

ISSN: 1043-3546
PERIODICALS
6200 Aurora Avenue•Suite 200W
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DAIRY, FOOD AND ENVIRONMENTAL

Sanitation

A PUBLICATION OF THE INTERNATIONAL ASSOCIATION FOR FOOD PROTECTION, INC.

APRIL 2001

• IAFP 2001, Preliminary Program

• IAFP 2002, Call for Symposia

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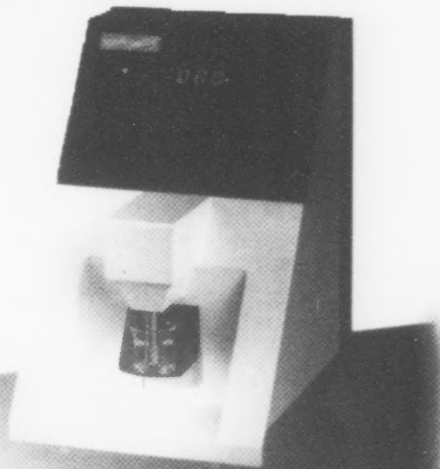
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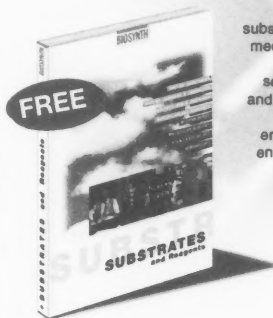
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DAIRY, FOOD AND ENVIRONMENTAL

Sanitation

A PUBLICATION OF THE INTERNATIONAL ASSOCIATION FOR FOOD PROTECTION

Dairy, Food and Environmental Sanitation (ISSN-1043-3546) is published monthly beginning with the January number by the International Association for Food Protection, 6200 Aurora Avenue, Suite 200W, Des Moines, Iowa 50322-2863, USA. Each volume comprises 12 numbers. Printed by Heuss Printing, Inc., 911 N. Second Street, Ames, Iowa 50010, USA. Periodical Postage paid at Des Moines, Iowa 50318 and additional entry offices.

Manuscripts: Correspondence regarding manuscripts should be addressed to Donna A. Bahun, Production Editor, International Association for Food Protection.

News Releases, Updates, Coming Events and Cover Photos: Correspondence for these materials should be sent to Donna A. Bahun, Production Editor, International Association for Food Protection.

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

Orders for Reprints: All orders should be sent to **Dairy, Food and Environmental Sanitation**, International Association for Food Protection. Note: Single copies of reprints are not available from this address; address single copy reprint requests to principal author.

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Business Matters: Correspondence regarding business matters should be addressed to Lisa K. Hovey, Managing Editor, International Association for Food Protection.

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Claims: Notice of failure to receive copies must be reported within 30 days domestic, 90 days outside US.

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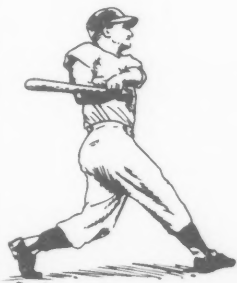
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My Perspective



By JENNY SCOTT
President

“To provide food safety professionals worldwide with a forum to exchange information on protecting the food supply”

The Mission of the International Association for Food Protection is to provide food safety professionals worldwide with a forum to exchange information on protecting the food supply. What does this mean to you? Are we achieving our mission? Here is my perspective on this issue.

IAFP fulfills its mission in several ways. First and foremost is through publication of the Association's journals. Many consider the *Journal of Food Protection (JFP)* to be the premier journal for publication of research on microbial food safety. ISI (the Institute for Scientific Information) publishes a Journal Citation Report that ranks journals by the number of times they are cited in a given year, providing an objective way to determine the journals with the highest scholarly impact within subject areas. In 1998 the *Journal of Food Protection* ranked number 14 in "impact factor" among journals in *Food Science and Technology*. For comparison purposes, *Food Microbiology* ranked number 22, the *International Journal of Food Microbiology* ranked 5, the *Journal of Food Safety* ranked 70, and the *Journal of Food Science* ranked number 17 out of 90 journals in this category. In 2000, 274 manuscripts were published and 486 manuscripts were submitted to *JFP*. Almost 50% of the manuscripts published in 2000 were submitted from authors outside the US;

manuscripts came from 29 different countries.

We also provide a forum for exchange of information on food safety and food sanitation through *Dairy, Food and Environmental Sanitation*, which is read by over 6,000 individuals worldwide. The journal publishes informational articles, IAFP news, industry news, a section on industry-related products, coming events and more. We welcome input from our Members here – letters to the editor, "Thoughts on Food Safety," and, in particular, articles of interest to food safety professionals (Members and non-members alike are welcome to contribute). Papers in *DFES* are generally practical in nature and less technical than those in *JFP*. They may describe solutions to problems, field investigations, organization and application of food control programs, food safety training and education programs, and similar subjects. Often talks and presentations given at meetings of affiliate groups, at the IAFP Annual Meeting, or at other food safety meetings can be modified to make them appropriate for publication. We can't fulfill our mission here without your help. I urge you to share your experiences with other food safety professionals through articles in *DFES*.

The next most important way we fulfill our mission is through our Annual Meeting. Many recognize this meeting as

the leading food safety conference. In this day and age when everyone wants to climb on the food safety bandwagon, as we prepare for our 88th Annual Meeting; IAFP is comfortably ensconced as the leader. We pack a lot in four days – Committee and Professional Development Group (PDG) meetings, scientific symposia, technical papers and posters, exhibits of the latest food safety products and services, our annual business meeting and an awards banquet. Not to mention the social events. There are countless opportunities to network with food safety professionals from around the world. Last year's meeting attracted over 1,300 attendees from 31 countries! I can't think of a better way to exchange food safety information. We're looking forward to another successful "information exchange" this August in Minneapolis. You can help us fulfill our mission by participating.

Some of our Committees have many years of serving as a forum for sharing food safety information. Of particular note is the Committee on Communicable Diseases Affecting Man, which has prepared manuals on investigating foodborne and waterborne disease that have been widely distributed around the globe.

I mentioned our PDGs above. These groups are relatively new in the Association, being established several years ago to provide a forum for discussion of specific areas of interest to food safety professionals in the Association. Many are commodity-oriented, such as Meat and Poultry, Fruit and Vegetable, and Seafood Safety and Quality while others are discipline-related, such as Risk Management. Our newest PDG is the Student PDG, which provides students with opportunities to network with their peers from other universities, with food safety professionals in their areas of interests and with potential future employers. Our Annual Meeting also provides them the opportunity to share their latest research findings with others in the field.

IAFP also uses workshops to fulfill its mission. We generally hold two workshops prior to the Annual Meeting and one or two elsewhere during the year. Workshops with their working groups and hands-on exercises allow us to provide more in-depth treatment of and discussion about particular topics of interest, led by experts in the field.

And another means of fulfilling our mission of providing

a forum for information exchange is through the IAFP Audiovisual Library. IAFP Members can borrow a wide variety of education and training videos on dairy, food and environmental sanitation from over 100 tapes in our library. See page 315 for a description of tapes and a request form, or visit our Web site at www.foodprotection.org. We welcome your contributions to the library, as well as suggestions for videos you think we should add to it.

And last, but not least, IAFP fulfills its mission through our Web site, which is developing as a means of communicating IAFP activities to Members and non-members throughout the world. Our Web site is only three-years old, but it is growing by leaps and bounds. We have big plans for providing more and more information through this vehicle. Stay tuned for new developments here.

In summary, these are only a few of the ways IAFP accomplishes its mission. From my perspective, we are doing a good job. But I'm sure there are ways we can do better. We welcome your input on ways to enhance how we accomplish our mission and advance food safety worldwide.

COMMENTARY

FROM THE EXECUTIVE DIRECTOR



By DAVID W. THARP, CAE
Executive Director

“Have you contributed to the IAFP Foundation Fund?”

Have you contributed to the IAFP Foundation Fund? Have you made an annual contribution? In this column, I want to refresh your awareness of the Association's Foundation and the programs supported.

The Foundation Fund is supported solely through the generosity of Members like you and through a portion of our Sustaining Member fees. Over the past year, we received individual contributions from 111 Members (listed on the following page). Out of 3,000 total Members, that is only 4% of our Members who contribute to the Foundation. When you complete this column, I hope that you will consider joining your colleagues by sending a contribution to the IAFP Foundation to “Advance Food Safety Worldwide.” We feel the Foundation exists to serve all

Members and we want to build broad Member support.

Two projects sponsored entirely by Foundation funds are the Audiovisual Library and the Developing Scientists Competition. Both are essential in carrying out the Association mission. The Audiovisual Library of training tapes is available to all Members for use in teaching and training. The Foundation purchases tapes and then pays the cost to send tapes to IAFP Members. Members are expected to pay the return shipping expense. What could be easier or more beneficial? Last year, over 900 tapes were loaned to our Members. Just think, if users of the Audiovisual Library were to contribute \$5 for each tape used, the Foundation would receive more than \$4,000! I want to make you aware that many of the Library users do contribute to the Foundation when they realize the Foundation Fund sponsors this very worthwhile endeavor.

The other highly visible project sponsored by the Foundation is our Developing Scientists Competition at the Annual Meeting. Each year since 1986, the Foundation has awarded cash prizes and Association Memberships to finalists and winners of the Competition. Since 1994, three awards have been presented in two categories – oral presentations and poster presentations. This competition is responsible for attracting student involvement in the Association and is very successful. It is interesting to review the list of past awardees in the Developing Scientists Competition and to know what these student winners are doing today. Many former competitors continue to be very active in the Association and have worked their way in to leadership roles not only in the Association, but also in the food safety community. Anna Lammerding, our current Vice President, is a previous recipient of a Developing Scientist Competition Award.

Just from these two examples, you can see the valuable work the

IAFP Foundation Fund supports, but it doesn't stop here! The Foundation supports the shipment of excess IAFP Journals to FAO in Rome for further distribution to Third-World countries. We receive numerous thank you letters from recipients of these journals telling how much they appreciate receiving current food safety information. Without the help of FAO and the Foundation, these food safety professionals would not have access to the latest scientific research presented in our Journals.

Two additional areas of support are provided by the Foundation during the Annual Meeting. The Foundation allocates a portion of its budget to assist speakers in paying for their travel. It is projected that with our new Sustaining Member Program, the ability to sponsor speakers in need of assistance will increase. Support is also provided for the Ivan Parkin Lecture given during our Opening Session. This provides a perfect opportunity to publicize the work of the IAFP Foundation. The Foundation sponsorship allows us to attract leaders in food science to address our attendees. Watch for the announcement of this year's Ivan Parkin Lecturer in the May issue of *DFES*.

The Foundation also provides IAFP sponsorship of the Samuel J. Crumbine Award. The Crumbine Award is presented annually recognizing excellence in food protection services at public health agencies in the US and Canada.

The IAFP Foundation Fund carries out projects that support the mission of IAFP. From these short descriptions, you can see how essential the Foundation support is for the Association, its Members and for food safety. Please seriously consider donating to the Foundation to assist in furthering their work. It is simple, just write a check payable to the IAFP Foundation Fund and mail it to our office. We guarantee to put your contribution to work supporting the Association mission. Thank you in advance!



International Association for
Food Protection®

THANKS TO THE FOLLOWING INDIVIDUALS FOR THEIR SUPPORT OF THE IAFP FOUNDATION

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- ◆ Ulf Ahlin
- ◆ Henry V. Atherton
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The above list represents individual contributors to the Association Foundation Fund during the period January 1, 2000 through February 28, 2001. In addition, a portion of the Sustaining Member dues are allocated to support this Fund. Your contribution is welcome. Call the Association office at 800.369.6337 or 515.276.3344 for more information on how you can support the Foundation.

Occurrence of *Listeria monocytogenes* in Vegetables

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SUMMARY

The occurrence of *L. monocytogenes* in lettuce, cabbage, parsley, and watercress was studied at various times during the year. Quantification of *L. monocytogenes* was carried out only in lettuce. One-hundred samples of lettuce and fifty samples of each of the other vegetables were examined, giving a total of 250 samples. The vegetables, purchased in the local market in the cities of Campinas and Piracicaba in the state of São Paulo, Brazil, were acquired in the same way as the consumer buys them. The incidence of the bacterium was determined with enrichment in *Listeria* enrichment broth, and incubation at 4°C for 30 days, followed by isolation on Palcam and Oxford agars. For the *L. monocytogenes* count in lettuce, the multiple tube technique in tryptic soy broth with 0.6% added yeast extract was used, in addition to incubation at 4°C for 30 days and isolation on Palcam and Oxford agars as mentioned before. The total incidence of *L. monocytogenes* in the vegetables examined was 3.2%. The bacterium was not found in any of the cabbage samples analyzed. The average population of *L. monocytogenes* in lettuce was 1.2 MPN/g. Isolation of the organism occurred in the months of January (62.5%), June (12.5%) and July (25%), the wettest and coldest months of the year.

A peer-reviewed article.

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INTRODUCTION

In 1981, transmission of *L. monocytogenes*, a gram positive, pathogenic, psychrotrophic bacterium (38), via food was definitely proven on the occasion of a listeriosis outbreak, with 41 cases and 17 deaths (38). The incriminated food was cabbage that had been cultivated in soil fertilized with sheep feces contaminated with *L. monocytogenes*. Other foodborne outbreaks of listeriosis have been linked to foods such as milk (15) and cheese (30). Listeriosis does not produce the symptoms of gastroenteritis. After being ingested, the bacterial cells colonize the intestine and are phagocytosed by macrophages, in which they multiply and are spread throughout the organism. The resulting medical condition is serious, affecting the central nervous system, and can cause meningitis, abortion, septicemia and other manifestations (38). Pregnant women, children, and those who are immunodepressed and otherwise debilitated, are especially sensitive. In Brazil, cases of listeriosis have been reported by Esper et al. (12), Hoffer & Menezes (24) and Suassuna et al. (41), although a possible connection to food ingestion was not studied.

The natural reservoir of *L. monocytogenes* is the soil, from which it can contaminate foods (5, 27, 44, 45). According to Welshimer (45), fallen decayed leaves are a niche for *L. monocytogenes*. The presence of *L. monocytogenes* in the environment may also be related to the climate. Motes (35) correlated the presence of this bacterium in estuaries with the occurrence of temperatures below 20°C, and Welshimer & Donker-Voet (47) correlated it with the wettest period of the year.

L. monocytogenes has been found in both chicken (13, 28, 31, 33, 36) and beef (10, 13, 49). Destro et al. (10) obtained positive results for the bacterium in 25% of fresh cheese samples.

In vegetables, Wong et al. (48) detected *L. monocytogenes* in 12.2% of samples examined and Arumugasawamy et al. (1) obtained 22% positive results. Heisick et al. (21) isolated *L. monocytogenes* from cabbage, but not from lettuce. Farber et al. (13) examined 50 lettuce samples and failed to isolate *L. monocytogenes*. Tiwari & Aldenrath (43) and Gohil et al. (17) also failed to isolate *L. monocytogenes* from vegetables. Because this bacterium is psychrotrophic, Hayes et al. (20) investigated the refrigerators of people who had contracted listeriosis and isolated *L. monocytogenes* from 100% of the refrigerated vegetables examined, including lettuce, cabbage, and parsley. Parsley used in garnishing dishes was also shown to be a source of *L. monocytogenes* in a commercial delicatessen establishment (29).

Vegetables allow for development of *L. monocytogenes*, as has been shown for lettuce (6, 39), endives (7), and cabbage (9, 16, 32). *L. monocytogenes* could survive in prepared salads, depending on conditions, (1, 7, 8, 32, 37, 48). The use of modified atmospheres to package vegetables does not inhibit *L. monocytogenes*, which can even multiply under these conditions (2, 4, 14).

The methodology for isolating *L. monocytogenes* from vegetables is still not fully established. According to Tham et al. (42), sampling is a very important factor, and the choice of methodology should be flexible and should vary according to the circumstances. According to Heisick et al. (22), *L. monocytogenes* populations below 10² CFU/g are not recovered by direct plating on selective media. The accompanying flora is another important factor to be considered, because it generally hampers the isolation of *L. monocytogenes* from vegetables (18). Hao et al. (19) was more successful in isolating *L. monocytogenes* from cabbage when low temperature enrichment was used. For environmental samples, various

authors (25-27, 44, 46, 47) have commended the use of low temperatures (4°C) for success in isolating *L. monocytogenes*. Although the infecting dose has not been well established, it is probably low (40). McLaughlin (34) suggested a *L. monocytogenes* population below 10² CFU/g in foods as the maximum tolerable limit.

No data are available on the contamination of vegetables by *L. monocytogenes* in Brazil. The objective of this work was to study the natural occurrence of this bacterium in some widely consumed leafy vegetables.

MATERIAL AND METHODS

Samples of 4 vegetables were acquired at local markets in the cities of Campinas and Piracicaba, in the state of São Paulo, Brazil. The samples were collected at different times of the year as follows: lettuce (*Lactuca sativa*) collected from March 1996 to March 1997; cabbage (*Brassica oleracea capitata*) collected from September to November 1996; watercress (*Nasturtium officinale*) collected from September 1996 to March 1997; and parsley (*Petroselinum crispum*) collected from November 1996 to March 1997. Fifty samples of each vegetable were examined, and, between May and October 1998, an additional fifty samples of lettuce were examined to determine the population of *L. monocytogenes* naturally present. In all, 250 samples were examined.

Sampling

From each sample, 25-g portions were aseptically removed, except for samples used for obtaining counts in lettuce, from which 50-g samples were removed. The vegetables were cut into small pieces with sharp sterile knives, with the aim of getting a representative sample from the various parts of the vegetable.

Occurrence of *L. monocytogenes* in lettuce, cabbage, watercress and parsley

Each 25-g sample was blended for 2 min with 225 ml *Listeria* enrichment broth (LEB) (11) in a piston homogenizer (Stomacher Seward Medical), and then transferred to a sterile 500-ml screw-capped flask which was then incubated at 4°C for 30 days in a commercial refrigerator. After incubation, a loop of the suspension was streaked onto the surface of plates of Palcam and Oxford agars and incubated at 30°C for 48 hours (11).

L. monocytogenes count in lettuce

The multiple tube technique was used to count *L. monocytogenes* in lettuce, using a series of 3 tubes (23). Each 50-g samples was blended with 450 ml peptone salt solution and the necessary decimal dilutions were made. Inoculation into TSB broth + 0.6% YE was followed by incubation at 4°C for 30 days. After incubation, a loopful of the contents of those tubes that showed turbidity was streaked onto the surface of plates of the selective agars Palcam and Oxford, which were then incubated at 30°C for 48 h (11).

Isolation and identification of *L. monocytogenes*

Colonies that were gray, smooth, 2-3 mm in diameter, surrounded by a dark halo and having a sunken center, and that developed on Oxford and Palcam agar media, were suspected of being *L. monocytogenes*. They were isolated and subjected to the following tests: catalase, oxidase, gram test, motility at 20°C, and fermentation of sugars (glucose, xylose, rhamnose, and sucrose) in bromocresol purple broth incubated at 35°C for 24-48h (11). Definitive identification was effected by application of the Camp-Test (11) in blood agar plates (Blood Agar Base no. 2, Difco) with addition of sheep blood (WL Imunoquímica) and

through biochemical identification with the Api Listeria kit, 10 300 bio Mérieux.

RESULTS AND DISCUSSION

The incidence of *L. monocytogenes* in vegetables was 3.2%. We found positive samples in lettuce, parsley, and watercress, but not in cabbage. Under the conditions of this study, the incidence of *L. monocytogenes* was much lower in the vegetables examined than has been reported for other foods. For chicken carcasses, Hudson and Mead (28) found 60% of samples were positive. Farber et al. (13) reported 59% and Kabuky (31) reported 80%. A high incidence has also been reported for beef: 85.4%; (13); 65% (10) and 10% (49); Destro et al. (10) also found 25% positive samples in fresh cheese.

In general, the incidence of *L. monocytogenes* in vegetables reported by other authors has also been low: 1.1% in cabbage and not detected in lettuce (21); not detected in lettuce and cabbage (13, 43); and 12.2% in vegetables (48).

Tiwari and Aldenrath (43) also failed to isolate *L. monocytogenes* from cabbage, although this vegetable does support the growth of the bacterium, as shown by Kaliander et al. (32), Conner (9), Beuchat et al. (3), and Heisick et al. (21). These last authors reported a 1.1% incidence of *L. monocytogenes* in cabbage samples.

The absence of isolations from cabbage may have been because the samples were acquired on the local market, where it is a common practice to remove the outer leaves of cabbage heads. Because contamination of vegetables by *L. monocytogenes* is principally via the environment (5) and its habitat is old fallen leaves (44, 47), it is probable that in this case, any contamination by *L. monocytogenes* was removed with the outer leaves. Steinbruegge et al. (39) considered this

explanation highly probable for lettuce. Another factor to consider is the fact that the density was considerably higher for cabbage leaves than for the other vegetables studied, and therefore a smaller area was sampled for cabbage than for the other vegetables. Because of this characteristic of cabbage, other methodologies might be better in this case, such as a surface wash of the leaves or sampling with sterile swabs in a pre-determined area.

In all, *L. monocytogenes* was isolated from 8 of 250 vegetable samples examined. Of these isolations, 5 occurred in January, (1 in lettuce, 2 in watercress and 2 in parsley). There was one positive lettuce sample and June and another 2 in July. Thus, there was a clear preponderance of isolations in the month of January, which is the rainy season in southeastern Brazil.

In Germany, a correlation between a wet climate and the occurrence of *L. monocytogenes* has been suggested (47), and our results apparently agree. The remaining isolations occurred in winter months, June and July. Motes (35) showed that occurrence of *L. monocytogenes* in estuaries was greatest when the temperature was below 20°C. A cold climate therefore appears to be a second seasonal factor, although it is not quite as favorable as wetness. However, the microorganism certainly survives for lengthy periods in the soil, albeit in small numbers, (45). The *L. monocytogenes* counts obtained in two lettuce samples was 0.9 and 1.5 MPN/g (average 1.2 MPN/g). Hayes et al. (20) found a much greater population (1.4×10^3 MPN/g) in a sample of cabbage involved in an outbreak of listeriosis. Other samples, however, yielded much lower counts: 40 MPN/g in parsley and <0.3 MPN/g in lettuce. McLaughlin (34) suggested a value of $<10^2$ CFU/g as the criterion of acceptability for the presence of *L. monocytogenes* in

foods. On the basis of this value, the lettuce samples studied would be within the acceptable limit.

Because the incidence of *L. monocytogenes* in vegetables is low, it is important to examine a sufficiently large number of samples. Many authors did not manage to do this, such as Petran et al. (37), who showed no *L. monocytogenes* isolated from lettuce and cabbage but who examined only one sample of each, which was clearly inadequate. When only a few samples are studied, one or two positive results will result in a high percentage of incidence. Arumugaswamy et al. (1) found 5 positive samples in a total of 22 analyzed, obtaining a 22.2% incidence of *L. monocytogenes*; in this study, 250 samples were examined over a period of 3 months. Isolation of *L. monocytogenes* was sporadic and occurred more frequently in certain batches than in other. In the same way as Tiwari & Aldenrath had (43), we examined batches of 20 samples from which *L. monocytogenes* was not isolated. Based on these observations, it would appear that 50 samples would be an adequate number.

In this study, the incidence of *L. monocytogenes* in vegetables in nature was low, and its numbers in lettuce particularly low, indicating a low risk of contamination in a domestic environment. However, industrial processing of vegetables (disinfection and packaging) for minimal processed salads could increase this risk. The repeated introduction of small populations of *L. monocytogenes* into the industrial environment could lead to establishment of this bacterium in the area unless Good Manufacturing Practices are rigorously observed. In chicken, contamination by *L. monocytogenes* has been shown to be higher in the carcasses than in the live birds (36). The same could occur in commercially processed vegetables, such as in vegetables packaged in a modified atmo-

sphere, especially considering that *L. monocytogenes* survives and multiplies in vegetables stored under these conditions (2, 4, 14, 32).

ACKNOWLEDGMENT

The authors are very grateful to the Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), Brazil for the financial support of this study.

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Maximizing Microbiological Quality of Fresh Orange Juice by Processing Sanitation and Fruit Surface Treatments

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SUMMARY

This study was designed to evaluate the individual and combined effects of processing sanitation and fruit surface treatments on the microbial quality of fresh-squeezed, unpasteurized 'Valencia' orange juice. The average initial total microorganism count of fresh juice extracted with a non-sanitized juice extractor was 4.0 ± 0.7 log CFU/ml, and this figure was significantly reduced, to 2.5 ± 1.0 log CFU/ml, by cleaning and sanitizing the extractors with quaternary ammonia. Juice initial yeast and mold counts were about 2.5 ± 0.2 log CFU/ml when non-washed fruit were extracted by use of a thermally sanitized extractor. When fruit were washed prior to extraction, however, the yeast and mold counts were lowered to $< 1.0 \pm 0.0$ log CFU/ml. The best result was obtained with treatment of both fruit and equipment surfaces with hot water (80°C), which yielded juice with low values ($< 1.0 \pm 0.0$ log CFU/ml) for both total microorganism counts and yeast-and-mold counts. Further, fresh juice produced with surface thermal treatment of both fruit and equipment had superior microbial stability during both refrigerated (4°C) and abused (25°C) storage.

A peer-reviewed article.

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INTRODUCTION

Chemical cleaners and antimicrobial agents are widely used in the food and beverage industry to remove and/or inactivate undesirable microorganisms on the surfaces of processing equipment and raw agricultural commodities. Undesirable microorganisms can also be destroyed by simple heating, a method long used to sanitize food-contact surfaces and to pasteurize food for product safety and shelf-life extension (1, 5).

Heat treatment, or pasteurization, was not involved in production of fresh-squeezed citrus juice in the past (3, 6, 9). Thus, chemical treatments were relied upon as the only means to reduce fruit surface microorganisms for the production of fresh juice. However, rapid fruit surface heating has recently been shown to be effective in decontaminating fruit prior to juice extraction (7). For instance, hot water immersion of orange fruit at 80°C for 1 min can successfully reduce fruit-surface and initial juice microbial loads without altering juice sensory quality. This finding has promoted the current adoption of fruit heating treatments in fresh juice operations by some juice companies.

Previous studies have evaluated the benefits of fruit surface treatments for fresh juice production (7, 8). However, the impact of equipment cleanliness as well as the combined value of processing sanitation and fruit surface treatment has not been clearly demonstrated. This study was designed to evaluate the individual and combined effects of processing sanitation and fruit surface treatments on the microbial quality of fresh orange juice. In addition, the influence of fruit surface treatments on the microbial stability of the juice during storage at both 4°C and 25°C were monitored.

MATERIALS AND METHODS

Fruit preparation

Late-season (harvested in June 2000) 'Valencia' oranges (*Citrus sinensis* L.) were purchased from a local packinghouse. Non-washed 'field-run' fruit were stored at 4°C and 95% relative humidity for about 2 weeks before use. For the second part of this study, 'packed' fruit that had been washed and waxed at the packinghouse were stored at 7°C and 95% relative humidity for about 8 weeks before use. Cold-stored fruit are often used during the non-harvest season for fresh fruit and fresh juice markets (2, 12).

