial Update: June 1999 financial statements were reviewed. Actual results exceed budget.

- Reviewed revisions to update the Personnel Policy Manual.
- Committees & PDGs: Discussed changes in Chairpersons and received reports from meetings held at the Annual Meeting.
- HACCP Task Force - recommends not rewriting the HACCP Manual.
- Board Member attendance at Affiliate meetings.
- Discussed other groups' interest in becoming an IAMFES Affiliate.
- Update on 1999 Annual Meeting events and schedules.
- Workshops held prior to the 1999 Annual Meeting.
- Future workshop ideas.
- Planning for 2000, 2001 and 2002 Annual Meetings; future Annual Meeting sites.
- Food Safety Alliance.
- Co-sponsorship of Food Micro 99, Japan PC2000, and ASAE 2000.
- HACCP program for the dairy industry.
- History project to record and recap IAMFES' history.
- FSTEAs, coordination of food safety materials - Gale Prince to represent IAMFES.
- Reviewed Fellows selection process.
- Student Chapters or Affiliate organizations.

Next Executive Board meeting: November 12 - 14, 1999, Des Moines, Iowa.

Committee Minutes

IAMFES 86th Annual Meeting August 1-4, 1999 Held at the Hyatt Regency Dearborn Hotel Dearborn, Michigan

STANDING COMMITTEES

Dairy, Food and Environmental Sanitation Management Committee

Members Present: Bob Brackett, Fred Weber, Doug Holt, Susan Sumner, John Bruhn, Christine Bruhn, Pete Cook, Harold Bengsch, Bob Gravani, LeeAnne Jackson, Linda Harris, Bill LaGrange, Robert Sanders, Chris Newcomer, Jack Guzewich, and Jenny Scott.

Guests: Joan Rosen (for Larry Bell), and Helene Uhlman.

Staff Members: Donna Bahun and David Tharp.

Appointment of Recording Secretary: Linda Harris. No objections.

Additions/Modification to Agenda and Approval: Pete Cook, Addition to New Business - Selection of Chair and Vice Chair; Discussion of Business Plan. Approved.

Minutes of the 1998 Meeting:

The minutes of the 1998 *DFES* management committee meeting were published in the November issue of *DFES*. The minutes were adopted by consensus of the committee.

Scientific Editor Report - Bill LaGrange

A total of 26 manuscripts was submitted to *DFES* in 1998, 22 of these were published, one was returned to the author for revision, one was sent to IAMFES for publication and two were rejected. To date, in 1999, 24 manuscripts have been submitted, one has been published, five have been returned to the author for revisions, 10 are currently under review, four have been sent to IAMFES for publication, two were recommended as more appropriate for the *Journal of Food Protection* and three were rejected. The reasons for rejecting articles were usually that the

article was not appropriate for *DFES*. None were rejected for violation of commercial policy.

There has been a major effort to solicit articles for the journal. Letters were sent to potential authors who presented at last year's annual meeting. The Executive Board submitted names of potential authors and topics. Committee members are encouraged to promote publication in the journal.

John Bruhn commented that many people still believe that *DFES* articles are not peer reviewed and thought that this might be a reason for low submission rates. He suggested that wording regarding peer review status appear somewhere on the front page. Donna Bahun and David Tharp will explore this further.

Some of the articles in *DFES* are not peer reviewed. John Bruhn suggested publication of a single-page set of instructions for non-peer reviewed articles. David Tharp and Donna Bahun will explore this further.

Production Editor Report - Donna Bahun

The difficulty in soliciting articles for *DFES* was noted in the Production Editor Report. A variety of strategies have been used in an attempt to increase submission rates. These include: letters of invitation to annual meeting presenters and letters to heads of food science departments requesting submission of articles from faculty members.

The new "Thoughts on Today's Food Safety column" is beginning to come together after a difficult start in generating sufficient articles. The most difficult aspect of this column is identifying subjects and appropriate authors who are willing and have the time to respond. Currently, articles are available through the November issue. A subcommittee is responsible for identifying potential topics and authors. A member of the subcommittee makes the first contact with the potential author. Bob Gravani suggested that the subcommittee meet at the IAMFES meeting. Members of the subcommittee agreed.

There was a discussion of the format of the article. The general consensus was that it should be contained within a single page without reducing the type size further. This will probably mean a reduction in the maximum word count for the article from 1000 to 750 or 800. After some discussion, it was decided that references were appropriate in some cases for the article. However, it was agreed that references use should be limited to two or three and they should fit as part of the one-page format. Separate instructions to authors are being developed for the Thoughts on Today's Food Safety. To date, the focus has been on having sufficient articles to publish the column on a monthly basis. The galley print does not go back to author but it could.

The policy on commercialism has been incorporated into the instructions for authors for *DFES*.

Executive Board Report – Robert Brackett

The executive board is very supportive of *DFES*. They have tried to be actively involved by suggesting authors who might be interested in publishing in the journal. Some suggestions for the pool of potential authors are assistant professors, graduate students in the later stages of their Ph.D. program, students presenting in the IFT undergraduate paper competition, developing scientist award presenters. The executive board suggests soliciting long-term members to consider publishing articles on the history of IAMFES. Issues that might affect *JFP/DFES*: IFT is undergoing a review of the *Journal of Food Science* and is planning to specifically break out the table of contents to include a subsection on food safety. It will be important to maintain short turn-around times and publication schedules.

IAMFES Office Report – David Tharp

David Tharp complemented Donna Bahun on her contributions to *DFES* as well as annual meeting materials. He noted major changes in office personnel, particularly the loss of Carol Mouchka. Carol's replacement was terminated within three months which resulted in a complete restructuring of office responsibilities. Rick McAtee is no longer with IAMFES; his duties have largely been outsourced. Lisa Hovey was appointed assistant director. *JFP* is now published by Allen Press; they have the table of contents and abstracts on line for current and back issues. This is available on the IAMFES web site as well as the Allen Press Web site. The IAMFES web site is considerably larger than last year with about 80 pages of information. Shipping methods for international members outside of North America has traditionally been shipped by surface transportation. This has been changed to a drop shipment by air followed by local surface delivery, which has improved delivery time to approximately 2 weeks from 2 to 3 months. IAMFES membership has increased. There are currently close to 3,000 members. Membership dues have not gone up. Name

change and changes to the constitution and bylaws has been a hot topic in *DFES*.

There was some discussion as to whether the name of *DFES* would be changed if the name of the organization changes. It was generally decided that this would be appropriate as a topic of discussion for next year. It was agreed that any name change would come as a recommendation from the management committee to the Executive Board.

Old Business:

1. "Thoughts on Today's Food Safety column" Column Report.

Covered under Production Editor Report.

2. Commercialism Policy for *DFES*.

Included now in the instructions for authors. Consistent with instructions to speakers and to *JFP*.

3. Business Plan.

Development of a business plan was proposed last year. However, with turnover in the IAMFES office staff during the past year, this was not done. John Bruhn moved to recommend development of a business plan for *DFES* to the Executive Committee, Fred Weber seconded, approved.

New Business:

1. Discuss Focus Issues of *DFES*.
2. Publication schedule for advertising purposes in media kit. After some discussion, it was agreed that focus topics for many of the *DFES* issues were not appropriate when peer-reviewed articles were considered. Having focus topics makes coordinating the journal more difficult and may result in delaying publication of appropriate articles. Focus issues for 3-A Sanitary Standards Holders' List as well as for preview and review of the annual meeting were appropriate.

Election of Vice Chairperson and Chair:

Tom Gilmore has resigned due to a high workload over the next year. Therefore, a chair is needed to take over for Pete Cook for 1999/2000 and a vice chair is needed for a 2-year term. It is expected that the vice chair would become chair of the *DFES* management committee in the year 2001-2003.

Christine Bruhn and Linda Harris were contacted and agreed to let their name stand. Both are willing to assume the role of vice chair or chair. Motion to accept Christine Bruhn and Linda Harris as nominees to the Executive Committee: Harold Bengsch, Chris Newcomer seconded. Approved.

Summary of Recommendations to the IAMFES Board:

1. Donna Bahun and David Tharp should develop a Business Plan for *DFES*. The committee suggests that the IAMFES strategic plan of 1994 or 1995 be considered when developing this plan.
2. Linda Harris and Christine Bruhn will stand as candidates for Chair and Vice Chair of the *DFES* Management Committee. The committee agrees to accept the decision of the President Elect Jack Guzewich for selection of Chair and Vice Chair.
3. It is recommended that the publication schedule be modified in the media kit. The concept of feature articles is only appropriate for issues with regular features such as annual meeting issues or the 3-A Sanitary Standard Holders' List. It is recommended that other issue themes be discontinued.

Final comments from Committee:

Fred Weber - Role of Internet in the future. Informative and less expensive. Suggested as a topic item for next year. Comment to board.

Bob Gravani - Suggested that committee look at developing a food safety spotlight similar to the status summaries of IFT. As part of the journal, perhaps semi annually. In depth review of a subject e.g., allergens. Need to meet more often than annually? Ask membership for other articles.

Final Comments from Chairperson:

Recommends conference call for committee as a whole in February or March to discuss issues that have come up over the year. Hour-long conference call at that time.

Meeting Adjourned: 3:00 p.m.

Chairperson: Pete Cook.

Journal of Food Protection Management Committee

Members Present: Anna M. Lammerding, Larry Beuchat, John Sofos, O.D. Pete Cook, Roger Cook, Mansel Griffiths, Paul Hall, Lee-Ann Jaykus, J. Eric Line, and Don Conner (Incoming Chairperson).

Members Absent: Jinru Chen, Roberta Morales, E. Jeffrey Rhodehamel, Isabel Walls (Incoming Vice-Chairperson), and Richard Whiting.

Board Members/IAMFES Staff Present: Jack Guzewich, Jenny Scott, David Tharp, Bev Corron, and Lucia Collison.

Meeting Called to Order: 3:10 p.m.

Recording Secretary of Minutes: Anna Lammerding.

Old Business:

1. Minutes of 1998 meeting were reviewed and approved (Motion by Roger Cook, seconded by Lee-Ann Jaykus).
2. Reviewed recommendations and Executive Board actions. Commercialism policy is now included in Instructions to Authors.
3. Committee Member Roger Cook, from New Zealand, noted that the improved delivery of IAMFES journals to international members was very much appreciated.

New Business:

1. Report from Scientific Co-Editors: Increased number of manuscripts submitted in 1999 (As of July 15, 213 manuscripts compared with 175 for same period in 1998). Turn-around time from submission to publication averages 9.5 months, compared with 11.1 months in 1998.
2. Report from Administrative Editor: New printer is Allen Press, in Lawrence, Kansas, effective January 1, 1999. The company provides improved efficiency, and Internet access for Table of Contents and abstracts through APT Online. Scientific Citations report ranks *JFP* as 10th highest among Food Science and Technology journals (the list does not include "non-food" micro journals).
3. Discussion on multi-media survey of readership.
4. Motion in favor of John Sofos being re-appointed for a second four-year term was approved.

Recommendations to IAMFES Executive Board:

1. That the costs/benefits of offering electronic/on-line delivery of *JFP* be investigated.
2. That staff investigate the opportunity of offering retrospective issues of *JFP* to be indexed in Index Medicus.
3. That John Sofos be re-appointed for another four-year term as Scientific Co-Editor.

Next Meeting Date: Annual Meeting, Atlanta, 2000.

Meeting Adjourned: 4:35 p.m.

Chairperson: Anna Lammerding.

Past Presidents' Advisory Committee

Summary of Activities and Action Taken:

The IAMFES Past Presidents were updated by David Tharp, Executive Director on the status of the associations finance conditions, membership status, publications and office reorganization. The group discussed the proposed name change, membership survey results related to the name change, and changes to the Constitution and Bylaws. The Past Presidents' committee voiced support for the name change. The committee also discussed the idea of a leadership workshop for affiliate delegates and committee chairpersons. The committee supported the idea and encouraged the IAMFES Executive Board to move forward with such a workshop for 2000.

Chairperson: Gale Prince.

Program Committee

Members Present: David Golden, Paul Hall, Donna Garren, Don Conner, Don Breiner, Maria Nazarowec White, John Bruhn, Alex Castillo, Frank Yiannas, Stan Bailey, and Tom Schwarz.

Member Absent: Jeff Farber.

Board Members and IAMFES Staff Present: Jack Guzewich, Jenny Scott, Bev Corron and Lucia Collison.

Meeting Called to Order: 12:55 p.m.

Recording Secretary of Minutes: Paul Hall.

New Business:

1. Consider minimum distance between poster boards.
2. Do not set podium where it blocks screen.

Proposed Symposium Topics:

1. Dairy Plant HACCP: Where Are We and Where Are We Going?
2. Large Dairy Herds.
3. Transportation of Raw Milk and Finished Dairy Products.
4. Cook Chill/Sous Vide Technology.
5. IAMFES Online SOP's for Retail Food Operations Processes.
6. Post-cooking, handling and storing HACCP based strategies for cooked and ready-to-eat seafoods based on Quantitative Risk Assessment.
7. Should contemporary molecular techniques for *Vibrio* and Viruses be used by FDA in policy making decisions?
8. Processing to control pathogens in the next millennium – Poster Symposium.
9. Surveillance of Foodborne Disease and its Control in Latin America and the Caribbean.

10. Current Issues in Produce Safety.
11. *Listeria*: A Year Later, What Have We Learned.
12. Using Genetic Methods to Track Microorganisms in Food Production and Processing.
13. Bioterrorism and Food Protection.
14. Real Time Detection Systems.
15. *Campylobacter* Performance Standards: Implementation and Control.
16. Testing to Reduce Risk: How Much is Enough?
17. Unified Food Safety Inspection and Rating in Foodservice and Retail Markets.
18. Processing to Make Foods Safer.
19. Microbiological Sampling of Processed Foods and Process Environments.
20. Small Round Structured Viruses and Foodborne Disease.
21. *Listeria monocytogenes*: Current Issues and Concerns, Section 1 Pathology, Virulence, and Risk Assessment of *L. monocytogenes*.
22. *Listeria monocytogenes*: Current Issues and Concerns, Section 2 Detection, Enumeration, and Intervention Strategies for *L. monocytogenes*.
23. Food Labeling Issues.
24. The Safe Production of Sprouts from Seeds; Update on Research Activities and Recommendations on Best Practices for the Sprout Industry.
25. Significance of Mycotoxins in the Global Food Supply.
26. The Earth is Curved (and so are kinetic data).
27. Food Biotechnology: Challenges and Opportunities in the New Millennium.
28. International Trends in On-Farm Food Safety.

Summary:

22 accepted for further development; 6 rejected.

Workshops proposed:

1. Rapid Microbiological Methods – *Listeria* and *Campylobacter*.
2. Introduction to Microbial Risk Analysis Workshop.
3. Food Safety Network.
4. Writing and Implementing a Retail Food HACCP-TQM Manual.
5. Foodborne Disease, in conjunction with AFDO.
6. Food Safety Impact from Equipment and Facility Construction.

7. Change Symposium # 19, Microbiological Sampling of Processed Foods and Process Environments, to possible workshop.

Summary:

4 workshops accepted for further development; 3 rejected. A suggestion was made for a possible Latin America Workshop

Other Business:

1. Design Workshop Proposal Form.
2. Submission date – January 10, 2000.

Recommendations to the Board:

1. The option for LCD projectors to be available to presenters.
2. Donna Garren nominated to chair Developing Scientist Awards Competition.
3. No watermarks or logo; placement and size restriction for both slides and posters.

Next Meeting Date: January 21-22, 2000, Atlanta Hilton.

Adjourned: 4:34 p.m.

Chairperson: David Golden.

SPECIAL COMMITTEES

Committee on Communicable Diseases Affecting Man

Members Present: Frank L. Bryan, O.D. Pete Cook, John J. Guzewich, Daniel Maxson, Barry S. Michaels, Richard C. Swanson, Ewen C. D. Todd, and Leslie Wisniewski.

Members Absent: Charles Bartleson.

Board Members/IAMFES Staff Present: Jack Guzewich.

Visitors: One.

Meeting Called to Order: 8:00 a.m.

Recording Secretary of Minutes: Frank Bryan.

Old Business:

The 5th edition of the manual "Procedures to Investigate Foodborne Illness" was published early in the year. Activities were centered on thanking (and distributing copies to) committee members, peer reviewers, and others who contributed to the manual, representatives of international agencies who have interest in investigating and surveillance of foodborne diseases, and those who have indicated interest in translation of the manual. The first printing has been

exhausted, and a second printing has been made. Activities of the committee chairman included trying to get information from the executives on why the manual "Procedures to Implement Hazard Analysis Critical Control Point Systems" was withdrawn from sale. This action caused a cessation of activities to revise this manual, which had been in progress over the previous year up to the time a representative of the Executive Board informed the Committee of the action of the Executive Board at the last annual meeting. Afterwards, the Committee Chairman met with the IAMFES President and the Past President, two letters also were written to them, and discussions were made with the Executives to plead for this information. The chairman of the Committee was informed that a Task Force on HACCP was formed by the Executives, but none of the Committee Members were asked to serve on the Committee.

Because of the situation that has been briefly stated above, members of the Committee have been relatively inactive over the past year waiting for word from the Executives to continue revision of the HACCP manual or to pass this responsibility to some other group. This is the longest duration of inactivity of the Committee for several decades! In years to come, this will become obvious by the lack of materials in the form of manuals and articles generated by the Committee. At least a 2-year lag has occurred, and it is continuing.