Equipment sanitation

Prior to all fruit washing, the fruit washingline was sanitized by use of 200 ppm quaternary ammonia (Spartan Chemical Company Inc., Toledo, OH) and rinsed 2 min later with potable water. To simulate a non-sanitized processing condition, juice extractors (Inter-Citrus; Araraquara, Brazil) that had been used to squeeze juice were left at ambient temperature for about 20 h before the experiment. For the sanitized processing conditions, the juice extractors were manually disassembled, cleaned, and sanitized by spraying with quaternary ammonia (200 ppm; 2 min contact) or immersion in hot water (80°C; 1 min contact) before use.

Treatment of oranges

The washing treatment was conducted on a commercial washingline with Fruit Cleaner 395 (FMC Co., Lakeland, FL). The hot water treatment consisted of immersing fruit in hot water at 80°C for 1 min (7). After each treatment, the fruit were placed in a sample bag (six fruit/bag) containing 1 liter of 0.1% peptone and shaken on a rotary shaker (150 rpm) at 4°C for 1 h as described in previous studies (7, 8). The fruit wash solution was used for esti-

imating surface microorganism counts.

Thirty fruit per treatment were squeezed with a juice extractor for each juice sample. The fresh-squeezed juice was immediately poured into new screw-cap polyethylene bottles (250 ml) and tested for microbial counts after storage at 4°C or 25°C.

Microbial test

Appropriate dilutions (in 0.1% peptone) of each sample (either fruit wash solution or orange juice) were plated on plate count agar (PCA; Difco) or tartarate acidified potato dextrose agar (APDA, pH 3.5; Difco). After plates had been incubated for 48 h at 35°C (PCA) or five days at 25°C (APDA), colonies were counted. Numbers of colonies on PCA and on APDA represented total microorganism counts and yeast-and-mold counts, respectively.

Statistical analysis

Microbial counts and fruit temperature analyses were based on a minimum of three replications per treatment. The Duncan's new multiple range test was performed by PlotIt (Scientific Programming Enterprises, Haslett, MI) software to determine the statistical significance of any differences ($P < 0.05$) between results obtained with different treatments.

RESULTS AND DISCUSSION

Field-run (non-packed) orange fruit were used for the first part of this study. The fruit had high surface microbial counts (about 4.0 CFU/cm²) before washing (Table 1). Washing these fruit on a commercial washer with a fruit cleaner significantly reduced ($P < 0.05$) surface microbial populations. Further decontamination was achieved by immersing fruit in hot water at 80°C for 1 min. The surface microbial counts were reduced by more than 3.0 log cycles

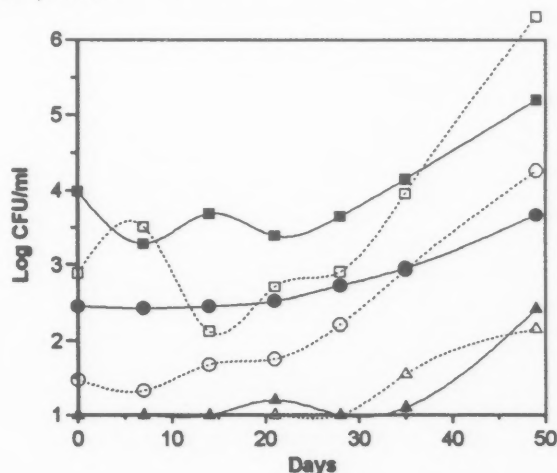
TABLE 1. Effects of fruit surface treatments on surface microbial levels

Fruit surface treatments ¹	Total microorganisms	Yeast and molds
(log CFU/cm ²)		
Raw fruit		
None	4.0 ± 0.1a ²	4.0 ± 0.2a
Washing	2.3 ± 0.6 ^b	1.5 ± 0.6b
Washing and heating	<1.0 ± 0.0c	<1.0 ± 0.0b
Packed fruit		
None	3.2 ± 0.2a	2.7 ± 0.2a
Washing	2.8 ± 0.6a	2.1 ± 0.6a
Washing and heating	<1.0 ± 0.1b	<1.0 ± 0.0b

¹Six 'Valenica' oranges were treated per treatment and triplicate experiments were conducted. Fruit washing treatment was accomplished using a commercial fruit cleaner. Surface heating treatment was conducted by immersing fruit in hot water at 80°C for 1 min.

²Means (n = 3; ± SD) followed by the same letter are not significantly different (P > 0.05).

Figure 1. Influence of processing sanitation on the microbial levels of fresh orange juice stored at 4°C. Total microorganism counts are represented by closed symbols (juice extractors were ■ not sanitized, ● sanitized by quaternary ammonia, or ▲ sanitized by hot water). Similarly, yeast and mold counts are represented by open symbols. All field-run fruit were decontaminated by hot water.



as the result of these washing and thermal antimicrobial treatments. Previous studies yielded similar results (6, 7).

Figure 1 shows the importance of processing sanitation for

fresh juice production. Fruit processed with an extractor that was intentionally left without being cleaned and sanitized after a prior juicing operation had the highest initial juice microbial loads. Initial

counts were significantly reduced ($P < 0.05$) when the juice extractor was manually disassembled, cleaned, and sanitized with quaternary ammonia prior to extraction. Quaternary ammonia (200 ppm) was sprayed thoroughly on the parts and rinsed with potable water after 2 min of contact time. In general, total microorganism counts were reduced from 4.0 ± 0.7 to 2.5 ± 1.0 log CFU/ml, and yeast and mold counts were reduced from 2.9 ± 1.0 to 1.5 ± 0.5 log CFU/ml. The decontamination was also achieved when the disassembled parts were heated by hot water immersion at 80°C for 1 min. Fruit processed with equipment subjected to this heating treatment had the lowest initial juice microbial counts ($<1.0 \pm 0.0$ log CFU/ml).

Figure 2 shows that the microbial loads of fresh juice is not influenced solely by the cleanliness of processing equipment. Total juice microorganisms as well as yeast-and-mold counts were high (3.5 ± 0.6 and 2.5 ± 0.2 log CFU/ml, respectively) when non-washed fruit were utilized for processing, although all equipment had been sanitized by hot water prior to operation. Fruit washing reduced surface microorganism numbers. For example, the washing treatment significantly lowered ($P < 0.05$) the yeast-and mold-counts of the fresh juice, from 2.5 ± 0.2 to $<1.0 \pm 0.0$ log CFU/ml. Nonetheless, the best result was obtained when the combined fruit and equipment thermal surface treatments were used, which yielded juice with low levels ($<1.0 \pm 0.0$ log CFU/ml) of both total microorganisms and yeasts and molds.

Cold storage (4°C) was effective in controlling the microbial levels in all cases (Fig. 1 and 2). Regardless of treatments, no significant change in total microorganism counts was observed within the first 35 days of storage.

In the second part of our study, packed fruit were used to investigate juice microbial stability under conditions promoting

Figure 2. Influence of fruit surface treatments on the microbial levels of fresh orange juice stored at 4°C. Total microorganism counts are represented by closed symbols (field-run fruit were ■ not washed, ● washed by a cleaner, or ▲ washed by a cleaner and heated by hot water). Similarly, yeast and mold counts are represented by open symbols. All extractors were sanitized by hot water.

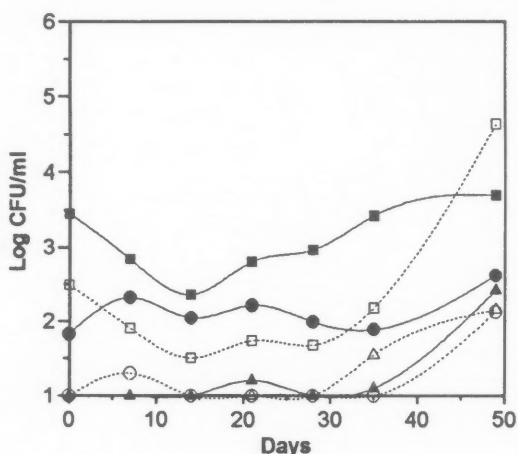
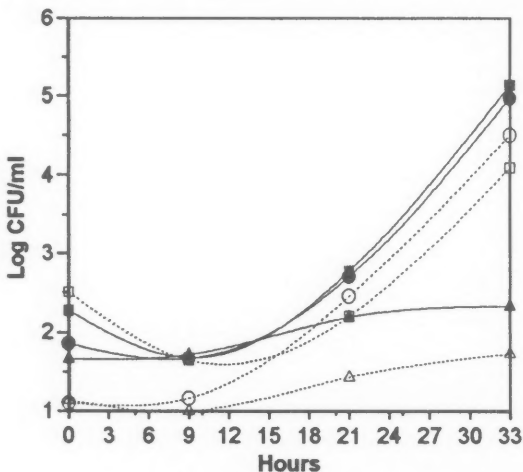


Figure 3. Influence of fruit surface treatments on the microbial levels of fresh orange juice stored at 25°C. Total microorganism counts are represented by closed symbols (packed fruit were ■ not washed, ● washed by a cleaner, or ▲ washed by a cleaner and heated by hot water). Similarly, yeast and mold counts are represented by open symbols. All extractors were sanitized by hot water.



accelerated spoilage. These fruit were washed and waxed before packing. The packed fruit were then stored at 7°C for about 8 weeks before final fruit surface treatments and juice extraction. Table 1 shows that the surface total microorganism counts of the packed fruit were approximately

3.2 log CFU/cm² before the final washing. As had been seen in the first part of the study, microbial counts were reduced by fruit washing. Microbial levels of the packed fruit were decreased to $<1.0 \pm 0.0$ log CFU/ml by fruit washing and immersion in hot water (80°C) for 1 min.

Microbial counts of all juices remained below 3 log CFU/ml during 21 hours of storage at 25°C (Fig. 3), although microbial counts did increase in juice extracted from packed fruit with or without an additional fruit washing treatment after 21 hours of abused storage. On the other hand, no significant microbial growth ($P > 0.05$) was apparent for juice extracted from hot water treated fruit and stored up to 33 hours under similar conditions. This shows that microbial stability of fresh juice can be improved by a fruit surface treatment such as immersion in hot water at 80°C for 1 min.

A large variation in initial microbial loads of fresh juice has been reported (3, 4, 7, 10, 11, 13). Previous studies indicate that broken and deteriorated fruit result in juice with greater numbers of microorganisms than sound fruit (3, 10, 11). Our results show that variations in initial microbial loads of fresh juice may also be explained by non-uniformity in processing sanitation and/or fruit surface treatments in juice preparation. Short-time product abuse at elevated temperature may increase the microbial levels of fresh juice. However, the spoilage process is slow and gradual compared to the contamination that resulted from initial fruit processing. Thus, it is most critical for fresh juice producers to design and follow proper processing and sanitation methods to avoid unnecessary contamination. It is also important, for future microbiological research, to carefully consider both processing and fruit surface treatments utilized in the juice preparation.

In conclusion, research was conducted to evaluate the individual and combined effects of processing sanitation and fruit surface treatments on the microbial quality of fresh 'Valencia' orange juice. Initial microbial loads of the fresh juice were significantly reduced by either fruit washing or use of equipment sanitizing chemicals. Thermal antimicrobial treatment of either processing equipment or orange fruit were ascertained to be very effective in de-

contamination. The maximum microbial reduction was obtained by using the combined equipment and fruit surface treatments with hot water at 80°C for 1 min. Further, fresh juice produced using the combined surface thermal treatments had superior microbial stability during both refrigerated (4°C) and abused (25°C) storage. Because the surface treatments may be applied to various varieties of fruit and different types of processing equipment, the optimized treatment parameters for each processing operation should be established on an individual experimental basis.

ACKNOWLEDGMENTS

Technical support from James Alderman is acknowledged. Research materials and equipment provided by InterCitrus (Araraquara, Brazil) and Beshaco, Inc. (Vero Beach, FL) is gratefully appreciated.

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HISTORY

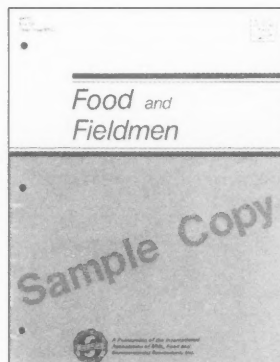
1911-2000

THE '80s

The 1980 Annual Meeting was special because it was held in Milwaukee, the birthplace of the Association in 1911. This was to have been a joint meeting with NEHA, but, because of the distance between hotels, very few attendees could participate in both meetings. As a result, it was agreed to dissolve the Bridge Committee that had worked to merge IAMFES and NEHA into a single organization.

Dr. C. K. Johns of Ottawa, Quebec, Canada was an honored attendee. He had served as president at the Meeting held in Milwaukee in 1935, had been a Member of the Association for over 50 years, and had attended nearly all of the Annual Meetings during this time. At this meeting, the Chairman of the Affiliate Council became a voting member of the Executive Board. There were 28 local organizations affiliated with IAMFES at that time.

This year also marked the introduction of *Food and Fieldmen*, which contained articles on a variety of topics of interest to dairy plant fieldmen and practicing sanitarians. Sample copies



Sample copy of *Food and Fieldmen*, the first issue was in January 1981. Reprinted from *Food and Fieldmen*, Sample Copy, June 1980.

were distributed to attendees. Regular publication was to commence the following January, under a new title, *Dairy and Food Sanitation*.

The Chairperson of the Journal Management Committee congratulated contributing authors and many others who had made this

new journal possible. A two-color Membership pamphlet, "IAMFES, Inc. — It's for you" was also distributed to attendees.

In 1981, *Dairy and Food Sanitation* was born. It was estimated that 3,000 Members would need to subscribe to the new Journal in order to cover production costs. Also, a change in dues structure would be required as follows: Membership with *Journal of Food Protection*,

IAFP History...

Beginning in the January 2001 issue of *DFES* we started printing sections from the book, the "International Association for Food Protection History 1911-2000." This is the final section. See page 298 to obtain your copy of this informative book.



1983-84 Executive Board (front row, left to right), Sidney E. Barnard, A. Richard Brazis, Earl O. Wright, Archie Holliday, Harry Haverland, (back row, left to right) Robert Marshall, Helene Uhlman, Kathy Hathaway, Leon Townsend, and Roy Ginn. Reprinted from *Dairy and Food Sanitation*, Volume 3, No. 11, 1983.

\$60.00; Membership with both publications, \$75.00. Student Memberships were available at \$10 and students could choose to receive either journal. The Sustaining Member Fee increased from \$250 to \$300 per year.

The Educator-Industry Award was split into two separate Awards in 1982. An award would be presented to recognize a Member from education and one from industry. The Industry Award was named after Harold Barnum.

It was the Association's goal to have a circulation of 3,000 for *Dairy and Food Sanitation* by the end of 1982. Circulation was over 2,000 and increasing monthly. The Board determined at this meeting that it must see a strong return on investment for *Dairy and Food Sanitation* during 1982, or face squarely the question of whether the new Journal would continue to be offered. The *Journal of Food Protection* held its own in circulation and was becoming recognized throughout the world as the leading publication in the area of food science research.

It was evident at this meeting that the IAMFES staff was challenged by financial problems. Additional income was needed, along with an increase in Membership. The Executive Board granted the Executive Secretary permission to borrow up to \$15,000 without Board permission; this privilege was never used. Several journal advertisers pre-paid a year's advertising fees, which helped relieve immediate cash flow problems.

Following the 1982 Meeting, the Association staff organized a telemarketing program and developed additional programs to produce immediate funds. The staff prepared to begin exhibiting at meetings and conferences of other organizations to promote Association benefits. Much was achieved because of staff members

who were willing to put in extra hours during these trying times.

The 1983 Meeting held in St. Louis, Missouri, saw many changes take place. Earl Wright stepped down and Kathy Hathaway was appointed Executive Secretary. The addition of a second computer made it possible for the staff to provide direct billing to affiliates that wished to turn over their dues collections, resulting in an increase in Affiliate memberships. It was pointed out by the Association President that the financial picture improved markedly for the Association, from a loss of approximately \$30,000 in 1980, to balanced budgets in 1981 and 1982, to a net income of approximately \$45,000 in 1983.

In 1984, the President reported the Executive Board acted to allow exhibits, starting with the 1986 Annual Meeting. The Foundation Fund grew progressively. An overseas keynote speaker on food protection was sponsored by the Foundation Fund. Survey results showed the following percentages of Association Members: Industry, 53%, Government, 30%, and Academia, 17%.

Dairy and Food Sanitation was increasing page counts by this time, and additional members were added to the editorial staff. Henry Atherton began editing the Journal for publication. The *Journal of Food Protection* grew from a 50-page to a 90-page Journal and was now received in 90 countries.

The 1986 Annual Meeting broke all previous attendance records. Although 400 people had been expected, the number exceeded 600 attendees. This was a good indicator of increasing interest in the organization. Membership had been decreasing slightly, but in 1986, it increased, and Members now numbered almost 3,600. This was also the first year for exhibits at the Annual Meeting. Twenty-seven educational tabletop exhibits were displayed. Based on the success of the exhibits, the Executive Board agreed to allow exhibits at future meetings.

Also in 1986, the keynote speech became known as the Ivan Parkin Lecture. This lecture was funded by the Foundation Fund. Ivan Parkin was IAFP President from 1954 to 1955 and remained active in the Association for many years following. He served as an example to others as a loyal Member, a professional, and an educator dedicated to protecting the food supply. Dr. Parkin is remembered by those who knew him as a kind and warm person. Being chosen to deliver the lecture was a considerable honor.



Ivan E. Parkin, President, 1955. Reprinted from the *Journal of Milk and Food Technology*, Volume 18, No. 1, 1955.

Another new Foundation-supported Award was begun as a student competition and titled the Developing Scientist Award. This Award recognized excellence in student presentations at the Annual Meeting.

At this meeting, a proposed audio-visual lending library was discussed. Support would come from Foundation funds. The library would serve as a technical information and training source for all Members.

The 1987 Annual Meeting, held at Disneyland Hotel in Anaheim, California, shattered the 1986 record with its 850 participants. This was a year of tremendous growth in many areas of the Association. There was an increase in graduate student papers presented that year as well as an increase of 523 Members bringing total Membership to 4,121. The lending library proposed a year before was authorized by the Executive Board.

In January 1988, Lloyd Bullerman took over Scientific Editor duties from Elmer Marth for the *Journal of Food Protection*. Dr. Marth served as Scientific Editor for twenty years.

The 1988 Annual Meeting held in Tampa, Florida, marked the 75th Annual Meeting. The Association observed the occasion with its Diamond Jubilee Celebration. The program was the most ambitious ever held by the Association. Nine symposia provided in-depth information on specific topics and issues, and was well received by the 800 registered participants. Membership continued to grow during the year, surpassing 4,400, which included 800 new Members.

At the 1989 meeting held in Kansas City, Missouri, it was reported the year had been very productive, but slightly unusual. Earlier that year, Kathy Hathaway, the Executive Manager, resigned to move to Ohio. Steven Halstead was hired as the new Executive Manager and was introduced to Members at the Meeting.

The 1989 Meeting was considered outstanding because of the variety of technical sessions and symposia related to food and environmental concerns. An increased number of companies exhibited their materials, equipment, and services. The President pointed out that the future of the organization depends on continuing to attract qualified individuals in all areas of the food industry. Presidential columns or "monthly reports" began in 1989. The intent was to provide information, faster communication and insight to Members.

THE '90s

During 1990, a computer, scanner, and laser printer were added, to make desktop publishing possible. This equipment allowed faster preparation of the Journals and added flexibility. There had been a deficit of funds for the previous four years, but 1990 marked the reversal of that deficit to a surplus of \$8,300. Revenues for 1991 were budgeted at \$780,000.

The 1990 Annual Meeting held in Arlington Heights, Illinois attracted 810 attendees. One hundred twenty-six speakers including 18 developing scientists gave presentations. Sixty-seven companies were present in the exhibit hall.

At the 1990 Annual Meeting, a committee appointed to investigate the possibility of a name change of the organization gave its report. However, the Membership voted not to change the name of the Association at this time.

Considerable time was spent analyzing and streamlining office operations. At the 1991 Annual Meeting, the purchase of four additional computers was reported. These were networked together to perform desktop publishing of the Journals, a change that provided savings for the Association. Poster presentations and pre-meeting workshops were initiated in Louisville, Kentucky at the 1991 Annual Meeting.

An historic event took place in 1992. Ann Draughon, a professor at the University of Tennessee was elected to the Executive Board as secretary. She was the first woman elected to serve in such a capacity. In 1995, she would begin her term as President.

Over 60 presentations were given during various symposia at the 1992 Annual Meeting in Toronto under the theme of "Global Issues and Food Safety." Poster and technical presentations combined with symposia provided attendees with close to 170 presentations. Pre-meeting



F. Ann Draughon, elected to the Executive Board as Secretary in 1992, served as President in 1995. Reprinted from *Dairy, Food and Environmental Sanitation*, Volume 15, No. 8, 1995.

workshops were popular, giving Members an opportunity to deal with scientific subjects on a discussion-and-demonstration basis. The Long-Range Planning Committee presented the following recommendations to the Executive Board:

1. Update Bylaws and statements of objectives to reflect changes in direction of the Association.
2. Continue to strengthen Membership.
3. Retain and expand the Association's role in publication of scientific information.
4. Strengthen Association officer and committee work.
5. Strengthen Affiliate organizations.
6. Enhance the soundness of Association financial stability.
7. Enhance and develop relationships with other scientific and related associations.
8. Maintain Association with the 3-A Symbol Council.

By 1992, it was evident the Association office needed additional space. Since appropriate office space could not be found in the Ames area, it was decided to relocate to Des Moines. In September 1992, the staff and office moved 35 miles south from Ames to Des Moines.

At the 1993 Annual Meeting in Atlanta, a new alliance was formed with the International Life Sciences Institute (ILSI). ILSI's sponsorship of a symposium on "Foodborne Microbial Pathogens" greatly enhanced the educational program. The program including four concurrent sessions was the Association's most ambitious to date. Over 175 presentations during the three-day meeting combined with two pre-meeting workshops to provide attendees a wealth of information. Symposia were presented with speakers traveling from Australia, Belgium, Canada, France, Germany, Korea, Switzerland, and the United Kingdom.

Professional Development Groups (PDGs) were established in 1993 to enhance program development for future Annual Meetings. Meat, seafood, poultry and the food safety network were the first PDGs begun. Also in 1993, the Long-Range Planning Committee recommended and the Board accepted a mission statement for the Association. "To provide food safety professionals worldwide with a forum to exchange information on protecting the food supply" was put to use as the Association's mission.

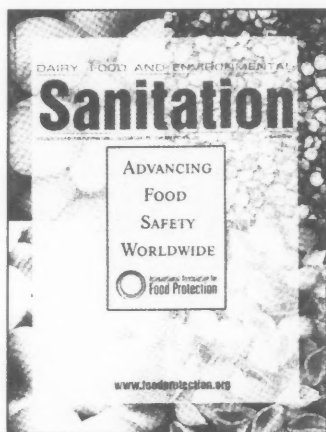
In January of 1994, Larry Beuchat was appointed as Co-Scientific Editor for the *Journal of Food Protection*. Because of the volume of papers submitted to the Journal, the Executive Board agreed with Lloyd Bullerman to appoint a second Scientific Editor.

San Antonio was a great setting for the 1994 Annual Meeting with a program that included over 200 presentations and 921 attendees. Subject matter continued to expand as pathogens were discovered in new locations and in new carriers. In addition to the general program, there were poster sessions and an Audiovisual Theater where selections from the Audiovisual Library were presented. Combined with two pre-meeting workshops, 20 committee and PDG meetings, and over 60 educational exhibiting companies, the 81st Annual Meeting provided the latest scientific information to attendees.

In recognition of corporate excellence in food safety, the first Black Pearl Award was supported and presented by Wilbur Feagan of F&H Food Equipment Company. Mr. Feagan presented the award to the H.E.B., Company at the Awards Banquet in San Antonio.

By 1995, ILSI's presentation of symposia had grown to three. Their involvement helped to attract additional interest from international attendees. At the conclusion of the Meeting in Pittsburgh, David Tharp was appointed as interim Executive Director replacing Steve Halstead. This was a temporary appointment until a permanent Executive Director was hired. Also worthy of note is that Ann Draughon became the first female President of the Association upon the conclusion of the 1995 Annual Meeting.

In December 1995, Dave Merrifield took over as Executive Director bringing many years of management experience with him. He had been the Director of the Iowa Chiropractic



January 2000 cover of *Dairy, Food and Environmental Sanitation*. Reprinted from *Dairy, Food and Environmental Sanitation*, Volume -20, No. 1, 2000.

Food and Environmental Sanitation.

During 1996, IAMFES entered the new electronic age. E-mail became a communication tool. The Executive Board began using E-mail to communicate quickly. At the Annual Meeting in Seattle that year, it was announced that Members' E-mail addresses would be included in the Membership Directory. More than 960 attendees had the opportunity to participate in over 225 presentations. This was the first year of holding five concurrent sessions.

Although the number of Annual Meeting presentations and attendees continue to grow, the Meeting remained small enough for intimate one-on-one conversations with the speakers. This was a great attraction for attendees. The ability of the IAMFES Annual Meeting to react to late breaking topics of concern and include them on the program was also a benefit that many Meetings were not able to offer.

Later in 1996, the Executive Board established a benefit for Affiliates of IAMFES. The Board members were available to serve as speakers on topics of importance to food safety; IAMFES would provide the travel expense for the Board member to get to the Affiliate meeting.

January of 1997 brought the appointment of David Tharp as Executive Director replacing Dave Merrifield who resigned. David Tharp had served as Director of Finance and Administration for four years and served as Interim Director in 1995.

☞ The President's Food Safety Initiative was released in early 1997. This affected many

Society. Effective January of 1996, Lloyd Bullerman retired his position as Scientific Editor for the *Journal of Food Protection*, which he had held for 8 years. John Sofos joined Larry Beuchat as Co-Editors for the Journal. Also in 1996, Bill LaGrange began as Scientific Editor for *Dairy,*

Members and was a topic of much discussion at Annual Meetings.

At the April 1997 Executive Board meeting, the strategic plan was reviewed and revised with new goals established. A strategy was discussed to develop a timeline to change the Association name. The discussion centered on a long implementation period to allow for Members' input and discussion. It was projected that January of 2000 would be the date for officially changing the name assuming acceptance by the Members.

In the spring of 1997, a Windows network server was installed at the office. By fall, membership software was added. Efficiencies were gained and record keeping was made easier.

Attendance at the 1997 Annual Meeting exceeded 1,000 for the first time ever. The Meeting was held in Orlando with up to 5 concurrent sessions containing symposium, technical session and poster session presentations. A charter was issued to the Korean Association of Dairy, Food and Environmental Specialist (KOAMFES). The first Affiliate Association chartered outside of North America.

IAMFES launched a Web site in the fall of 1997 with information about the Association. About 10 pages of general data explaining the Journals, Annual Meeting, committee involvement and Membership made up the first Web site. Interest was generated and Membership applications were received from the Internet presence.

The first every stand-alone workshop was held in April of 1997 in suburban San Francisco. The topic was "Resources for the Real World of HACCP." It was well attended and a successful first venture.

At the 1998 Annual Meeting Opening Session in Nashville, seven Members were inducted as Fellows for the first time. Attendance soared to 1,152! Membership also showed growth after two consecutive years of decline. Sponsorship monies were solicited and supporting companies contributed \$10,000 to sponsor Annual Meeting events. It was announced that Journals shipped to points outside of North America will now be sent via air delivery to the destination countries saving weeks, even months of delivery time.

Also in 1998, a new Award was presented to the Food Research Institute at the University of Wisconsin-Madison. The Award titled "NFPA's

Food Safety Award" was sponsored by the National Food Processors Association. The IAMFES Foundation Fund sponsored its first Silent Auction and raised more than \$2,000.

Late in 1998, IAMFES cosponsored an ILSI conference titled "The National Food Safety Initiative: Implications for Microbial Data Collections, Analysis and Application" held in Washington, D.C. IAMFES assisted in preparing promotional materials and registering attendees. It was a successful 3-day conference for both organizations with more than 240 attendees.

By the end of the year, a redesigned Web site was launched with more than 100 pages of information. A link to the printer of *Journal of Food Protection* made the Table of Contents and Abstracts available to visitors. *Dairy, Food and Environmental Sanitation* Table of Contents and selected features were also made available to users. Endless volumes of information could now be found at the IAMFES Web site.

A stand-alone workshop titled "An Insider's Look at Microbial Risk Assessment" was held in Washington, D.C in the spring of 1999. Attendance showed that interest was high in the subject.

Early in 1999, efforts turned to keeping Members informed about the upcoming votes on changing the Association name. The process was explained in the President's column and the Executive Director's column. Information was provided at the IAMFES Web site for Member review.

Two votes would need to be taken. One at the Annual Business Meeting, then a second mail ballot vote assuming the first vote passed. Each vote was to accept the Constitution that stated that an Association is created by the name of "International Association for Food Protection."

The 86th Annual Meeting in Dearborn was attended by 1,131 and provided more than 250 presentations. ILSI's continued involvement through supporting symposia attracted additional international attendees. Committee and PDG involvement was again at an all-time high level. Eighty-five companies showed their latest products and technology in the exhibit hall.

The name change vote was taken at the Annual Meeting in Dearborn and Members overwhelmingly voiced their approval of the

new name, "International Association for Food Protection." Ballots were mailed to all Members. Of the votes returned, 94% voted to accept the new name!

Many legal filings followed the vote results, along with changing our name with vendors, suppliers, federal and state governments. New stationery, envelopes and Membership materials all had to be obtained. All were in place as we entered the year 2000.

2000

Now as we go forth into the 21st Century, the Association is well positioned with a new name identifying our Members' interests. We have two well-respected Journals that are recognized around the world. The *Journal of Food Protection* and *Dairy, Food and Environmental Sanitation* are delivered to Members and subscribers in 60 countries. Circulation currently stands at 3,000 for *JFP* and 3,100 for *DFES*. The Membership Directory is now available online and our revenues are budgeted at \$1.5 million. Our Annual Meeting attracts leaders in food safety from every continent. This year we expect more than 1,200 attendees in Atlanta for the IAFP 87th Annual Meeting.

As this history of the Association shows, the Association today is much different than the original Association in 1911. We are different than we were in the '30s, the '50s and '60s, and we are different than we were in the '80s and even the '90s! That is what is unique about an Association serving its Members' needs. An association, like International Association for Food Protection, must evolve with its Members. It must change to meet its Members' wants and desires.

We conclude this history with a quote from President F.W. Fabian (1942), "Our Association, founded in 1911, is now going into the second generation of milk inspectors. The charter Members who founded the Association are getting scarce. Now any organization which has carried on for 35 years, through two world wars, one depression, and the exuberant Twenties, must have something or else it, like many other organizations, would have long since folded up."

Long live the International Association for Food Protection!



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NEW

IAFP Job Fair

**Attention
Job Seekers
and
Employers**

The first IAFP Job Fair will be held during IAFP 2001, the Association's 88th Annual Meeting, August 5-8, 2001 in Minneapolis, Minnesota. If you are seeking a career change or are a college senior or recent graduate bring several copies of your curriculum vitae (C.V.)! Employers, take advantage of recruiting the top food scientists in the world.

Contact Scott Burnett for more information at 770. 228.7283 ext. 115 or E-mail: sburnett@cfsqe.griffin.peachnet.edu.

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CALL FOR SYMPOSIA

IAFP 2002

JUNE 30–JULY 3, 2002

SAN DIEGO, CALIFORNIA

The Program Committee invites International Association for Food Protection Members and other interested individuals to submit a symposium proposal for presentation during the 2002 Annual Meeting, June 30–July 3, 2002 in San Diego, California.

WHAT IS A SYMPOSIUM?

A symposium is an organized, half-day session emphasizing a central theme relating to food safety and usually consists of six 30-minute presentations by each presenter. It may be a discussion emphasizing a scientific aspect of a common food safety and quality topic, issues of general interest relating to food safety and quality, a report of recent developments, an update of state-of-the-art materials, or a discussion of results of basic research in a given area. The material covered should include current work and the newest findings. Symposia will be evaluated by the Program Committee for relevance to current science and to Association Members.

SUBMISSION GUIDELINES

To submit a symposium, complete the Symposium Proposal form. The title of symposium; names, telephone numbers, fax numbers, and complete mailing addresses of the person(s) organizing the symposium and convenors of the session; topics for presentation, suggested presenters, affiliations; description of audience to which this topic would be of greatest interest; and signature of organizer. When submitting a proposal, the presenters do not need to be confirmed, only identified. Confirmation of presenters takes place after acceptance of your symposium.

SYMPOSIUM FORMAT

Symposium sessions are 3 and 1/2 hours in length including a 30-minute break. A typical format is six 30-minute presentations. However, variations are permitted as long as the changes fit within the allotted time frame. If varying from the standard format, be sure to indicate this on the Symposium Proposal form.

SYMPOSIUM PROPOSAL DEADLINE

Proposals may be submitted by mail to International Association for Food Protection office for receipt no later than July 16, 2001 or by presenting the proposal to the Program Committee at its meeting on Sunday, August 5, 2001 in Minneapolis, Minnesota. Proposals may be prepared by individuals, committees, or professional development groups.

The Program Committee will review submitted symposia and organizers will be notified in October 2001 as to the disposition of their proposal.

PRESENTERS WHO ARE NOT MEMBERS

International Association for Food Protection does not reimburse invited presenters for travel, hotel, or other expenses incurred during the Annual Meeting. However, invited presenters who are not Association members will receive a complimentary registration. Presenters who are Association Members are expected to pay normal registration fees.

ASSOCIATION FOUNDATION SPONSORSHIP

The International Association for Food Protection Foundation has limited funds for travel sponsorship of presenters. Symposium organizers may make requests in writing to the Program Committee Chairperson. Requests are reviewed on an individual and first-come-first-served basis. The maximum funding grant will be \$500 per symposium. Organizers are welcome to seek funding from other sources and the Association will provide recognition for these groups in our program materials. Organizers are asked to inform the Association if they obtain outside funding.

HAVE AN IDEA BUT YOU ARE UNABLE TO ORGANIZE IT?

Many Association Members have excellent suggestions for symposia topics, but are unable to organize the session. Such ideas are extremely valuable and are welcome. If you have an idea for a symposium topic, please inform the Program Committee Chairperson as soon as possible. Symposia topics are among the most valuable contribution an Association Member can make to assure the quality of our Annual Meeting.

WHO TO CONTACT:

Bev Corron
International Association for Food Protection
6200 Aurora Ave., Suite 200W
Des Moines, IA 50322-2863, USA
Phone: 800.369.6337; 515.276.3344
Fax: 515.276.8655
E-mail: bcorron@foodprotection.org

SYMPOSIUM PROPOSAL

IAFP 2002

JUNE 30–JULY 3, 2002

SAN DIEGO, CALIFORNIA

Title: _____

Organizer's Name: _____

Address: _____

Phone: _____ Fax: _____ E-mail: _____

Topic – Suggested Presenter, Affiliation

(Example: 1. HACCP Implementation – John Smith, University of Georgia)

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Suggested Convenors:

Description of Audience: _____

Signature of Organizer: _____

Receipt by mail
by July 16, 2001 to:

International Association for Food Protection
Symposium Proposal
6200 Aurora Ave., Suite 200W
Des Moines, IA 50322-2863, USA

Submit in person
on August 5, 2001 to:

Program Committee
IAFP 2001, the Association's 88th Annual Meeting
Minneapolis, MN

or Contact:

Bev Corron
International Association for Food Protection
6200 Aurora Ave., Suite 200W
Des Moines, IA 50322-2863, USA
Phone: 800.369.6337; 515.276.3344
Fax: 515.276.8655
E-mail: bcorron@foodprotection.org

New Members

ARGENTINA

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Universidad Nacional Del Litoral
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Ana M. R. Pilofof

University of Buenos Aires
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(The following company recently increased their support to the Association by becoming a Gold Sustaining Member)

Kraft Foods, Inc., Glenview, IL; 847.646.3678

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Qualicon, A DuPont Subsidiary, Wilmington, DE; 302.695.2262

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Esperanza, Santa Fe

Ana M. R. Pilosof
University of Buenos Aires
Buenos Aires

CANADA

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Minnesota

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Updates

Quality Chekd Dairies, Inc. Elects 2001 Board Officers, New Board Members at 2000 Annual Meeting

Quality Chekd Dairies, Inc. elected officers for the Board of Directors for 2001—and two new members to that Board—at the dairy co-op's 2000 Annual Meeting in Kamuela, HI.

Quality Chekd Dairies' Board of Directors elected the following officers for 2001 to a one-year term from among those serving on the Board:

President—Mr. L. G. (Lynn) Oller, president, Hiland Dairy Company, Springfield, MO; vice president—Dennis Winter, president & CEO, Super Store Industries, Stockton, CA; secretary—Mr. Doug Parr, V.P., dairy sales & marketing, Dean Foods Company, Rosemont, IL; and treasurer—Mr. Steve Schmid, president, Smith Dairy Products Company, Orrville, OH.

Newly-elected to the Board of Directors at the 2000 Annual Meeting were Mr. Steve Turner, president of Turner Holdings, LLC, Memphis, TN, and Mr. Charley Price, chief operating officer of Galliker Dairy, Johnstown, PA. Each was elected by the membership to complete a three-year term. All appointments are effective immediately.

Continuing their terms on the Board are Mr. Jim Miklinski, general manager of Wendt's Dairy, Niagara Falls, NY; Mr. Dan Soehnen, general manager of Superior Dairy, Inc., Canton, OH; and Mr. Jerry Teel, president of Vitamilk Dairy, Inc., Seattle, WA.

Mr. Paul Arbuthnot, general manager of Sunshine Dairy, Portland, OR retired from the Board of Directors as the Board's outgoing president; and Mr. Ron Richardson, who retired as president and general manager of Roberts Dairy, Omaha, NE, in the fall of 2000, retired from the Board as well.

Dr. Sharon R. Thompson, D.V.M. is Appointed as the Department of Health and Human Services Liaison to the Joint Institute for Food Safety Research

The Food and Drug Administration's Center for Food Safety and Applied Nutrition (FDA/CFSAN) has announced the appointment of Dr. Sharon R. Thompson, D.V.M., as the Department of Health and Human Services (DHHS) liaison to the Joint Institute for Food Safety Research (JIFSR).

The United States Department of Agriculture (USDA) and DHHS created JIFSR to coordinate planning and priority setting for food safety research among the two departments, other government agencies, and the private sector. This coordination optimizes food safety research investments, by identifying research priorities and avoiding research redundancies.

JIFSR also fosters the effective transfer of research results to those that will benefit along the farm-to-table continuum.

Dr. Thompson will serve as a senior level consultant to the executive director, JIFSR, Jerry R. Gillespie, D.V.M., Ph.D., providing in-depth knowledge of federal research agencies

and food safety, with particular emphasis on the needs and concerns of the participating HHS agencies (FDA, Centers for Disease Control and Prevention, and the National Institutes for Health) and their stakeholders. She will work with the JIFSR executive director to identify knowledge gaps, research needs, and leveraging/partnering mechanisms to address the goals of the National Food Safety Strategic Plan.

Dr. Thompson comes to her new position after serving as the associate director for Veterinary Medical and International Affairs in the Office of the Director, Center for Veterinary Medicine, FDA. She holds an A.B. degree, cum laude, in biology from Harvard University and a D.V.M. degree from Virginia-Maryland Regional College of Veterinary Medicine.

Martha Y. Villasenor Promoted at Fristam Pumps

Fristam Pumps, Inc. is pleased to announce the promotion of Martha Y. Villasenor to the position of senior applications engineer. Fluent in Spanish, French, Portuguese and English, Martha's responsibilities include providing technical guidance, training and customer support to Fristam's customers in Central and South America. In addition, she translates the company's technical and sales documents into Spanish.

Martha holds a bachelor's degree in chemical engineering from the University of Chihuahua-Mexico and a Master of Science degree in agricultural economics from New Mexico State University.

IFT Names James N. Klapthor as Media Relations Manager

The Institute of Food Technologists (IFT) named James N. Klapthor as media relations manager.

Jim Klapthor comes from Albion College, where he was director of media relations. Prior to Albion, Jim spent ten years in radio and television broadcasting in Michigan and California,

serving at various times as news and sports director, producer, anchor, reporter and writer.

Jim is a graduate of Western Michigan University.

Maureen Colton Named FoodHandler Inc. Director of Marketing

FoodHandler Inc., has named Maureen Colton as director of marketing.

Maureen will be responsible for the development of effective business plans and marketing strategies to support the company's growth goals, as well as to direct FoodHandler's brand position within the foodservice market.

Prior to joining FoodHandler, Maureen held director of marketing and sales management positions with Cleaning Technologies Group, National Laboratories and SC Johnson Wax.



DQCI Services, Inc.

Bacteriological & Chemical Testing

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ADPI's Warren Clark Announces Retirement

Dr. Warren S. Clark, Jr., Chief Executive Officer of the American Dairy Products Institute (ADPI) has announced his plans to retire as of February 28, 2002.

Clark joined the staff of the American Dry Milk Institute (ADMI) in 1967 as technical director. With the formation of the Whey Products Institute (WPI) in 1971, Clark also assumed the same position for that group. On January 1, 1976, Clark was named assistant executive director of the ADMI and WPI and he became executive director of the associations on July 1 of that year.

Among his leadership accomplishments were bringing about the merger of ADMI and WPI to form the American Dairy Products Institute in 1986, the subsequent merger of the Evaporated Milk Association (EMA) into ADPI in 1987, and the formation of a Cheese Division within the Institute in 1997.

Clark has represented the processed dairy products industry in many capacities nationally and internationally, including with the International Dairy Federation (IDF), the European Whey Products Association (EWPA), the American Dairy Science Association (ADSA), the International Association for Food Protection (IAFP), the Institute of Food Technologists (IFT), and the Association of Official Analytical Chemists (AOAC) International.

In 1999, Clark received USDA's Honor Award – the highest award the Secretary of Agriculture can bestow upon private citizens – for his outstanding contributions as a member of the European Union Dairy Certification Team. In addition to being the Institute's chief executive officer, Clark currently serves the dairy industry as chairman of the 3-A Sanitary Standards Symbol Administrative Council Board of



International Association for
Food Protection



Trustees, treasurer of the US National Committee of the International Dairy Federation, and as a member of the National Conference on Interstate Milk Shipments (NCIMS) – Food & Drug Administration (FDA) Liaison Committee.

American Medical Association (AMA) and US Government Release New Foodborne Illness Physician/Patient Information Kit

Declaring that foodborne illness is a serious public health problem, the American Medical Association (AMA), the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), and the USDA's Food Safety & Inspection Service (FSIS) have released a new physician/patient information kit.

"Diagnosis and Management of Foodborne Illness, A Primer for Physicians," is designed to update physicians, nurses and other medical personnel. It also contains concise patient information for physicians to distribute. More than 15,000 kits are available free to physicians, and the information is also available on line at www.ama-assn.org/foodborne.

"There are an estimated 76 million cases of foodborne

illness each year, resulting in more than 5,000 deaths and 325,000 hospitalizations annually in the United States," said Art Liang, MD, CDC's assistant director for foodborne disease. "While many foodborne illnesses, such as typhoid and cholera have faded, new and re-emerging ones have taken their place. We didn't even know *Cyclospora*, resistant *Salmonella*, and some strains of *E. coli* existed when many of today's practicing physicians were in medical school. Physicians are now hungry for good information on recognizing and treating food-related diseases. This information kit gives them the information they want and need," said AMA Trustee J. Edward Hill, MD.

"The kit also contains concise, easy-to-understand patient information for physicians to distribute to their patients. It details four safe-food handling tips everyone should follow, as well as a chart of recommended cooking temperatures for various foods. This information is a critical component of foodborne illness prevention," said Joseph A. Levitt, director of FDA's Center for Food Safety and Applied Nutrition. "Food safety is everyone's responsibility. Physicians can play an enormous role in educating their patients – especially their at-risk populations – about preventing foodborne illness," said FSIS associate administrator Margaret Glavin.

Young children, pregnant women, older adults, and those with weakened immune systems are at a higher risk for foodborne illness. Immune systems may be weakened by medical treatments, such as steroids or chemotherapy, or by conditions such as AIDS, cancer or diabetes. Those suffering from liver disease, alcoholism, or increased stomach acidity due to gastric surgery or regular use of antacids are also at increased risk.

Scientists Learning to Keep Tabs on Dioxin

Monitoring a group of toxic chemicals called dioxins in food, livestock feeds and other materials should be less expensive, thanks to new technologies developed by scientists with the Agricultural Research Service. Dioxins, produced by natural or industrial processes, are chlorinated aromatic compounds that can build up in the fat of humans and animals. They may increase the risk of tumors and possibly cause other undesirable health effects. The dioxin family of about 210 compounds includes 17 that are considered toxic.

The new ARS technologies can detect dioxins in concentrations as low as 0.1 parts per trillion in fat samples. When ARS scientists at Fargo, ND, began dioxin research in 1994, analysis cost nearly \$2,000 per sample. That cost is now down to about \$600-\$800 per sample, and ARS researchers are developing an even more efficient procedure that requires minimal use of chemical solvents and is expected to reduce costs of analysis by half.

The US Environmental Protection Agency began seven years ago to consider the possible importance of air pollution in the dioxin contamination of forage and other livestock feeds. In a USDA fact-finding mission to investigate the extent of dioxin contamination in livestock from all sources, a team of ARS scientists at Fargo researched dioxins in beef produced in 13 states, including Hawaii. The scientists found that most of the samples were "clean," with some exceptions in the kidney fat of some individual carcasses.

The beef samples that had high dioxin levels were found to have come from animals raised in barns or pens containing posts that had been treated with dioxin-containing pentachlorophenol (penta) to prevent rotting. Now, according to EPA

regulations, wood preservatives used for fence posts or feeding troughs in barns can no longer contain penta. An article about dioxin research appears in the January issue of ARS' *Agricultural Research* magazine, which can be found on the web at: www.ars.usda.gov/is/AR/archive/jan01/dioxin0101.htm. ARS is the chief scientific research agency of the US Department of Agriculture.

FAO: Countries Around the World Should be Concerned about 'Mad Cow Disease' and Should Take Action to Prevent Risks

The UN Food and Agriculture Organization (FAO) has urged countries around the world, not just those in Western Europe, to be concerned about the risk of bovine spongiform encephalopathy (BSE) and its human form, the new variant Creutzfeldt-Jakob disease (nvCJD). In a statement issued in Rome, FAO called for action to protect the human population, as well as the livestock, feed and meat industries.

"There is an increasingly grave situation developing in the European Union, with BSE being identified in cattle in several member states of the EU which have, until recently, been regarded as free from the disease. Confirmed and suspected cases of nvCJD are occurring in people outside the UK, in various member states. More research needs to be conducted into the nature of the agent and its modes of transmission. Much remains unknown about the disease and the infective agent. There is currently no method of diagnosis at early stages of infection and no cure for the disease, neither in animals nor in humans," FAO said.

All countries which have imported cattle or meat and bone meal (MBM) from Western

Europe, especially the UK, during and since the 1980s, can be considered at risk from the disease, according to the UN agency. Several countries have imported large quantities of MBM in the recent past. FAO said it supports the EU's action and considers "that there is an urgent need to refine the risk assessment and to extend it to other countries and regions. Countries at risk should implement effective surveillance for BSE in cattle and controls on the animal feed and meat industries. At present, this means: laboratory testing of samples from slaughtered cattle, and correct disposal of fallen stock and improved processing of offals and by-products." Within countries, FAO recommended applying the so-called Hazard Analysis Critical Control Point system (HACCP) which aims at identifying potential problems and taking corrective measures throughout the food chain. Some of the issues include the production of animal feed, the raw materials used, cross-contamination in the feed mill, labelling of manufactured feeds, the feed transport system, as well as monitoring imported live animals, slaughtering methods, the rendering industry and the disposal of waste materials.

"Strict controls have been implemented in the United Kingdom and are now being implemented in the rest of the EU. Countries outside the EU should adopt appropriate measures to protect their herds and to ensure the safety of meat and meat products. Legislation to control the industry and its effective implementation is required, including capacity building and the training of operatives and government officials," FAO said.

FAO advised countries to adopt a precautionary approach. As an immediate measure, countries which have imported animals and MBM from BSE-infected trading partners should consider a precautionary ban on the feeding of MBM to ruminants

(cattle, sheep, goats) or, to reduce the risk of infection even further, to all animals.

Attention should be paid to slaughtering procedures and to the processing and use of offal and by-product parts, FAO said. The rendering industry should be scrutinized and appropriate procedures adopted everywhere. FAO, together with the World Health Organization (WHO) and the Organization Internationale des Epizooties (OIE), will hold an expert consultation in the near future to draw up advice for countries, particularly developing countries, to protect their people from nvCJD, their live-stock from BSE, and their industries from trade restrictions and their repercussions.

The FAO/WHO Codex Alimentarius is currently finalizing work on a 'Code of Practice for Good Animal Feeding' to ensure that animal products do not create risks to consumers. FAO, together with WHO and OIE, will continue to inform countries of developments and of scientific and technical advances relating to this problem.

FDA Juice Safety Rule "Underscores Importance of Pasteurization as a Food Safety Tool," Says National Food Processors Association

In response to a final rule on fruit and vegetable juice safety issued by the Food and Drug Administration, (FDA) Dr. Allen Matthys, vice president of regulatory affairs for the National Food Processors Association (NFPA), made the following comments: "FDA's long-awaited final rule clearly underscores the importance of pasteurization as a food safety tool to ensure the safety of fruit and vegetable juices. Under this rule, processors are required to achieve a

100,000-fold reduction in the numbers of the most resistant pathogens in their finished products compared to levels that may be present in unprocessed juice. Clearly, this will require pasteurization or an equivalent treatment."

"NFPA had urged FDA to require that all juices be pasteurized or receive an equivalent treatment to ensure their safety. It is our belief that such a requirement – which is not included in this rule – would be more effective than simply requiring that manufacturers use Hazard Analysis Critical Control Point (HACCP) principles for juice processing."

"We are pleased that FDA did not exempt smaller companies from these regulations, but instead established a longer compliance period for these companies. Consumers need assurance that all the juices they buy are safe, whether they come from large or small companies."

"Finally, it is important that consumers know that the vast majority of juices sold in the United States – more than 98 percent – have been pasteurized or otherwise heat-treated, and that these juices can be purchased and consumed with confidence. For example, all shelf-stable juices – those that do not require refrigeration prior to opening – have been heat-processed. Frozen concentrated juices also are produced from ingredients that have been heat-processed. And many refrigerated juices also have been pasteurized. Consumers can check with the retailer or manufacturer if they have questions."

How Deadly Foodborne *Listeria* Bacterium Travels

Cornell University food scientists and veterinarians have won a four-year,

\$1.2 million grant from the National Institutes of Health to investigate how *Listeria monocytogenes* – the deadliest of all foodborne bacteria – evolve and travel in food, humans, animals, water and soil. "*Listeria* is everywhere. It's in the food processing plants, it's in animals, it's in the soil, it's in the water. And because it can be found in so many places, it provides the ideal model for studying the evolution and ecology of bacterial pathogens," says Martin Wiedmann, Cornell assistant professor of food science and the primary investigator on the project. *L. monocytogenes* causes death in as many as 20 percent of people who contract listeriosis. It also poses serious health risks to agricultural animals.

While scientists understand the microbiology of the bacterium, how it is transmitted through food, animals, water and soil is not well understood. "Through broad collaborations with researchers in food science and veterinary medicine, we will systematically develop a biological and evolutionary framework to model and understand the association between distinct groups of *Listeria*, and the different bacterial hosts and environments. All the while we will be trying to understand the basic biology that forms the base for those associations," says Wiedmann. Wiedmann will be joined in the study by Ynte Schukken, Cornell associate professor of veterinary medicine, and Yrjo Grohn, Cornell professor of veterinary medicine, both in the university's College of Veterinary Medicine. Jonathan Hibbs, bacteriology laboratory director of the New York State Department of Health's Wadsworth Center, Albany, NY, will coordinate the collection of fecal samples and perform *L. monocytogenes* culture analysis.

Michael Wagner, an expert in molecular microbial ecology at the Technical University of Munich, Germany, will develop ways to quantify the ability of different groups of *Listeria* to survive and multiply inside protozoans, acellular or unicellular microscopic organisms. Also collaborating on the project are Kathryn Boor, Cornell associate professor of food science; Eugene Madsen, assistant professor of microbiology; and Patrick McDonough, assistant professor of veterinary medicine. Efforts are underway to work with researchers at Zhejiang University and Yangzhou University in China to coordinate data on *L. monocytogenes* subtypes in China.

Most bacterial species include a genetically diverse group of organisms – strains – that often differ in observable characteristics, such as the pathogenic potential for different host species or the ability to compete in various environments. “Our work will lead to a prediction and identification of human pathogenicity through application of our newly developed evolutionary framework for probing relationships between organism groups and different habitats and environments,” says Wiedmann.

For the past nine years, Wiedmann has been collecting samples of *Listeria*, identifying each strain’s unique genetic fingerprint. Every month, the New York State Department of Health sends him new strains, which he identifies and adds to a database. He also receives *Listeria* strains from tainted food sent to him by the New York State Department of Agriculture and Markets and from the New York State Veterinary Diagnostic Laboratory. To date, Wiedmann has developed a *Listeria* database of nearly 900 strains.

In 1999, Wiedmann’s database led health investigators to the *Listeria* strain responsible for a major listeriosis outbreak, which was traced to the Bil Mar Foods/Sara Lee food concern. Ultimately, 35 million pounds of hot dogs and other luncheon meat were recalled. The following site provide additional information on this news release. Martin Wiedmann’s Web site: www.foodscience.cornell.edu/wiedmann/wiedmann.