On July 28, a letter was received from the President of IAMFES with an attached report from the HACCP Task Force. The report complimented the Committee on the past contributions of the manual, but they considered it out of date. (This was the reason for the work on updating the manual!) The Task Force believes that the report of the National Advisory Committee on Microbiological Criteria for Foods is the guideline that should be used by all, and if anything else is used or written it should follow that document. The Task Force questioned whether a IAMFES HACCP manual is necessary. (It should be noted that the Committee Chairman met with the Executive Board and Executive Director and his key staff members prior to commencing revision of the HACCP manual. At the time, the Committee Chairman stated that there were a number of other documents on the HACCP concept that were available from other sources and asked whether the Committee should revise the manual. There was no particular discussion on this matter, but none of the Executive Board Members stated any objections. Thus, the Committee initiated steps for revising the manual.)

New Business:

The mission of the proposed "International Association for Food Protection" (name change, if this occurs) significantly limits the Committee objectives to the surveillance and control of foodborne diseases (and related items). Recently there has been a series of articles on foodborne disease surveillance and a revision of the foodborne disease investigation manual,

so it will be a few years or longer before these topics need serious revision or updated editions. Therefore, possible future activities of the Committee are to prepare documents on (a) action to take when food workers are found to be colonized, infected, or ill with foodborne disease pathogens or (b) control of foodborne diseases. The (a) activity could serve as a useful document for local and state disease control and food regulatory agency, as well as to guide food industry management. The outcome may (and no doubt will) differ from presently available international, federal, state or local guidelines on this subject. Whether this is tolerable to the Executives remains to be seen; therefore full advance approval would have to be granted by the Executives before this activity could be initiated. The (b) activity has been done to a great extent in the HACCP manual because the HACCP approach focuses on prevention and control of operations that contribute to the occurrence of foodborne diseases. Thus, it was the manual on control of foodborne diseases. Activities in this direction, however, are presently blocked or at least stalled by the Executives and perhaps others (such as the task force and whoever else is granted the responsibility to revise/rewrite the HACCP manual). These dilemmas need resolution! The IAMFES, or IAFP, apparently is going in a direction that does not make revision of the vector-borne or waterborne manuals of high priority, or perhaps not even a future function of the organization. This is also the case for developing materials that guide sanitarians and others in carrying out environmental health activities other than those relating specifically to foods.

Certain Professional Development Groups (PDG) that are presently dealing directly or indirectly with foodborne diseases cloud responsibilities for these activities. These matters need to be sorted out, but this cannot be done by the Committee without communication from the Executives and perhaps PDG chairs.

Summary of Activities and Action Taken:

Several topics were presented as possible Committee projects:

1. Hazard Analysis/Hazards Guide
2. Farm Hazard Analysis
3. Risk Assessment
4. Management of the Infected Food Handler (see "a" above)
5. Control of small, round structured viruses (srsv) in the food establishment (see "b" above)
6. Waterborne manual update (Committee felt this is not needed yet)
7. The committee has not made a final decision on which project(s) will be pursued.

Recommendations to IAMFES Executive Board:

1. Improve communications with this Committee.
2. Assist in sorting out responsibilities of the Committee and Professional Development Groups that have common interests. Serious overlapping is occurring. This will become more complicated as this situation is allowed to occur.

Next Meeting Date: Next annual meeting.

Meeting Adjourned: August 1, 1999 - 12:00 p.m.

Chairperson: Frank L. Bryan.

Committee on Sanitary Procedures

Members Present: Dan Erickson (Committee Chair), Helen Piotter, Ron Schmidt, and Charles Price.

Board Members Present: Gale Prince.

Meeting called to order: 10:00 a.m.

Recording Secretary of Minutes: Helen Piotter.

Old Business:

- A. 3-A Sanitary Standards Annual Meeting.

The committee met during the week of May 18 to 24, 1999 at the 3-A Sanitary Standards Annual Meeting in Milwaukee, WI. During these meetings the committee discussed and provided editorial comments on six amendments and proposed changes to standards. Four of the proposed changes were moved to the plenary session for approval in joint committee, while two of the proposed changes were returned to the task committee for rewriting.

The committee also spent approximately 22 hours during the May meeting working on proposed changes on the *3-A Sanitary Practice for High Temperature Short Time (HTST) and Higher Heat Shorter Time (HHST) Pasteurization*. This 150-page document was tabled as the time limit for the meeting had expired. It was recommended that no further editions of the document be produced until the committee completed its review. A meeting has been scheduled for October 26, 1999 in Chicago, Illinois for the purpose of completing the review of the Pasteurization Practice.

Attendance: Dan Erickson (Chairperson), Sherry Roberts (Vice-chairperson), Dale Chilton, Michael Ely, Richard Gleason, Pat Heslip, Jon Lauer, Gary Newton, Helen Piotter, John Ringsrud, Ron Schmidt, Stan Welch, Don Wilding, Philip Wolff (USDA/AMS Rep.), and Charles Price (USHHS/USPHS/FDA Rep.).

Mr. Charles Price was designated as the official USPHS/FDA representative for the 1999 meeting.

- B. National Sanitation Foundation (NSF/3-A Task Group on Meat and Poultry Processing Equipment document) continues to move forward towards eventual acceptance. Input from CSP has been requested.

New Business:

- A. The CSP discussed a potential name change for the committee. There has been some confusion about the present name which does not adequately reflect the committee's function and responsibilities. A motion was made to develop a suitable name at the October meeting.
- B. Gale Prince updated CSP on the current IAMFES/3A relationship.
- C. CSP discussed the possibility of conducting a workshop at the 2000 IAMFES meeting on equipment design, fabrication, and installation.
- D. Ron Schmidt suggested that CSP be more proactive in developing guidelines on the evaluation of cleanability of food processing and handling equipment

Summary of Activities:

The CSP, one of the "A" committees in the *3-A Sanitary Standards* organizational structure, continues to provide a regulatory and scientific viewpoint as it relates to food equipment standards and their development. Serving as a professional voice for IAMFES, CSP further provides input on food safety/food protection issues.

Recommendations to IAMFES Board:

Due to the nature of activities and the need for continuity, CSP recommends that the term of office for the chairperson and vice chairperson be extended.

Meeting adjourned: 11:31 a.m.

Chairperson: Dan Erickson.

PROFESSIONAL DEVELOPMENT GROUPS

Applied Laboratory Methods Professional Development Group

Members Present: Shelagh McDonagh, Claire H. Lee, Cathy Bowyer, Rick Zampa, Chris Wilkins, and Robert Brooks.

Members Absent: Melissa Newman, Michael H. Brodsky, Donna Christensen, Musa Dahdal, Lee-Ann Jaykus, Lee H. Jensen, Robert T. Marshall, Douglas

McDougal, Linda M. Polzin, Mary A. Robart, and Lawrence A. Roth.

Board Members/IAMFES Staff Present: James Dickson and Lucia Collison.

Meeting Called to Order: 10:10 a.m.

Recording Secretary of Minutes: Cathy Bowyer.

Old Business: None.

Discussion: Rapid Methods Workshop - Committee consensus greater interest if there is a theme, *Listeria* or other theme. Hands on format. 1991-92 workshop previously 2 page lecture, demos, no hands on work 30 to 35 enrolled. Include sensitivities limits, tech issues of merit. Exhibitors notified of technical nature of presentations.

Method Validation/Evaluation.

ISO guide accreditation requires method validation. Documentation of performance (in house) in specific matrices, etc.

Consensus of the group was to focus on the workshop.

*Include consideration of appropriate use of various rapid tests.

Focus or Theme - *Listeria/Campylobacter* course coordinator. Shelagh and others committee members presents. Maximum course enrollment 20 to 30 depending on size.

Shelagh McDonagh, Coordinator assisted by Donna Christensen. Claire and Cathy will help contact speakers, etc. Table displays following 20 to 30 minute lecture. Jim will make proposal to Program Committee.

Action Plan - Workshop Organization.

Award Nominations encourage submission of names, letter of specific criteria.

Preliminary Plan:

1. Workshop, *Listeria* 1/2 day, *Campylobacter* 1/2 day with possible presenters being Dan Fung or P. C. Vasavada.
Campylobacter Atmosphere Issues - Norm Stern.
QC Media - Dr. Hunt, FDA or Eric Line, USDA.
Listeria - Judy Fraser, Jeff Farber, or Cathy Donnell.
General topic of organism followed by methods.
2. Technology applied to both organisms intermingled throughout so not to duplicate.
3. Products from vendors - product specifics or materials.
4. Globalization - closing talk emerging issues, codex or ICMSF.

Summary of Activities and Action Taken:

Rapid Methods Workshop will be pursued with a focus on *Listeria* and *Campylobacter*.

Recommendations to IAMFES Executive Board:

Rapid Methods Workshop for future annual meetings, hands on format with a focus on *Listeria* and *Campylobacter*. Preliminary plan.

Next Meeting Date: IAMFES 2000 Meeting.

Meeting Adjourned: 11:30 a.m.

Chairperson: Shelagh McDonagh.

Audiovisual Library Professional Development Group

Members Present: Harry Haverland, Thomas McCaskey, and Robert Sanders.

Members Absent: T. Gilmore, K. Anderson, D. Cherney, J. Christy, W. Clark, Jr., J. Harrison, A. Haverland, B. Langlois, H. Malberg, D. McSwane, E. Morton, M. Robbins, R. Schmidt, and P. C. Vasavada.

Board Members/IAMFES Staff Present: Anna M. Lammerding, Tami Schafroth, and Frank Zuehlke.

Meeting Called to Order: 10:00 a.m.

Recording Secretary of Minutes: Anna M. Lammerding.

Summary of Activities and Action Taken:

Reviewed current issues and formulated recommendations.

Old Business:

1. Minutes of 1998 meeting were reviewed and approved (Motion by T. McCaskey, seconded by A. M. Lammerding).
2. Discussion on Board's action on 1998 recommendations.
3. Copying and donating AV materials to international members in distant locations: Materials are usually copyright protected; copies are of very poor quality, decided not feasible.
4. Identification of users who most benefit from utilizing AVL and use these individuals to review materials: Database software has only recently been implemented for tracking AVL information. However, it is now possible to identify high frequency users. AVL staff might consider requesting high frequency users, on an ad hoc basis, to review AV materials.

New Business:

1. Status of the International Association of Food Industry Suppliers (IAFIS) grant to the Foundation Fund for AVL Support: \$9K was conditionally offered, designated for only the purchase of new AV materials. Grant status still pending.

2. Staff Reports

- (i) Report on AV suitability of current holdings re-evaluation (review)
AV materials 5 to 10 years old =
40 reviewed, 15 pending review;
10+ years: 12 reviewed, 13 pending review
- (ii) New additions: 10 new videos have been added (received and reviewed). Several more new videos pending review before adding to the AVL.
- (iii) Progress on re-evaluations.
- (iv) Projected budget for 1999-2000.
- (v) Internet access and on-line services, since AVL holdings listed on Web site, increased requests for materials, many received by E-mail.
- (vi) Tom McCaskey agreed to continue serving as Vice Chairperson.

Recommendations to IAMFES Executive Board:

1. That the AVL users evaluation form be re-evaluated and revised as necessary to encourage more and better responses from users.
2. That the AVL committee review users' comment at the annual committee meeting (or interim) to monitor quality and usefulness of AVL holdings.
3. That frequent AVL users be identified from data base, and asked to review materials on an ad hoc basis.
4. That materials received produced by federal agencies (e.g. USDA, FDA) not be reviewed before adding to library holdings.
5. That return postage be provided when materials are sent to reviewers.
6. That AVL/IAMFES staff modify AVL users' database, if necessary to provide estimates of costs for shipping materials internationally.
7. That AVL staff request originators of slide presentations to reproduce them on videotape, or use AVL users' comments to evaluate suitability of such materials, rather than have reviewers assess slide presentations.
8. That users and all IAMFES members be encouraged to identify/refer relevant materials to add to the AVL.
9. That the AVL budget requested from the Foundation Fund be increased from \$9,000 to \$10,500 to cover increased salary and postage costs.
10. That the Board extend appreciation to Tom Gilmore for years of service as chairperson of the AVL, and appoint a new chairperson.

Next Meeting Date: Annual Meeting, Atlanta 2000.

Meeting Adjourned: 12:00 p.m.

Dairy Quality and Safety Professional Development Group

Members Present: Terry Musson, Charles Price, Anne Quilter Goldstein, Steve Ferreira, Bob Kuhn, Helene Uhlman, Helen Piotter, Ron Schmidt, Dan Erickson, Gene Frey, John Rushing, Gaylord Smith, and Don Breiner.

Meeting Called to Order: 1:30 p.m.

Recording Secretary of Minutes: Bob Kuhn.

Old Business:

The letters from Michael Brodsky and Jenny Scott were handed out.

New Business:

John Rushing updated the committee on the NCIMS pilot program for HACCP. The fieldman's pocket guide is completed and has been submitted to the Board. The members brainstormed to develop a subject matter for 2000 symposia. The proposed developed symposia are as follows: Dairy Plant HACCP; Nutrition Management and New Construction on large herd dairy farms; and Appendix B sampling. The committee also talked about having a workshop on 3A standards for construction on large dairy farms. This workshop would run before the IAMFES 2000 meeting.

Next Meeting Date: August 2000, Atlanta, GA.

Meeting Adjourned: 3:30 p.m.

Chairperson: Gaylord Smith.

Food Safety Network Professional Development Group

Chairperson: Dr. Douglas Powell.

Vice-Chairperson: Gisele LaPointe.

Members Present: Jeff Farber, Julie Albrecht, Rochelle Clavero, Dion Lerman, and Ann Marie McNamara.

Purpose:

The Food Safety Network PDG assists IAMFES with the assessment, development and implementation of electronic tools to enhance food safety.

Objectives for 1999-2000:

1. Collaborate with the U.S. Food Safety Technology and Education Alliance (FSTEA) on the assessment of available electronic tools for food safety training.
2. Develop several articles and research papers for *DFES* providing overviews and assessments of available electronic tools for IAMFES membership.

3. Develop a hands-on workshop for the 2000 IAMFES annual meeting, featuring overviews on Internet search tools, pathogens modeling models, HACCP planning tools, EpiTracker and gene sequencing database tool, followed by practical, simultaneous afternoon sessions on each, using an available teaching lab with computers for each participant.

Food Sanitation Professional Development Group

Members Present: Gloria Swick, Brian Turner, Frank Yiannas, and Pete Snyder.

Board Members/IAMFES Staff Present: Gale Prince and Tami Schafroth.

Meeting Called to Order: 1:30 p.m. to 3:00 p.m.

Recording Secretary of Minutes: Frank Yiannas.

Summary of Activities and Actions Taken:

The Food Sanitation PDG agreed to concentrate on developing and revising the following pamphlets during the next year.

- Before Disaster Strikes (revise)
- Temporary Events (revise)
- Home Food Safety (develop and create pamphlet)

In addition, the group suggested that the pamphlets should be posted on the IAMFES Web site.

Chairperson: Frank Yiannas.

Fruit and Vegetable Safety and Quality Professional Development Group

Members Present: Jeff Farber, Chair; Donna Garren, Vice Chair; Linda Harris, Vice Chair; Frances Pabrua, Randy Worobo, George Weber, Phil Blagoyevich, Tom McCaskey, Larry Beuchat, Mike Villaneva, Joe Furuike, Mahipal Kunduru, Mel Kramer, Dianne Peters, Kathleen Rajkowski, Kali Phelps, Susan Sumner, Julie Albrecht, Marian Wachtel, Peter Taormina, Shanna Lively, Nancy Nagle, LeeAnne Jackson, and Nelson Cox.

Members Absent: Edith Garrett, Laura Lindabery, Jena Roberts, Ring Chang Wu, Deog-Hwan Oh, Kook Hae Kang, Janell Percy, Alan Hathcox, Dianne Peters, Judy Harrison, Fred Breidt, and Lawrence Roth.

Board Members/IAMFES Staff Present: Bob Brackett.

New Members: Jeff Farber, George Weber, Linda Harris, Tom McCaskey, Donna Garren, Mike Villaneva, Nancy Nagle, Joe Furuike, Edith Garrett, Mahipal Kunduru, Linda Lindabery, Mel Kramer, Jena Roberts, Dianne Peters, Philip Blagoyevich, Kathleen Rajkowski,

Randy Worobo, Kali Phelps, Ring Chang Wu, Julie Albrecht, Deog-Hwan Oh, Marian Wachtel, Kook Hae Kang, Peter Taormina, Frances Pabrua, Shanna Lively, Janell Percy, Nelson Cox, Alan Hathcox, Larry Beuchat, Susan Sumner, LeeAnne Jackson, Dianne Peters, Judy Harrison, Fred Breidt, and Lawrence Roth.

Meeting Called to Order: 1:30 p.m.

Recording Secretary of Minutes: Donna M. Garren.

Old Business:

1. Review of 1998 minutes.
2. 1998 Action Item: ListServ for electronic communication among members.
IAMFES Executive Board felt that it was too expensive to necessitate a ListServ for the group.
3. Current method of communication via E-mail among members will continue.

New Business:

1. Development of a resource update pamphlet or article on produce issues (for *DFES*), Ag. research activities, etc.
2. Next year's symposium:
Water Quality and Safety?
Proposed topic that will be presented to the Program Committee is "Produce Safety Issues."

Topics will include: water quality and safety, EPI investigations in relation to produce, consumer perception of produce safety, media perception and coverage of produce safety issues, other current issues.

Update on produce-related activities:

FDA: sprouted seed consumer advisory, juice labeling requirements for apple and citrus, international implementation and education programs in relation to the GAPs guidance document.