FDA Announces Report on Safety of Imported Foods

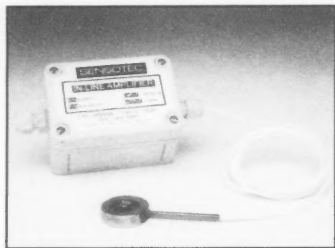
FDA has announced the enactment of procedures to advance the Administration’s food safety program by more effectively preventing unsafe imported food from entering the United States. These procedures have been developed in response to President Clinton’s directive on July 3, 1999, to the Secretaries of Health and Human Services and Treasury to work together to address six specific issues, targeting unscrupulous importers who violate the rules and subvert the system by moving unsafe food into US markets. FDA and US Customs Service presented their joint plan in an October 27, 1999 report to the President, posted it for public comment, and held a series of public meetings to discuss the plan. FDA and Customs then worked together to develop procedures and new rules to initiate the plan. FDA has now established a procedure to prevent distribution of unsafe imported food by requiring that shipments from “bad actor” importers be held in a secure storage facility at the importers’ expense until released by FDA. FDA has also established procedures to enhance interagency

coordination and efficiently use Customs’ civil monetary penalties procedures against importers who attempt to enter food into the United States by means of a material false statement, act, or omission. Penalties can be issued in amounts up to the domestic value of merchandise so imported.

FDA has also published, for comment, a proposed rule that will require marking food shipments refused for safety reasons to indicate that the product was denied entry into the United States. This will help eliminate the practice of “port shopping” in which importers whose cargo is denied entry at one port try to re-introduce it at another port without bringing the food into compliance with US laws and regulations. In addition, FDA is developing a proposed rule that will establish standards for importers and other persons who use sample collection services and/or private laboratories to demonstrate compliance with FDA law, including standards for the collection and analysis of samples.

Although Americans enjoy the safest food supply in the world, the implementation of these procedures will increase the tools available to FDA and Customs to penalize unscrupulous importers and discourage those who import or attempt to import food that jeopardizes the public health. As a result, consumers will be still better protected against unsafe food. In some cases, these activities can be accomplished through changes to internal operating procedures; in others, regulations are being proposed. FDA and Customs will continue to work with other government agencies and Congress to further ensure the safety of the US food supply.

Industry Products



Sensotec, Inc.

Sensotec, Inc. Amplifier Avoids Harsh Environments

The Model U3W Universal In-Line Amplifier provides signal conditioning and amplification in severe environments by allowing the electronics to be placed in-line and away from excessive heat, electrical noise, or other undesirable conditions. The unit is housed in a rugged package which meets NEMA-4 and IP-66 ratings for water resistance, making it effective in a wide range of applications. In-line amplifiers are also ideal for use with miniature transducers or when space is limited. The ability to locate the amplifier remotely also permits convenient access to potentiometer adjustments.

The Model U3W is a 3-Wire configuration which operates on 18 to 28 VDC and has selectable excitation voltages of 3 or 5 VDC. Other features include programmable gain settings, a wide zero adjustment and a buffered solid state shunt cal. The unit is compatible with any strain gauge type sensor, supplies a highly regulated voltage to the transducer and delivers a 4-20 mA output.

Sensotec, Inc., Columbus, OH

Reader Service No. 252

Precision Photometer from Nuclear Associates

The Precision Photometer from Nuclear Associates is ideal for medical, laboratory, scientific and industrial precision light readings. When used for mammography quality control of viewbox luminance and room illuminance, this versatile device ensures that: The luminance of viewboxes for interpretation or quality control of mammography images meets or exceeds minimum levels, ambient illuminance levels are below prescribed levels, and viewing conditions have been optimized. The Precision Photometer can be used to check x-ray viewbox and generator collimator light, check the CT system light source, measure light localizer illumination and measure brightness and uniformity of a light source. It also performs required ACR (NITS) measurements.

The Precision Photometer (Model 07-621) is battery operated and utilizes a filtered sensor with spectral response tightly calibrated to the CIE photopic response. The illuminance receptors closely follow the Cosine Law relative sensitivity versus angle of illuminance. This highly accurate instrument is designed to measure both illuminance (the amount of light falling on a surface) in lux (lumens per m²) and luminance (the amount of light emitted from a surface) in nit (candela per m²).

Optional accessories include: a Flexible 12" Fiberoptic Probe (model 07-634), designed for measuring relative densities of

areas on radiographs, or luminance of video screens and viewboxes; a Rigid 1" Fiberoptic Probe (model 07-634-1000), designed for readings taken against a monitor or viewbox; and a Rotating Illuminance Receptor (model 07-634-1100), designed for reading background light and field light.

The Precision Photometer is extremely popular, due to its compact, rugged construction, easy-to-read digital display, and competitive price. It is supplied with its own carrying case. At just 4" high by 2.8" wide by 1.2" thick (10 × 7 × 3 cm), and only 4 ounces (120 g), the Precision Photometer is the optimal choice for portability and versatility.

Nuclear Associates, Carle Place, NY

Reader Service No. 253

Eka Chemicals' Purate™ Technology for ClO₂ Generation Receives Expanded EPA Registration

Eka Chemicals' Purate™ technology for ClO₂ generation, the 1st sodium chlorate-based ClO₂ chemistry to receive EPA registration for drinking water and municipal water disinfection, is now approved for non-food industrial process water use. These registrations, and a corresponding FDA clearance for ClO₂ use on poultry, fruits, and vegetables in food processing facilities, are a part of Eka Chemicals' ongoing program for registering use of Purate™ technology for a wide range of ClO₂ applications.

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

Purate™ technology, used in conjunction with Eka Chemicals' patented SVP-Pure™ ClO₂ generation system, offers municipal and industrial ClO₂ users a unique combination of benefits. Purate™ is a two-chemical feed system that is elemental chlorine free, can achieve 95%+ chemical conversion efficiency, and is one of the most cost-effective means of ClO₂ production for water treatment. The SVP-Pure™ ClO₂ generation system is designed for ClO₂ capacities up to 100#/hr, is PLC controlled, and includes effective safety interlock programming.

Eka Chemicals Inc., Marietta, GA

Reader Service No. 254

ClearView Intelligent Inspection — Safeline's New Technology: "Soft Ray" and High Performance Image Processing Ensure Complete Product Integrity

ClearView, Safeline's new generation of intelligent product inspection systems, combines high-resolution "soft ray" inspection technology with innovative hardware and high-performance image processing software. The ClearView systems ensure pharmaceutical, food and packaged product integrity by detecting and eliminating foreign bodies such as metal, stone, glass, bone, high-density plastic and rubber. Real-time analysis of products in ClearView inspection systems provide the ability to monitor product and package attributes of both conveyed packaged products, loose discrete products, continuous-flowing bulk products, and pumped liquids and slurries.

Safeline's ClearView inspection systems are available in four

product models, tailored to the needs of the pharmaceutical, food and packaging industries: the Type 42P Automatic Pipeline Inspection System for inspection of pumped liquids and slurries; the Type 42BF Inspection System for inspecting continuous bulk product flows, the Type 42 Inspection System for automatic inspection of conveyed packages and loose products, and the Type 21 Inspection System for high speed automatic inspection of conveyed packaged products.

All Safeline ClearView inspection systems use linear technology that is unmatched for its sensitivity and simplicity. Critical inspection of any product flowing or conveyed through a ClearView system results from its combination of a computer-controlled "soft ray" generator and a powerful data analysis system. ClearView's color video display provides real-time diagnostics data, and the operator control center is a user-friendly touchscreen system. The ClearView system will detect minute changes in product density that signify product contamination or deviation from accepted specifications.

The stainless steel enclosure cabinet of the ClearView is designed for high-pressure washdown. The system will fit easily into existing conveyor or pipeline systems, and quick release belts or fittings allow quick dismantling and cleaning.

To comply with Vendor Certification programs and satisfy HACCP or FDA requirements, the ClearView inspection system may be equipped with a statistical control package for automatic data collection. An available option is a label print-out capability that automatically generates labels containing statistical data on a batch.

Safeline Inc., Tampa, FL

Reader Service No. 255



Serfilco, Ltd.

New, Compact Filtration Systems for Critical Plating Requirements from Serfilco

Serfilco announces the availability of its new Space-Saver® 'SX' filtration systems engineered to provide reliable, high performance filtration on small to medium size tank production in such quality-conscious areas as the electronics and precious metal plating fields.

Featuring Serfilco's new, non-metallic, leak-proof Series 'X' magnetic-coupled pumps and industry proven Series 'S' filter chambers, the new systems provide high flow and high turnover rates, assuring continuous particle removal for efficient, economical clarification and purification of solutions.

Flow rates range from 1200 to 1500 GPH.

The filter chamber is constructed of PVC, CPVC, polypropylene or PVDF to ensure chemical and temperature compatibility. Chambers are available in sizes to accommodate 10", 20", 30" or 40" cartridges for high solids holding

capacity and less frequent cartridge replacement.

The new Space-Saver 'SX' systems are available with or without optional purification chambers offering a low cost, but effective method of continuously or periodically removing organic impurities from plating baths and other chemical solutions.

Serfilco, Ltd., Northbrook, IL

Reader Service No. 256

PIAB USA, Inc. Compact Compressed Air-driven Vacuum Pump Simplifies Installation and Maintenance

Machinery and plant design involving compressed air-driven vacuum pumps can be greatly facilitated by the new P3010 vacuum pump, according to the vacuum technology company PIAB, which has introduced a range of pumps with an emphasis on modularity and efficiency.

The core of the system is a compressed air-driven vacuum pump module based on PIAB's COAX technology, a development of a patented design with three ejectors that expand the compressed air in several stages. This technology consumes less air than conventional pumps: 1 scfm at 44 psi feeding pressure at a maximum flow of 3 scfm.

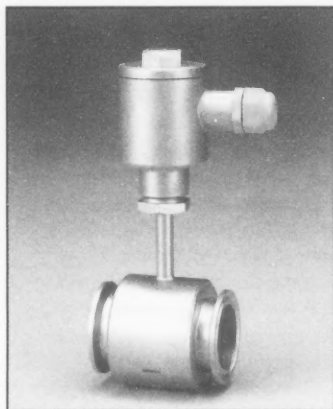
The pump module is clipped onto a "click-in" strip, which can take up to four pumps, inserted without tools. There are a number of pump accessories, all very easy to attach. These include connector modules, vacuum gauges, Quick Release modules for faster working cycles and extra pump modules to increase performance.

"The pumps are designed to be easy to maintain and simple to install," continues Niklas Svahn. "They are very well suited

for use with a robot arm, where suction cups are being used to lift various components. PIAB's clients in the packaging industry have also shown a lot of interest in the system."

PIAB USA, Inc., Rockland, MA

Reader Service No. 257



Viatran Corporation

In-line Temperature Measurement from Viatran Corp.

Viatran introduces Model VTI Temperature Transmitter, an in-line remote seal capable of nonintrusive temperature measurement in pipes.

Features: Temperature measurement without flow interference; CIP, SIP Cleaning by Pig Possible; RTD or 4-20 mA Signal; and Ra Finish of 16 µin.

Typical Applications: Pharmaceuticals; Food Processing; Beverages and Syrups; Cosmetics; and Paints and Lacquers.

The measuring system allows for non-intrusive RTD temperature measurement in pipelines. The stainless steel liner separates the process media from the temperature sensing element, providing a flush surface. The liner comes standard with 316 SST for excellent corrosion

resistance and has an Ra finish of 16 µin. This in-line design ensures a laminar flow which helps measurements to be accurate to less than 1°F and allows a typical response time of 30 seconds.

Standard process connections include 3A approved Tri-Clamp connections from 1" to 2 1/2" and ANSI flange mounting from 1/2" to 3" flanges. Three unique connection heads are available with either aluminum or stainless steel housings and up to a NEMA 4X rating. Retransmit options include an RTD with 2 or 4 wires and a 4-20 mA signal. Line break controls is an added safety feature which allows the unit to send a set signal to a closed loop controller even when the sensor is non-functioning.

Viatran Corporation, Grand Island, NY

Reader Service No. 258

New Step Plates Maintain Well Volume for High Throughput 96-lane Automated Sequencing Gels from Sigma

Sigma introduces specially designed glass plates that maintain well volume for high throughput 96-lane gels. Sigma's Step Plates are manufactured with a sturdy high quality borosilicate glass, ground, and polished to provide the most resilient surface against breaks, chips, and cracks. The front plate is beveled on the inside, creating a thicker gel in the area of comb loading – maintaining sample capacity up to 5 ul for loading 96-lane gels. Gel casting for Step Plates is standard and requires the use of a 0.4 mm casting and sharktooth comb.

Sigma, St. Louis, MO

Reader Service No. 259

You Can Save with The SAVS™ System from Regal™

Regal™ introduces their Ultimate system for uninterrupted, unattended service – SAVS™ (Self-sustained Automatic Vacuum Switchover) for Chlorinators, Sulphonators and Ammoniators.

Regal's chlorinators, sulphonators and ammoniators have been specifically designed for switchover service – and do the switching themselves. The units have built-in corrosion-proof and permanently adjusted switchover latches and reset knobs. In addition, they have all the reliability features that Regal products are known for – simple, safe and efficient design, and more corrosion-resistant vital parts than competitive units.

One unit supplies gas until its cylinder is empty – at which point the other unit starts operating, keeping the gas supply continuous.

These complete and self-sustained units will save you in reliability, time, safety and provide you with continuous peace of mind when your system cannot be monitored at all times.

Chlorinators Incorporated,
Stuart, FL

Reader Service No. 260

New Bulletin Features Spraying Systems Co.'s Maximum Free Passage FullJet® Nozzle

A new four-page, full-color bulletin highlighting the new Maximum Free Passage (MFP) FullJet nozzle is now available from Spraying Systems Co. Offering the industry's largest free passage of any full cone spray nozzle of its type, the nozzle's maximum solids passage capability translates

into consistent blanching, quenching, washing, pasteurizing, cooling, and rinsing.

Explained in the bulletin, is the MFP FullJet nozzle's patent-pending design that provides maximum spherical diameter free passage with outstanding spray performance. The design results in uniform distribution of liquid throughout the spray pattern for higher performance in spraying applications. The stable spray has consistent edges without fluttering.

Also covered in the bulletin are the MFP nozzle's performance specifications. Information is provided on the nozzle's materials of construction, which includes models in all 316 stainless steel or a brass body with a 316 stainless steel vane. It features NPT and BSPT (M or F) inlet connections from 3/8" to 3" with standard spray angles of 60° and 90° and wide spray angles of 115°.

Spraying Systems Co.,
Wheaton, IL

Reader Service No. 261

Neogen Unveils Test for Salmonella enteritidis

Neogen Corporation has announced the introduction of a kit for the leading cause of gastroenteritis, just in time to aid food producers comply with pending governmental regulation. Neogen's new test kit, Reveal® for *Salmonella enteritidis* (Se), provides commercial egg producers with a quick and easy method of detecting the dangerous pathogen, as the US Food and Drug Administration prepares to implement Se-reduction regulations. Se became the leading cause of salmonellosis in the US in 1994. The foodborne illness caused by Se is generally due to eating raw, incompletely

cooked, or recontaminated eggs. Ingestion of Se-contaminated poultry meat is the second leading cause of this illness.

"The introduction of Reveal for Se will be an invaluable tool to egg producers, as they comply with the FDA's final rule, and seek to further reduce the likelihood of Se-contaminated eggs reaching consumers. Until the introduction of an effective rapid test for Se, the industry had to wait up to 7 days for an outside laboratory's test results. Reveal for Se enables the industry to get results within 24 hours – it provides the rapid, accurate answer they need to manage their flocks and egg production," said Dr. Joseph Madden, Neogen's vice president of scientific affairs.

Neogen's Se test is based upon antibodies developed by Neogen and the USDA at the Russell Center in Athens, GA. Reveal for Se utilizes unique antibodies to ensure sensitivity and specificity. The test withstood the scrutiny of an intensive third-party validation, and was found to have no cross-reactivity with a wide range of other *Salmonella* species. The USDA estimates that as many as 11 eggs per 100,000 are contaminated with Se. According to the USDA, there were approximately 371 million egg layers in the US in January 2001, providing more than 71.4 billion eggs per year. This translates to up to 7,854,000 Se-infected in-shell eggs in the US every year. The effects of salmonellosis can range from mild nausea and diarrhea to severe, and potentially fatal, complications in the very young and old, and among those with weakened immune systems.

Neogen Corporation,
Lansing, MI

Reader Service No. 262

How the Audiovisual Library Serves IAFP Members

Purpose ...

The Audiovisual Library offers International Association for Food Protection Members an educational service through a wide variety of quality training videos dealing with various food safety issues. This benefit allows Members free use of these videos.

How It Works ...

- 1) Members simply fill out an order form (see page 326) and fax or mail it to the IAFP office. Members may also find a Library listing and an order form online at the IAFP Web site at www.foodprotection.org.
- 2) Material from the Audiovisual Library is checked out for a maximum of two weeks (three weeks outside of North America) so that all Members can benefit from its use.
- 3) Requests are limited to five videos at a time.

How to Contribute to the Audiovisual Library ...

- 1) As the IAFP Membership continues to grow, so does the need for additional committee members and materials for the Library. The Audiovisual Committee meets at the IAFP Annual Meeting to discuss the status of the Audiovisual Library and ways to improve the service. New Members are sought to add fresh insight and ideas.
- 2) Donations of audiovisual materials are always needed and appreciated. Tapes in foreign languages (including, but not limited to Spanish, French, Chinese [Mandarin/Cantonese]), are especially desired for International Members who wish to view tapes in their native language.
- 3) Members may also make a financial contribution to the Foundation Fund. The Foundation Fund sponsors worthy causes that enrich the Association. Revenue from the Foundation Fund supports the IAFP Audiovisual Library. Call Lisa Hovey, Assistant Director or Lucia Collison, Association Services at 800.369.6337 or 515.276.3344 if you wish to make a donation.

Audiovisual Library

as of March 9, 2001

(A Member Benefit of IAFP)

DAIRY

- D1170 3-A Symbol Council**-(8 minute videotape). A video which was developed to make people in the dairy and food industries aware of the 3-A program and its objectives.
- D1180 10 Points to Dairy Quality**-(10 minute videotape). Provides in-depth explanation of a critical control point in the residue prevention protocol. Illustrated with on-farm, packing plant, and milk-receiving plant scenes as well as interviews of producers, practicing veterinarians, regulatory officials and others. (Dairy Quality Assurance-1992) (Reviewed 1998)
- D1010 The Bulk Milk Hauler: Protocol & Procedures**-(8 minute videotape). Teaches bulk milk haulers how they contribute to quality milk production. Special emphasis is given to the hauler's role in proper milk sampling, sample care procedures, and understanding test results. (Iowa State University Extension-1990). (Reviewed 1998)
- D1020 Causes of Milkfat Test Variations & Depressions**-(30 minute-140 slides-tape-script). This slide set illustrates the many factors involved in causing milkfat test variations or depressions in your herd, including feeding, management, stage of lactation, age of samples, handling of samples, and testing procedures. The script was reviewed by field staff, nutritionists, laboratory personnel and county extension staff. It is directed to farmers, youth and allied industry. (Penn State-1982)
- D1030 Cold Hard Facts**-This video is recommended for training personnel associated with processing, transporting, warehousing, wholesaling and retailing frozen foods. It contains pertinent information related to good management practices necessary to ensure high quality frozen foods. (National Frozen Food Association-1993) (Reviewed 1998)
- D1040 Ether Extraction Method for Determination of Raw Milk**-(26 minute videotape). Describes the ether extraction procedure to measure milkfat in dairy products. Included is an explanation of the chemical reagents used in each step of the process. (CA-1988) (Reviewed 1998)
- D1050 The Farm Bulk Milk Hauler**-(30 minute-135 slides-tape-script). This slide set covers the complete procedure for sampling and collecting milk from farms. Each step is shown as it starts with the hauler entering the farm lane and ends when he leaves the milk house. Emphasis is on universal sampling and automated testing. Funds to develop this set were provided by The Federal Order #36 Milk Market Administrator. (Penn State-1982) (Reviewed 1998)
- D1060 Frozen Dairy Products**-(27 minute videotape). Developed by the California Department of Food and Agriculture. Although it mentions the importance of frozen desserts, safety and checking ingredients; emphasis is on what to look for in a plant inspection. Everything from receiving, through processing and cleaning and sanitizing is outlined, concluded with a quality control program. Directed to plant workers and supervisors, it shows you what should be done. (CA-1987) (Reviewed 1997)
- D1070 The Gerber Butterfat Test**-(7 minute videotape). Describes the Gerber milkfat test procedure for dairy products and compares it to the Babcock test procedure. (CA-1990) (Reviewed 1998)
- D1080 High-Temperature, Short-Time Pasteurizer**-(59 minute videotape). Provided by the Dairy Division of Borden, Inc. It was developed to train pasteurizer operators and is well done. There are seven sections with the first covering the twelve components of a pasteurizer and the purpose and operation of each. The tape provides the opportunity for discussion after each section or continuous running of the videotape. Flow diagrams, processing and cleaning are covered. (Borden, Inc.-1986) (Reviewed 1997)
- D1090 Managing Milking Quality**-(33 minute videotape). This training video is designed to help dairy farmers develop a quality management process and is consistent with ISO 9000 certification and HACCP processes. The first step is to evaluate the strengths and weaknesses of a dairy operation. The video will help you find ways to improve the weaknesses that are identified on your farm.
- D1100 Mastitis Prevention and Control**-(2-45 minute videotapes). This video is ideal for one-on-one or small group presentations.

ENVIRONMENTAL

- Section titles include: Mastitis Pathogens, Host Defense, Monitoring Mastitis, Mastitis Therapy, Recommended Milking Procedures, Postmilking Teat Dip Protocols, Milk Quality, Milking Systems. (Nasco-1993)
- D1110 Milk Plant Sanitation: Chemical Solution**-(13 minute videotape). This explains the proper procedure required of laboratory or plant personnel when performing chemical titration in a dairy plant. Five major titrations are reviewed... alkaline wash, presence of chlorine and iodophor, and caustic wash and an acid wash in a HTST system. Emphasis is also placed on record keeping and employee safety. (1989)
- D1120 Milk Processing Plant Inspection Procedures**-(15 minute videotape). Developed by the California Department of Food and Agriculture. It covers pre- and post-inspection meeting with management, but emphasis is on inspection of all manual and cleaned in place equipment in the receiving, processing and filling rooms. CIP systems are checked along with recording charts and employee locker and restrooms. Recommended for showing to plant workers and supervisors. (CA-1986)
- D1130 Pasteurizer - Design and Regulation**-(16 minute videotape). This tape provides a summary of the public health reasons for pasteurization and a nonlegal definition of pasteurization. The components of an HTST pasteurizer, elements of design, flow-through diagram and legal controls are discussed. (Kraft General Foods-1990) (Reviewed 1998)
- D1140 Pasteurizer - Operation**-(11 minute videotape). This tape provides a summary of the operation of an HTST pasteurizer from start-up with hot water sanitization to product pasteurization and shut-down. There is an emphasis on the legal documentation required. (Kraft General Foods-1990) (Reviewed 1998)
- D1150 Processing Fluid Milk**-(30 minute-140 slides-script-tape). This slide set was developed to train processing plant personnel on preventing food poisoning and spoilage bacteria in fluid dairy products. Emphasis is on processing procedures to meet federal regulations and standards. Processing procedures, pasteurization times and temperatures, purposes of equipment, composition standards, and cleaning and sanitizing are covered. Primary emphasis is on facilities such as drains and floors, and filling equipment to prevent post-pasteurization contamination with spoilage or food poisoning bacteria. It was reviewed by many industry plant operators and regulatory agents and is directed to plant workers and management. (Penn State-1987) (Reviewed 1998)
- E3010 The ABCs of Clean-A Handwashing & Cleanliness Program for Early Childhood Programs**-For early childhood program employees. This tape illustrates how proper handwashing and clean hands can contribute to the infection control program in daycare centers and other early childhood programs. (The Soap & Detergent Association-1991)
- E3020 Acceptable Risks?**-(16 minute videotape). Accidents, deliberate misinformation, and the rapid proliferation of nuclear power plants have created increased fears of improper nuclear waste disposal, accidents during the transportation of waste, and the release of radioactive effluents from plants. The program shows the occurrence of statistically anomalous leukemia clusters; governmental testing of marine organisms and how they absorb radiation; charts the kinds and amounts of natural and man-made radiation to which man is subject; and suggests there is no easy solution to balancing our fears to nuclear power and our need for it. (Films for the Humanities & Sciences, Inc.-1993) (Reviewed 1998)
- E3030 Air Pollution: Indoor**-(26 minute videotape). Indoor air pollution is in many ways a self-induced problem...which makes it no easier to solve. Painting and other home improvements have introduced pollutants, thermal insulation and other energy-saving and water-proofing devices have trapped the pollutants inside. The result is that air pollution inside a modern home can be worse than inside a chemical plant. (Films for the Humanities & Sciences, Inc.) (Reviewed 1998)
- E3040 Asbestos Awareness**-(20 minute videotape). This videotape discusses the major types of asbestos and their current and past uses. Emphasis is given to the health risks associated with asbestos exposure and approved asbestos removal abatement techniques. (Industrial Training, Inc.-1988) (Reviewed 1998)
- E3055 Effective Handwashing-Preventing Cross-Contamination in the Food Service Industry**-(3 1/2 minute videotape). It is critical that all food service workers wash their hands often and correctly. This video discusses the double wash method and the single wash method and when to use each method. (Zep Manufacturing Company-1993)
- E3060 EPA Test Methods for Freshwater Effluent Toxicity Tests (Using Ceriodaphnia)**-(22 minute videotape). Demonstrates the Ceriodaphnia 7-Day Survival and Reproduction Toxicity Test and how it is used to monitor and evaluate effluents for their toxicity to biota and their impact on receiving waters

and the establishment of NPDES permit limitations for toxicity. The tape covers the general procedures for the test including how it is set up, started, monitored, renewed and terminated. (1989) (Reviewed 1998)

- E3070 EPA Test Methods for Freshwater Effluent Toxicity Tests (Using Fathead Minnow Larva)**-(15 minute videotape). A training tape that teaches environmental professionals about the Fathead Minnow Larval Survival and Growth Toxicity Test. The method described is found in an EPA document entitled, "Short Term Methods for Estimating the Chronic Toxicity of Effluents & Receiving Waters to Freshwater Organisms." The tape demonstrates how fathead minnow toxicity tests can be used to monitor and evaluate effluents for their toxicity to biota and their impact on receiving waters and the establishment of NPDES permit limitations for toxicity. (1989) (Reviewed 1998)

- E3075 EPA: This is Super Fund**-(12 minute videotape). Produced by the United States Environmental Protection Agency (EPA) in Washington, D.C., this videotape focuses on reporting and handling hazardous waste sites in our environment. The agency emphasizes community involvement in identifying chemical waste sites and reporting contaminated areas to the authorities. The primary goal of the "Super Fund Site Process" is to protect human health and to prevent and eliminate hazardous chemicals in communities. The film outlines how to identify and report abandoned waste sites and how communities can participate in the process of cleaning up hazardous sites. The program also explains how federal, state and local governments, industry and residents can work together to develop and implement local emergency preparedness/response plans in case chemical waste is discovered in a community.