USDA: domestic implementation and education programs in relation to the GAPs guidance document.

NACMCF: release of white paper on Sprouted Seeds from the Produce Subcommittee, review of specific answering to 5 questions relating to the USDA AMS's QTV Program (not an advisory review of the actual QTV Program).

Request for comments on a proposed book on the Microbiology of Fruits and Vegetables discussed.

Individual comments concerning the need or chapter topics will be sent directly to Susan or Jeff Farber.

Summary of Activities and Actions:

1. Will propose a symposium for IAMFES 2000 on Produce Safety Issues to the Program Committee.

2. Developed a subcommittee to investigate having either a keynote speaker in the General Session and/or industry sponsored reception at next year's meeting.

Committee includes: Shanna Lively, Joe Furuike, Mahipal Kunduru, Frances Pabrua, Donna Garren.

3. Postponed the discussion of the development of a graduate paper competition and an EPI workshop until next year's PDG meeting in Atlanta.

Recommendations to IAMFES Executive Board:

None at this time.

Next Meeting Date: IAMFES 2000; August 2000.

Meeting Adjourned: 3:30 p.m.

Meat and Poultry Safety and Quality Professional Development Group

Members Present: Stan Bailey, Don Conner, John Cerveny, Nelson Cox, Kathy Glass, Anna Lammerding, Lynn McMullen, and Ann Marie McNamara.

Members Absent: Carla Abbatemarco, Jean Allen, Neal Apple, Dane Bernard, Lance Bolton, Bill Boylan, Jackie Caplinger, Robert Charlebois, Warren Charminski, Lori Cole, Pat Dodsworth, Jerry Erdmann, Thippareddi Harshavardhan, Joseph Huseman, Eric Line, Ivan Linjacki, Mike May, Tom McCaskey, Tom McMeekin, Larry Mendes, Joe Meyer, Art Miller, Brendan Murphy, Frances Nattress, Chris Newcomer, Chuck Papa, James Price, Tom Ross, John Rice, Jenny Scott, Brian Sheldon, Leora Shelef, Don Splittstoesser, Wayne Sprung, Colleen Stevens, Susan Sumner, Francine Van Rossem, Amy Waldroup, Larry Wallace, Isabel Walls, Ron Weiss, and Connie Zagrosh.

New Members Present: David Baker, Cathy Bowyer, Robert Brooks, Diana Hao, Yanbin Li, Dick Mathews, Shelagh McDonagh, and Ron Osborne.

Board Members/IAMFES Staff Present: Jim Dickson and Lucia Collison.

Meeting Called to Order: 1:35 p.m.

Recording Secretary of Minutes: Kathy Glass and Don Conner.

New Business:

Meeting called to order by Don Conner (Chairperson) and reviewed charge of the PDG. Introductions of attendees were made. Agenda presented:

Discussion of Priority Issues in Meat & Poultry:

Performance Standards. The potential establishment of a *Campylobacter* performance standard was discussed. McNamara indicated that the USDA quantita-

tive MPN baseline study is ongoing and should be completed by February 2000, after which a proposed rule will likely follow mid to late 2000. New medium, Campy-Line, was discussed as new method for quantification. Bailey and Cox provided information on Eric Line's work. The PDG expressed concern over lack of information on infectious dose, sources, recovery of injured cells, etc. McNamara proposed a symposium on "*Campylobacter* as a Performance Standard" (see details below).

Listeria. Difficulties in addressing *Listeria* contamination in terms of CCP management was discussed. The primary issue discussed was difficulty in environmental and product sampling to gather reliable data due to the ecology and diversity of *Listeria*. A symposium, "*Listeria*: A Year Later, What Have We Learned," (see detail below) was proposed by McNamara. Bailey indicated that ILSI will propose two symposia on *Listeria* for the 2000 meeting. These three were reviewed and determined to be complementary.

HACCP. Regulatory application of HACCP was discussed. The "spread" between HACCP principles and regulatory application was the primary concern. While the committee agreed that HACCP was a major issue, there was no consensus on what action for the PDG to take. It was decided to address HACCP next year after very small plants are brought under HACCP inspection.

Other Issues. Egg cooling - no discussion. Microbiological sampling - various issues related to methodologies were discussed. A need for a workshop on sampling was identified.

Symposia Topics Submitted for 2000 Meeting:

1. *Campylobacter*: Performance Standards (Ann Marie McNamara)
 - Overview of FSIS perspective
 - Farm to table control
 - Control in red meat processing
 - Research needs
 - Industry perspective
2. Genetic Techniques to Trace Foodborne Microorganisms (Stan Bailey)
 - Tracing farm data
 - Case study - how techniques are used
 - Case study - industry experience
 - Pros/Cons of various techniques
 - Interpretation of subtyping data
3. *Listeria*: A Year Later, What We Have Learned (Ann Marie McNamara)
 - Overview
 - FoodNet update
 - USDA-FDA risk assessment
 - AMI food safety overview
 - Research overview

4. Real Time Detection of Pathogens (Kathy Glass)

TBA

New Officers: Norman Stern, USDA-ARS, will serve as chairperson for 2000, and Ann Marie McNamara, Sara Lee, will serve as vice chairperson for 2000-2001.

Summary of Activities and Action Taken:

1. Performance Standards: Symposium on *Campylobacter* developed for 2000 meeting.
2. *Listeria*: Symposium on experience with *Listeria* developed for 2000 meeting.
3. HACCP: Discussions tabled until 2000 meeting.
4. Methodology: Two symposia put forth to address emerging subtyping (genetic) methods utility and limitation, and update on real time methods.

Recommendations to IAMFES Board:

None.

Next Meeting: 2000 Annual Meeting.

Meeting Adjourned: 3:00 p.m.

Chairperson: Don Conner.

Microbial Food Safety Risk Assessment Professional Development Group

Members Present: Lee-Ann Jaykus (Chair), Donald Schaffner (Vice Chair), Patricia Desmarchelier, Amir Fazil, Michael McElvaine, Greg Paoli, Dianne Peters, Susan Sumner, Ewen Todd, and Richard Whiting.

Members Absent: Robert Buchanan, Michael Cassin, Musa Dahdal, Jeffrey Farber, B. J. Hartog, Allan Hogue, Anna Lammerding, Maria Lourdes Costarrica, Tom McMeekin, Barry Michaels, Arthur Miller, Roberta Morales, Christopher Newcomer, Deong-Hwan Oh, Pekka Pakkala, Nin Parkinson, Morris Potter, Tom Ross, Pete Snyder, Suzanne Van Gerwen, Paul Vanderlinde, Alex Von Holy, Isabel Walls, and Frank Yiannas.

Board Members/IAMFES Staff Present: Jenny Scott and Bev Corron.

New Members: Mark Cullison, Yanbin Li, Mel Kramer, and Leon Gorris.

Meeting called to order: 10:15 a.m.

Recording Secretary of Minutes: Lee-Ann Jaykus.

Old Business:

1. 1998 minutes read and approved.
2. Don Schaffner provided an overview of the Risk Assessment Workshop which was pre-

sented in Washington D.C. in April, 1999 and prior to this year's IAMFES meeting in Dearborn, MI. Overall, the format was good and the workshop was well received. Close to 35 attended the April workshop and 25 attended the Dearborn workshop. Major criticisms related to the diversity of the audience and marketing of the workshop (i.e., marketing to a very general audience may not have been appropriate).

New Business:

1. The group discussed the future of the microbial risk assessment workshop. In response to participant comments, the group believed that two different risk assessment workshops should be offered: (a) one focusing on the general principles of microbial risk assessment and (b) the other focused on a "hands-on" approach using a computer lab. Don Schaffner said that he would work with Rutgers to access their computer center through the Office of Continuing Education and begin to put this workshop together. Estimated target date for the first offering in late 2000 or early 2001. Don Schaffner, Greg Paoli, and Dick Whiting will meet to revise the current workshop to suit a more general audience. The group would like to schedule this workshop for the spring of 2000, perhaps in Washington, D.C.
2. The group proposed a risk assessment symposium and submitted the proposal to the Program Committee. The symposium is titled "Testing to Reduce Risk: How Much is Enough?" The purpose of the symposium is to present an overview of statistical sampling, sources of variability, value of testing, the impact of sampling on risk mitigation for representative foodborne pathogens, and the legal and regulatory implications of testing. The session will be followed by a 30-minute roundtable discussion.
3. The Committee discussed the feasibility of contributing a "back page" article to *DFES* during 1999-2000. It was decided that the subject of the article should be the relationship between risk assessment and risk analysis. Michael McElvaine will write the article, and it will be reviewed by Don Schaffner, Jenny Scott, Susan Sumner, and Lee-Ann Jaykus.
4. Ewen Todd informed the group that the Committee on Communicable Diseases Affecting Man would like to consider sponsoring a manual on risk assessment procedures. This would be a long-term project (2-3 years) and would require expertise in risk assessment as well as other supporting disciplines. The

Committee decided that this was a worthwhile offer to pursue, with Don Schaffner and Lee-Ann Jaykus to meet with the Communicable Diseases group for further discussion.

5. The Committee discussed the relationship of this IAMFES committee to other related committees in groups such as the Society for Risk Analysis (SRA) and the American Society for Microbiology (ASM). It was decided that there was no need to establish formal relationships between these groups. It was emphasized that individuals involved in multiple groups should clearly communicate the objectives and projects sponsored by our Committee.
6. Dick Whiting was nominated and elected unanimously to serve as vice-chair of the Microbial Food Safety Risk Assessment PDG.

Summary of Activities and Action Taken:

Call to order and introductions. Approval of the 1998 meeting minutes. Report on past year's workshop. Organized symposium and *DFES* "Back page" article for the upcoming year. Discussed modifications to existing risk assessment workshop and committed to the development of a second "hands-on" risk assessment workshop. The Committee will pursue a liaison with the Communicable Diseases Affecting Man Committee regarding a microbial risk assessment manual. Dick Whiting to become new vice-chair.

Recommendations to the IAMFES Executive Board:

1. Marketing of the risk assessment workshop is a concern. We would like to market one workshop to a very general audience, and the second workshop to a more advanced audience, those who want hands-on "How to" experience in quantitative risk assessment methods.
2. Approval of planning and scheduling of the workshops. The Board needs to be made aware that the more advanced workshop may be more expensive due to the need for on-site computer facilities.
3. Approval of Dick Whiting as upcoming co-chair.
4. Direction from the Board as to whether to proceed in planning a risk assessment manual in collaboration with the Communicable Diseases Affecting Man Committee.

Next meeting date: IAMFES meeting in Atlanta, GA, August, 2000.

Meeting adjourned: 12:00 noon.

Chairperson: Lee-Ann Jaykus.

Retail Food Safety and Quality Professional Development Group

Members Present: Carl Custer, Jintanart Wongetiawolit, Pravate Tuitemwong, Suree Wongpiyachon, Dean Cliver, Cameron Hackney, Fred Reimers, Brian Turner, and O. P. Snyder.

Board Members/IAMFES Staff Present: Jack Guzewich.

Meeting Called to Order: 10:00 a.m.

Recording Secretary of Minutes: Pete Snyder.

Old Business: None.

Elections:

1. Carl Custer nominated Peter Snyder to be Chairperson. It was passed by unanimous vote. Frank Yiannas will be asked by Pete if he wants to be Vice Chairperson.
2. Pete Snyder handed out the enclosed documents to propose that a uniform format be adopted for the HACCP procedures to be put on the web. The idea was discussed and it was agreed that one of the first tasks would be to develop a universal format for a process HACCP and a recipe HACCP.
3. Pete Snyder showed pictures as an example of sous vide. It was agreed that sous vide and chilled food systems would be a good example of a HACCP procedure to develop. The Committee agreed this is an appropriate process to HACCP.
4. Pete Snyder handed out the document "Food Process Hazard and Control Guidelines." It was agreed that this was a key document to begin with because a process must have target control limits. This will be developed early on by the group.
5. The booklet "Retail Food Operations Hazard and Control Guidelines" was circulated by Pete Snyder. This document provides an overview of the retail food system. It will be put on the web as an introductory document for people to read to understand retail system and total quality safety management.
6. The use of the Web as a document development method was discussed and agreed to. Bev Corron and Jack Guzewich and Pete Snyder discussed the process. Bev will look into how to set up a secure section and pass the information on.

It was recognized that all work done by Members on this program was the property of IAMFES once it was on the Web. The HACCP committee will oversee the Web page to assure it is NACMCF compliant.

Chairperson: O. Peter Snyder.

Seafood Safety and Quality Professional Development Group

Members Present: Custy Fernandes.

Guests: Ewen Todd, Cameron Hackney, and Gary Richards.

Board Members/IAMFES Staff Present: Anna Lammerding and Bev Corron.

Meeting Called to Order: 1:35 p.m.

Recording Secretary of Minutes: Custy F. Fernandes, Vice Chairperson.

Old Business:

Increase communication among Members.

New Business:

1. How to attract Member participation.
2. Technical and symposia scheduling overlaps.
3. Year 2000 symposia topics.

Summary of Activities and Action Taken:

1. Spread the word about annual meeting.
2. Have a pre-conference discussion two months prior to next IAMFES meeting to conclude on symposia topics and invite speakers.

Recommendations to IAMFES Executive Board:

Scheduling symposia is a problem. However, certain topics in the sessions will overlap, thus splitting interested audience. Hence, minimize overlapping symposia on last day, as generally attendance gets thinner.

Next Meeting Date: IAMFES 2000 August Meeting.

Meeting Adjourned: 3:00 p.m.

Chairperson: Custy F. Fernandes, Vice Chairperson.

Viral and Parasitic Foodborne Disease Professional Development Group

Members Present: Lee-Ann Jaykus (Chair), Daniel Maxson (Vice Chair), Thomas Schwarz, Dean Cliver, and Nigel Cook.

Members Absent: Bert Bartleson, Musa Dahdal, Jack Guzewich, James Hartman, Ivan Linjacki, and Mark Sobsey.

Board Members/IAMFES Staff Present: Jim Dickson.

New Members: Mel Kramer, Custy Fernandes, Pete Snyder, Carl Custer, Rocelle Clavero, Kali Phelps, Gloria Swick, and Gary Richards.

Meeting Called to Order: 3:45 p.m.

Recording Secretary of Minutes: Daniel Maxson.

Old Business:

1. 1998 minutes read and approved.
2. Gary Richards outlined the foodborne virus symposium (title: Methods for the Detection of Infectious Viruses in Foods) to be done on Wednesday, August 4, 1999.

New Business:

1. Introduction of new members.
2. The group discussed symposium ideas for the year 2000 IAMFES meeting in Atlanta, GA. Two symposium ideas were suggested. The first focused on parasitic agents of foodborne disease; however, the group could not come up with a unifying theme or a sufficient number of speakers to put together a reasonable proposal. The group did plan a symposium entitled Small Round Structured Viruses and Foodborne Disease. Daniel Maxson agreed to organize this symposium, with Dean Cliver and Tom Schwarz as convenors.
3. The group also discussed the need to provide a "back page" article for *DFES*. It was decided that a general article on food and waterborne parasitic protozoa would be appropriate. Nigel Cook agreed to write this article along with a colleague in the U.K. Dan Maxson and Dean Cliver will serve as reviewers.
4. Dean Cliver was nominated and elected unanimously to serve as vice-chairperson of the Viral and Parasitic Foodborne Disease PDG.

Summary of Activities and Action Taken:

Call to order and introductions. Approval of the 1998 meeting minutes. Report on past year symposium organization. Organized symposium and *DFES* "Back page" article for the upcoming year. Dean Cliver to become new vice-chair.

Recommendations to the IAMFES Executive Board:

Approval of Dean Cliver as incoming committee chairperson.

Next meeting date: IAMFES meeting in Atlanta, GA. August, 2000.

Meeting adjourned: 4:45 p.m.

Chairperson: Lee-Ann Jaykus.

TASK FORCES

Awards Task Force

Members Present: Lawrence Roth, Beth Johnson, and Randy Daggs.

Guests: Fred Weber and Dick Brazis.

Members Absent: None.

Board Members/IAMFES Staff Present: Jack Guzewich and Tami Schafroth.

Summary of Activities and Action Taken: The Awards Committee met to discuss the process and materials associated with the nominations and judging for the IAMFES awards for 2000 and beyond. To encourage and facilitate nominations for the Harry Haverland Citation, Harold Barnum Industry, Educator and the Sanitarian awards, the committee continued the process of modifying and updating the nominating criteria forms. The intent is to provide clear guidance to individuals who may wish to nominate candidates for awards. When the forms have been completed and approved, they will be made available on the IAMFES Web site. The jury evaluation forms are also being reviewed and updated.

Chairperson: Lawrence Roth.

Constitution and Bylaws Task Force

Members Present: Michael Brodsky, Charles Price, Robert Sanders, and David Fry.

Members Absent: Ron Case and Allen Saylor.

Board Members/IAMFES Staff Present: Robert Brackett and David Tharp.

Meeting Called to Order: 10:10 a.m.

Recording Secretary of Minutes: Michael Brodsky.

Summary of Activities and Action Taken:

Agreed that the Constitution and Bylaws should be proposed for vote as revised and amended. There was concern that not all members may have received the final document and summary of highlights. Recommend to David Tharp that documents be posted and made available for Members prior to the business session.

Discussed procedure for the voting process, including the notification of the Teller, F. Ann Draughon, to be prepared for a paper ballot in case of a close vote by

"show of hands." Suggested that Ann appoint two assistants, at least one from the Affiliate Council. Further meeting to discuss parliamentary procedure will take place on Tuesday between Michael Brodsky, Robert Brackett, David Tharp and a professional parliamentarian.