- E3080 Fit to Drink**-(20 minute videotape). This program traces the water cycle, beginning with the collection of rain-water in rivers and lakes, in great detail through a water treatment plant, to some of the places where water is used, and finally back into the atmosphere. Treatment of the water begins with the use of chlorine to destroy organisms; the water is then filtered through various sedimentation tanks to remove solid matter. Other treatments employ ozone, which oxidizes contaminants and makes them easier to remove; hydrated lime, which reduces the acidity of the water; sulfur dioxide, which removes any excess chlorine; and flocculation, a process in which aluminum sulfate causes small particles to clump together and precipitate out. Throughout various stages of purification, the water is continuously tested for smell,

taste, titration, and by fish. The treatment plant also monitors less common contaminants with the use of up-to-date techniques like flame spectrometers and gas liquefaction. (Films for the Humanities & Sciences, Inc.-1987)

- E3110 Garbage: The Movie**-(25 minute videotape). A fascinating look at the solid waste problem and its impact on the environment. Viewers are introduced to landfills, incinerators, recycling plants and composting operations as solid waste management solutions. Problems associated with modern landfills are identified and low-impact alternatives such as recycling, reuse, and source reduction are examined. (Churchill Films) (Reviewed 1998)

- E3120 Global Warming: Hot Times Ahead**-(23 minute videotape). An informative videotape program that explores the global warming phenomenon and some of the devastating changes it may cause. This program identifies greenhouse gases and how they are produced by human activities. Considered are: energy use in transportation, industry and home; effects of deforestation, planting of trees and recycling as means of slowing the build-up of greenhouse gases. (Churchill Films-1995)

- E3130 Kentucky Public Swimming Pool & Bathing Facilities**-(38 minute videotape). Developed by the Lincoln Trail District Health Department in Kentucky and includes all of their state regulations which may be different from other states, provinces and countries. This tape can be used to train those responsible for operating pools and waterfront bath facilities. All aspects are included of which we are aware, including checking water conditions and filtration methods. (1987). (Reviewed 1998)

- E3135 Plastics Recycling Today: A Growing Resource**-(11:35 minute videotape). Recycling is a growing segment of our nation's solid waste management program. This video shows how plastics are handled from curbside pickup through the recycling process to end-use by consumers. This video provides a basic understanding of recycling programs and how communities, companies and others can benefit from recycling. (The Society of the Plastics Industry, Inc.-1988)

- E3140 Putting Aside Pesticides**-(26 minute videotape). This program probes the long-term effects of pesticides and explores alternative pest-control efforts; biological pesticides, genetically-engineered microbes that kill objectionable insects, the use of natural insect predators, and the cross-breeding and genetic engineering of new plant strains that produce their own anti-pest toxins. (Films for the Humanities & Sciences, Inc.) (Reviewed 1999)

- E3150 Radon**—(26 minute videotape). This program looks at the possible health implications of radon pollution, methods homeowners can use to detect radon gas in their homes, and what can be done to minimize hazards once they are found.
- E3160 RCRA-Hazardous Waste**—(19 minute videotape). This videotape explains the dangers associated with hazardous chemical handling and discusses the major hazardous waste handling requirements presented in the Resource Conservation and Recovery Act. (Industrial Training, Inc.)
- The New Superfund. What It is & How It Works**—A six-hour national video conference sponsored by the EPA. Target audiences include the general public, private industry, emergency responders and public interest groups. The series features six videotapes that review and highlight the following issues:
- E3170 Tape 1—Changes in the Remedial Process: Clean-up Standards and State Involvement Requirements**—(62 minute videotape). A general overview of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and the challenge of its implementation. The remedy process — long-term and permanent clean-up is illustrated step-by-step, with emphasis on the new mandatory clean-up schedules, preliminary site assessment petition procedures and the hazard ranking system/National Priority List revisions. The major role of state and local government involvement and responsibility is stressed.
- E3180 Tape 2—Changes in the Removal Process: Removal and Additional Program Requirements**—(48 minute videotape). The removal process is a short-term action and usually an immediate response to accidents, fires and illegal dumped hazardous substances. This program explains the changes that expand removal authority and require procedures consistent with the goals of remedial action.
- E3190 Tape 3—Enforcement & Federal Facilities**—(52 minute videotape). Who is responsible for SARA clean-up costs? Principles of responsible party liability; the difference between strict, joint and several liability; and the issue of the innocent land owner are discussed. Superfund enforcement tools—mixed funding, De Minimis settlements and the new nonbinding preliminary allocations of responsibility (NBARS) are explained.
- E3210 Tape 4—Emergency Preparedness & Community Right-to-Know**—(48 minute videotape). A major part of SARA is a free-standing act known as Title III: The Emergency Planning and Community Right-to-Know Act of 1986, requiring federal, state, and local governments and industry to work together in developing local emergency preparedness/response plans. This program discusses local emergency planning committee requirements, emergency notification procedures, and specifications on community right-to-know reporting requirements such as using OSHA Material Safety Data Sheets, the emergency & hazardous chemical inventory and the toxic chemical release inventory.
- E3220 Tape 5—Underground Storage Tank Trust Fund & Response Program**—(21 minute videotape). Another addition to SARA is the Leaking Underground Storage Tank (LUST) Trust Fund. One half of the US population depends on ground water for drinking—and EPA estimates that as many as 200,000 underground storage tanks are corroding and leaking into our ground water. This program discusses how the LUST Trust Fund will be used by EPA and the states in responding quickly to contain and clean-up LUST releases. Also covered is state enforcement and action requirements, and owner/operator responsibility.
- E3230 Tape 6—Research & Development/Closing Remarks**—(33 minute videotape). An important new mandate of the new Superfund is the technical provisions for research and development to create more permanent methods in handling and disposing of hazardous wastes and managing hazardous substances. This segment discusses the SITE (Superfund Innovative Technology Evaluation) program, the University Hazardous Substance Research Centers, hazardous substance health research and the DOD research, development and demonstration management of DOD wastes.
- E3240 Sink A Germ**—(10 minute videotape). A presentation on the rationale and techniques for effective handwashing in health care institutions. Uses strong imagery to educate hospital personnel that handwashing is the single

most important means of preventing the spread of infection. (The Brevis Corp.-1986). (Reviewed 1998)

- E3245** **Wash Your Hands**-(5 minute videotape). Handwashing is the single most important means of preventing the spread of infection. This video presents why handwashing is important and the correct way to wash your hands. (LWB Company-1995)
- E3250** **Waste Not: Reducing Hazardous Waste**-(35 minute videotape). This tape looks at the progress and promise of efforts to reduce the generation of hazardous waste at the source. In a series of company profiles, it shows activities and programs within industry to minimize hazardous waste in the production process. Waste Not also looks at the obstacles to waste reduction, both within and outside of industry, and considers how society might further encourage the adoption of pollution prevention, rather than pollution control, as the primary approach to the problems posed by hazardous waste. (Umbrella films)

FOOD

- F2260** **100 Degrees of Doom... The Time & Temperature Capers**-(14 minute videotape). Video portraying a private eye tracking down the cause of a *Salmonella* poisoning. Temperature control is emphasized as a key factor in preventing foodborne illness. (Educational Communications, Inc.-1987) (Reviewed 1998)
- F2450** **A Guide to Making Safe Smoked Fish**-(21 minute videotape). Smoked fish can be a profitable product for aquaculturalists, but it can be lethal if not done correctly. This video guides you through the steps necessary to make safe smoked fish. It provides directions for brining, smoking, cooling, packaging and labeling, and cold storage to ensure safety. The video features footage of fish smoking being done using both traditional and modern equipment. (University of Wisconsin-Madison-Spring, 1999)
- F2005** **A Lot on the Line**-(25 minute videotape). Through a riveting dramatization, "A Lot on the Line" is a powerful training tool for food manufacturing and food service employees. In the video, a food plant supervisor and his pregnant wife are eagerly awaiting the birth of their first child. Across town, a deli manager is taking his wife and young daughter away for a relaxing weekend. Both families, in a devastating twist of fate, will experience the pain, fear, and disruption caused by foodborne illness. This emotionally charged video will enthrall new and old employees alike and strongly reinforce the importance of incorporating GMPs into everyday work routines. Without question, "A Lot on the Line" will become an indispensable part of your company's training efforts. (Silliker Laboratories-2000)
- F2440** **Cleaning & Sanitizing in Vegetable Processing Plants: Do It Well, Do It Safely!**-(16 minute videotape) This training video shows how to safely and effectively clean and sanitize in a vegetable processing plant. It teaches how it is the same for processing plant as it is for washing dishes at home. (University of Wisconsin Extension-1996) (Available in Spanish)
- F2010** **Close Encounters of the Bird Kind**-(18 minute videotape). A humorous but in-depth look at *Salmonella* bacteria, their sources, and their role in foodborne disease. A modern poultry processing plant is visited, and the primary processing steps and equipment are examined. Potential sources of *Salmonella* contamination are identified at the different stages of production along with the control techniques that are employed to insure safe poultry products. (Topek Products, Inc.) (Reviewed 1998)
- F2015** **Controlling Listeria: A Team Approach**-(16 minute videotape). In this video, a small food company voluntarily shuts down following the implication of one of its products in devastating outbreak of *Listeria monocytogenes*. This recall dramatization is followed by actual in-plant footage highlighted key practices in controlling *Listeria*. This video provides workers with an overview of the organism, as well as practical steps that can be taken to control its growth in plant environments. Finally, the video leaves plant personnel with a powerful, resounding message: Teamwork and commitment are crucial in the production of safe, quality foods. (Silliker Laboratories-2000)
- F2037** **Cooking and Cooling of Meat and Poultry Products**-(2 videotapes - 176 minutes). (See Part 1 Tape F2035 and Part 2 Tape F2036). This is session 3 of a 3-part Meat and Poultry Teleconference cosponsored by AFDO and the USDA Food Safety Inspection Service. Upon completion of viewing these videotapes, the viewer will be able to (1) recognize inadequate processes associated with the cooking and cooling of meat and poultry at the retail level; (2) Discuss the hazards associated with foods and the cooking and cooling processes with management at the retail level; (3) Determine the adequacy of control methods to prevent microbiological hazards in cooking and cooling at the retail level, and (4) Understand the principle for determining temperature with various temperature measuring devices. (AFDO/USDA-1999)
- F2030** **"Egg Games" Foodservice Egg Handling and Safety**-(18 minute videotape). Develop an effective egg handling and safety program that is right for your operation. Ideal for

- manager training and foodservice educational programs, this video provides step-by-step information in an entertaining, visually-exciting format. (American Egg Board-1999)
- F2020 Egg Handling & Safety**-(11 minute videotape). Provides basic guidelines for handling fresh eggs which could be useful in training regulatory and industry personnel. (American Egg Board-1997)
- F2036 Emerging Pathogens and Grinding and Cooking Comminuted Beef**-(2 videotapes - 165 minutes.) (See Part 1 Tape F2035 and Part 3 Tape F2037.) This is session 2 of a 3-part Meat and Poultry Teleconference cosponsored by AFDO and the USDA Food Safety Inspection Service. These videotapes present an action plan for federal, state, local authorities, industry, and trade associations in a foodborne outbreak. (AFDO/USDA-1998)
- F2035 Fabrication and Curing of Meat and Poultry Products**-(2 videotapes - 145 minutes). (See Part 2 Tape F2036 and Part 3 Tape F2037.) This is session 1 of a 3-part Meat and Poultry Teleconference cosponsored by AFDO and the USDA Food Safety Inspection Service. Upon viewing, the sanitarian will be able to (1) Identify typical equipment used for meat and poultry fabrication at retail and understand their uses; (2) Define specific terms used in fabrication of meat and poultry products in retail establishments, and (3) Identify specific food safety hazards associated with fabrication and their controls. (AFDO/USDA-1997)
- F2039 Food for Thought-The GMP Quiz Show**-(16 minute videotape). In the grand tradition of television quiz shows, three food industry workers test their knowledge of GMP principles. As the contestants jockey to answer questions, the video provides a thorough and timely review of GMP principles. This video is a cost-effective tool to train new hires or sharpen the knowledge of veteran employees. Topics covered include employee practices, including proper attire, contamination, stock rotation, pest control, conditions for microbial growth and employee traffic patterns. Food safety terms such as HACCP, microbial growth niche, temperature danger zone, FIFO and cross-contamination, are also defined. (Silliker Laboratories-2000)
- F2040 Food Irradiation**-(30 minute videotape). Introduces viewers to food irradiation as a new preservation technique. Illustrates how food irradiation can be used to prevent spoilage by microorganisms, destruction by insects, overripening, and to reduce the need for chemical food additives. The food irradiation process is explained and benefits of the process are highlighted. (Turnelle Productions, Inc.) (Reviewed 1998)
- F2045 Food Microbiological Control**-(6-videotapes - approximate time 12 hours). Designed to provide information and demonstrate the application of basic microbiology, the Good Manufacturing Practices (GMPs), retail Food Code, and sanitation practices when conducting food inspections at the processing and retail levels. Viewers will enhance their ability to identify potential food hazards and evaluate the adequacy of proper control methods for these hazards. (FDA-1998)
- F2050 Food Safe-Food Smart-HACCP & Its Application to the Food Industry**-(2-16 minute videotapes). (1)-Introduces the seven principles of HACCP and their application to the food industry. Viewers will learn about the HACCP system and how it is used in the food industry to provide a safe food supply. (2)-Provides guidance on how to design and implement a HACCP system. It is intended for individuals with the responsibility of setting up a HACCP system. (Alberta Agriculture, Food and Rural Development) (Reviewed 1998)
- F2060 Food Safe-Series I**-(4-10 minute videotapes). (1) "Receiving & Storing Food Safely," details for food-service workers the procedures for performing sight inspections for the general conditions of food, including a discussion of food labeling and government approval stamps. (2) "Food-service Facilities and Equipment," outlines the requirements for the proper cleaning and sanitizing of equipment used in food preparation areas. Describes the type of materials, design, and proper maintenance of this equipment. (3) "Microbiology for Foodservice Workers," provides a basic understanding of the microorganisms which cause food spoilage and foodborne illness. This program describes bacteria, viruses, protozoa, and parasites and the conditions which support their growth. (4) "Food-service Housekeeping and Pest Control," emphasizes cleanliness as the basis for all pest control. Viewers learn the habits and life cycles of flies, cockroaches, rats, and mice. (Perennial Education-1991) (Reviewed 1998)
- F2070 Food Safe-Series II**-(4-10 minute videotapes). Presents case histories of foodborne disease involving (1) *Staphylococcus aureus*, (sauces) (2) *Salmonella*, (eggs) (3) *Campylobacter*, and (4) *Clostridium botulinum*. Each tape demonstrates errors in preparation, holding or serving food; describes the consequences of those actions; reviews the procedures to reveal the cause of the illness; and illustrates the correct practices in a step-by-step demonstration. These are excellent tapes to use in conjunction with hazard analysis critical control point training programs. (Perennial Education-1991) (Reviewed 1998)

- F2080 Food Safe-Series III**-(4-10 minute videotapes). More case histories of foodborne disease. This set includes (1) Hepatitis "A", (2) *Staphylococcus aureus* (meats), (3) *Bacillus cereus*, and (4) *Salmonella* (meat). Viewers will learn typical errors in the preparation, holding and serving of food. Also included are examples of correct procedures which will reduce the risk of food contamination. (Perennial Education-1991) (Reviewed 1998)
- F2133 Food Safety First**-(50 minute videotape). This food safety training video presents causes of foodborne illness in foodservice and ways to prevent foodborne illness. Individual segments include personal hygiene and handwashing, cleaning and sanitizing, preventing cross contamination and avoiding time and temperature abuse. Foodhandling principles are presented through scenarios in a restaurant kitchen. (Glo-Germ 1998). Available in Spanish.
- F2090 Food Safety: An Educational Video for Institutional Food-Service Workers**-(10 minute videotape). Provides a general discussion on food safety principles with special emphasis on pathogen reductions in an institutional setting from child care centers to nursing homes. (U.S. Department of Health & Human Services-1997)
- F2120 Food Safety: For Goodness Sake, Keep Food Safe**-(15 minute videotape). Teaches foodhandlers the fundamentals of safe food handling. The tape features the key elements of cleanliness and sanitation, including: good personal hygiene, maintaining proper food product temperature, preventing time abuse, and potential sources of food contamination. (Iowa State University Extension-1990) (Reviewed 1998)
- F2110 Food Safety is No Mystery**-(34 minute videotape). This is an excellent training visual for food-service workers. It shows the proper ways to prepare, handle, serve and store food in actual restaurant, school and hospital situations. A policeman sick from food poisoning, a health department sanitarian, and a food-service worker with all the bad habits are featured. The latest recommendations on personal hygiene, temperatures, cross-contamination, and storage of foods are included. (USDA-1987). Also available in Spanish. - (Reviewed 1998)
- F2130 Food Safety: You Make the Difference**-(28 minute videotape). Through five food workers from differing backgrounds, this engaging and inspirational documentary style video illustrates the four basic food safety concepts: handwashing, preventing cross-contamination, moving foods quickly through the danger zone, and hot/cold holding (Seattle-King County Health Department-1995)
- Food Safety Zone Video Series**-A one-of-a-kind series that helps get your employees to take food safety issues seriously! These short, to-the-point videos can help make your employees aware of various food hazards, and how they can help promote food safety. The 4 topics are: Basic Microbiology, Cross Contamination, Personal Hygiene, and Sanitation. (J.J. Keller & Associates - 1999). (Also available in Spanish.)
- F2125 Tape 1-Food Safety Zone: Basic Microbiology**-(10 minute videotape). In this video, food service personnel will gain a deeper understanding of food safety issues and what they can do to prevent recalls and contamination. It describes the different types of bacteria that can be harmful to food, and tells how to minimize bacterial growth through time and temperature controls, personal hygiene practices, and sanitation.
- F2126 Tape 2-Food Safety Zone: Cross Contamination**-(10 minute videotape). Quickly teach your employees how they can help prevent cross contamination. Employees are educated on why contaminants can be extremely dangerous, cause serious injury, and even death, to consumers of their food products. This fast-paced video will give your employees a deeper understanding of the different types of cross contamination, how to prevent it, and how to detect it through visual inspections and equipment. The emphasis is that prevention is the key to eliminating cross contamination.
- F2127 Tape 3-Food Safety Zone: Personal Hygiene**-(10 minute videotape). After watching this video, your employees will understand why their personal hygiene is critical to the success of your business. This video teaches employees about four basic good personal hygiene practices: keeping themselves clean, wearing clean clothes, following specific hand washing procedures, and complying with all related work practices. Personnel are also taught that personal hygiene practices are designed to prevent them from accidentally introducing bacteria to food products, and are so important that there are federal laws that all food handlers must obey.
- F2128 Tape 4-Food Safety Zone: Sanitation**-(10 minute videotape). Don't just tell your employees

- why sanitation is important, show them! This training video teaches employees about the sanitation procedures that cover all practices to keep workplaces clean, and food produced free of contaminants and harmful bacteria. Four areas covered include personal hygiene, equipment and work areas, use and storage of cleaning chemicals and equipment, and pest control.
- F2135** **Get with a Safe Food Attitude**—(40 minute videotape). Consisting of nine short segments which can be viewed individually or as a group, this video presents safe food handling for moms-to-be. Any illness a pregnant woman contracts can affect her unborn child whose immune system is too immature to fight back. The video follows four pregnant women as they learn about food safety and preventing foodborne illness. (US Department of Agriculture-1999)
- F2140** **GMP Basics - Employee Hygiene Practices**—(20 minute videotape). Through real-life examples and dramatization, this video demonstrates good manufacturing practices that relate to employee hygiene, particularly hand washing. This video includes a unique test section to help assess participants' understanding of common GMP violations. (Silliker Laboratories-1997)
- F2143** **GMP Basics: Guidelines for Maintenance Personnel**—(21 minute videotape). Developed specifically for maintenance personnel working in a food processing environment, this video depicts a plant-wide training initiative following a product recall announcement. Maintenance personnel will learn how GMPs relate to their daily activities and how important their roles are in the production of safe food products. (Silliker Laboratories-1999)
- F2148** **GMP-GSP Employee**—(38 minute videotape). This video was developed to teach food plant employees the importance of "Good Manufacturing Practices" and "Good Sanitation Practices." Law dictates that food must be clean and safe to eat. This video emphasizes the significance of each employee's role in protecting food against contamination. Tips on personal cleanliness and hygiene are also presented. (L.J. Bianco & Associates)
- F2150** **GMP: Personal Hygiene & Practices in Food Manufacturing**—(14 minute videotape). This video focuses on the personal hygiene of food-manufacturing workers, and explores how poor hygiene habits can be responsible for the contamination of food in the manufacturing process. This is an instructional tool for new food-manufacturing line employees and supervisors. It was produced with "real" people in actual plant situations, with only one line of text included in the videotape. (Penn State-1993)—(Available in Spanish and Vietnamese)
- F2147** **GMP Basics: Process Control Practices**—(16 minute videotape). In actual food processing environments, an on-camera host takes employees through a typical food plant as they learn the importance of monitoring and controlling key points in the manufacturing process. Beginning with receiving and storing, through production, and ending with packaging and distribution, control measures are introduced, demonstrated, and reviewed. Employees will see how their everyday activities in the plant have an impact on product safety. (Silliker Laboratories-1999)
- F2160** **GMP: Sources & Control of Contamination during Processing**—(20 minute videotape). This program, designed as an instructional tool for new employees and for refresher training for current or reassigned workers, focuses on the sources and control of contamination in the food-manufacturing process. It was produced in actual food plant situations. A concise description of microbial contamination and growth and cross-contamination, a demonstration of food storage, and a review of aerosol contaminants are also included. (Penn State-1995)
- F2180** **HACCP: Safe Food Handling Techniques**—(22 minute videotape). The video highlights the primary causes of food poisoning and emphasizes the importance of self-inspection. An explanation of potentially hazardous foods, cross-contamination, and temperature control is provided. The main focus is a detailed description of how to implement a Hazard Analysis Critical Control Point (HACCP) program in a foodservice operation. A leader's guide is provided as an adjunct to the tape. (The Canadian Restaurant & Foodservices Association-1990) (Reviewed 1998)
- F2172** **HACCP: Training for Managers**—(17 minute videotape). Through industry-specific examples and case studies, this video addresses the seven HACCP steps, identifying critical control points, recordkeeping and documentation, auditing, and monitoring. It also explains how HACCP relates to other programs such as Good Manufacturing Practices and plant sanitation. (J. J. Keller & Associates, Inc.-2000)
- F2170** **The Heart of HACCP**—(22 minute videotape). A training video designed to give plant personnel a clear understanding of the seven HACCP principles and practical guidance on how to apply these principles to their own work environment. This video emphasizes the principles of primary concern to plant personnel such as critical limits, monitoring systems, and corrective actions that are vital

- to the success of a HACCP plan. (Silliker Laboratories Group-1994)
- F2171 HACCP: The Way to Food Safety**-(53 minute videotape). The video highlights the primary causes of food poisoning and stresses the importance of self-inspection. Potentially hazardous foods, cross-contamination and temperature control are explained. The video is designed to give a clear understanding of the seven HACCP principles and practical guidance on how to apply these principles to a work environment. Critical limits, monitoring systems and corrective action plans are emphasized. The video also provides an overview of foodborne pathogens, covering terminology, the impact of pathogens, and what employees must do to avoid problems. Also described are the sources, causes and dangers of contamination in the food industry. (Southern Illinois University-1997)
- F2175 Inspecting For Food Safety-Kentucky's Food Code**-(100 minute videotape). Kentucky's Food Code is patterned after the Federal Food Code. The concepts, definitions, procedures, and regulatory standards included in the code are based on the most current information about how to prevent foodborne diseases. This video is designed to prepare food safety inspectors to effectively use the new food code in the performance of their duties. (Department of Public Health Commonwealth of Kentucky-1997) (Reviewed 1999)
- F2190 Is What You Order What You Get? Seafood Integrity**-(18 minute videotape). Teaches seafood department employees about seafood safety and how they can help insure the integrity of seafood sold by retail food markets. Key points of interest are cross-contamination control, methods and criteria for receiving seafood and determining product quality, and knowing how to identify fish and seafood when unapproved substitutions have been made. (The Food Marketing Institute) (Reviewed 1998)
- F2210 Northern Delight-From Canada to the World**-(13 minute videotape). A promotional video that explores the wide variety of foods and beverages produced by the Canadian food industry. General in nature, this tape presents an overview of Canada's food industry and its contribution to the world's food supply. (Temelle Production, Ltd.) (Reviewed 1998)
- F2240 On the Front Line**-(18 minute videotape). A training video pertaining to sanitation fundamentals for vending service personnel. Standard cleaning and serving procedures for cold food, hot beverage and cup drink vending machines are presented. The video emphasizes specific cleaning and serving practices which are important to food and beverage vending operations. (National Automatic Merchandising Association-1993) (Reviewed 1998)
- F2250 On the Line**-(30 minute videotape). This was developed by the Food Processors Institute for training food processing plant employees. It creates an awareness of quality control and regulations. Emphasis is on personal hygiene, equipment cleanliness and good housekeeping in a food plant. It is recommended for showing to both new and experienced workers. (Available in Spanish) The Food Processors Institute. 1993. (Reviewed 1998)
- F2270 Pest Control in Seafood Processing Plants**-(26 minute videotape). Videotape which covers procedures to control flies, roaches, mice, rats and other common pests associated with food processing operations. The tape will familiarize plant personnel with the basic characteristics of these pests and the potential hazards associated with their presence in food operations. (Reviewed 1998)
- F2280 Principles of Warehouse Sanitation**-(33 minute videotape). This videotape gives a clear, concise and complete illustration of the principles set down in the Food, Drug and Cosmetic Act and in the Good Manufacturing Practices, as well as supporting legislation by individual states. (American Institute of Baking-1993)
- F2290 Product Safety & Shelf Life**-(40 minute videotape). Developed by Borden Inc., this videotape was done in three sections with opportunity for review. Emphasis is on providing consumers with good products. One section covers off-flavors, another product problems caused by plant conditions, and a third the need to keep products cold and fresh. Procedures to assure this are outlined, as shown in a plant. Well done and directed to plant workers and supervisors. (Borden-1987) - (Reviewed 1997)
- F2220 Proper Handling of Peracetic Acid**-(15 minute videotape). Introduces peracetic acid as a chemical sanitizer and features the various precautions needed to use the product safely in the food industry.
- F2230 Purely Coincidental**-(20 minute videotape). A parody that shows how foodborne illness can adversely affect the lives of families that are involved. The movie compares improper handling of dog food in a manufacturing plant that causes the death of a family pet with improper handling of human food in a manufacturing plant that causes a child to become ill. Both cases illustrate how handling errors in food production can produce devastating outcomes. (The Quaker Oats Company-1993.) (Reviewed 1998)
- F2310 Safe Food: You Can Make a Difference**-(25 minute videotape). A training video for food-service workers which covers the fundamentals of food safety. An explanation of proper food temperature, food storage, cross-contamination control, cleaning and sanitizing, and handwashing as methods of foodborne illness control is provided. The video

provides an orientation to food safety for professional foodhandlers. (Tacoma-Pierce County Health Department-1990). (Reviewed 1998)