Recommendations to IAMFES Executive Board:

To reappoint current task force members for another year during the transition period. M. Brodsky agreed to remain as chairperson. Charles Price and Robert Sanders agreed to remain as Members. Allan Saylor has resigned his appointment, but David Fry agreed to serve as a Member. Ron Case will have to be contacted to determine if he wishes to continue. If not, a replacement will be required.

Next Meeting Date: IAMFES 2000 Meeting, Atlanta, GA.

Chairperson: Michael Brodsky.

Education Task Force

Date of Meeting: Sunday, August 1, 1999.

Location: Dearborn, MI.

Members Present: Dorothy Wrigley and Carl Custer.

Board Members/IAMFES Staff Present: Anna Lammerding.

Meeting Called to Order: 1:30 p.m.

Recording Secretary of Minutes: Dorothy Wrigley.

Old Business:

The K-12 education web page is under development by Jennifer Quinlan, Melissa Taylor, Tara Renner, Marilyn Lee and Jennifer are doing most of the reviews. The page is now accessible through a link on the IAMFES Web page.

Cindy Roberts, from NAL, will be looking for reviewers for their material during the annual meeting.

New Business:

The web pages will need on-going maintenance. This would require a committee structure rather than a task force.

Other alternative outreach mechanisms were discussed which would reach the K-12 audience, including their teachers. Some possibilities:

1. Interaction with regional science fairs, through the International Science and Engineering Fair program through certificate type awards for projects in food safety;
2. A workshop for high school teachers held during the IAMFES meeting and targeting teachers in the meeting host city;

3. Encouraging IAMFES Members to give presentations in schools; and
4. Providing food safety career information on the education web page.

Summary of Activities and Action Taken:

The web page continues to be developed.

Recommendations to IAMFES Executive Board:

To form an Education Committee with the mission to identify, review, and recommend educational material for the web page and to recommend strategies to Members for communication of food safety information to the K-12 audience.

Next Meeting Date: IAMFES 2000 Meeting.

Meeting Adjourned: 2:45 p.m.

Chairperson: Dorothy Wrigley.

SUPPORT GROUPS

Affiliate Council Support Group

Affiliates Represented:

Alberta, California, Carolina, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Korea, Metropolitan, Michigan, Minnesota, Missouri, New York, Ohio, Ontario, Pennsylvania, Texas, Virginia, Washington, and Wisconsin.

IAMFES Board Members: Bob Brackett, Jack Guzewish, Jenny Scott, Jim Dickson, and Anna Lammerding.

IAMFES Office: David Tharp (Staff Liaison) and Tami Schafroth (Staff Liaison).

Recording Secretary: Randy Daggs.

Meeting Called to Order: 7:15 a.m.

Additions/Modifications to the Agenda:

It was suggested that the Executive Board consider future meetings with National Environmental Health Association (NEHA); otherwise, the agenda was accepted as proposed.

Minutes of the 1998 Affiliate Council Meeting

The minutes of the 1998 Affiliate Council Meeting were accepted as published in the journal of *Dairy, Food and Environmental Sanitation* (1st, J. Bruhn; 2nd, P. Hibbard).

Report from the IAMFES Executive Board: (Robert Brackett)

- A. Michael Brodsky served as chair of the Constitution and By-Laws Task Force, which was assigned to recommend revisions that were in concert with the proposed Association name change; and

- B. New Affiliate: British Columbia.
- C. Proposed/potential affiliates include:
Argentina, Australia, Mexico, and Thailand.

Report from the IAMFES Office: (David Tharp and Tami Schafroth)

- A. Introduce staff members and staff reassignments
 - 1. Tami Schafroth – new title is Association Services; will continue work with the Affiliate Council and Awards Committees;
 - 2. Donna Bahun – Publications Specialist, Design and Layout;
 - 3. Julie Cattanaach – Membership Services; Meeting Coordinator;
 - 4. Bev Corron – Journal Publications; Web Page;
 - 5. Lucia Collison – Administrative Assistant;
 - 6. Frank Zuehlke – Senior Accountant;
 - 7. Lisa Hovey – new title as Assistant Director, formerly Director of Finance;
 - 8. Karla Jordan – Orders; Miscellaneous Requests;
 - 9. Pam Wanninger – Journal Proofreader; and
 - 10. Tanya Smith – in charge of Audiovisual Library.
- B. *Journal of Food Protection (JFP)*
 - 1. now published by Allen Press; abstracts to be placed on Web site;
 - 2. journals now shipped by air to countries outside of North America, cutting time from as much as three months to two weeks; and
 - 3. reduced publication time for *JFP* articles.
- C. sponsored joint data collection symposium this year with ILSI (approx. 250 registrants).
- D. Membership:
 - 1. continues to increase.
 - 2. New Member Reception – added this year to recognize the importance of new members to the Association and to orientate them to the structure and opportunities within IAMFES; first year attendance was low; however, several suggestions were offered to the Board to improve the Reception event:
 - a. announce the Meeting in the Affiliate Newsletter so Affiliates can promote the event internally for next year (C. Price); and
 - b. change date to increase likelihood that more new members would attend (D. Fry).

- E. Dues:
 - 1. no increases for 1999 – remained at \$85;
 - 2. early payment discount (\$10) worked well – approx. 60-70% paid this way.
- F. Association Name Change – to be discussed in detail at the Business Meeting.
- G. Working Relationship Between IAMFES Office and Affiliates (Tami Schafroth):
 - 1. IAMFES continues to publish Affiliate meeting/conference dates on request
 - 2. sample journals provided to the Affiliates for their annual meetings
 - 3. offers use of placard (table-top sign) with the IAMFES Mission Statement
 - 4. banners are also available for affiliate annual meetings
 - 5. “Executive Board Speaker Program”:
 - a. continues to be extremely successful
 - b. Board members already have spoken at 10 Affiliate meetings in calendar '99,
 - c. Board members are scheduled to speak at 6 more Affiliate meetings in '99
 - 6. question raised about providing a list of IAMFES services:
 - a. suggested publication of such a list in the Affiliate Newsletter;
 - b. also suggested placing the list on the IAMFES Web site;
 - c. discussed problem of turnover within the Affiliates, and the difficulty in keeping track of who the affiliate contact person is;

Election of 1999-2000 Council Secretary

- 1. Chairperson Johnson reviewed the duties of the Affiliate Secretary, Chairperson, and past Chairperson role as the Awards Committee Chair, then indicated that Fred Weber was a candidate for the position; subsequently, Fred Weber was asked to give a brief review of his participation in IAMFES, etc.
- 2. Helene Uhlman nominated Charles Price for Affiliate Secretary.
- 3. By a show of hands (with the nominees absent), Fred Weber was duly elected as the new Affiliate Council Secretary.

Old Business:

- A. Reviewed future annual meeting dates, as follows:
 - 1. Atlanta Hilton, August 6 – 9, 2000 (\$119).
 - 2. Minneapolis Hilton, August 5 – 8, 2001 (\$129).

3. San Diego Hyatt, June 30 - July 3, 2002 (\$142).

- B. There followed a brief discussion of increasing prices, facility size, and potential conflicts with future meetings of IFT and NEHA; presently, no conflicts with these Associations were noted, e.g., IFT meets June 15-19, 2002 in Anaheim, CA.

New Business:

- A. Affiliate Council Operational Guidelines
 1. brief, preliminary discussion on voting procedures;
 2. motion made by J. Bruhn, seconded by D. Fry, to accept the revision to the Affiliate Council Operational Guidelines; and
 3. motioned passed, with one vote against.

- B. Affiliate Reports:

General summary: Delegates discussed the last annual meeting arrangements and their satisfaction and gratitude with the Executive Board Speaker program; noted establishment of several affiliate Web sites and the need to link to the IAMFES site, as well as a general shift to food-orientated subjects in their programs and workshops.

- C. Affiliate Awards:

1. C. B. Shogren Memorial Award - Wisconsin
2. Educational Conf. - Illinois
3. Annual Meeting - Iowa
4. Newsletter - Wyoming
5. Membership
 - a. Highest Percent Increase - Kansas.
 - b. Highest Numerical Increase - California.
6. Questions/Concerns about the award process:
 - a. Question was raised by J. Bruhn if we are "preselecting" the Shogren Award for larger affiliates because of their abilities/capacity to do more than smaller affiliates; no solution was offered, but there is a past tendency to select for the larger affiliates in this category;
 - b. Annual report form is long, intimidating, and sometimes confusing, e.g., this year's due dates were a surprise to many completing the form;
 - c. Request made to display winner's report form (not available for this year's recipients);

- d. Lack of Annual Reports Submitted by Affiliates (11 this year); hard time contacting delegates, although IAMFES indicated they tried to contact the affiliate delegate whenever possible;
 - e. Suggested development of an E-mail list serve (J. Bruhn); and
 - f. Need to identify (and keep updated) specific contact person and affiliate delegate.
7. There ensued a general discussion on affiliate contact people and communication lines between IAMFES and the affiliates.

Affiliate Newsletter:

1. *DFES* welcomes talks/topics from annual meetings (F. Weber).
2. call for update on Affiliate information (B. Johnson).
3. suggestions/improvements:
 - a. include summary of Exec. Board meetings;
 - b. notification for material deadlines; publication dates; and
 - c. current publication dates: Oct., Jan., Mar., and June.

Recommendations to the IAMFES Board:

1. Study/evaluate potential for occasional joint annual meetings between IAMFES and NEHA (1st, J. Bruhn; 2nd, H. Uhlman); motion carried;
2. Recommend/support use of new technology (e.g., LCD projectors with compatible software, etc.) at the 2000 Annual Meeting (1st C. Price; 2nd, H. Uhlman); motion carried;
3. Establish CEU's for attendance at IAMFES Meetings (1st, J. Bruhn; 2nd, G. Swick); motion carried;
4. comments:
 - a. continue to monitor and improve upon hotel reservation systems, etc. for annual meetings;
 - b. include the Affiliate Council to assist the Executive Board with the new member reception event; and
 - c. develop a Saturday workshop on Affiliate leadership topics.

Pass Gavel:

Chairperson Johnson expressed her appreciation to the IAMFES Executive Board for their input and support during her tenure as chair, and thanked the council members for all their support and cooperation. Chairperson Johnson then presented a gavel to Randy Daggs, beginning his term as Chair of the Affiliate Council.

Adjournment:

Incoming Chairperson Daggs sought a motion to adjourn the meeting; the meeting was adjourned by general acclamation at 10:00 a.m.

Foundation Fund Support Group

Members Present: C. Dee Clingman, Harry Haverland, Robert Marshall, and Earl Wright (Emeritus).

Board Members/IAMFES Staff Present: Robert Brackett, Jack Guzewish, and Jenny Scott.

Meeting Called to Order: 1:35 p.m.

Recording Secretary of Minutes: Harry Haverland.

Old Business:

Minutes of the 1998 meeting were approved. Each of the six (6) activities currently supported by the Foundation Fund were reviewed in light of current funding levels and existing protocols. Ivan Parkin Lecture, Audiovisual Library, Developing Scientist/Post Program, Shipment of surplus journals to FAOUN, Rome, Italy for further distribution to developing countries. The chairperson read a letter from Dr. G. D. Orriss, Chief, Food Quality and Standard Services, FAOUN, expressing appreciation for the shipment of journals and indicating that the journals are being distributed to developing countries in the regions of Africa, Asia, Latin America, and the Caribbean. Very positive response from the recipients.

Speaker(s) Travel: There will continue to be a need to support desired quality speakers who are unable to fund their travel to appear on the program.

New Business:

Considerable time was spent discussing various avenues for increasing the financial base of the fund. A very positive attitude prevails that we will accomplish the \$100,000/2000. However, for the slogan to materialize we need to do a better job in explaining why the money is so important. Additional emphasis needs to be placed on Sustaining Memberships. California Affiliate is a strong supporter and more affiliates need to come on board.

Budget: See attachment.

Dr. Marshall indicated that a change should be made in the bylaws for clarification: page 17, paragraph 1.8,

line 3, chairperson, vice chairperson, be changed to read chairperson and vice chairpersons.

Motions:

C. Dee Clingman moved that the support group accept the proposed budget. Motion seconded by Dr. Marshall. Motion passed. Dr. Marshall recommended the continuation of the silent auction. Recommendation seconded by Earl Wright. Recommendation passed.

Recommendations to IAMFES Executive Board:

1. The silent auction be continued as an activity of the annual meeting.
2. The \$19,300 budget for FY00 be approved.
3. The current six programs being supported by the Foundation Fund be continued.
4. The change in the bylaws, page 17, paragraph 1.8, line 3 - a chairperson, vice chairperson be changed to - a chairperson and vice chairpersons be approved.
5. Express the support group's appreciation to the central office.

Chairperson: Harry Haverland.

IAMFES FOUNDATION FUND BUDGET YEAR ENDING 08-31-00

	<u>FY 08-31-00 BUDGET</u>
REVENUE:	
INTEREST INCOME	\$ 5,000
CONTRIBUTIONS:	
SUSTAINING	10,000
OTHER	5,000
TOTAL REVENUE	<u>\$ 20,000</u>
EXPENSE:	
POSTAGE/SHIPPING	\$ 1,000
SPEAKER TRAVEL	2,000
AWARDS	3,000
IVAN PARKIN LECTURE	1,800
CRUMBINE AWARD SUPPORT	1,000
LENDING LIBRARY	10,500
TOTAL EXPENSE	<u>\$ 19,300</u>
REVENUE LESS EXPENSE	<u>\$ 700</u>

1999 Annual Meeting Exhibitors

3-A Sanitary Standards Symbol Administrative Council

1500 Second Avenue SE, Suite 209
Cedar Rapids, IA 52403
Phone: 319.286.9221
Fax: 319.286.9290

3M Microbiology Products

3M Center, Bldg. 275-5W-05
St. Paul, MN 55144-1000
Phone: 800.228.3957
Fax: 651.737.1994
Web site: www.mmm.com

AATI (Advanced Analytical Technologies, Inc.)

2501 North Loop Drive, Suite 613
Ames, IA 50010
Phone: 515.296.6187
Fax: 515.296.9910
Web site: www.advanced-analytical.com

ABC Research Corporation

3437 SW 24th Avenue
Gainesville, FL 32607
Phone: 352.372.0436
Fax: 352.378.6483
Web site: www.abcr.com

ACURID Commercial Services by ORKIN

217 Piedmont Road, NE
Atlanta, GA 30324
Phone: 404.888.2749
Fax: 404.877.4999
Web site: www.orkin.com

Advanced Instruments, Inc.

Two Technology Way
Norwood, MA 02062
Phone: 800.255.4034
Fax: 781.320.8181
Web site: www.aitests.com

American Egg Board

1460 Renaissance Drive
Park Ridge, IL 60068
Phone: 847.296.7043
Fax: 847.296.7007
Web site: www.aeb.org

American Proficiency Institute

1159 Business Park Drive
Traverse City, MI 49686
Web site: www.api-pt.com

Anderson Instrument Co. Inc.

156 Auriesville Road
Fultonville, NY 12072
Phone: 518.922.5315
Fax: 518.922.8997
Web site: www.andersoninstrumentco.com

AOAC International

481 N. Frederick Avenue, Suite 500
Gaithersburg, MD 20877-2417
Phone: 301.924.7077
Fax: 301.924.7089
Web site: www.aoac.org

Applied Research Institute

3N Simm Lane
Newtown, CT 06470
Phone: 203.270.7692
Fax: 203.426.3299
Web site: www.ARILLC.com

Aquionics Inc.

21 Kenton Lands Road
Erlanger, KY 41018
Phone: 606.341.0710
Fax: 606.341.0350
Web site: www.aquionics.com

Association of Food and Drug Officials

P.O. Box 3425
York, PA 17402
Phone: 717.757.2888
Fax: 717.755.8089

Atkins Technical, Inc.

3401 SW 40th Boulevard
Gainesville, FL 32608
Phone: 352.378.5555
Fax: 352.335.6736
Web site: www.atkinstech.com

Audits International

1899 Second Street
Highland Park, IL 60035
Phone: 847.433.0900
Fax: 847.433.7873
Web site: www.audits.com

Becton Dickinson Microbiology Systems

7 Loveton Circle
Sparks, MD 21152
Phone: 410.316.4472
Fax: 410.316.4906

BioControl Systems, Inc.

12822 SE 32nd Street
Bellevue, WA 98005
Phone: 425.603.1123
Fax: 425.603.0070
Web site: www.rapidmethods.com

bioMérieux, Inc.

595 Anglum Road
Hazelwood, MO 63042-2320
Phone: 314.731.8500
Fax: 314.731.8678
Web site: www.biomerieux.com

Biopath Inc.

2611 Mercer Avenue
West Palm Beach, FL 33401
Phone: 800.645.2302
Fax: 561.655.3361

Capitol Vial, Inc.

151 Riverside Drive, P.O. Box 446
Fultonville, NY 12072
Phone: 518.853.3377
Fax: 518.853.3409
Web site: www.capitolvial.com

Celsis, Inc.

1801 Maple Avenue
Evanston, IL 60201
Phone: 847.467.7870
Fax: 847.467.6602
Web site: www.celsis.com

Chemunex, Inc.

1 Deer Park Drive, Suite H-2
Monmouth Junction, NJ 08852
Phone: 732.329.1153
Fax: 732.329.1192

Cogent Technologies, Ltd.

11140 Lushek Drive
Cincinnati, OH 45241
Phone: 513.469.6800
Fax: 513.469.6811

DSM Food Specialties

N89 W14475 Patricia Drive
Menomonee Falls, WI 53051
Phone: 414.255.7955
Fax: 414.255.7732

Decagon Devices, Inc.

950 NE Nelson Court, P.O. Box 835
Pullman, WA 99163
Phone: 509.332.2756
Fax: 509.332.5158
Web site: www.decagon.com

Diffchamb, Inc.
Backa Bergögata 7
SE-422 46 Hisings Backa
Sweden
Phone: 46 31.58.32.70
Fax: 46 31.58.33.70
Web site: www.diffchamb.com

DiverseyLever, Inc.
255 E. 5th Street, Suite 1200
Cincinnati, OH 45202
Phone: 513.762.6794
Fax: 513.762.6079
Web site: www.Diverseylever.com

DQCI Services, Inc.
5205 Quincy Street
Mounds View, MN 55112
Phone: 612.785.0484
Fax: 612.785.0584

DYNAL, Inc.
5 Delaware Drive
Lake Success, NY 11042
Phone: 516.326.3270
Fax: 516.326.3298
Web site: www.dynal.no

Elsevier Science
655 Avenue of the Americas
New York, NY 10010
Phone: 212.633.3758
Fax: 212.633.3112
Web site: www.elsevier.com/locate/foodsci

EM Industries, Inc./EM Science Division
480 S. Democrat Road
Gibbstown, NJ 08027
Phone: 800.222.0342
Fax: 609.423.6313
Web site: www.emscience.com

FDA Center for Food Safety & Applied Nutrition
200 C Street SW
Washington, D.C. 20204
Phone: 202.205.4220
Fax: 202.401.3532
Web site: www.fda.gov

FoodHandler
514 Grand Boulevard
Westbury, NY 11590
Phone: 800.338.4433
Fax: 516.338.5486
Web site: www.foodhandler.com

FoodLabs, Inc.
1500 Hayes Drive
Manhattan, KS 66502
Phone: 785.537.1862
Fax: 785.537.0226
Web site: www.foodlabsinc.com

Food Quality Magazine
208 Floral Vale Boulevard
Yardley, PA 19067
Phone: 215.860.7800
Fax: 215.860.7900

Food Safety Summit
Eaton Hall Expositions
256 Columbia Turnpike
Florham Park, NJ 07932
Phone: 800.746.9646
Fax: 973.514.5977
Web site: www.foodsafetysummit.com

Food Testing & Analysis Magazine
P.O. Box 5244
Glendale, CA 91221-1081
Phone: 818.842.4777
Fax: 818.769.2939

Foss North America, Inc.
7682 Executive Drive
Eden Prairie, MN 55344
Phone: 612.974.9892
Fax: 612.974.9823
Web site: www.fossnorthamerica.com

GSC Mobile Solutions
4660 South Hageborn Road, Suite 119
East Lansing, MI 48823-5353
Phone: 517.337.8960
Fax: 517.337.2868

GENE-TRAK Systems
94 South Street
Hopkinton, MA 01748
Phone: 508.435.7400
Fax: 508.435.0025

Glo-Germ Company
150 E. Center Street, P.O. Box 537
Moab, UT 84532
Phone: 435.259.5931, ext. 127
Fax: 435.259.5930
Web site: www.glogerm.com

Great Western Chemical Company
5700 NW Front Avenue
Portland, OR 97210
Phone: 503.227.1616
Fax: 503.227.7377

Hanna Instruments Inc.
584 Park East Drive
Woonsocket, RI 02895
Phone: 401.765.7500
Fax: 401.766.8184
Web site: www.hannainst.com

IDEXX Laboratories, Inc.
One Idexx Drive
Westbrook, ME 04092
Phone: 800.321.0207
Fax: 207.856.0865

International Association of Milk, Food and Environmental Sanitarians, Inc.
6200 Aurora Avenue, Suite 200W
Des Moines, IA 50322-2863
Phone: 800.369.6337
Fax: 515.276.8655
Web site: www.iamfes.org

International BioProducts, Inc.
14780 NE 95th Street
Redmond, WA 98052
Phone: 425.883.1349
Fax: 425.881.6880
Web site: www.intlbioproducts.com

International Food Hygiene
Drifffield, P.O. Box 4
East Yorkshire YO25 9DJ England
Phone: 44 0.1377.241724
Fax: 44 0.1377.253640

Intrinsic Energies Indications, LLC
P.O. Box 346
Saline, MI 48176-0346
Phone: 734.944.8169

LabPlas Inc.
1950 rue Bombardier
Ste-Julie, Quebec J3E 2J9 Canada
Phone: 450.649.7343
Fax: 450.649.3113
Web site: www.labplas.com

Malthus Diagnostics, Inc.
35888 Center Ridge Road
North Ridgeville, OH 44039
Phone: 440.327.2585
Fax: 440.327.7286

Mega International
3208 W. Lake Street, #22
Minneapolis, MN 55416
Phone: 612.924.0863
Fax: 612.924.0701
Web site: www.mega-international.com

Michelson Laboratories, Inc.
6280 Chalet Drive
Commerce, CA 90040
Phone: 562.928.0553
Fax: 562.927.6625
Web site: www.michelsonlab.com

MicroBioLogics, Inc.
217 Osseo Avenue North
Saint Cloud, MN 56303
Phone: 320.253.1640
Fax: 320.253.6250

Microbiology International
97H Monocacy Boulevard
Frederick, MD 21701
Phone: 800.39.MICRO
Fax: 301.662.8096
Web site: www.microbiology-intl.com

MicroSys, Inc.

812 Proctor Avenue
Ogdenburg, NY 13669
Phone: 800.818.8335
Fax: 613.271.1148

NASCO

901 Janesville Avenue
Fort Atkinson, WI 53538-0901
Phone: 920.563.2446
Fax: 920.563.8296
Web site: www.nascofa.com

Nelson-Jameson Inc.

2400 E. 5th Street, P.O. Box 647
Marshfield, WI 54449
Phone: 715.387.1151
Fax: 715.387.8746

Neogen Corporation

620 Leshar Place
Lansing, MI 48912
Phone: 517.372.9200
Fax: 517.372.0108
Web site: www.neogen.com

New Horizons Diagnostics Corporation

9110 Red Branch Road
Columbia, MD 21045
Phone: 410.992.9357
Fax: 410.992.0328
Website: www.NHDIag.com

Norback Ley & Associates, LLC

3022 Woodland Trail
Middleton, WI 53562
Phone: 608.233.3814
Fax: 608.233.3895
Web site: www.norbackley.com

NSF International Strategic Registrations, Ltd.

2100 Commonweath, Suite 100
Ann Arbor, MI 48105
Phone: 734.669.0098
Fax: 734.669.0196
Web site: www.nsf.org

Organon Teknika

100 Akzo Avenue
Durham, NC 27712
Phone: 919.620.2377
Fax: 919.620.2615

Oxoid, Inc.

217 Colonnade Road
Nepean, Ontario K2E 7K3 Canada
Phone: 613.226.1318
Fax: 613.226.3728
Web site: www.oxoid.ca

PE Biosystems

850 Lincoln Center Drive, Building 400
Foster City, CA 94404
Phone: 800.345.5224
Fax: 650.638.5884
Web site: www.pebiosystems.com

PestWest Electronics, Limited

Denholme Drive, Ossett
West Yorkshire, WF5 9NB England
Phone: 44.19242.77631
Fax: 44.19242.74385

Q Laboratories, Inc.

1400 Harrison Avenue
Cincinnati, OH 45214
Phone: 513.471.1300
Fax: 513.471.5600

Qualicon, Inc.

Route 141 and Henry Clay Road
P.O. Box 80357
Wilmington, DE 19880-0357
Phone: 302.695.7758
Fax: 302.695.4106
Web site: www.qualicon.com

Raven Biological Labs, Inc.

8607 Park Drive
Omaha, NE 68127
Phone: 402.593.0781
Fax: 402.593.0995
Web site: www.ravenbiolabs.com

REMEL Inc.

12076 Santa Fe Drive
Lenexa, KS 66215
Phone: 800.255.6730
Fax: 800.447.5750
Web site: www.remelinc.com

Rhodia, Inc.

P.O. Box 592
Madison, WI 53718
Phone: 800.356.9393
Fax: 800.810.0393
Web site: www.us.rhodia

Rochester-Midland Corporation

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Rochester, NY 14621
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Fax: 716.467.4406
Web site: www.rochestermidland.com

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Fax: 651.486.0837
Web site: www.rtechlabs.com

Silliker Laboratories Group, Inc.

900 Maple Road
Homewood, IL 60430
Phone: 708.957.7878
Fax: 708.957.8449
Web site: www.silliker.com

Spiral Biotech, Inc.

An Advanced Instruments Company
7830 Old Georgetown Road
Bethesda, MD 20814
Phone: 301.657.1620
Fax: 301.652.5036
Web site: www.spiralbiotech.com

Underwriters Laboratories Inc.

333 Pfingsten Road
Northbrook, IL 60062
Phone: 847.272.8800
Fax: 847.509.6219
Web site: www.ul.com

University of Guelph

Laboratory Services Division
95 Stone Road West
P.O. Box 3650, Zone 2
Guelph, Ontario N1H 8J7 Canada
Phone: 519.767.6299
Fax: 519.767.6240

WVR Scientific Products

Goshen Corporate Park West
1310 Goshen Parkway
West Chester, PA 19380
Phone: 610.429.5577
Fax: 610.436.1761

Warren Analytical Laboratory

650 "O" Street
Greeley, CO 80631
Phone: 800.945.6669
Fax: 970.351.6648
Web site: www.warrenlab.com

Weber Scientific

2732 Kuser Road
Hamilton, NJ 08691
Phone: 800.328.8378
Fax: 609.584.8388
Web site: www.weberscientific.com

ZEP Manufacturing Company

1310 Seaboard Industrial Boulevard
Atlanta, GA 30318
Phone: 404.352.1680
Fax: 404.350.2742
Web site: www.zepmfg.com

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Fresh Express, Morrow

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Illinois

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Suntory Water Group
Chicago

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Fuller Ultraviolet Corporation
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Texas Tech University, Lubbock

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Vermont

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Smithfield Packing Co., Smithfield

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Kraft Foods, Madison

Lyle Holsinger
Walker Stainless, New Lisbon

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Keith J. Ender
Kraft Foods, Madison

Lyle Holsinger
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New IAMFES Sustaining Member

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Zylux Corporation
Maryville, Tennessee

UpDates

Watterson Joins Bell Laboratories as Technical Sales Rep for North Central US

Mark Watterson joined Bell Laboratories' sales and marketing team this fall as a technical sales representative for the north central United States.

Watterson provides technical support and information on Bell products to Bell distributors and PCOs in Missouri, Kansas, Nebraska, Colorado, North and South Dakota, Minnesota, and Iowa.

Working one-on-one with distributors and PCOs, Watterson assists them in solving rodent control problems and offers recommendations on the best use of Bell products. He also provides PCO training through state pest control associations and private companies, and represents Bell's complete line of rodent control products at state and national trade shows.

Watterson holds a bachelor's degree in communications from Southwest Missouri State University. Watterson is based in Kansas City, MO.

Alfa Laval Flow Inc. Appoints New Accounting Manager

John Lund, of Twin Lakes, Wisconsin, has been promoted to accounting manager for Alfa Laval Flow Inc.

Lund joined Alfa Laval Flow Inc. in 1996 as staff accountant. In

addition to overseeing the accounting and financial functions for Alfa Laval Flow Inc., his new responsibilities include expanding the Industrial Valve Division's accounting operations and performing cost accounting.

Dick Heckmann and Henri Proglio Appointed to Lead Vivendi Water

Dick Heckmann of USFilter and Henri Proglio of Vivendi will be appointed to run Vivendi Water, a new company consisting of all of Vivendi's water businesses, including USFilter and Générale des Eaux.

Dick Heckmann, the current chairman of USFilter, will be appointed chairman of Vivendi Water. Henry Proglio, senior executive vice president of Vivendi, will be the new company's chief executive officer.

Daniel Caille, Générale des Eaux's president, will join the senior management of Vivendi as executive vice president, working with chairman and chief executive officer Jean-Marie Messier and chief operating officer Eric Licoys.

Osmonics Names Michael R. Fabich General Manager of Household Water Treatment Global Marketing Unit

Osmonics announced that Mike Fabich will join the company as general manager of the Household Water Treatment Global

Marketing Unit. Fabich, formerly vice president, Water Products with Erie Manufacturing Co., brings more than 17 years of experience in the water treatment industry to his new role.

Mike understands how to translate global customer and market needs into tightly focused strategic plans. At Erie Manufacturing, where he directed sales and marketing for three years, Mike developed a number of innovative programs. And at Fleck Controls, where he was also regional sales manager, he made sure sales strategies were market-focused, not product-driven.

After Fabich graduated from the University of Wisconsin-LaCrosse, he joined International Chemtex Corporation in Minneapolis as a chemist. Over a seven-year period, he held positions as operations manager and market development manager. Later, Fabich gained experience running a start-up operation within Aqua Chem, serving industrial, commercial, and institutional water treatment customers.

New Unimetrics Business Development Manager Joins J&W Scientific

J&W Scientific, welcomes Waver Armstrong as Unimetric's new business development manager. Armstrong brings twenty years of past Unimetrics knowledge to the position. Previous to the acquisition of Unimetrics by J&W in 1998 he served as their president for ten years.

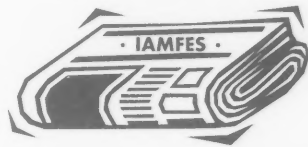
Morris Potter Appointed ILSI Executive Director

Dr. Morris E. Potter has been appointed Executive Director by the Boards of Trustees of ILSI and ILSI North America. His employment is effective November 1, 1999. Dr. Potter was most recently the Director, Food Safety Initiatives, Center for Food Safety and Applied Nutrition at the Food and Drug Administration. He served as Assistant Director for Foodborne Disease at the Centers for Disease Control and Prevention in Atlanta, Georgia. Former Executive Director Dr. George Hardy was commended for his excellent leadership and outstanding service to ILSI and ILSI North America during the past seven years. Dr. Hardy will assume a new position as Executive Director of the American Association of State and Territorial Health Officials (ASTHO) in Washington, D.C.

Internationally Acclaimed Micro- biologist Doyle Honored as IFT Fellow

Dr. Michael Doyle, Regents Professor and Director, Center for Food Safety and Quality Enhancement, University of Georgia, was inducted as a Fellow of the Institute of Food Technologists (IFT) at their 1999 Annual Meeting in Chicago. Because nomination and election is by a jury of peers, the Fellow is among the highest honors achievable in this 28,000-member professional society of scientists and technologists who guide our world food supply. Since IFT's founding 60 years ago, only 274 professionals have been honored as Fellows.

Widely known for his pioneering research in microbiological pathogenicity in foods and means



NEWS

to obviate such problems, Dr. Doyle is one of the first experts contacted by industry, government, and the media when an issue arises. He is a member of numerous federal and state government groups dealing with food safety and preservation. Dr. Doyle developed the first method to detect the noted *E. coli* O157:H7 microorganism in foods.

A graduate of University of Wisconsin with B.S., M.S. and Ph.D. degrees, Dr. Doyle lives in Peachtree City, GA, with his wife, Annette, and his three children: Mike, Jr., a senior at Washington University in St. Louis; Patrick, a sophomore at Washington University in St. Louis; and Kirsten, a high school student.

FPI Announces 2000 Crumbine Award Criteria

The Foodservice & Packaging Institute, Inc. (FPI) has announced the availability of the criteria for the 2000 Samuel J. Crumbine Award for Excellence in Food Protection at the Local Level, which annually recognizes excellence in food protection services at public health agencies in the United States and Canada.

The winner of the Award is selected by an independent panel of food protection practitioners composed of representatives from leading public health and environmental health associations, past Crumbine Award winners, a consumer advocate, and a food industry representative. The jury makes its award selection each spring in a judging process administered by FPI.

Entries for the Crumbine Award competition are limited to United States and Canadian local government public health agencies (county, district, city, town, or township) that provide food protection services to their communities under authority of a statute or ordinance. Past winners may apply five years after receiving the award.

Named for one of America's most renowned health officers and health educators — Samuel J. Crumbine, M.D. (1863-1943) — the Award has elevated the importance of food protection programs within local public health agencies and has inspired excellence in the planning and delivery of those services. The Crumbine Award was first offered in 1955 and has been presented almost every year since then.

The 1999 Award was presented to the Lake County, Illinois, Health Department at a special ceremony hosted by the National Environmental Health Association (NEHA) in Nashville, TN, this past July. Staff from the winning agency were also honored at the annual conference of the International Association of Milk, Food and Environmental Sanitarians (IAMFES) and the National Association of County & City Health Officials (NACCHO).

Questions about the Lake County Health Department's award-winning program should be directed to Thaddeus J. Koeune (847.356.6222). For information about the Crumbine Award, a copy of the criteria, and a sample of past winning entries, please contact

Lynn Rosseth at FPI (703.527.7505). The 2000 Samuel J. Crum-bine Award criteria may also be found on FPI's Web site, www.fpi.org.



Robert T. Marshall Announces Retirement

Dr. Robert T. (Bob) Marshall has announced his retirement for January 1, 2000 from the faculty of the Food Science Department of the University of Missouri. Marshall recently completed his 39th year on the faculty at MU. He joined the Dairy Department in 1960 and the Department of Food Science and Nutrition in 1967. He has been responsible for teaching dairy foods and food microbiology courses and for coaching the dairy products evaluation team.