- F2320 Safe Handwashing**-(15 minute videotape). Twenty-five percent of all foodborne illnesses are traced to improper handwashing. The problem is not just that handwashing is not done, the problem is that it's not done properly. This training video demonstrates the "double wash" technique developed by Dr. O. Peter Snyder of the Hospitality Institute for Technology and Management. Dr. Snyder demonstrates the procedure while reinforcing the microbiological reasons for keeping hands clean. (Hospitality Institute for Technology and Management-1991) (Reviewed 1998)
- F2325 Safe Practices for Sausage Production**-(3 hour videotape). This videotape is based on a series of educational broadcasts on meat and poultry inspections at retail food establishments produced by the Association of Food and Drug Officials (AFDO) and USDA's Food Safety and Inspection Service (FSIS), along with FDA's Center for Food Safety and Applied Nutrition. The purpose of the broadcast was to provide training to state, local, and tribal sanitarians on processes and procedures that are being utilized by retail stores and restaurants, especially those that were usually seen in USDA-inspected facilities. The program will cover the main production steps of sausage products, such as the processes of grinding, stuffing, and smoking, and typical equipment used will be depicted. Characteristics of different types of sausage (fresh, cooked and smoked, and dry/semi-dry) will be explained. Pathogens of concern and outbreaks associated with sausage will be discussed. The written manual for the program is available at www.fsis.usda.gov/fo/hrds/STATE/RETAIL/manual.htm. (1999)
- F2460 Safer Processing of Sprouts**-(1 hour and 22 minute videotape). Sprouts are enjoyed by many consumers for their taste and nutritional value. However, recent outbreaks of illnesses associated with sprouts have demonstrated a potentially serious human health risk posed by this food. FDA and other public health officials are working with industry to identify and implement production practices that will assure that seed and sprouted seed are produced under safe conditions. This training video covers safe processing practices of sprouts including growing, harvesting, milling, transportation, storage, seed treatment, cleaning and sanitizing, sampling and microbiological testing. (CA Dept. of Health Services, Food and Drug Branch; U.S. Food and Drug Administration, and the Centers for Disease Control and Prevention - 2000)
- F2330 Sanitation for Seafood Processing Personnel**-(20 minute videotape). A training video suited for professional foodhandlers

working in any type of food manufacturing plant. The film highlights Good Manufacturing Practices and their role in assuring food safety. The professional foodhandler is introduced to a variety of sanitation topics including: (1) foodhandlers as a source of food contamination, (2) personal hygiene as a means of preventing food contamination, (3) approved food storage techniques including safe storage temperatures, (4) sources of cross-contamination, (5) contamination of food by insects and rodents, (6) garbage handling and pest control, and (7) design and location of equipment and physical facilities to facilitate cleaning. (Reviewed 1998)

- F2340 Sanitizing for Safety**-(17 minute videotape). Provides an introduction to basic food safety for professional foodhandlers. A training pamphlet and quiz accompany the tape. Although produced by a chemical supplier, the tape contains minimal commercialism and may be a valuable tool for training new employees in the food industry. (Clorox-1990) (Reviewed 1998)
- F2350 ServSafe* Steps to Food Safety**-The ServSafe food safety series consists of six videos that illustrate and reinforce important food safety practices in an informative and entertaining manner. The videos provide realistic scenarios in multiple industry segments. English and Spanish are provided on each tape. (National Restaurant Association Education Foundation -2000)
- Step One: Starting Out with Food Safety**-(12 minute videotape). Defines what foodborne illness is and how it occurs; how foods become unsafe; and what safety practices to follow during the flow of food.
- Step Two: Ensuring Proper Personal Hygiene**-(10 minute videotape). Introduces employees to ways they might contaminate food; personal cleanliness practices that help protect food; and the procedure for thorough handwashing.
- Step Three: Purchasing, Receiving and Storage**-(12 minute videotape). Explains how to choose a supplier; calibrate and use a thermometer properly; accept or reject a delivery; and store food safely.
- Step Four: Preparing, Cooking, and Serving**-(11 minute videotape). Identifies proper practices for thawing, cooking, holding, serving, cooling and reheating food.
- Step Five: Cleaning and Sanitizing**-(11 minute videotape). Describes the difference between cleaning and sanitizing; manual and machine warewashing; how sanitizers work; how to store clean items and cleaning supplies; and how to setup a cleaning program.
- Step Six: Take the Food Safety Challenge: Good Practices, Bad Practices - You Make the Call!**-(35 minute videotape). Challenges viewers to identify good and bad practices presented in five short scenarios from different industry segments.

- F2430 Smart Sanitation: Principles & Practices for Effectively Cleaning Your Food Plant**—(20 minute videotape). A practical training tool for new sanitation employees or as a refresher for veterans. Employees will understand the food safety impact of their day-to-day cleaning and sanitation activities and recognize the importance of their role in your company's food safety program. (Silliker Laboratories Group-1996)
- F2370 Supermarket Sanitation Program—"Cleaning & Sanitizing"**—(13 minute videotape). Contains a full range of cleaning and sanitizing information with minimal emphasis on product. Designed as a basic training program for supermarket managers and employees. (1989) (Reviewed 1998)
- F2380 Supermarket Sanitation Program—"Food Safety"**—(11 minute videotape). Contains a full range of basic sanitation information with minimal emphasis on product. Filmed in a supermarket, the video is designed as a basic program for manager training and a program to be used by managers to train employees. (1989) (Reviewed 1998)
- F2390 Take Aim at Sanitation**—(8 minute videotape). This video features tips on food safety and proper disposal of single service items. Also presented is an emphasis on food contact surfaces as well as the manufacture, storage and proper handling of these items. (Foodservice and Packaging Institute, Inc.-1995). (Available in Spanish)
- F2410 Wide World of Food-Service Brushes**—(18 minute videotape). Discusses the importance of cleaning and sanitizing as a means to prevent and control foodborne illness. Special emphasis is given to proper cleaning and sanitizing procedures and the importance of having properly designed and constructed equipment (brushes) for food preparation and equipment cleaning operations. (1989) (Reviewed 1998)
- F2420 Your Health in Our Hands—Our Health in Yours**—(8 minute videotape). For professional foodhandlers, the tape covers the do's and don'ts of foodhandling as they relate to personal hygiene, temperature control, safe storage and proper sanitation. (Jupiter Video Production-1993). (Reviewed 1998)

OTHER

- M4010 Diet, Nutrition & Cancer**—(20 minute videotape). Investigates the relationship between a person's diet and the risk of developing cancer. The film describes the cancer development process and identifies various types of food believed to promote and/or inhibit cancer. The film also provides recommended dietary guidelines to prevent or greatly reduce the risk of certain types of cancer.
- M4020 Eating Defensively: Food Safety Advice for Persons with AIDS**—(15 minute videotape). While HIV infection and AIDS are not acquired by eating foods or drinking liquids, persons infected with the AIDS virus need to be concerned about what they eat. Foods can transmit bacteria and viruses capable of causing life-threatening illness to persons infected with AIDS. This video provides information for persons with AIDS on what foods to avoid and how to better handle and prepare foods. (FDA/CDC-1989)
- M4030 Ice: The Forgotten Food**—(14 minute videotape). This training video describes how ice is made and where the critical control points are in its manufacture, both in ice plants and in on-premises locations (convenience stores, etc.); it documents the potential for illness from contaminated ice and calls on government to enforce good manufacturing practices, especially in on-premises operations where sanitation deficiencies are common. (Packaged Ice Association-1993)
- M4040 Legal Aspects of the Tampering Case**—(25 minute videotape). This was presented by Mr. James T. O'Reilly, University of Cincinnati School of Law at the fall 1986 Central States Association of Food and Drug Officials Conference. He emphasizes three factors from his police and legal experience—know your case, nail your case on the perpetrator, and spread the word. He outlines specifics under each factor. This should be of the greatest interest to regulatory sanitarians, in federal, state and local agencies. (1987)
- M4050 Personal Hygiene & Sanitation for Food Processing Employees**—(15 minute videotape). Illustrates and describes the importance of good personal hygiene and sanitary practices for people working in a food processing plant. (Iowa State-1993)
- M4060 Psychiatric Aspects of Product Tampering**—(25 minute videotape). This was presented by Emanuel Tanay, M.D. from Detroit, at the fall 1986 conference of CSAFDA. He reviewed a few cases and then indicated that abnormal behavior is like a contagious disease. Media stories lead to up to 1,000 similar alleged cases, nearly all of which are false. Tamper-proof packaging and recalls are essential. Tampering and poisoning are characterized by variable motivation, fraud and greed. Law enforcement agencies have the final responsibilities. Tamper proof containers are not the ultimate answer. (1987)
- M4070 Tampering: The Issue Examined**—(37 minute videotape). Developed by Culbro Machine Systems, this videotape is well done. It is directed to food processors and not regulatory sanitarians or consumers. A number of industry and regulatory agency management explain why food and drug containers should be made tamper evident. (Culbro-1987)



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 - D1180 10 Points to Dairy Quality
 - D1010 The Bulk Milk Hauler: Protocol & Procedures
 - D1020 Causes of Milkfat Test Variations & Depressions (slides)
 - D1030 Cold Hard Facts
 - D1040 Ether Extraction Method for Determination of Raw Milk
 - D1050 The Farm Bulk Milk Hauler (slides)
 - D1060 Frozen Dairy Products
 - D1070 The Gerber Butterfat Test
 - D1080 High-Temperature, Short-Time Pasteurizer
 - D1090 Managing Milking Quality
 - D1100 Mastitis Prevention and Control
 - D1110 Milk Plant Sanitation: Chemical Solution
 - D1120 Milk Processing Plant Inspection Procedures
 - D1130 Pasteurizer - Design and Regulation
 - D1140 Pasteurizer - Operation
 - D1150 Processing Fluid Milk (slides)

- ENVIRONMENTAL**
- E3010 The ABCs of Clean - A Handwashing & Cleanliness Program for Early Childhood Programs
 - E3020 Acceptable Risks?
 - E3030 Air Pollution: Indoor
 - E3040 Asbestos Awareness
 - E3055 Effective Handwashing-Preventing Cross-Contamination in the Food Service Industry
 - E3060 EPA Test Methods for Freshwater Effluent Toxicity Tests (Using Ceriodaphnia)
 - E3070 EPA Test Methods for Freshwater Effluent Toxicity Tests (Using Fathead Minnow Larva)
 - E3075 EPA: This is Super Fund
 - E3080 Fit to Drink
 - E3110 Garbage: The Movie
 - E3120 Global Warming: Hot Times Ahead
 - E3130 Kentucky Public Swimming Pool & Bathing Facilities
 - E3135 Plastic Recycling Today: A Growing Resource
 - E3140 Putting Aside Pesticides
 - E3150 Radon
 - E3160 RCRA - Hazardous Waste
 - E3170 The New Superfund: What It is & How It Works-(1) Changes in the Remedial Process: Clean-up Standards & State Involvement Requirements
 - E3180 The New Superfund: What It is & How It Works-(2) Changes in the Removal Process: Removal & Additional Program Requirements

- E3190 The New Superfund: What It is & How It Works - (3) Enforcement and Federal Facilities
- E3210 The New Superfund: What It is & How It Works - (4) Emergency Preparedness & Community Right-to-Know
- E3220 The New Superfund: What It is & How It Works - (5) Underground Storage Tank Trust Fund & Response Program
- E3230 The New Superfund: What It is & How It Works - (6) Research & Development/Closing Remarks
- E3240 Sink a Germ
- E3245 Wash Your Hands
- E3250 Waste Not: Reducing Hazardous Waste

- FOOD**
- F2260 100 Degrees of Doom...The Time & Temperature Capers
 - F2450 A Guide to Making Safe Smoked Fish
 - F2005 A Lot on the Line
 - F2440 Cleaning & Sanitizing in Vegetable Processing Plants: Do It Well, Do It Safely!
 - F2010 Close Encounters of the Bird Kind
 - F2015 Controlling Listeria: A Team Approach
 - F2037 Cooking and Cooling Meat and Poultry Products
 - F2030 "Egg Games" Foodservice Egg Handling and Safety
 - F2020 Egg Handling & Safety
 - F2036 Emerging Pathogens and Grinding and Cooking Comminuted Beef
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 - F2039 Food for Thought - The GMP Quiz Show
 - F2040 Food Irradiation
 - F2045 Food Microbiological Control
 - F2050 Food Safe - Food Smart - HACCP & Its Application to the Food Industry (Part 1&2)
 - F2060 Food Safe - Series I (4 Videos)
 - F2070 Food Safe - Series II (4 Videos)
 - F2080 Food Safe - Series III (4 Videos)
 - F2133 Food Safety First
 - F2090 Food Safety: An Educational Video for Institutional Food-Service Workers
 - F2120 Food Safety: For Goodness Sake, Keep Food Safe
 - F2110 Food Safety is No Mystery
 - F2130 Food Safety: You Make the Difference
 - F2125 Food Safety Zone: Basic Microbiology
 - F2126 Food Safety Zone: Cross Contamination
 - F2127 Food Safety Zone: Personal Hygiene
 - F2128 Food Safety Zone: Sanitation

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- F2320 Safe Handwashing
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- F2330 Sanitation for Seafood Processing Personnel
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- F2350 SERVSAFE® Steps to Food Safety (6 Videos)
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- F2370 Supermarket Sanitation Program - "Cleaning & Sanitizing"
- F2380 Supermarket Sanitation Program - "Food Safety"
- F2390 Take Aim at Sanitation
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- M4070 Tampering: The Issue Examined

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August 5-8, 2001

Hilton Minneapolis
Minneapolis, Minnesota

Preliminary Program

P - Posters; S - Symposia; T - Technical

Program subject to change

SUNDAY EVENING — AUGUST 5, 2001

7:00 p.m. – 8:00 p.m.

Opening Session

Ivan Parkin Lecture

MONDAY MORNING — AUGUST 6, 2001

8:30 a.m. – 12:00 p.m.

S01 Moving Beyond HACCP — Risk Management and Food Safety Objectives, Session I

(Sponsored by ILSI-NA)

- ♦ Introduction: ICMSF Framework for Managing the Safety of Foods
- ♦ Assessing Risks and Establishing Food Safety Objectives
- ♦ On-the-line: Process and Performance Criteria
- ♦ Use and Misuse of Microcriteria for Foods
- ♦ Applying ICMSF Process for Foods

S02 Impact of Water Quality on Food Safety

- ♦ Safety of Potable Water from Municipal Treatment Plants/Distribution Systems
- ♦ Safety of Potable Water from Communal Wells: Anatomy of an Outbreak
- ♦ Food Production and Processing Risks Using Recycled Water
- ♦ Public Health Risks in the Food Industry Associated with Viral Contamination of Potable Water

- ♦ Public Health Risks in the Food Industry Associated with Parasitic Contamination of Potable Water: Outbreaks and Detection
- ♦ Public Health Risks in the Food Industry Associated with Parasitic Contamination of Potable Water: Risk Assessment and Control Measures

S03 Improving Laboratory Quality Assurance in the Real World

- ♦ Laboratory QA: Basic Challenges and Issues
- ♦ Industry Perspectives on Lab Quality Assurance
- ♦ The Role of Proficiency Testing in Laboratory Quality Assurance
- ♦ International Perspectives on Laboratory Quality Assurance
- ♦ Good Laboratory Practices: The Foundation of an Effective Quality Assurance Program

S04 Food Allergens — Current Issues and Concerns

- ♦ Consumer Issues
- ♦ Analytical Information — Methods and Findings
- ♦ Supplier Issues
- ♦ In-plant Practices
- ♦ Regulatory Perspective
- ♦ Legal Issues and Perspective

T01 Meat Microbiology

- T1 Evaluation of Methods for Sampling Rectal/Colonial Feces, Hides, and Carcasses to Test for Presence of *Escherichia coli* O157:H7 and *Salmonella* spp.
- T2 Rapid Detection of *Escherichia coli* O157:H7 in Raw Ground Beef via PCR Using a 375 g Sample Composite and Short Enrichment
- T3 Towards a Rapid Quantitative Risk Assessment Model of Human Illness: The Example of *Escherichia coli* O157:H7 in Non-intact Beef
- T4 Combined Treatments of 2% Lactic Acid (80°C) and Microwaves for the Reduction of Natural Microflora and *Escherichia coli* O157:H7 on Vacuum-packaged Beef Subprimals
- T5 Inhibition of *Listeria monocytogenes* on Hot Dogs Using Antimicrobial Whey Protein-based Edible Casings
- T6 Effects of Dried Prune Purees on Suppression of Growth of Foodborne Pathogens in Ground Beef
- T7 Application of Potassium Sorbate and Other Antimicrobial Ingredients to Control *Listeria monocytogenes* in Ready-to-eat Meat and Poultry Products
- T8 Serotype Tracking of *Salmonella* through Integrated Broiler Chicken Operations
- T9 Microbiological Risk Assessment on Raw Pork Carcasses in Ontario Abattoirs
- T10 Evaluations of Acidified Sodium Chlorite for Use on Red Meats
- T11 Comparative Studies of the Microbial-Vaccêa, a Non-destructive Wet-vacuum Microbial Collection System on Beef Carcasses
- T12 Real Time Detection of Pathogenic *Vibrio parahaemolyticus* in Oysters

P01 Produce Microbiology

- P1 Comparative Study of *Toxoplasma gondii* Oocysts on Raspberries and Blueberries
- P2 Development of a Standard Method to Detect *Giardia* on Fresh Fruit and Vegetables
- P3 Isolation of Potential Microbial Competitors of Foodborne Pathogens for Use on Fresh and Minimally-processed Produce

- P4 Consumer Handling of Fresh Produce
- P5 Withdrawn
- P6 Evaluation of Postharvest Survival and Growth of *Salmonella*, *Escherichia coli*, and *Listeria* on Peaches
- P7 *Salmonella* Inactivation from the Surface of Whole and Cut Produce by Gaseous Ozone
- P8 Is *Salmonella enterica* a Good Colonizer of Plant Surfaces?
- P9 Reducing *Salmonella* on the Surface of Apples Using Wash Practices Commonly Used by Consumers
- P10 Isolation and Characterization of a *Lactobacillus plantarum* Bacteriophage from Cucumber Fermentation
- P11 Effect of Glycine Betaine on Survival of *Lactococcus lactis* in Fresh, Refrigerated, Spicy Cucumbers
- P12 Reduction of *Listeria monocytogenes* on Green Peppers (*Capsicum annuum*) by Gaseous and Aqueous Chlorine Dioxide and Water Washing, and Its Growth at Refrigerated Temperature
- P13 Mold and Yeast Flora in Fresh Fruits
- P14 Improved Quality and Fumonisin Levels in Mexican Corn
- P15 Spread of *Listeria monocytogenes* during Preparation of Freshly Squeezed Orange Juice
- P16 Effects of pH and Temperature on Inactivation of *Escherichia coli* O157:H7 in a Model Apple Cider System
- P17 A Survey of Production Practices and Microbial Contamination in Iowa Apple Cider
- P18 Elimination of *Escherichia coli* O157:H7 in Apple Cider by Electron Beam Irradiation
- P19 Influence of Temperature on Inactivation of *Escherichia coli* O157:H7 and *Salmonella* in Apple Cider and Orange Juice Treated With Ozone
- P20 Chemical Inactivation of *Escherichia coli* O157:H7 and *Salmonella* spp. in Apple Cider and Orange Juice
- P21 Survival of *Salmonella* in Calcium-fortified Orange Juice at Refrigeration Temperature
- P22 Survival Differences of Enterohemorrhagic *Escherichia coli* O157:H7 Strains in Three Apple Varieties at 25 and 4°C

- P23 Effect of Low-temperature, High-pressure Treatment on the Survival of *Escherichia coli* O157:H7 and *Salmonella* in Unpasteurized Fruit Juices
- P24 Validation of Thermal Pasteurization Treatments for Commercial Apple Ciders Using *Escherichia coli* O157:H7
- P25 Inactivation of *Listeria monocytogenes* in Cinnamon-added Apple Juice
- P26 Transmission and Internalization of *Escherichia coli* O157:H7 from Contaminated Cow Manure into Lettuce Tissue as Monitored by Laser Scanning Confocal Microscopy
- P27 Evaluation of Various Household Sanitizers for Eliminating *Escherichia coli* on Lettuce
- P28 Effectiveness of Water Rinse as a Means for Pathogen Recovery in Lettuce
- P29 Simulation of an *Escherichia coli* O157:H7 Lettuce Outbreak in a Restaurant Setting: Survival of *E. coli* O157:H7 on and Contamination of Shredded Lettuce
- P30 Changes in Appearance and Natural Microflora on Iceberg Lettuce Treated in Warm Chlorinated Water and Then Stored at Refrigeration Temperature
- P31 Comparison of Commercial Cleaners for Effectiveness in Removing *Salmonella* and *Escherichia coli* O157:H7 from the Surface of Apples
- P32 Destruction of *Escherichia coli* O157:H7 on Apples of Different Varieties Treated with Citric Acid before Drying
- P33 Destruction of *Escherichia coli* O157:H7 during Drying of Apple Slices Pre-treated with Acidic Solutions after Inoculation
- P34 The Localization and Persistence of Bacterial and Viral Contaminants on the Surface of Inoculated Cantaloupe and Their Response to Disinfection Treatments
- P35 Minimum Bacteriostatic and Bactericidal Concentrations of Various Household Sanitizers for *Escherichia coli*
- P36 The Bactericidal Effect of Chlorine Dioxide Treatment against *Salmonella* spp., *Escherichia coli* O157:H7, and *Listeria monocytogenes* Inoculated on Tomatoes and Carrots

- P37 Enhancement of the Microbiological Quality of Selected Ready-to-eat Vegetables Disinfected by Chloramine, Chlorine, Ethanol, and Ozone
- P38 Assessment of the Antibacterial Efficacy of Fruit and Vegetable Washes Using In-vitro and In-situ Methods
- P39 Inactivation of Pathogenic Bacteria on Lettuce by Hydrogen Peroxide and Mild Heat
- P40 Comparison of Peptone Water and Dey-Engley Neutralizing Broth in Recovering Bacteria from the Surface of Fresh Produce Treated with Lactic Acid and Hydrogen Peroxide
- P41 Evaluation of Volatile Chemical Treatments for Lethality to *Salmonella* Seeds and Sprouts

MONDAY AFTERNOON — AUGUST 6, 2001

1:30 p.m. – 5:00 p.m.

S05 Moving Beyond HACCP – Risk Management and Food Safety Objectives, Session II

(Sponsored by ILSI-NA)

- ◆ What is a Food Safety Objective and How Do They Relate to Public Health Objectives?
- ◆ What Role Should Food Safety Objectives Play in the US Food Industry and How Will They Affect the Way Industry Does HACCP?
- ◆ What Role Should Food Safety Objectives Play in the Regulatory Process?
- ◆ An International Perspective on Food Safety Objectives
- ◆ How Can We Educate the Public about Tolerable Level of Risk/acceptable Level of Protection?

S06 USDA Competitive Grants in Food Safety and the Awards Process

- ◆ Enhancing Food Safety and Epidemiological Approaches to Food Safety (NRI)
- ◆ National Integrated Food Safety Initiative Grants (406)
- ◆ Initiative for Future Agriculture and Food Systems (401), RFP Formulation and Stakeholders' Input
- ◆ Awards Process: A Panel Manager's Perspectives
- ◆ Winning Integrated Proposals: A Winner's Perspective

S07 Food Safety in the Digital Age

- ◆ From Data to Knowledge Management
- ◆ New and Emerging Information Technologies
- ◆ From EpiInfo to FoodNet: Improving Surveillance and Outbreak Response
- ◆ Meeting Regulatory Requirements for Electronic Record Keeping and Electronic Signatures (21 CFR 11)
- ◆ Emerging Technologies to Map and Mitigate Biocontaminants
- ◆ Using Information Technology to Make Better Business Decisions
- ◆ Kraft Takes a Byte Out of Food Safety

S08 Dairy Plant HACCP — Where are We and Where are We Going?