Dr. Marshall's research was first centered on bovine mastitis and milk quality. From 1967 to 1985, he and his graduate students studied heat stable enzymes of foodborne bacteria that grow in the cold. He cooperated with USDA ARS researchers in studies of cleaning and sanitizing of milk plant equipment as well as

surfaces of meats. In the 1980s his research centered on acceleration of cheese ripening, and this gave way to research on ice cream, which has been his focus for some 10 years. In 1989 he became the Arbuckle Professor of Food Science and revised the major ice cream book, *Ice Cream, 5th Edition*. He is co-author of *The Science of Providing Milk for Man* and edited the 16th edition of *Standard Methods for the Examination of Dairy Products*.

Dr. Marshall has received recognition for outstanding achievements from the International Association of Milk, Food and Environmental Sanitarians (IAMFES) (Fellows and Honorary Life Member); American Dairy Science Association (Award of Honor and Fellow); the Missouri Milk, Food and Environmental Health Association (Lifetime Achievement Award); the Missouri Alumni Association (Distinguished Faculty Award); and the University of Missouri (AMOCO Teaching Award).

He has been president of both the American Dairy Science Association (ADSA) and the International Association of Milk, Food and Environmental Sanitarians. At the University of Missouri he served on the Faculty Council, the Campus Promotion and Tenure Committee (chair), and two Dean and one Vice Chancellor selection committees. He became Program Leader of Food Science in 1994 and Chair of Food Science in 1999. He has advised 22 doctoral and 31 master's degree candidates during his tenure at MU. He currently is Director of both graduate studies and undergraduate studies.

There will be an ice cream social in Dr. Marshall's honor on Saturday, January 8, 2000 at the Country Club of Missouri, 1300 Woodrail Avenue, Columbia, MO 65203, Phone: 573.449.7201.

Susan Alpert Named CFSAN Director of Food Safety

FDA's Center for Food Safety and Applied Nutrition (CFSAN) announced the appointment of Susan Alpert, Ph.D., M.D., as the Center's Director for Food Safety. In this capacity she will report directly to Joseph A. Levitt, Director of the center.

As Director of Food Safety, Dr. Alpert will provide leadership for the President's Food Safety Initiative. As the Center's senior physician, she will also provide oversight for all medical and clinical aspects of food safety across the broad range of FDA's food safety responsibilities.

"As a pediatrician with a strong background in both infectious diseases and microbiology, Dr. Alpert brings unique skills and experience to this critical job," said Levitt. "This means FDA will be bringing a clinical perspective to all facets of its public health mission of ensuring that Americans continue to enjoy a safe food supply," he added.

FDA is responsible for overseeing the safety of all food sold in the US, except for meat and poultry—some 78 percent of the food Americans consume.

Dr. Alpert currently serves as Director of the Office of Device Evaluation in FDA's Center for Devices and Radiological Health, where she oversees FDA's review of all medical devices. She has held that post since 1993, when she left her previous position as supervisory medical officer in FDA's Center for Drug Evaluation and Research. She joined the FDA in 1987.

Dr. Alpert has received numerous honors and awards,

most recently the Presidential Meritorious Executive Rank Award in 1998.

A graduate of Barnard College, Columbia University, Dr. Alpert received her Ph.D. in medical microbiology from the New York University School of Medicine. She earned her M.D. at the University of Miami School of Medicine and trained in pediatrics at Montefiore Hospital of the Albert Einstein College of Medicine. She completed her training in pediatric infectious disease at Children's Hospital in Washington, D.C., as part of a joint program with FDA.

Dr. Alpert assumed her new duties October 25. She replaces Morris Potter, D.V.M., who will leave FDA to become Executive Director of the International Life Sciences Institute (ILSI) and ILSI North America.

Reprinted from *The FDA Web Site, HHS News, US Dept. of Health and Human Services.*

FSIS Announces New Regulator's Food Safety Information Line

The US Department of Agriculture's Food Safety and Inspection Service has launched its new Regulator's Food Safety Information Line for state food and public health agencies. Located at FSIS' Technical Service Center in Omaha, NE, the site of the successful HACCP Hotline, the new service will answer food safety questions related to meat, poultry, and egg products.

"FSIS wants to assist state and local agencies responsible for food safety and consumer protection in providing the best information possible on hazards, from farm to table, associated with food safety,"

said FSIS Administrator Thomas Billy. "Our goal is for the Regulator's Food Safety Information Line to become a valuable, trusted resource for state food safety agencies."

Recognizing the key role that state and local government agencies play in a seamless national food safety system, FSIS created the information line to provide information and assistance to states. The information line is expected to improve cooperation and communication at all levels of government.

The information line staff will respond to technical or regulatory questions on raising animals for food, slaughtering animals, processing products from those animals, and handling those products during transportation, storage, retail, and food service operations. The staff's goal is to provide timely, authoritative answers to state colleagues' questions.

The information line will assist the states in providing accurate and helpful information that they can pass along to their local government agencies.

The number for the Regulator's Food Safety Information Line is 800.233.3935. It will handle inquiries by telephone (including voice-mail), fax, mail, and E-mail (food.safety@usda.gov). The information line will be staffed 6 a.m. to 6 p.m., CST, Monday through Friday. Consumers with questions on food safety can reach the FSIS Meat and Poultry Hotline at 800.535.4555.

Information of general interest such as interpretations of agency regulations and policy will be published on FSIS' Web site at www.fsis.usda.gov. Suggestions on improvements to the information line may be directed to the infor-

mation line staff or to the Administrator, FSIS, US Department of Agriculture, Washington, D.C. 20250.

Salmonella Outbreak Linked to Raw Tomatoes in California

From December 1998 through February 1999, *Salmonella baidon* infection was reported for 44 Californians residing in 15 counties and for at least 41 other persons in seven other states. In the previous 15 years, only one human *Salmonella baidon* isolate had been recovered in California. Approximately one-third of California patients were hospitalized and one patient died.

Most patients (90%) developed their symptoms during a brief, three-week period ending January 9, 1999. An investigation conducted by the California Department of Health Services and presented at the 39th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) on September 29, 1999 in San Francisco, CA, implicated raw tomatoes. Tomatoes are an uncommon but previously reported vehicle for *Salmonella* infections.

The wide geographic distribution and short duration of this outbreak were consistent with a vehicle that was widely distributed and perishable. The investigators implicated tomatoes by comparing food items eaten by persons who were ill to foods eaten by persons who were not ill. The investigators enrolled the first 17 adult *Salmonella baidon* case-patients reported to the Department and compared them to 32 age-, sex- and county-matched persons ('controls') previously diagnosed with illness caused by other serotypes of *Salmonella* in 1998.

Case-patients were more likely than their matched counterparts to have consumed raw tomatoes (100% vs 60%), restaurant-prepared tomatoes (94% vs. 33%), home-prepared tomatoes (81% vs 48%), restaurant-prepared lettuce (88% vs 52%), and sour cream (76% vs 31%) and to have eaten at a chain of Mexican restaurants (63% vs 17%). A concurrent investigation of case patients in Virginia conducted by that state's Department of Health also implicated raw tomatoes.

The distribution routes of suspect tomatoes consumed in California and Virginia were traced back to identify their sources. Because tomatoes were consumed at different restaurants that were supplied by different processors, they were probably contaminated at the farm or during packing or handling prior to retail distribution. Two tomato packers in Florida could have supplied the tomatoes consumed by the California and Virginia case patients. The two packing operations were inspected by the Federal Food and Drug Administration during April 1999, the end of the tomato growing season, when no adverse findings were noted. Although no control measures were instituted, the outbreak was short-lived.

Because fruits, vegetables, and grains are promoted as part of a health diet, it is important that these foods be as safe as possible. However, foods that are eaten raw, such as fruits and vegetables, present a special risk for microbial contamination. In October 1998,

just two months before this outbreak began, the United States Department of Health and Human Services published an industry guidance document for safe growing and handling practices for fresh fruit and vegetables. We recommend adherence to these guidelines by growers, packers, and processors in their handling of fresh tomatoes. In particular, water used in tomato packing and processing operations should be routinely monitored to insure that potable water standards are achieved and to insure that water temperatures are controlled. This latter recommendation is intended to minimize a pressure gradient that can draw pathogens into tomato tissues. We also recommend that fresh produce, such as tomatoes, be labeled with a product code that identifies the date and location of origin. Product labeling would facilitate timely tracebacks, which will make farm and other inspections easier. In turn, timely inspections provide opportunities for food-safety interventions when breaches in production or processing are identified.

Mexico Eligible to Export Processed Poultry to United States

The US Department of Agriculture's Food Safety and Inspection Service is adding Mexico to the list of countries eligible to export poultry products to the United States effective Oct. 14. Reviews of

Mexico's laws and regulations by FSIS demonstrate that the requirements of Mexico's poultry processing inspection system are equivalent to relevant United States laws and regulations. This action enables certified poultry processing establishments in Mexico to export processed poultry products to the United States.

Poultry slaughtered in Mexico remains ineligible for export to the United States. Only products processed from poultry slaughtered in federally inspected establishments in the United States or in establishments in other countries eligible to export poultry from certified slaughter establishments to the United States may be imported into the United States after processing in certified Mexican establishments. Following inspection under Mexico's equivalent inspection system, FSIS inspectors will reinspect poultry products exported from Mexico to the United States at United States ports of entry.

An FSIS proposal to add Mexico to the list of countries eligible to export poultry products to the United States was published in the Nov. 28, 1997, Federal Register. The proposal reported that Mexico's poultry processing inspection system is equivalent to that of the United States, and that its official residue control laboratory is fully capable of testing poultry products.

FSIS retains the right to verify that establishments certified by the Mexican government are meeting United States requirements.



ThermoWorks, Inc.

High Speed Pocket Thermometer from ThermoWorks

ThermoWorks announces a new version of its professional Thermapen pocket thermometer. The unique needle-tip probe features a reduced diameter at the insertion end with a larger diameter shaft for durability and strength. The fast, miniaturized tip also makes it possible to take internal temperatures of very small samples. Reasonable accuracy can be achieved in about 1/8" immersion depth. The thermocouple sensor technology is the same as that found in larger handheld meters but packaged into a compact pocket-sized housing. The probe folds into the meter for safe transport or storage and can

be rotated for use at an angle convenient to the user. When the probe is folded in, the Thermapen shuts off. If left open, an auto-shut-off feature will preserve the battery. The 1/2" tall LCD digits are two to three times larger than the hard-to-read displays of other pocket meters. Most contact or immersion thermometers require 30 to 60 seconds to read temperature.

ThermoWorks, Inc., Alpine, UT

Reader Service No. 311

A New Membrane Air Dryer Available from Whatman, Inc.

The Whatman® Membrane Air Dryer will provide pure, dry compressed air and will offer an economical, efficient alternative to pressure swing and refrigerant dryer technologies.

The Membrane Air Dryer will dry compressed air to dewpoints as low as -40°F at flow rates of up to 10 SCFM. As the Whatman Membrane Air Dryer has no moving parts, it operates reliably and efficiently without operator attention.

Dry air is achieved by returning a small portion of the dry product air to sweep out moisture, which preferentially passes through the membranes. The degree of drying is controlled by varying the compressed air throughput. The moisture laden

sweep gas is vented to the atmosphere, eliminating potential liquid-handling and freezing problems.

The Membrane Air Dryer is compact and lightweight and can be easily mounted in an existing pipeline. Coalescing prefiltration is employed immediately upstream of the membranes to protect them from pipe scale, other particulate matter, and liquids. The Membrane Air Dryer requires no electrical connections, which makes it ideal for remote and point-of-use installations or for flammable and explosive applications.

Whatman Inc., Tewksbury, MA

Reader Service No. 312

NEW Online Test Kit Database

The AOAC Research Institute has been actively reviewing analytical test kits for more than 7 years. All of this information is now compiled in one easy-to-use database. This NEW database includes entries on more than 500 test kits arranged according to broad categories of analytes (bacterial, antibiotic, toxins, hormones, chemical, and biochemical). Within each of these categories, individual test kits are further subclassified according to specific analyte. The database is very user-friendly and is routinely updated with new test kit entries.

AOAC Research Institute,
Gaithersburg, MD

Reader Service No. 313

The publishers do not warrant, either expressly or by implication, the factual accuracy of the products or descriptions herein, nor do they so warrant any views or opinions offered by the manufacturer of said articles and products.

New Computerized, Non-Destructive Testing System for UHT Milk Products

The ElecTester MK IV, a new computerized system of quality control for the non-destructive testing of UHT milk products, including infant formulas and flavored milks, is now available from Elecster Oyj of Toijala, Finland. The system tests 125cc-1000cc UHT brik-type cartons (e.g., Tetra Pak, Combibloc), by checking the hydrodynamic behavior of the contents at speeds up to 1000/h. The ElecTester MK IV unit can be further automated by connecting it to an Automatic Testing Station.

To minimize health and financial risks, quality control is vital in milk packaging. Traditional quality control methods are complex and involve excessive time and labor, because the sample packages must be opened for testing.

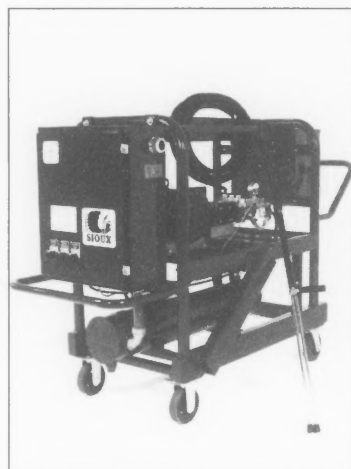
With the ElecTester MK IV, a higher number of samples can be tested at reduced cost, because the cartons are not opened or damaged in any way during testing. In addition, tested samples can be sold as part of the normal production batch.

Operation of the MK IV is based on detecting even the slightest change in the product's hydrodynamic behavior, achieved by oscillating the package and measuring the 'damping' value (reduction in amplitude). The system can also be programmed for an unlimited number of UHT testing 'recipes' - for different products and/or package sizes. There are two test heads: one for 25cc-500cc cartons and another for 500cc-1000cc cartons. The brik holder, mounted on the test head, is precisely dimensioned for each package size to facilitate easy placement and removal.

The ElecTester MK IV is operated by a foot switch. Initialization is facilitated by automatic start-amplitude and reference-value settings. The graphics include a high-quality color display, showing actual measurement values. The acceptance limits are adjustable by the operator. If the measured value exceeds these limits, rejection is indicated by both audio and visual signals.

EIBIS International, Ramsgate, United Kingdom

Reader Service No. 314



Sioux Steam Cleaner Corporation

Clean Food Processing Equipment/Facilities with a Sioux Hot Pressure Washer

Sioux's model E-140-H8-1800 Hot Pressure Washer is great for food manufacturing and processing facilities. It is excellent for sterilization of equipment, as well as for general maintenance of buildings and facilities.

This unit has an output of 140 GPH at 180°F and 1800 PSI. It requires very little preheating and no recovery time. Thus, hot water is ready in only 3-5 minutes and is available continuously for

unlimited time periods. This totally electric unit produces no flames or exhaust and can be used in locations where fuel-fired units would be dangerous.

In addition, Sioux's complete All-Electric line is third-party certified to UL 1776 and CSA C-22.2 No. 68-92.

Also available for use with any Sioux cleaner is Sioux's Liquid A Steam and Pressure Cleaning Compound. This detergent is USDA approved for use in food handling areas and is completely biodegradable.

Sioux Steam Cleaner Corporation, Beresford, SD

Reader Service No. 315

Airgas Refillable Refrigerant Cylinders Provide Environmental and Economic Benefits

Airgas, Inc. (NYSE-ARG) has announced its offering of 30-lb. refillable cylinders for its chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants as alternatives to single-use disposable cylinders. Applications for the 30-lb. refillable cylinders include residential and commercial air conditioning, industrial cooling, and food storage. Key advantages to the Airgas refillable cylinder program include elimination of disposal expense and decreased liability, along with reduced release of ozone-depleting gases into the atmosphere.

Airgas' refillable cylinder program is a response to environmental damage that, according to research, has reached immense proportions. In a study conducted by an independent West Coast consulting firm, the continued release of ozone-depleting CFCs and HCFCs can be traced to single-

use disposable cylinders for storing and transporting refrigerant gases. The study also estimated that as many as 75% of EPA-certified technicians might be using improper or substandard techniques for refrigerant reclamation. Instead of being recycled, the cylinders are often punctured and discarded, allowing for the unchecked release of residual ozone-depleting gases. In addition to damaging the environment, these improper techniques could result in disposal fees and fines.

Airgas, Inc., Radnor, PA

Reader Service No. 316

New PerfectHyb™ Plus Hybridization Buffer Offers Superior Performance Over Current Hybridization Buffers

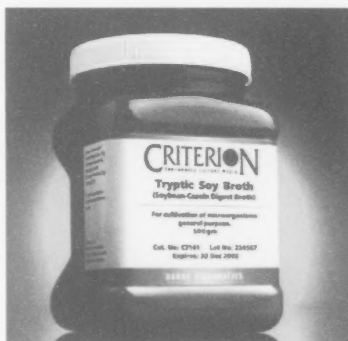
Compared with the best conventional buffers and the most popular commercial buffers on the market today, new PerfectHyb™ Plus hybridization buffer offers superior performance. PerfectHyb Plus is up to 20 times more sensitive than conventional buffers. This extra sensitivity gives you rapid hybridization and a continuous increase in signal over time. And with the highest signal-to-noise ratio of any hybridization buffer, it will always let you achieve superior signal clarity.

If results are needed in a hurry, data for most applications can be obtained in as little as one hour with PerfectHyb Plus. It is also versatile enough to be used in all radioactive and non-radioactive blotting applications, including Southern blot; Northern blot; Dot blot; Library screening; ³²P; DIG; FITC; Biotin; and CY5/CY3.

PerfectHyb Plus comes ready-to-use as a room temperature solution that requires no blocking agents or long pre-hybridization steps. It is also flexible enough to be incorporated into your current protocols to instantly improve your results! Its unique low viscosity formulation is the final step to making it ultra convenient and easy to use.

Sigma, St. Louis, MO

Reader Service No. 317



Hardy Diagnostics

Hardy Diagnostics Introduces CRITERION™ Dehydrated Culture Media

CRITERION™ is a new brand of dehydrated culture media and a whole new concept in packaging. CRITERION's wide mouth opening allows you to easily use a scoop, which reduces dust formation. No more shaking of the bottle to dispense media. Convenient hand grip design features finger indentations to allow for easy and safe handling of the bottle.

It is packaged in four convenient sizes: 2 l mylar zipper bag, pre-weighed for 2 liters of media; 500 g wide-mouth bottle with finger grips; 2 kg bucket with easy-opening screwlid; 10 kg bucket

with easy-opening screwlid.

Hardy Diagnostics, Santa Maria, CA

Reader Service No. 318

Labconco's Redesigned RapidVap® Vacuum Evaporation System Accelerates Sample Prep with Vortex Motion

Labconco Corporation offers the redesigned RapidVap® Evaporation System, an instrument capable of processing up to 110 each biological or analytical samples. The microprocessor-controlled, mechanically-created vortex action increases the surface area for faster evaporation and helps mix the sample for maximum sample recovery. Vortex motion, heat, and vacuum combine to quickly reduce samples to dryness or an end point volume and provide an alternative to traditional centrifugal evaporation. The RapidVap is suited for preparing samples for applications including drug discovery, agrichemistry, mycology testing, and environmental analysis.

The redesigned system has a sleek new styling and added programmability. Up to 9 different protocols may be entered into memory so exact test parameters can be easily repeated. The LCD display prompts the user to set program parameters and digitally shows actual running conditions.

The 1000-watt block heater supplies a precisely controlled amount of dry heat from ambient to 100°C to the samples to speed evaporation. The heater and block move in tandem for more efficient heat transfer.

Labconco Corporation, Kansas City, MO

Reader Service No. 319

Award Nominations

The International Association for Food Protection welcomes your nominations for our Association Awards. Nominate your colleagues for one of the Awards listed below. Only Members are eligible to be nominated (does not apply to the NFPA Food Safety Award). You do not have to be a Member of the Association to nominate a deserving professional.

To request nomination criteria, contact:

International Association for Food Protection
6200 Aurora Avenue, Suite 200W
Des Moines, Iowa 50322-2863, USA
By telephone: 800.369.6337; 515.276.3344
Fax: 515.276.8655
Web site: www.foodprotection.org
E-mail: info@foodprotection.org.

Nominations deadline is February 18, 2000.
You may make multiple nominations. All nominations must be received at the International Association for Food Protection's office by February 18, 2000.

- ◆ Persons nominated for individual awards must be current Members of the Association. Black Pearl Award nominees must be a company employing current Members. NFPA Food Safety Award nominees do not have to be Members of the Association.
- ◆ 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 the Annual Meeting in Atlanta, Georgia on August 9, 2000.

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.

Fellows Award – Distinguished Plaque

Presented to individuals for their contribution to the Association and its Affiliates with quiet distinction over a prolonged period of time.

Sponsored by the International Association for Food Protection.

Honorary Life Membership Award – Plaque and Lifetime Membership in the Association

Presented to Members for their devotion to the high ideals and objectives of the Association and for their service to the Association.

Sponsored by the International Association for Food Protection.

Harry Haverland Citation Award – Plaque and \$1,000 Honorarium

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

Sponsored by DiverseyLever/U.S. Food Group.

Harold Barnum Industry Award – Plaque and \$1,000 Honorarium

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

Sponsored by NASCO International, Inc.

Educator Award – Plaque and \$1,000 Honorarium

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

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

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.

Call for Abstracts

**87th Annual Meeting
August 6-9, 2000
Atlanta, Georgia**

General Information

1. Complete the Abstract Submission Form.
2. All presenters must register for the Annual Meeting and assume responsibility for their own transportation, lodging, and registration fees.
3. There is no limit on the number of abstracts registrants may submit. However, presenters must present their presentations.
4. Accepted abstracts will be published in the Program and Abstract Book. Editorial changes will be made to accepted abstracts at the discretion of the Program Committee.
5. Photocopies of the abstract form may be used.
6. Membership in the Association is not required for presenting a paper at the International Association for Food Protection Annual Meeting.

Presentation Format

1. Technical – Oral presentations will be scheduled with a maximum of 15 minutes, including two to four minutes for discussion. Projectors for 35-mm slides will be available. Other equipment may be used at the presenter's expense. Prior authorization from the office must be obtained. Overhead projectors will not be allowed.
2. Poster – Freestanding boards will be provided for presenting posters. Handouts may be used, but audiovisual equipment will not be available. The presenter will be responsible for bringing pins and velcro.

Instructions for Preparing Abstracts

1. Title – The title should be short but descriptive. The first letter in each word in the title and proper nouns should be capitalized.
2. Authors – List all authors using the following style: surname, followed by a comma, then first name.
3. Presenter Name & Title – List the full name and title of the person who will present the paper.
4. Presenter Address – List the name of the department, institution, and full postal address (including zip/postal code and country).
5. Phone Number – List the phone number, including area code, country, and city of the presenter.
6. Fax Number – List the fax number, including area code, country, and city of the presenter.
7. E-mail – List the E-mail address for the presenter.
8. Format preferred – Check the box to indicate oral or poster format. The Program Committee makes the final decision on the format of the abstract.
9. Developing Scientist Awards Competitions – Check the box to indicate if the paper is to be presented by a student in this competition. A signature and date is required from the major professor or department head. See "Call for Entrants in the Developing Scientist Awards Competitions."
10. Abstract – Type abstract, double-spaced, in the space provided or on a separate sheet of paper, using a 12-point font size. Use no more than 250 words.

Abstract Submission

Abstracts submitted for the International Association for Food Protection 87th Annual Meeting in Atlanta, Georgia August 6-9, 2000 will be evaluated for acceptance by the Program Committee. Please be sure to follow format instructions above carefully; failure to do so may result in rejection. Information in the abstract data must not have been previously published in a copyrighted journal.

Submit your abstract to the office. Abstracts must be received no later than January 10, 2000.

Return the completed abstract form through one of the following methods:

1. Regular mail: Abstracts may be sent by post or express courier along with a disk copy (text or MS Word™ format) to the following address:

Abstract Submission
International Association for Food Protection
6200 Aurora Avenue, Suite 200W
Des Moines, Iowa 50322-2863, USA

2. E-mail: Submit via E-mail as an attached text or MS Word™ document to abstracts@foodprotection.org.
3. On-line: Use the on-line abstract submission form located at www.foodprotection.org.

Selection Criteria

1. Abstracts must accurately and briefly describe:
 - (a) the problem studied and/or objectives;
 - (b) methodology;
 - (c) essential results; and
 - (d) conclusions and/or significant implications.
2. Abstracts must report the results of original research pertinent to the subject matter. Papers should report the results of applied research on: food, dairy and environmental sanitation; foodborne pathogens; food and dairy microbiology; food and dairy engineering; food and dairy chemistry; food additives and residues; food and dairy technology; food service and food administration; quality assurance/control; mastitis; environmental health; waste management and water quality. Papers may also report subject matter of an educational and or nontechnical nature.
3. Research must be based on accepted scientific practices.

4. Research should not have been previously presented nor intended for presentation at another scientific meeting. Papers should not appear in print prior to the Annual Meeting.
5. Results should be summarized. Do not use tables or graphs.

Rejection Reasons

1. Abstract was not prepared according to the "Instruction for Preparing Abstracts."
2. Abstract does not contain essential elements as described in "Selection Criteria."
3. Abstract reports inappropriate or unacceptable subject matter, is not based on accepted scientific practices, or the quality of the research or scientific approach is inadequate.
4. Work reported appears to be incomplete and/or data are not presented. Indication that data will be presented is not acceptable.
5. The abstract was poorly written or prepared including spelling and grammatical errors.
6. Results have been presented/published previously.
7. The abstract was received after the deadline for submission.
8. Abstract contains information that is in violation of the International Association for Food Protection Policy on Commercialism.

Projected Deadlines/Notification

Abstract Submission Deadline: January 10, 2000.

Acceptance/Rejection Notification: March 1, 2000.

Contact Information

Questions regarding abstract submission can be directed to Bev Corron, 515.276.3344 or 800.369.6337; E-mail: bcorron@foodprotection.org.

Program Chairperson:

David Golden
University of Tennessee
Dept. of Food Science and Technology
Knoxville, TN 37901-1071, USA
Phone: 423.974.7247
Fax: 423.974.7332
E-mail: dgolden@utk.edu

Abstract Form

DEADLINE: Must be Received by January 10, 2000

Follow instructions on page 815

(1) Title of Paper _____

(2) Authors _____

(3) Full Name and Title of Presenter _____

(4) Institution and Address of Presenter _____

(5) Phone Number: _____

(6) Fax Number: _____

(7) E-mail: _____

(8) Format preferred: Oral Poster No Preference

NOTE: Selected presentations may be recorded (audio or visual). The Program Committee will make the final decision on presentation format.

(9) Developing Scientist Awards Competitions Yes Graduation date: _____

Major Professor/Department Head approval (signature and date): _____

(10) TYPE abstract, DOUBLE-SPACED, in the space provided or on a separate sheet of paper using a 12-point font size. Use no more than 250 words.

Call for Entrants in the Developing Scientist Awards Competitions

Supported by the International Association for Food Protection Foundation

The International Association for Food Protection is pleased to announce the continuation of its program to encourage and recognize the work of students and recent graduates in the field of food safety research. Qualified individuals may enter either the oral or poster competition.

Purpose

1. To encourage students and recent graduates to present their original research at the Annual Meeting.
2. To foster professionalism in students and recent graduates through contact with peers and professional Members of the Association.
3. To encourage participation by students and recent graduates in the Association and the Annual Meeting.

Presentation Format

Oral Competition – The Developing Scientist Oral Awards Competition is open to graduate students enrolled in or recent graduates from M.S. or Ph.D. programs at accredited universities or colleges. Presentations are limited to 15 minutes, which includes two to four minutes for discussion.

Poster Competition – The Developing Scientist Poster Awards Competition is open to students enrolled in or recent graduates from undergraduate or graduate programs at accredited universities or colleges. The presenter must be present to answer questions for a specified time (approximately two hours) during the assigned session. Specific requirements for presentations will be provided at a later date.

General Information

1. Competition entrants cannot have graduated more than a year prior to the deadline for submitting abstracts.
2. Accredited universities or colleges must deal with environmental, food or dairy sanitation, protection or safety research.
3. The work must represent original research completed and presented by the entrant.
4. Entrants may enter only one paper in either the oral or poster competition.
5. All entrants must register for the Annual Meeting and assume responsibility for their own transportation, lodging, and registration fees.
6. Acceptance of your abstract for presentation is independent of acceptance as a competition finalist. Competition entrants who are chosen as finalists will be notified of their status by the chairperson by June 1, 2000.
7. All entrants with accepted abstracts will receive complimentary, one-year Association Member-

ship, which includes their choice of *Dairy, Food and Environmental Sanitation* or *Journal of Food Protection*.

8. In addition to adhering to the instruction in the "Call for Abstracts," competition entrants must check the box to indicate if the paper is to be presented by a student in this competition. A signature and date is required from the major professor or department head.

Judging Criteria

A panel of judges will evaluate abstracts and presentations. Selection of up to ten finalists for each competition will be based on evaluations of the abstracts and the scientific quality of the work. All entrants will be advised of the results by June 1, 2000.

Only competition finalists will be judged at the Annual Meeting and will be eligible for the awards. All other entrants with accepted abstracts will be expected to be present as part of the regular Annual Meeting. The presentations will not be judged and they will not be eligible for the awards.

Judging criteria will be based on the following:

1. Abstract – clarity, comprehensiveness and conciseness.
2. Scientific Quality – Adequacy of experimental design (methodology, replication, controls), extent to which objectives were met, difficulty and thoroughness of research, validity of conclusions based upon data, technical merit and contribution to science.
3. Presentation – Organization (clarity of introduction, objectives, methods, results and conclusions), quality of visuals, quality and poise of presentation, answering questions, and knowledge of subject.

Finalists

Awards will be presented at the International Association for Food Protection Annual Meeting Awards Banquet to the top three presenters (first, second and third places) in both the oral and poster competitions. All finalists will receive a complimentary Awards Banquet ticket and are expected to be present at the banquet where the awards winners will be announced and recognized.

Awards

- First Place – \$500 and an engraved plaque
- Second Place – \$300 and a framed certificate
- Third Place – \$100 and a framed certificate

Award winners will also receive a complimentary, one-year Membership including *Dairy, Food and Environmental Sanitation* and *Journal of Food Protection*.

Policy on Commercialism

1. INTRODUCTION

No printed media, technical sessions, symposia, posters, seminars, short courses, and/or all related type forums and discussions offered under the auspices of the International Association for Food Protection (hereafter referred to as Association forums) are to be used as platforms for commercial sales or presentations by authors and/or presenters (hereafter referred to as authors) without the expressed permission of the staff or Executive Board. The Association enforces this policy in order to restrict commercialism in technical manuscripts, graphics, oral presentations, poster presentations, panel discussions, symposia papers, and all other type submissions and presentations (hereafter referred to as submissions and presentations), so that scientific merit is not diluted by proprietary secrecy.

Excessive use of brand names, product names or logos, failure to substantiate performance claims, and failure to objectively discuss alternative methods, processes, and equipment are indicators of sales pitches. Restricting commercialism benefits both the authors and recipients of submissions and presentations.

This policy has been written to serve as the basis for identifying commercialism in submissions and presentations prepared for the Association forums.

2. TECHNICAL CONTENT OF SUBMISSIONS AND PRESENTATIONS

2.1 Original Work

The presentation of new technical information is to be encouraged. In addition to the commercialism evaluation, all submissions and presentations will be individually evaluated by the Program Committee chairperson, technical reviewers selected by the Program Committee chairperson, session convener, and/or staff on the basis of originality before inclusion in the program.

2.2 Substantiating Data

Submissions and presentations should present technical conclusions derived from technical data. If products or services are described, all reported capabilities, features or benefits, and performance parameters must be substantiated by data or by an

acceptable explanation as to why the data are unavailable (e.g., incomplete, not collected, etc.) and, if it will become available, when. The explanation for unavailable data will be considered by the Program Committee chairperson and/or technical reviewers selected by the Program Committee chairperson in order to ascertain if the presentation is acceptable without the data. Serious consideration should be given to withholding submissions and presentations until the data are available as only those conclusions that might be reasonably drawn from the data may be presented. Claims of benefit and/or technical conclusions not supported by the presented data are prohibited.

2.3 Trade Names

Excessive use of brand names, product names, trade names, and/or trademarks is forbidden. A general guideline is to use proprietary names once and thereafter to use generic descriptors or neutral designations. Where this would make the submission or presentation significantly more difficult to understand, the Program Committee chairperson, technical reviewers selected by the Program Committee chairperson, session convener, and/or staff will judge whether the use of trade names, etc., is necessary and acceptable.

2.4 "Industry Practice" Statements

It may be useful to report the extent of application of technologies, products, or services, however, such statements should review the extent of application of all generically similar technologies, products, or services in the field. Specific commercial installations may be cited to the extent that their data are discussed in the submission or presentation.

2.5 Ranking

Although general comparisons of products and services are prohibited, specific generic comparisons that are substantiated by the reported data are allowed.

2.6 Proprietary Information (See also 2.2.)

Some information about products or services may be proprietary to the author's agency or company, or to the user and may not be publishable. However, their scientific principles and validation of performance parameters must be described. Conclusions and/or comparisons may only be made on the basis of reported data.

Capabilities

Discussion of corporate capabilities or experiences are prohibited unless they pertain to the specific presented data.

3. GRAPHICS

3.1 Purpose

Slides, photographs, videos, illustrations, art work, and any other type visual aids appearing with the printed text in submissions or used in presentations (hereafter referred to as graphics) should be included only to clarify technical points. Graphics which primarily promote a product or service will not be allowed. (See also 4.6.)

3.2 Source

Graphics should relate specifically to the technical presentation. General graphics regularly shown in, or intended for, sales presentations cannot be used.

3.3 Company Identification

Names or logos of agencies or companies supplying the goods or services must not appear on the graphics, except on the first slide of the presentation. Slides showing products may not include predominant nameplates. Graphics with commercial names or logos added as background borders or corners are specifically forbidden.

3.4 Copies

Graphics that are not included in the preprint may be shown during the presentation only if they have been reviewed in advance by the Program Committee chairperson, session convener, and/or staff, and have been determined to comply with this policy. Copies of these additional graphics must be available from the author on request by individual attendees. It is the responsibility of the session convener to verify that all graphics to be shown have been cleared by Program Committee chairperson, session convener, staff, or other reviewers designated by the Program Committee chairperson.