- ◆ History of Dairy Plant HACCP
- ◆ Outline of HACCP Program
- ◆ Evaluation of Program at Present
- ◆ Long-term Goals of the Program
- ◆ Overview of HACCP Pilot Results
- ◆ First Hand HACCP Pilot Experience

T02 General Food Microbiology

- T13 A Microbial Survey of Toilet Paper and Associated Performance Variables Related to Its Role in Reducing Communicable Disease Transmission
- T14 Evaluation of the Combined Effects of Selective Handwashing Water Temperatures and Antimicrobial Soaps on Microbial Reduction Efficacy and Skin Irritation
- T15 Application of Real Time Temperature Monitoring for Food Safety and Quality Management in Food Retail
- T16 A Microbial Survey of Household Can Openers, Food and Beverage Can Tops and Cleaning Methodology Effectiveness
- T17 Inhibitory Activity of Honey against Foodborne Pathogens as Influenced by the Presence of Hydrogen Peroxide and Level of Antioxidant Power
- T18 Sensitization of Gram-negative Bacteria for Antimicrobial Peptides under High Hydrostatic Pressure: Role of Cell Surface Characteristics
- T19 Protective Effect of Colanic Acid of *Escherichia coli* O157:H7 to Environmental Stress
- T20 Bactericidal Activity of Oleate Towards Vegetative Cells and Endospores of *Clostridium perfringens*

- T21 Validating Sanitation Regimes in Drink-vending and Post-mix Systems
- T22 Providing Safe Food for the Homeless and Destitute: An Educational Program for Soup Kitchen Workers
- T23 Microbiological Survey of Hot-air Hand Dryers from Various Locations
- T24 Pathogenic and Indicator Bacteria Associated with Handwashing and Drying Contact Surfaces

P02 Meat Microbiology

- P42 Inhibition of *Listeria monocytogenes* on Turkey Frankfurters by Carbon Dioxide and Chemical Additives
- P43 Inhibition of *Listeria monocytogenes* by Sodium Diacetate and Sodium Lactate on Wieners and Cooked Bratwurst
- P44 Radiation Resistance of *Listeria monocytogenes* Isolated from Frankfurters
- P45 Control of *Listeria monocytogenes* on Turkey Frankfurters by GRAS Preservatives
- P46 Effect of Antimicrobials in the Formulation and Post-packaging Thermal Pasteurization on *Listeria monocytogenes* Inoculated on Frankfurters after Peeling
- P47 Treatments to Control Post-processing Contamination by *Listeria monocytogenes* on Sliced Pork Bologna Stored at 4°C in Vacuum Packages
- P48 Combinations of Nisin with Organic Acids or Salts to Control Post-processing Contamination of *Listeria monocytogenes* on Sliced, Vacuum Packaged Pork Bologna at 4°C
- P49 Fate of Acid-adapted and Non-adapted *Listeria monocytogenes* on Fresh Beef Following Acid and Non-acid Decontamination Treatments
- P50 Lactic Acid Sensitization of *Salmonella* Typhimurium DT 104 and *Listeria monocytogenes* in Non-acid (Water) Meat Decontamination Fluids at 10°C
- P51 Biofilm Formation by Acid-adapted and Non-adapted *Listeria monocytogenes* in Fresh Meat Decontamination Washings and Its Destruction by Sanitizers
- P52 Inactivation of *Listeria monocytogenes* in Packaged Hot Dogs and Luncheon Meats by High Pressure Processing (HPP)
- P53 Survival of *Salmonella* spp. and *Listeria monocytogenes* during Manufacture of Italian Salami

- P54 *Salmonella* spp. Risk Assessment for Production and Cooking of Non-intact Pork Products
- P55 Biofilm Development by *Listeria monocytogenes* under Ready-to-eat Meat Processing Conditions and a Control Strategy Using Cold Plasma Technology
- P56 Enhanced Inhibition of *Listeria monocytogenes* and *Salmonella enterica* Serovar Enteritidis in Beef Bologna by Combinations of Lactate and Diacetate
- P57 Survival and Recovery of *Listeria monocytogenes* on Ready-to-eat Meats Inoculated Using Desiccated and Nutritionally Depleted Vectors
- P58 Post-process Pasteurization of Packaged Ham, Roast Beef, and Turkey Breast Surfaces to Reduce *Listeria monocytogenes*
- P59 Post-process Pasteurization of Kielbasa (Full and Half) and Salami to Reduce Surface *Listeria monocytogenes*
- P60 Inhibition of *Listeria monocytogenes* by Sodium Diacetate and Potassium Lactate in Cured, Ready-to-eat Processed Meat Products at Refrigerated Temperatures
- P61 Application of the Bacteriocinogenic *Lactobacillus sake* 2a to Prevent Growth of *Listeria monocytogenes* in Brazilian Sausage (Lingüiça Frescal) Packed with Different Atmospheres
- P62 The Presence of *Campylobacter* and *Salmonella* in Retail Poultry and Packaging
- P63 PCR-based Fluorescent Method for Rapid Detection of *Campylobacter jejuni* and *Salmonella* Typhimurium in Poultry Samples
- P64 Determination of Critical Control Points (CCPs) at Poultry Slaughterhouse in Korea
- P65 Antimicrobial Effect of Electrolyzed Water for Inactivating *Campylobacter jejuni* during Poultry Washing
- P66 Mucosal Humoral Immunity to Experimental *Salmonella* Enteritidis Infection in Chickens
- P67 Bacterial Survival, Moisture Content, and Soluble Proteins in Chicken Patties Processed by an Air Impingement Oven
- P68 Kinetic Parameters for Thermal Inactivation of *Salmonella* spp. in Commercially Formulated Chicken Patties and Franks
- P69 Incidence of *Clostridium perfringens* in an Integrated Broiler Chicken Operation from Breeder Farm to the Fully-processed Product
- P70 *Clostridium perfringens* Levels in Cooked and Uncooked Meat and Poultry Products
- P71 Evaluation of the MicroFoss System for Enumeration of Total Viable Organisms, *Escherichia coli* and Coliforms in Ground Beef
- P72 Gel Peroxygens as Barrier and Treatment Systems for Beef Carcasses
- P73 Comparison of Methods for the Isolation of *Escherichia coli* O157:H7 from Ground Beef
- P74 *Escherichia coli* O157:H7 Risk Assessment for the Production and Cooking of Restructured Beef Steaks
- P75 *Escherichia coli* O157:H7 Maintains Acid Tolerance in Acid-containing but not in Nonacid-containing Fresh Meat Decontamination Waste Fluids
- P76 Food Safety: Consumer Views of Public versus Private Interventions Related to Meat Processing
- P77 The Incidence of *Salmonella* spp. and Biotype 1 *Escherichia coli* on Swine Carcasses Processed under the HACCP-based Inspection Models Project
- P78 Vero Cell Assay for Detection of Cytoplasmic Vacuolation by *Arcobacter* spp. Isolated from Meat
- P79 Validation and Use of Alkaline Phosphatase Reduction as an Indicator for Meat Cooking Efficiency
- P80 Isolation of Shiga Toxin Producing *Escherichia coli* in Cattle Manure after a Passive Treatment
- P81 Survival of *Escherichia coli* O157:H7 in Cow Manure-amended Soil
- P82 Seasonal Occurrence of *Campylobacter* in Dairy Cattle and Their Environment
- P83 Sampling of the Dairy Farm Environment for *Listeria monocytogenes*
- P84 Comparison of Multiplex, ELISA and 5' Nuclease PCR Assays for Detection of Plasmid-bearing Virulent *Yersinia enterocolitica* in Pig Feces

S09 Joint FAO/WHO Initiative on Microbial Risk Assessment

- ◆ Overview of the FAO/WHO Process
- ◆ Exposure Assessment of *Salmonella* spp. in Broilers
- ◆ Exposure Assessment of *Salmonella enteritidis* in Eggs
- ◆ Hazard Characterization of *Salmonella*
- ◆ Exposure Assessment of *Listeria monocytogenes* in Ready-to-eat Meat and Fish
- ◆ Exposure Assessment of *Listeria monocytogenes* in Dairy Products
- ◆ Hazard Characterization of *Listeria monocytogenes*

S10 Organic Foods: Unique Characteristics and Growth Potential

- ◆ The Unique Characteristics of Organic Production
- ◆ What Organic Means in the Produce Industry
- ◆ Organic Dairy Products, Production, and Quality Characteristics
- ◆ Chemical Safety Issues in Organic Production
- ◆ Microbiological Safety Issues in Organic Production
- ◆ International Organic Market: Standards and Potential

S11 Indicator Microorganisms – What do They Indicate, and is It of Any Use?

- ◆ Microbiological Food Safety Objectives in Risk-based Food Safety Programs
- ◆ Use of Indicator Organism Testing in the Food Industry: Rationale and Examples
- ◆ FDA and Indicator Organisms: Which, Where, and Why?
- ◆ The New Zealand National Microbiological Database HACCP Verification Program
- ◆ Is There a Relationship between Microbial and Non-microbial Indicators of Fecal Contamination and Fecal Bacteria?
- ◆ How Much is That Sample in the Window? Application of Value-of-information Techniques to Evaluate and Compare Sampling Strategies

S12 Ensuring the Quality and Safety of Extended Shelf-Life Milk Products

- ◆ The Essentials of Extended Shelf-Life (ESL) Processing
- ◆ Validation of Safety Control and Packaging Systems in ESL Processing
- ◆ Quality Assurance of ESL Products – From Plant to Consumer
- ◆ Regulatory Perspective of ESL Processing and Products
- ◆ Overview of NCFST's ESL Dairy Products Task Force
- ◆ International Perspective of ESL Processing and Products

T03 Microbiological Methods

- T25 An Improved Transport Medium for the Preservation and Recovery of *Listeria monocytogenes* in Plant Environmental Samples
- T26 Comparison of a New ELISA-based Method and a Molecular Method for the Detection of *Listeria monocytogenes* in Food
- T27 Evaluation of a Next-day PCR Method for Detection of *Listeria monocytogenes* in Foods
- T28 *Campylobacter* Detection in Food Using an ELISA-based Method
- T29 A Comparison of the Survival Rates of *Campylobacter jejuni* under Varying Organic Loads and Food Contact Surfaces
- T30 Comparison of Polymerase Chain Reaction Primer Sets Designed to Detect *Salmonella enterica*
- T31 Factors That Influence the Recovery of *Escherichia coli* O157:H7 after an Acid Shock
- T32 Development of a Digital Database of Lactic Acid Bacteria in Europe
- T33 The Risks of Using Data Loggers to Monitor Average Temperature Exposures
- T34 An Evaluation of Surface Hygiene Monitoring Techniques for Use in the Food Industry
- T35 Detection of Hepatitis A Virus in a Complex Food: Strawberry Frosting Mix
- T36 Development of PCR Primers for Detection of Proliferative Histamine Former, *Morganella morganii*

- P03 General Food Microbiology and Methods**
- P85 Antimicrobial Spectrum of Thymol, Eugenol, Potassium Sorbate and Sodium Benzoate at Selected pHs
- P86 Rope Spoilage in Bread and Its Control by Natural Antimicrobials
- P87 Antimycotic Activity of Vanillin in Combination with Selected Antimicrobial Agents
- P88 Reduction of Aflatoxins by Korean Soybean Paste and Its Effect on Cytotoxicity and Reproductive Toxicity: Antigenotoxic Effect of the Methanol Extract of Korean Soybean Paste on Aflatoxin B1-induced Bacterial Reverse Mutation and Chromosome Aberration
- P89 Performance of Mycological Media for Supporting Colony Formation by Desiccated Food Spoilage Yeasts: An Interlaboratory Study
- P90 SimPlate for Yeast and Mold – Color Indicator: A New Method for Rapid Enumeration of Fungi in Food
- P91 Detection of Antifungal Activity of *Lactobacillus rhamnosus* and *Bacillus pumilus* Using a Milk Agar Plate Assay
- P92 Reduction of Aflatoxins by Korean Soybean Paste and Its Effect on Cytotoxicity and Reproductive Toxicity: Inhibitory Effect of Korean Soybean Paste on the Aflatoxin Toxicity in Laying Hens
- P93 *Aspergillus flavus* Radial Growth Rate and Lag Time as Affected by Natural and Synthetic Antimicrobial Agent Concentrations
- P94 Hurdle Technology and *Aspergillus flavus* Time-to-growth
- P95 Survival and Growth of *Salmonella* in Reconstituted Infant Cereal Hydrated with Water, Milk or Apple Juice
- P96 Evaluation of Liquid Egg White Pasteurization Guidelines for *Salmonella*
- P97 New Easy-to-read, Quantitative Method for *Escherichia coli* Testing in Foods
- P98 Inhibitory Activity of *Bifidobacterium longum* HY8001 against Verocytotoxin of *Escherichia coli* O157:H7
- P99 Effect of Glucose Supplementation on Growth and Acid Tolerance of *Escherichia coli* O157:H7 in Pure and Mixed Cultures with a *Pseudomonas* spp. at 10°C
- P100 Influence of Process Parameters on the Lethality of *Escherichia coli* O157:H7 during Pulsed Electric Fields Processing
- P101 Detex for Detection of *Escherichia coli* O157 in Raw Ground Beef and Raw Ground Poultry
- P102 Resuscitation and Growth of Heat-and Freeze-injured *Escherichia coli* O157:H7 in Selective Enrichment Broths
- P103 Changes in Thermal Sensitivity Resulting from pH and Nutritional Shifts of Acid-adapted and Non-acid-adapted *Listeria monocytogenes* Scott A, a Serotype 4b Strain
- P104 Comparison of Predictive Models for a 4-log Thermal Reduction of *Listeria monocytogenes* when Growth Conditions Differed
- P105 Thermal Inactivation Studies of *Listeria monocytogenes* Strains Belonging to Three Distinct Genotypic Lineages
- P106 Cycloheximide Replacement in Campyline Agar for *Campylobacter* Enumeration
- P107 Detex for the Detection of *Campylobacter* in Raw and Cooked Poultry
- P108 Survival and Thermotolerance of *Campylobacter jejuni* in Liquid Foods: Effects of Temperature and Presence of *Escherichia coli* and *Pseudomonas fluorescens*
- P109 Effectiveness of Selected Chemical Sanitizers against *Campylobacter jejuni* – containing Biofilms
- P110 Heat Shock Enhances Acid Tolerance of *Shigella flexneri*
- P111 Effect of Organic Acids and Temperature on Survival of *Shigella flexneri* in Broth
- P112 Response of Food Spoilage *Bacillus* spp. to Three Acid-based Sanitizers
- P113 Presence of Toxigenic *Bacillus* in Cup Drinks from Automatic Vending Machines on Street
- P114 Monte Carlo Simulation of the Influence of Spore Inoculum Size on *Clostridium botulinum* Germination and Growth
- P115 Estimation of Bacterial Cell Counts in Foods Using Oxygen Electrode Sensor
- P116 Rapid Detection of *Listeria monocytogenes* without DNA Extraction from Foods Using Polymerase Chain Reaction

(Tuesday a.m. continued)

- P117 PCR Detection of *Listeria monocytogenes* on Hotdog Using Oligonucleotide Primers Targeting the Genes Encoding Internalin AB
- P118 Inactivation of Hepatitis A Virus by Dynamic High Pressure
- P119 Handwashing Practices in UK Nursing Homes
- P120 Assessment and Variability of Cleaning Practices of UK Consumers, Using Observation, ATP and Microbiological Assessment
- P121 Kansas Food*A*Syst: Self-assessment Tools for Determining Risks to Food Safety during Production and Home Preparation
- P122 Effect of Ozonated Water on the Assimilable Organic Carbon and Coliform Growth Response Values and on Pathogenic Bacteria Survival
- P123 Adaptive Acid Tolerance Response in *Vibrio parahaemolyticus* and *V. vulnificus*
- P124 Thermotolerance of Coagulase-negative *Staphylococci* and Their Potential Use as Indicators of Cheese Plant Sanitation
- P125 Protecting the US Food Supply in a Global Economy: An Expert Gap Analysis

TUESDAY AFTERNOON — AUGUST 7, 2001

1:30 p.m. – 5:00 p.m.

General Session — 1:30 p.m. – 3:30 p.m.

- S13 Irradiation Pasteurization: Realizing the Food Safety Potential**
- ◆ Foodborne Illness in the US
 - ◆ Food Irradiation – The Clear and Simple Facts
 - ◆ How Irradiation Pasteurization Increases Food Safety
 - ◆ Expanding Consumers Food Safety Choices – The Minnesota Experience
 - ◆ Putting Irradiated Food on Supermarket Shelves – Experiences of a Leader in the Retail Industry
 - ◆ Legal Issues with Foods in General and Irradiated Food Specifically

Business Meeting – 4:00 p.m. – 5:00 p.m.

WEDNESDAY MORNING — AUGUST 8, 2001

8:30 a.m. – 12:00 p.m.

S14 *Mycobacterium paratuberculosis* — Villain or Bystander?

(Sponsored by ILSI-NA)

- ◆ The Evidence for and against the Association of *Mycobacterium paratuberculosis* with Human Crohn's Disease
- ◆ The Etiology of Bovine *Paratuberculosis* and On-farm Management Strategies
- ◆ Ecological and Physical Characteristics of *Mycobacterium paratuberculosis*
- ◆ Methodology for Detecting *Mycobacterium paratuberculosis* in Food Products
- ◆ Detection of *Mycobacterium paratuberculosis* in UK Retail Milk: Analysis and Perspectives

S15 Zero Tolerance — Boon or Bust?

- ◆ An Overview of Zero Tolerance as a Regulatory Policy
- ◆ An Industry View of Zero Tolerance
- ◆ Applications and Problems Associated with Zero Tolerance for *Escherichia coli* O157:H7 in Beef Products
- ◆ Public Health and Regulatory Perspectives on Zero Tolerance
- ◆ A Canadian Perspective on Zero Tolerance
- ◆ An International Perspective on Zero Tolerance
- ◆ A Consumer Perspective on Benefits and Application

S16 Communicating Science Effectively

- ◆ Listening, the First Step in Effective Communication to the Public
- ◆ How to Communicate Food Science to Produce Grant Dollars
- ◆ The Role of the Trade Association in Effectively Communicating "Understandable" Science to Consumers
- ◆ Communicating with the Public: Making a Hard Sell a Success
- ◆ Communicating Hot Topics: Consumer and Producer Response to Genetically Engineered and Conventional Sweet Corn and Potatoes

S17 Educating Food Service Workers

- ◆ FDA Retail Food Program Database of Foodborne Illness Risk Factors (August 2000)
- ◆ Partnering in Action and the Development of a Multi-level Food Safety Education Program for the Retail Food Industry
- ◆ Using Social Marketing to Reach Your Targeted Audience
- ◆ Strategies to Train and Motivate the Teenage Worker
- ◆ Food Safety Education for English as a Secondary Language for Food Service Workers

T04 Produce Microbiology

- T37 Food Safety Begins on the Farm: A National Education and Extension Program for Growers and Packers
- T38 Efficacy of Disinfection Methods against Caliciviruses on Fresh Fruits, Vegetables and Food-contact Surfaces
- T39 Concentration and Detection of Viruses from Fresh Produce and Food-contact Surfaces
- T40 Inactivation of *Cryptosporidium parvum* in Apple Cider Using Ultraviolet Light
- T41 Effects of Hydrogen Peroxide on the Survival of *Cryptosporidium parvum* Oocysts in Unpasteurized Fruit Juices
- T42 Inactivation of *Escherichia coli* O157:H7 and *Salmonella* in Apple Cider and Orange Juice by Combination Treatments of Ozone and Chemical Preservatives
- T43 Hydrogen Peroxide and Organic Acids as Antimicrobials in Fruit Juices
- T44 Growth of *Listeria monocytogenes* and *Escherichia coli* O157:H7 is Enhanced in Ready-to-eat Lettuce Washed in Warm Water
- T45 Application of Vapor Heat to the Exocarp of Cantaloupe for the Reduction of *Salmonella* and *Escherichia coli* Prior to Minimal Processing
- T46 Effect of Hot Water and Heated Hydrogen Peroxide Treatments in Reducing Transfer of *Salmonella* and *Escherichia coli* from Cantaloupe Surfaces to Fresh-cut Tissues
- T47 Lethality of 5 MeV e-Beam to *Staphylococcus*, *Salmonella* and *Listeria* in Sliced Cantaloupe and Tomato
- T48 Isolation, Identification, and Selection of Lactic Acid Bacteria from Alfalfa Sprouts for Competitive Inhibition of Foodborne Pathogens

P04 Meat, Dairy, and General Food Microbiology

- P126 Dairy-associated *Bacillus cereus* Growing as a Biofilm Has a Distinct Proteome
- P127 Growth of *Bacillus cereus* and *Pseudomonas fluorescens* Binary Biofilms and Response to a Chlorine Dioxide-containing Sanitizer in a Model Flow System
- P128 Heat Inactivation of *Listeria* Biofilm
- P129 Microbial Growth in Transgenic Pork
- P130 Recovery of Injured *Yersinia enterocolitica* from Swine Production Sites
- P131 Microbiological and Sensory Quality of New York State Fluid Milk Products: 1990-1999
- P132 Survival of *Listeria monocytogenes* in Refrigerated, Nisin-treated, Skim, 2%, and Whole Milk during Storage at 5°C
- P133 Effect of Residual Sanitizers on Cultured Dairy Products
- P134 The Effect of Osmotic Stress Adaptation on Heat Resistance of *Listeria monocytogenes* Scott A in Pork Slurry
- P135 Inhibition of Pathogens on Process Cheese Slices at Abuse Temperature
- P136 Recovery of *Salmonella* from Dairy Cattle and Their Environment
- P137 *Escherichia coli* O157:H7 in Dairy Cows and Their Environment
- P138 GIS and Epidemiology of *Salmonella* on Dairy Farms
- P139 Assessment of *Salmonella*, *Listeria* and *Escherichia coli* O157 in Biosolids and Streams Associated with a Dairy Farm
- P140 Microbial Safety of Pasture Versus Free-range Chickens Using Organic and Traditional Feed
- P141 Survival of Fecal Indicator Bacteria in Bovine Manure Incorporated into Soil
- P142 A Rapid Method for the Detection of *Listeria* in the Dairy Factory Environment
- P143 Rapid Detection of Microorganisms in Dairy Products Using an Automated Optical System
- P144 Dead *Listeria monocytogenes* Cells are Detected in Cooked Meat and Smoked Fish with a Commercial PCR-based Kit
- P145 Assessment of Protein Fingerprinting Method for Species Verification of Meats
- P146 Validation of CCPs in HACCP Systems in Small Meat and Poultry Processing Plants in Nebraska

(Wednesday a.m. continued)

- P147 Determining Exposure Assessment and Modelling Risks Associated with the Preparation of Poultry Products in the Home in the UK
- P148 Validation of the Use of Antibiotic Resistant Strains of *Escherichia coli* O157:H7 and *Salmonella* spp. for Recovery of Injured Cells Subjected to Stress Conditions Encountered during Competitive Inhibition
- P149 Ochratoxin A Production by Black *Aspergillus* Species and Significance to the Food Industry
- P150 Evaluation of Electrochemiluminescent Assays for the Rapid Detection of Foodborne Pathogens on Environmental Surfaces

**POSTER SYMPOSIUM —
AUGUST 8, 2001**

S18 Detection and Control of Human Pathogens in Fresh Fruits and Vegetables

- ◆ Sampling and Detection of Bacterial Pathogens in Fresh Produce
- ◆ Potential Sources of *Escherichia coli* O157:H7 Contamination of Apples during Growth, Harvesting, Distribution, and Processing
- ◆ Microbial Safety of Sprouts
- ◆ Detection and Control of Parasites on Fresh Produce
- ◆ Human Pathogens on Produce: Attachment, Biofilms, and Ecology
- ◆ Methods in Decontaminating Fruits and Vegetables

WEDNESDAY AFTERNOON — AUGUST 8, 2001

1:30 p.m. – 5:00 p.m.

S19 HACCP: How to Evaluate Success

- ◆ USDA HACCP: How to Evaluate Success
- ◆ FDA Seafood and Juice HACCP: Microbial Testing and Other Tools to Measure Success
- ◆ CDC: Using Epidemiology to Evaluate HACCP
- ◆ Industry Perspective: Is HACCP Working for the Meat, Poultry, and Seafood Industries?
- ◆ Consumer Perspective: Is HACCP Improving Food Safety?

S20 ILSI North America — sponsored Research Updates

(Sponsored by ILSI-NA)

- ◆ Engineering Vegetative Buffer Strips for Removal of *Cryptosporidium parvum* from Runoff from Dairies and Grazed Agricultural Land
- ◆ Optimization of Conditions to Kill *Escherichia coli* O157:H7 in Manure
- ◆ Effect of Organic Acid Content of Silages on the Growth of *Escherichia coli* O157:H7 and *Salmonella* Typhimurium DT104 on Total Mixed Rations
- ◆ Molecular Tools for Identification of *Listeria monocytogenes* Serotype 4b Strains
- ◆ Effects of Environment and Management on Persistence of Antibiotic Resistance in Bacteria from Swine
- ◆ Factors Affecting Transfer of Genes Encoding Multiple Antibiotic Resistance to *Salmonella* Typhimurium DT104

S21 The Benefits of Better Government and Industry Relations in Assuring Food Safety

- ◆ Current State of Federal Government/ Industry Food Safety Relations: FSIS Perspective
- ◆ Current State of Federal Government/ Industry Food Safety Relations: FDA/ CFSAN Perspective
- ◆ Current State of Federal Government/ Industry Food Safety Relations: Industry Perspective
- ◆ Current State of Federal Government/ Industry Food Safety Relations: State Perspective
- ◆ Current State of Federal Government/ Industry Food Safety Relations: Food Service Perspective

T05 General Food Microbiology

- T49 Death Kinetics of *Listeria monocytogenes* in Margarine, Yellow Fat Spreads, and Toppings
- T50 Survey of Pasteurized Milk at Retail in the United States for *Listeria monocytogenes*

- T51 The Thermal Resistance of *Listeria monocytogenes* as Affected by the pH and Water Activity of the Heating Menstrum
- T52 Foodworkers as a Source for Salmonellosis
- T53 Yeast Inactivation Kinetics during Thermoultrasonication Treatments
- T54 The Biocidal Efficacy of High Retention Gel Oxidant Sanitizers on Vertical and Irregular Surfaces
- T55 Assessing and Reducing the Risk of Cross Contamination in Food Service
- T56 Exposure Assessment for Human Pathogens Transmitted by Poor Handling Practices of Ready-to-eat (RTE) Foods
- T57 Physicians' Attitudes toward Food Safety Education
- T58 Effect of Peroxy Acid Sanitizers against Bacteriophage Associated with Cultured Dairy Products
- T59 Molecular Epidemiology of Norwalk-like Virus Outbreaks in Minnesota
- T60 Technology Requirements and Technology Transfer in the Welsh Food Industry



August 5-8, 2001

Hilton Minneapolis Minneapolis, Minnesota

EVENT INFORMATION

Evening Events

Cheese and Wine Reception

Sunday, August 5, 2001 (8:00 p.m. - 10:00 p.m.)

Attendees and guests will experience Mid-western hospitality at this traditional Sunday evening reception in the exhibit hall.

Exhibit Hall Reception

Monday, August 6, 2001 (5:00 p.m. - 6:30 p.m.)

Network with fellow food safety professionals during this informal reception while seeing the latest developments in the industry.

Monday Night Social — Mississippi River Dinner Cruise

Monday, August 6, 2001 (6:00 p.m. - 10:00 p.m.)

The mighty Mississippi River is the reason Minneapolis and St. Paul exist today. Feel the history of the Mississippi River on this spectacular dinner cruise. You will quickly escape into an island of nature in the midst of this major metropolitan area with old St. Anthony, where Minneapolis began, on one side and the spectacular downtown skyline on the other. At your leisure you may dine, socialize with friends and colleagues, or walk around the riverboat and experience the view from the upper deck. The riverboat travels through the Upper St. Anthony Falls Lock, the northern most lock of 29 on the Mississippi River and the deepest — it descends 50 feet! You pass under both the historic James J. Hill Stone Arch Bridge and the new Hennepin Avenue suspension bridge. This will be a river experience you will long remember.

Chanhasen Dinner Theater

Tuesday, August 7, 2001 (5:30 p.m. - 11:00 p.m.)

Food and entertainment — what a perfect combination! The people at Chanhasen Dinner Theater know this and have been working hard since 1968 to perfect this concept. Quoted as “the Cadillac of Dinner Theaters,” it is the nation’s largest professional dinner theater complex. Your ticket includes roundtrip transportation, dinner, and theater ticket. At this time, the show cannot be confirmed (word is it might be “My Fair Lady”). Limited tickets are available.

Minnesota Twins Baseball Game

Tuesday, August 7, 2001 (6:00 p.m. - 10:00 p.m.)

Go Twins! Cheer on the Minnesota Twins as they take on the Cleveland Indians in the Hubert H. Humphrey Metrodome. The Metrodome was the third domed facility in baseball and remains the only air-supported structure of the 30 ballparks. Join your friends and colleagues for a night at the ballpark. Price includes transportation to and from the Metrodome and a reserved seat for the game.

Awards Banquet

Wednesday, August 8, 2001 (7:00 p.m. - 9:30 p.m.)

A special occasion to formally recognize the accomplishments of deserving food safety professionals. An elegant reception and dinner are followed by the awards ceremony. Business attire requested.

Daytime Tours

Lunch included in all daytime tours

Expanded descriptions available at www.foodprotection.org

Twin Cities Highlights Tour

Sunday, August 5, 2001 (9:30 a.m. - 2:30 p.m.)

The fantastic diversity of the Greater Twin Cities Metro Area often catches first-time visitors by surprise. This tour includes both downtowns of St. Paul and Minneapolis. While in Minneapolis

you will experience the famous Nicollet Mall, the skyway network of downtown Minneapolis and the Minneapolis Sculpture Garden. The journey will continue through the Kenwood residential area to see the television home of Mary Tyler Moore, around sparkling lakes and lagoons, and make a short stop at the legendary Minnehaha Falls. Then it is on past Fort Snelling and into St. Paul. A guide will provide commentary on many sites including the trip along stately Summit Avenue, showcasing the best-preserved Victorian mansions in the country. The final stop is at the Minnesota History Center. The Center showcases and preserves the state's historical resources. Lunch will be provided at the History Center. The tour concludes with a drive past the University of Minnesota and an excursion into the St. Anthony Falls area – the birthplace of Minneapolis.