4. INTERPRETATION AND ENFORCEMENT

4.1 Distribution

This policy will be sent to all authors of submissions and presentations in the Association forums.

4.2 Assessment Process

Reviewers of submissions and presentations will accept only those that comply with this policy. Drafts of submissions and presentations will be reviewed for commercialism concurrently by both staff and technical reviewers selected by the Program Committee chairperson. All reviewer comments shall be sent to and coordinated by either the Program Committee chairperson or the designated staff. If any submissions are found to violate this policy, authors will be informed and invited to resubmit their materials in revised form before the designated deadline.

4.3 Author Awareness

In addition to receiving a printed copy of this policy, all authors presenting in a forum will be reminded of this policy by the Program Committee chairperson, their session convener, or the staff, whichever is appropriate.

4.4 Monitoring

Session convenors are responsible for ensuring that presentations comply with this policy. If it is determined by the session convener that a violation or violations have occurred or are occurring, he or she will publically request that the author immediately discontinue any and all presentations (oral, visual, audio, etc.), and will notify the Program Committee chairperson and staff of the action taken.

4.5 Enforcement

While both technical reviewers, session convenors, and/or staff may check submissions and presentations for commercialism, ultimately it is the responsibility of the Program Committee chairperson to enforce this policy through the session convenors and staff.

4.6 Penalties

If the author of a submission or presentation violates this policy, the Program Committee chairperson will notify the author and the authors' agency or company of the violation in writing. If an additional violation or violations occur after a written warning has been issued to an author and his agency or company, the Association reserves the right to ban the author and the authors' agency or company from making presentations in the Association forums for a period of up to two (2) years following the violation or violations.

NATIONAL ADVISORY COMMITTEE ON MICROBIOLOGICAL CRITERIA FOR FOODS

Daryl S. Paulson, Ph.D.
BioScience Laboratories, Inc.
Bozeman, Montana

On September 21-24, the National Advisory Committee convened to discuss and formulate recommendations on bare-hand contact with ready-to-eat foods. The meeting began Tuesday, September 21, with a background review authored by Jack Guzewich and Marianne P. Ross, DVM, of the U.S. Food and Drug Administration. This was followed by discussions on epidemiology of foodborne diseases. Of particular importance were the anecdotal data presented by Dr. Dale Morse of the New York State Department of Health. The data showed clearly that incidence of feces-borne disease transmission to patrons was reduced after the no-bare-hand law went into effect in New York State.

Three food industry members – Francis Ferko, National Council on Chain Restaurants; Dr. Jill Hollingsworth, Food Marketing Institute; and Steve Grover, National Restaurant Association – presented the food industry's views on control of foodborne disease.

After lunch, a group of consumer advocates presented their perspective on dangers of contaminated foods eaten by consumers, in terms of both morbidity and mortality. This was followed by a group of scientists presenting data on handwash and

gloving effectiveness, and even questioning whether plain soap and water washes and, in some cases, washes with water only actually may be as effective as an antimicrobial handwash.

The Advisory Committee found, based on the various data presented during the meetings, that bare-hand contact with ready-to-eat foods can contribute to the transmission of foodborne illness but that the sequence of events leading to transmission can be interrupted. Several preventative strategies were recommended.

1. Ill food workers should be excluded/restricted from contact with ready-to-eat foods and food contact surfaces.
2. Proper hand washing must occur, since it is an essential component in interrupting the transmission of foodborne pathogens.
3. Minimize bare-hand contact with ready-to-eat foods. Most Committee members, however, deemed the available scientific data insufficient to support a blanket prohibition of bare-hand contact with ready-to-eat foods.

Finally, it was thought that implementation of all three interventions will require education and motivation of food workers and managers.

subpopulations. Current calls for research proposals by the USDA, the International Life Sciences Institute and other organizations are addressing these and other important concerns including faster detection and quantitation of *L. monocytogenes*, molecular typing of human and environmental isolates, identification and characterization of pathogenicity/virulence factors, and the ecological niches for the most virulent strains, all of which are critical to conducting a quantitative risk assessment for listeriosis.

Growing numbers of individuals in the food industry are also beginning to question the usefulness and feasibility of maintaining the current "zero tolerance" policy for *L. monocytogenes* in all cooked/ready-to-eat foods. These concerns come from the fact that the number of listeriosis cases in the United States has remained relatively stable at approximately 1100 cases annually since 1993, despite the large number of Class I recalls and countless instances in which product was recalled internally by the manufacturer. Given that 90 of 3,547 (approximately 2.5%) of ready-to-eat products sampled by FSIS yielded *L. monocytogenes* during 1998, human exposure to *Listeria* is likely a common occurrence, particularly when additional products such as fresh fruits and vegetables are included, with the average individual likely ingesting very low levels of *L. monocytogenes* on a weekly basis. Over 50 Class I recalls have been issued since 1986 for frozen ice cream (more than 2.6 million gallons), with these recalled products most likely containing extremely low levels of *L. monocytogenes*. Given the inability of *Listeria* to grow in such frozen

products and a worldwide absence of listeriosis cases traced to commercially produced ice cream, the present "zero tolerance" policy appears to be overly restrictive for such products as frozen desserts.

Canada, Australia and many European countries have taken a somewhat more lenient approach, allowing up to 1000 *L. monocytogenes* CFU/g or ml in certain ready-to-eat foods such as ice cream that will not support growth of *Listeria*. However, these same countries do recognize the increased danger associated with certain "high risk" foods such as soft, surface-ripened cheeses, pate, and coleslaw; these presently account for 7 of the 10 confirmed foodborne listeriosis outbreaks reported worldwide in which the infectious vehicle was positively identified. Interestingly, 8 of these 10 outbreaks were caused by uncommon epidemic strains belonging to serotype 4 [7 serotype 4b (3 closely related), 1 serotype 4a]; the remaining two outbreaks were characterized by non-fatal gastroenteritis caused by ingesting unusually high levels of less virulent serotype 1/2b strains. Additional research focused on detecting and quantifying these highly virulent strains might eventually lead to a situation similar to that for enterohemorrhagic *E. coli* and *Yersinia enterocolitica*, in which the presence of only *L. monocytogenes* serotype 4b or perhaps only specific PFGE types as identified through the Pulse Net System would prompt a Class I recall in the United States. Solutions to these problems will have a major impact on the fate of the current "zero tolerance" policy for *L. monocytogenes* in all cooked/ready-to-eat foods marketed in the United States as well as any future import/export regulations regarding *Listeria*.

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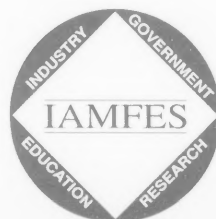
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• **6-7, Advanced Hazard Analysis and Critical Control Points (HACCP) Training Class for Poultry Meat Products**, Tucker, GA. This course is designed to provide HACCP team leaders, management personnel, and food safety system auditors with information and training in the application of advanced business techniques to their HACCP systems. For more information, contact Sylvia Small, US Poultry, 1530 Cooledge Road, Tucker, GA; Phone 770.493.9401; Fax: 770.493.9257; E-mail: training@poultryegg.org.

• **7-8, Food Service HACCP and Food Safety**, New Brunswick, NJ. This course is appropriate for food service managers, restaurant chefs, dietitians, nutritionists, sanitarians, and public health professionals who wish to improve their knowledge of food safety and understand the HACCP approach. For additional information, contact Continuing Professional Education, Cook College, Rutgers University, 102 Ryders Lane, New Brunswick, NJ 08901-8519; Phone: 732.932.9271; Fax: 732.932.1187; E-mail: ocpce@aesop.rutgers.edu.

• **7-9, Microbiology III: Foodborne Pathogens**, Guelph,

Ontario, Canada. Learn about rapid methods for detecting pathogens; ATP testing; pros and cons; pathogens' development of resistance to antibiotics; tracing sources of pathogens within a food processing establishment; and many other topics. For more details, contact Marlene Inglis, Guelph Food Technology Centre, 88 McGilvray St., Guelph, Ontario, N1G 2W1 Canada; Phone: 519.821.1246 ext. 5028; Fax: 519.836.1281; E-mail: gftc@uoguelph.ca.

JANUARY

• **3-6, Milk Pasteurization and Control School**, Madison, WI. This 4-day short course provides in-depth training for those dairy industry personnel involved with thermal processing of milk and milk products. For more information, contact Bob Bradley at 608.263.2007.

• **9-12, 2000 Dairy Forum**, at the Westin Mission Hills Resort, Rancho Mirage, CA. For more information, contact Melinda Witter at 202.737.4332.

• **17-18, International Poultry Scientific Forum**, at the Georgia World Congress Center, Atlanta, GA. The forum will be a place where internationally recognized experts can share the latest findings in such areas as the environment, nutrition, pathology, microbiology, food science, and processing. For more information, contact Sylvia Small, USPoultry, 1530 Cooledge Road, Tucker, GA 30084-7303; Phone: 770.493.9401; Fax: 770.493.9257; E-mail: promo@poultryegg.org.

• **19-21, International Poultry Exposition**, Atlanta, GA. For more information, contact The International Poultry Exposition, US Poultry & Egg Association, 1530 Cooledge Road, Tucker, GA 30084-7303;

Phone: 770.493.9401; Fax: 770.493.9257.

MARCH

• **3, Baking Industry Sanitation Standards Committee (BISSC) 2000 Annual Membership Meeting**, at the Chicago Marriott Hotel, Chicago. For more information, contact Bonnie Sweetman, Executive Director, BISSC, 1400 W. Devon Ave., Suite 422, Chicago, IL 60660; Phone: 773.761.4100; Fax: 773.274.3242; E-mail: bakesan@aol.com

• **9-11, International Fresh-cut Produce Association's 13th Annual Conference and Exhibition, "Dallas 2000: the Future is Now,"** Dallas, TX. This conference will provide fresh-cut processors, their suppliers, and their customers with an in-depth understanding of internal and external factors that will change the industry as it enters the twenty-first century. For more information, call Sherry Greenwood at 703.299.6282.

• **15, Dairy HACCP Workshop**, Madison, WI. This one-day workshop will cover design and implementation of HACCP plans in dairy plants. For additional information, contact Marianne Smukowski at 608.265.6346.

APRIL

• **16-19, Foodborne Pathogens 2000: Perspectives and Interventions**, Crowne Plaza, Arlington/Crystal City, VA. Sponsored by the Society for Industrial Microbiology. For more information, contact 3929 Old Lee Highway, Suite 92A, Fairfax, VA 22030-2421; Phone: 703.691.3357; Fax: 703.691.7991; E-mail: info@simhq.org.



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THOUGHTS on Today's Food Safety...

The State of *Listeria*: Where Have We Been and Where Are We Going?

Elliot T. Ryser

Department of Food Science and Human Nutrition
Michigan State University
East Lansing, MI

In the summer of 1985, the general public and the scientific community were caught off guard when consumption of Jalisco-brand Mexican-style cheese was traced to over 300 cases of listeriosis, including 85 fatalities, in Southern California. As a result of this outbreak, *Listeria monocytogenes* rose to the front page of many national newspapers and prompted regulators in the United States to adopt a policy of "zero tolerance" for this pathogen in all ready-to-eat foods. *L. monocytogenes*, both then and now, is responsible for over half of all microbiologically related Class I recalls. After learning that the number of listeriosis cases in the United States declined 44% between 1989 and 1993, to about 1100 cases (including 250 fatalities) annually, some regulatory officials and food commodity groups began claiming partial victory over *Listeria* and began refocusing their attention on more immediate food safety concerns such as *Escherichia coli* O157:H7. Extensive mass media coverage given of other non-*Listeria* outbreaks (including those traced to *E. coli* O157 H:7 in undercooked ground beef, unpasteurized apple cider and fresh produce), coupled with the absence of any major listeriosis outbreak in the United States since 1985 (except for one mild outbreak of *Listeria* gastroenteritis traced to temperature-abused chocolate milk in the Midwest) were again partially responsible for this shift of attention away from *Listeria*.

The processed meat industry in the United States received a rude awakening in late 1998 in the form of a severe nationwide outbreak traced to hot dogs. In July of 1998, officials at the Centers for Disease Control and Prevention (CDC) observed an increase in the number of listeriosis cases due to one particular strain of *L. monocytogenes* serotype 4b that was subsequently identified as belonging to pulsed-field gel electrophoresis (PFGE) type E. Further investigative efforts by CDC and the United States Department of

Agriculture (USDA) revealed an epidemiological link between illness and consumption of hot dogs manufactured by Bil Mar Foods, a large southwestern Michigan company producing up to 100 tons of hot dogs per day for national distribution. Based on these findings, the company on December 22, 1998 recalled all hot dogs and deli meats that had "sell by" dates of June 3, 1998 to February 17, 1999. By the time this outbreak officially ended on March 1, 1999, 101 cases (including 21 fatalities – 15 deaths and 6 miscarriages) were documented in 22 states, making this listeriosis outbreak the second deadliest on record in the United States. Although the source of the epidemic strain was never positively identified, post-processing contamination is likely to blame, considering that the start of the outbreak coincided with the removal of ventilation equipment near the packaging line. In response to the Bil Mar outbreak, USDA-FSIS officials held a public meeting in Arlington, VA to obtain public comments from government, industry, and academia on the most immediate food safety issues related to *L. monocytogenes*. One result of this meeting was an FSIS directive to have all processed meat manufacturers reassess their HACCP plans for additional critical control points that may be needed to prevent *L. monocytogenes* from contaminating finished product. Additionally, educational efforts were increased and targeted to pregnant women, the elderly, and immunocompromised individuals, all of whom are at usually high risk of developing listeriosis. More immediate research goals included the development of post-processing pasteurization techniques for pre-packaged hot dogs and luncheon meats, and a risk assessment for listeriosis from extended shelf-life products.

The outbreak just described served as a wake-up call for the processed meat industry and appeared to catch many lay people off guard, with large segments of the popular press and general public still unsure about what this "new" health threat was, despite the widely publicized 1985 listeriosis outbreak in California that claimed 85 lives. A voluminous amount of *Listeria*-related research has been conducted both in the United States and abroad since 1985, and well over 3000 scientific papers have been published to date (Ryser, E.T., and E.H. Marth. 1999. *Listeria*, Listeriosis and Food Safety, 2nd ed., Marcel Dekker, Inc. New York). However, many nagging questions still remain concerning virulence differences between strains, geographical distribution of different strains, oral infective dose, rate of human exposure to *L. monocytogenes*, and susceptibility of different human

Continued on page 822

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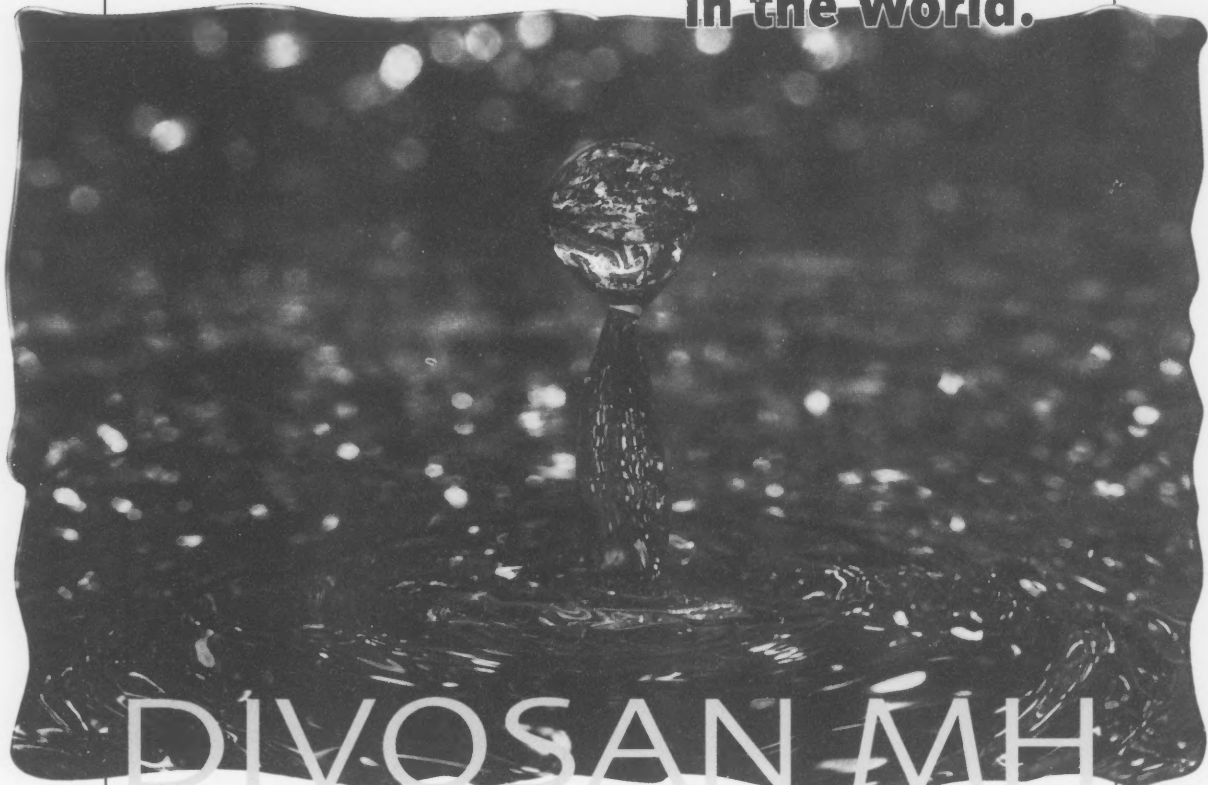
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