Stillwater, Minnesota

Monday, August 6, 2001 (9:30 a.m. – 3:30 p.m.)

A trip to Stillwater is a trip to Minnesota's yesteryear. Located on the sparkling blue St. Croix River, Stillwater lays claim to being Minnesota's oldest town and the birthplace of the Minnesota Territory in 1849. The tour guide will provide a riding tour of this enchanting old river-town and takes you behind the scenes of history. Anecdotes and incidents from bygone years will illuminate the lives of immigrants and entrepreneurs as you view mansions built by wealthy lumber barons and beautiful old churches on the "Street of Spires." You will stop at the Warden's Home Museum, an 1853 home for 11 wardens who managed the first territorial prison in that part of the country. Next, enjoy a delicious lunch at the famed Lowell Inn. Since 1927 this famous "Mount Vernon of the Midwest" has been a hotel known to serve the very finest food. You will have time after lunch to explore the many boutiques, galleries and shops that line Stillwater's historic streets.

Mansions & Museums Tour

Tuesday, August 7, 2001 (9:30 a.m. – 3:30 p.m.)

The first stop of the day will be the James J. Hill House on Summit Avenue in St. Paul. James J. Hill, the "Empire Builder," purchased a bankrupt railroad in St. Paul in the late 1800s and masterminded its success by building the Great Northern Railway. Completed in 1891, the house has 36,000 square feet, including 32 rooms, 13 bathrooms, and 22 fireplaces. With its carved woodwork, stained glass, and skylit art gallery, it is one of the most impressive residences ever constructed in the Midwest. Next, you will stop at the Cathedral of St. Paul. Modeled after

St. Peter's in Rome, it is one of the largest church buildings in North America. Among its many points of interest are the six chapels called the Shrine of Nations in which stand statues of the patron saints carved out of marble. Following the stop at the Cathedral, you will have lunch at Forepaugh's Restaurant, an elegant Victorian mansion complete with a French chef and staff in period costumes. After lunch, your final stop is at the Minneapolis Institute of Arts. The permanent collection includes American, European, Asian, African, Oceanic ancient and Oriental objects. Masterpieces from every age and culture await your discovery.

Affiliate Reception

Affiliate Reception

Saturday, August 4, 2001 (5:30 p.m. – 7:00 p.m.)

Affiliate officers and delegates plan to arrive in time to participate in this educational reception. Watch your mail for additional details.

New Member Reception and Orientation

New Member Reception and Orientation

Saturday, August 4, 2001 (4:30 p.m. – 5:30 p.m.)

If you recently joined the Association or if this is your first time attending an IAFP Annual Meeting, welcome! Attend this informal reception to learn how to get the most out of attending the Meeting. Meet some of today's leaders and gain knowledge on how you too can become a leader in your Association.

Committee Meetings

Committee Meetings

Sunday, August 5, 2001 (7:00 a.m. – 5:00 p.m.)

Committees and Professional Development Groups (PDGs) plan, develop and institute many of the Association's projects, including workshops, publications, and educational sessions. Share your expertise by volunteering to serve on any number of committees or PDGs.

Student Luncheon

Student Luncheon

Sunday, August 5, 2001 (12:00 p.m. – 1:30 p.m.)

Attention students, are you a Member of the Student Professional Development Group (PDG)? Join by signing up for the student luncheon to help you start building your professional network. The mission of the Student PDG is to provide students of food safety with a platform to enrich their experience as Members of IAFP.



International Association for Food Protection®

88th Annual Meeting

6200 Aurora Avenue, Suite 200W
Des Moines, IA 50322-2863, USA
Phone: 800.369.6337 • 515.276.3344
Fax: 515.276.8655
E-mail: info@foodprotection.org
Web site: www.foodprotection.org



August 5-8, 2001
Minneapolis, Minnesota

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

Meeting Information

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

Registration includes:

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

4 Easy Ways to Register

To register, complete the Attendee Registration Form and submit it to the International Association for Food Protection by:



Phone: 800.369.6337; 515.276.3344



Fax: 515.276.8655



Mail: 6200 Aurora Avenue, Suite 200W,
Des Moines, IA 50322-2863



Web site: www.foodprotection.org

The early registration deadline is July 6, 2001. After July 6, 2001 late registration fees are in effect. Pick up registration materials on site at the Hilton Minneapolis.

Refund/Cancellation Policy

Registration fees, less a \$50 administration fee and any applicable bank charges, will be refunded for written cancellations received by July 13, 2001. No refunds will be made after July 13, 2001; however, the registration may be transferred to a colleague with written notification. Refunds will be processed after August 13, 2001. Additional tickets purchased are nonrefundable.

Exhibit Hours

Sunday, August 5, 2001 — 8:00 p.m. – 10:00 p.m.

Monday, August 6, 2001 — 9:30 a.m. – 1:30 p.m.
3:00 p.m. – 6:30 p.m.

Tuesday, August 7, 2001 — 9:30 a.m. – 1:30 p.m.

Hotel Information

For reservations, contact the hotel directly and identify yourself as an International Association for Food Protection Annual Meeting attendee to receive a special rate of \$129 per night, single or double. Make your reservations as soon as possible; this special rate is available only until July 6, 2001.

Hilton Minneapolis
1001 Marquette Avenue
Minneapolis, Minnesota 55403
612.376.1000
1.800.HILTONS

Evening Events

Sunday, August 5, 2001

Opening Session (7:00 p.m. – 8:00 p.m.)

Cheese and Wine Reception (8:00 p.m. – 10:00 p.m.)

Monday, August 6, 2001

Exhibit Hall Reception (5:00 p.m. – 6:30 p.m.)

Monday Night Social, **Mississippi Dinner Cruise**
(6:00 p.m. – 10:00 p.m.)

Tuesday, August 7, 2001

Chanhassen Dinner Theatre (5:30 p.m. – 11:00 p.m.)

Minnesota Twins Baseball Game (6:00 p.m. – 10:00 p.m.)

Wednesday, August 8, 2001

Awards Banquet (7:00 p.m. – 9:30 p.m.)

Daytime Tours

(Lunch included in all daytime tours)

Sunday, August 5, 2001

Twin Cities Highlights (9:30 a.m. – 2:30 p.m.)

Monday, August 6, 2001

Historic Stillwater (9:30 a.m. – 3:30 p.m.)

Tuesday, August 7, 2001

Mansions & Museums (9:30 a.m. – 3:30 p.m.)



**International Association for
Food Protection®**

6200 Aurora Avenue, Suite 200W
Des Moines, IA 50322-2863, USA
Phone: 800.369.6337 • 515.276.3344
Fax: 515.276.8655
E-mail: info@foodprotection.org
Web site: www.foodprotection.org



**Attendee
Registration
Form**

**August 5-8, 2001
Minneapolis, Minnesota**

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

Title _____ Employer _____

Mailing Address (Please specify: Home Work) _____

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

Telephone _____ Fax _____ E-mail _____

First time attending meeting _____ Member since: _____

Regarding the ADA, please attach a brief description of special requirements you may have.

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

PAYMENT MUST BE RECEIVED BY JULY 6, 2001 TO AVOID LATE REGISTRATION FEES

REGISTRATION FEES:	MEMBERS	NONMEMBERS	TOTAL
Registration (Awards Banquet included)	\$ 275 (\$325 late)	\$415 (\$465 late)	_____
Association Student Member*	\$ 45 (\$ 55 late)	Not Available	_____
Retired Association Member*	\$ 45 (\$ 55 late)	Not Available	_____
One Day Registration: <input type="checkbox"/> Mon. <input type="checkbox"/> Tues. <input type="checkbox"/> Wed.	\$ 155 (\$180 late)	\$210 (\$235 late)	_____
Spouse/Companion* (Name): _____	\$ 45 (\$ 45 late)	\$ 45 (\$ 45 late)	_____
Children 15 & Over* (Names): _____	\$ 25 (\$ 25 late)	\$ 25 (\$ 25 late)	_____
Children 14 & Under* (Names): _____	FREE	FREE	_____
*Awards Banquet not included			
EVENTS:		# OF TICKETS	
Student Luncheon (Sunday, 8/5)	\$ 5 (\$ 10 late)	_____	_____
Monday Night Social, Mississippi Dinner Cruise (Monday, 8/6)	\$ 39 (\$ 44 late)	_____	_____
Children 14 and under	\$ 34 (\$ 39 late)	_____	_____
Chanhassen Dinner Theatre (Tuesday, 8/7)	\$ 75 (\$ 80 late)	_____	_____
Minnesota Twins Baseball Game (Tuesday, 8/7)	\$ 21 (\$ 26 late)	_____	_____
Awards Banquet (Wednesday, 8/8)	\$ 45 (\$ 50 late)	_____	_____
DAYTIME TOURS:			
(Lunch included in all daytime tours)			
Twin Cities Highlights (Sunday, 8/5)	\$ 40 (\$ 45 late)	_____	_____
Historic Stillwater (Monday, 8/6)	\$ 47 (\$ 52 late)	_____	_____
Mansions & Museums (Tuesday, 8/7)	\$ 49 (\$ 54 late)	_____	_____

Payment Options:

Check Enclosed

Name on Card _____

Signature _____

TOTAL AMOUNT ENCLOSED \$ _____

US FUNDS on US BANK

JOIN TODAY AND SAVE!!!

(Attach a completed Membership application)
(See page 356 of this issue
for a membership application)

Expiration Date _____

EXHIBITORS DO NOT USE THIS FORM



Hilton Minneapolis
 Minneapolis, Minnesota



WORKSHOPS

Workshop I Critical Steps in Laboratory Methods for the Detection of *Listeria monocytogenes*

This workshop offers information on the potential pitfalls or errors associated with the detection of *Listeria monocytogenes* in foods. The methods examined will include cultural (FDA/USDA), Immunological, Nucleic Acid, Subtyping, and Pulse Field Electrophoresis. Participants will be introduced to the limitations of each method, and possible modifications to insure the accuracy and effectiveness of your analysis. The workshop includes a laboratory section at the University of Minnesota allowing participants to view many of the common mistakes associated with *Listeria* analysis. Participants will also join in a round table discussion to share problems and ideas.

Workshop Topics

- Development and Validation of Methodologies for the Detection of *L. monocytogenes*
- Critical Steps in the Detection of *L. monocytogenes* Using Immunological Methods
- Critical Steps in the Detection of *L. monocytogenes* Using Nucleic Acid Methods
- Critical Steps in the Detection of *L. monocytogenes* Using RAPD and PFE
- Critical Steps in the Detection of *L. monocytogenes* Using Cultural Methods
- The Regulatory Perspective on *Listeria monocytogenes* Testing

Instructors

- James R. Agin**, Ohio Department of Agriculture, Reynoldsburg, OH
- Jeffrey M. Farber**, Health Canada, Ottawa, Ontario, Canada
- Judy Fraser-Heaps**, Pillsbury Company, Apple Valley, MN
- Anthony D. Hitchins**, FDA, Washington, D.C.
- Timothy C. Jackson**, Nestlé USA, Dublin, OH
- Melissa C. Newman**, University of Kentucky, Lexington, KY
- W. Payton Pruett**, ConAgra Refrigerated Prepared Foods, Downers Grove, IL

Who Should Attend?

Individuals working in food microbiology laboratories currently performing or planning to perform *Listeria* analysis.

Hours for Workshop

Friday August 3, 2001	Saturday August 4, 2001
Registration — 7:30 a.m. Continental Breakfast	7:30 a.m. Continental Breakfast
Workshop — 8:00 a.m. - 5:00 p.m. (Lunch Provided)	Workshop — 8:00 a.m. - 4:00 p.m. (Lunch Provided)

Workshop II Applying Advanced Techniques to HACCP Systems

(Co-sponsored by the US Poultry and Egg Association)

The purpose of this workshop is to provide an overview of business tools that can be applied to HACCP systems for process evaluation and improvement. This is not an introductory HACCP course. Rather, attendees will be expected to have a basic understanding of HACCP, and should have experience in working with an implemented HACCP system. A further processed poultry model serves as a focal point upon which other workshop topics are presented and discussed.

Workshop Topics

- The Process Model – Further Processed Poultry
- Data Collection, Interpretation, and Response
- Auditing
- Recall Management

Instructors

S. F. Bilgili, Auburn University, Auburn, AL
Don Conner, Auburn University, Auburn, AL
Steve Knight, US Poultry & Egg Association, Tucker, GA

Who Should Attend?

HACCP, quality, production, and management personnel of food processing plants using HACCP in their facilities. In particular, meat and poultry processors operating under mandatory HACCP, however, the principles and applications presented in this workshop are applicable to all segments of the food industry.

Hours for Workshop

Friday August 3, 2001	Saturday August 4, 2001
Registration – 7:30 a.m. Continental Breakfast	7:30 a.m. Continental Breakfast
Workshop – 8:00 a.m. – 5:00 p.m. (Lunch Provided)	Workshop – 8:00 a.m. – 4:00 p.m. (Lunch Provided)

Workshop III Crisis! Recall Management in the Food Industry

The legal aspects of dealing with crisis will be discussed as well as how to assess your risk and exposure before a crisis occurs. The nuts and bolts of dealing with crisis will be reviewed as well as a comprehensive discussion of how to deal with all aspects of the media.

Workshop Topics

- Legal Ramifications of a Food Recall
- How to Prevent a Crisis
- The Anatomy and Physiology of a Crisis
- Media/Interview in Times of Crisis
- Establishment of a Crisis Team and Plan

Instructors

William Marler, Marler Clark Attorneys at Law, Seattle, WA

Gale Prince, The Kroger Co., Cincinnati, OH

Larry L. Smith, Institute of Crisis Management, Louisville, KY

Jim Spata, New-Tech Consulting, Cincinnati, OH

Robert Strong, DiverseyLever Consulting, Liberty Town, OH

Who Should Attend?

Management personnel responsible for writing or implementing a crisis management plan.

Hours for Workshop

Saturday August 4, 2001
Registration – 7:30 a.m. Continental Breakfast
Workshop – 8:00 a.m. – 5:00 p.m. (Lunch Provided)

Annual Meeting Workshops

● Registration Form ●



Hilton Minneapolis Minneapolis, Minnesota

Friday-Saturday, August 3-4, 2001

- Workshop I:** Critical Steps in Laboratory Methods for the Detection of *Listeria monocytogenes*
- Workshop II:** Applying Advanced Techniques to HACCP Systems
- Saturday, August 4, 2001**
- Workshop III:** Crisis! Recall Management in the Food Industry

First Name (will appear on badge)	Last Name	
Company	Job Title	
Address	City	
State/Province	Country	Postal Code/Zip + 4
Area Code & Telephone	Fax	
E-mail	Member #	

Check Enclosed

Total Amount Enclosed
(US Funds on US Bank) \$ _____

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Signature _____ Expiration date _____

For further information, please contact the Association office at 800.369.6337; 515.276.3344; Fax: 515.276.8655;
E-mail: jcattanach@foodprotection.org.

Register by July 13, 2001 to avoid late registration fees

● Registration ●

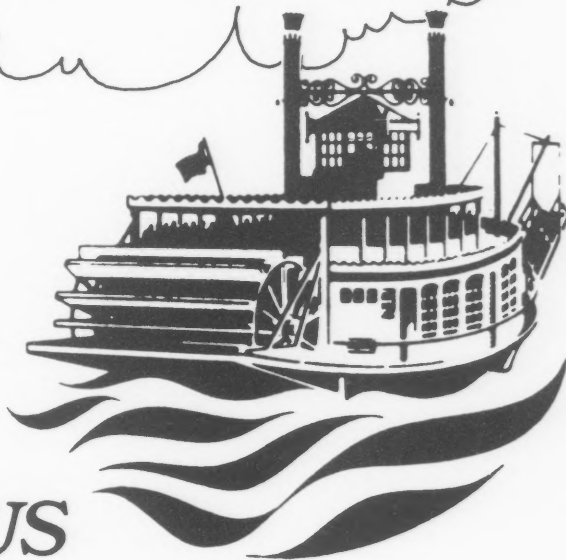
WORKSHOP I: Critical Steps in Laboratory Methods for the Detection of <i>Listeria monocytogenes</i>			WORKSHOP II: Applying Advanced Techniques to HACCP Systems	
	Early Rate	Late Rate	Early Rate	Late Rate
IAFP Member	\$475	\$550	\$450	\$525
NonMember	\$575	\$650	\$550	\$625
WORKSHOP III: Crisis! Recall Management in the Food Industry			Early Rate	Late Rate
IAFP Member	\$285	\$360	\$385	\$460
NonMember	\$385	\$460		

GROUP DISCOUNT:
Register 3 or more people from your company and receive a 15% discount. Registrations must be received as a group.

Refund/Cancellation Policy

Registration fees, less a \$50 administrative charge, will be refunded for written cancellations received by July 20, 2001. No refunds will be made after that date; however, the registration may be transferred to a colleague with written notification. Refunds will be processed after August 13, 2001. The workshop may be cancelled if sufficient enrollment is not received by July 13, 2001.

**IAFP 2001
Monday Night Social —
Mississippi River Dinner Cruise**



JOIN US

ABOARD THE STERNWHEELER

ANSON NORTHRUP
AND
BETSEY NORTHRUP

Monday, August 6, 2001

6:00 p.m. – 10:00 p.m.

See page 338 in this issue of *DFES* for additional information.



CONTRIBUTE to the Fourth Annual Foundation Fund Silent Auction Today!

The Foundation of the International Association for Food Protection will hold its Annual Silent Auction during IAFP 2001, the Association's 88th Annual Meeting in Minneapolis, Minnesota August 5-8, 2001. The Foundation Fund supports the:

- ◆ Ivan Parkin Lecture
- ◆ Travel support for exceptional speakers at the Annual Meeting
- ◆ Audiovisual Library
- ◆ Developing Scientist Competition
- ◆ Shipment of volumes of surplus *JFP* and *DFES* journals to developing countries through FAO in Rome

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

- ◆ Food Safety Videos
- ◆ California Salted Pistachios
- ◆ Pearl Necklace
- ◆ Missouri Country Sugar Cured Ham
- ◆ New Jersey Devils Hockey Jersey
- ◆ Waterford Crystal Vase
- ◆ IAFP Polo Shirts
- ◆ Wine

Complete the form and send it in today. Notification of donated items must be received by June 15, 2001 to be listed in the Program and Abstract Book.



Description of auction items _____

Estimated Value _____

Name of Donor _____

Company (if relevant) _____

Mailing Address _____

(Please specify: Home Work)

City _____ State or Province _____

Postal Code/Zip + 4 _____ Country _____

Telephone # _____ Fax # _____

E-mail _____

Return to:

Donna Gronstal
International Association for Food Protection
6200 Aurora Avenue, Suite 200W
Des Moines, IA 50322-2863, USA
Fax: 515.276.8655
E-mail: dgronstal@foodprotection.org



SPONSORSHIPS

We invite you to participate as a sponsor for IAFP 2001. Sponsorship participation provides an excellent opportunity to position your company or organization as a supporter of the Association.

Several exciting opportunities are available this year. Please review the event listing to select the one that will best position your organization. Reservations will be considered in order received for any open sponsorship events.



Sponsorship Event List

<u>Full Support</u>	<u>Partial Support</u>	<u>Event</u>
\$16,000	\$5,000 - \$9,000	Monday Evening Social
\$13,000	\$5,000 - \$7,000	Opening Reception Wine (Sunday)
\$13,000	\$5,000 - \$6,000	Exhibit Hall Reception (Monday)
\$7,500	\$3,500 - \$4,000	Leather Badge Holders w/Lanyards
\$3,000	\$1,000 - \$2,000	Exhibit Hall Pastries and Coffee (Monday Morning)
\$2,500	\$1,250 - \$1,500	Exhibit Hall Coffee Break (Monday Afternoon)
\$3,000	\$1,000 - \$2,000	Exhibit Hall Pastries and Coffee (Tuesday Morning)
\$2,500	\$1,250 - \$1,500	Coffee Break (Tuesday Afternoon)
\$3,000	\$1,000 - \$1,500	Coffee Break (Wednesday)
\$3,000	\$1,000 - \$1,500	IAFP New Member Orientation (Saturday)
\$3,500	\$1,500 - \$2,500	Spouse/Companion Hospitality Room
\$2,000	\$750 - \$1,000	Exhibitor Move-in Refreshments (Sunday)
\$2,000	\$750 - \$1,000	Student PDG Luncheon (Sunday)
\$1,750	\$500 - \$800	Awards Banquet Flowers (Wednesday)
\$1,500	\$500 - \$800	Committee Day Refreshments (Sunday)
\$1,000	\$400 - \$750	Speaker Travel Support

SPONSORSHIP PARTICIPANT

Name _____

Company _____

Address _____

City _____ State or Province _____

Country _____ Postal Code/Zip + 4 _____

Phone _____ Fax _____

E-mail _____

Desired Event to Sponsor _____



Contact:

David Larson

Phone: 515.987.1359

Fax: 515.987.2003

E-mail: larson6@earthlink.net



Coming Events

MAY

• **3-4 Conference: Trust, the Key to Successfully Resolving Consumer Complaints**, Radisson Hotel La Jolla, La Jolla, CA. Sponsored by the Food Processors Institute (FPI). Call NFPA/FPI Customer Service at 800.355.0983; fax: 202.639.5932; E-mail: fpi@nfpa-food.org.

• **7-10, IAFIS CIP/COP/SIP Workshop**, Michigan State University, East Lansing, MI. To register, call Alexis de la Rosa at 703.761.2600; E-mail: adclarosa@iafis.org, or visit the IAFIS Web site for online registration at www.iafis.org.

• **8-9, NFPA Workshop – Minimizing Unsaleables through Damage Control of Products in Distribution**, NFPA Headquarters, Washington, D.C. For additional information, contact Sandra Carvajal at 202.639.5910.

• **8-9, Food Plant Sanitation Workshop**, Seattle, WA. For additional information, contact AIB International, at phone: 785.537.4750; fax: 785.537.1493.

• **14-16, Practical HACCP for Food Processors**, Oak Brook, IL. Designed for food processors of all types. For additional information, contact Silliker Laboratories Group, Inc., at 800.829.7879 or fax 708.957.8405.

• **15-16, Pennsylvania Association of Milk, Food and Environmental Sanitarians Annual Conference**, Nittany Lion Inn, University Park, PA. For further information, contact Gene Frey at 717.397.0719.

• **15-16, Workshop: Irradiation, a Significant Food Safety Tool**, NFPA Conference Center, Washington, D.C. Sponsored by the Food Processors Institute (FPI). Call NFPA/FPI Customer Service at 800.355.0983; fax: 202.639.5932; E-mail: fpi@nfpa-food.org.

• **15-17, Penn State Food Microbiology Short Course, Detection and Control of Foodborne Pathogens**, University Park,

PA. For more information, contact Dr. Hassan Gourama at 610.396.6121; E-mail: hxg7@psu.edu or Dr. Catherine Cutter at 814.865.8862; E-mail: cnc3@psu.edu.

• **23-25, International Fresh-cut Produce Association HACCP Course**, Steinbeck Center, Salinas, CA. For additional information call 703.299.6282.

• **28-29, HACCP I: Documenting Your HACCP Prerequisite Program**, Guelph Food Technology Centre, Guelph, Ontario, Canada. For more information, phone 519.821.1246; fax: 519.836.1281; E-mail: gftc@uoguelph.ca.

• **28-31, Public Health in the 21st Century**, Marriott Wardman Park Hotel, Washington, D.C. Sponsored by the Commissioned Officers Association of the US Public Health Service and the IHS Clinical Support Center. For more information, contact Laurie Johnson at 252.726.9202; E-mail: lauriej@ec.rr.com.

JUNE

• **5-6, Associated Illinois Milk, Food and Environmental Sanitarians Dairy Plant Workshop**, Holiday Inn, Rockford, IL. For further information, contact Pat Callahan at 217.854.2547.

• **5-6, Texas Association for Food Protection Annual Meeting**, Holiday Inn South, Austin, TX. For further information, contact Ron Richter at 979.845.4409.

• **7-8, HACCP Workshop**, Minneapolis, MN. For additional information, contact AIB International, at phone: 785.537.4750; fax: 785.537.1493.

• **10-14, Values in Decisions on Risk Symposium**, held in Stockholm. The symposium will address the role of experts, media and regulators in complex decisions. For further information, contact Kjell Andersson, phone: 46.8.510.14755;

fax: 46.8.510.14756; E-mail: kjell.andersson@karinta-konsult.se.

• **13-15, Expo Dairy Show, Lacteo's 2001**, Expo Guadalajara, Guadalajara, Mexico. For further information, phone 564.70.40/564.70.68; fax: 52.5.564.03.29; E-mail: gefemani@iwm.com.mx.

• **13-15, NIZO Dairy Conference on Food Microbes 2001**, Ede, The Netherlands. For more information, contact Jane Macmillan at 44.1865.245685.

• **20-22, South Dakota Environmental Health Association Annual Meeting**, Ramkota River Centre, Pierre, SD. For further information, contact Gary Van Voorst at 605.367.8787.

• **23-27, Institute of Food Technologists Annual Meeting**, Ernest N. Morial Convention Center, New Orleans, LA. For more information, contact James N. Klaphor at 312.782.8424 ext. 231; E-mail: jnklaphor@ift.org.

JULY

• **6-13, International Workshop and Mini-Symposium on Rapid Methods and Automation in Microbiology XXI**, Kansas State University, Manhattan, KS. For further information, contact Daniel Y. C. Fung at 785.532.5654; Fax: 785.532.5681; E-mail: dfung@oznet.ksu.net.

• **15-18, 38th Annual Florida Pesticide Residue Workshop**, St. Pete Beach, FL. For additional information, contact Dr. Joanne Brown, at 850.488.0670; fax: 850.488.4226; E-mail: flprw@doacs.state.fl.us.

• **18-20, 4th Annual Foodborne Pathogen Analysis Conference**, St. Pete Beach, FL. For additional information, contact Dr. Joanne Brown, at 850.488.0670; fax: 850.488.4226; E-mail: flprw@doacs.state.fl.us.

AUGUST

• 3-4, **IAFP Workshops**, Minneapolis, MN.

- Workshop I "Critical Steps in Laboratory Methods for the Detection of *Listeria monocytogenes*."
- Workshop II "Applying Advanced Techniques to HACCP Systems."
- Workshop III "Crisis! Recall Management in the Food Industry."

Additional workshop information available in this issue of *DFES* on page 342.

• 5-8, **IAFP 2001, the Association's 88th Annual Meeting**, Minneapolis, MN. Registration materials available in this issue of *DFES* on page 341 or contact Julie Cattanaach at 800.369.6337; 515.276.3344; fax: 515.276.8655; E-mail: jcattanaach@foodprotection.org.

Visit our Web site at www.foodprotection.org for the most current Annual Meeting information.

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• 18-20, **New York State Association of Milk and Food Sanitarians Annual Meeting**, Holiday Inn, Syracuse/Liverpool. For additional information, contact Janene Lucia at 607.255.2892.

• 24-25, **Associated Illinois Milk, Food and Environmental Sanitarians Annual Meeting**, Stoney Creek Inn, East Peoria, IL. For further information, contact Pat Callahan at 217.854.2547.

• 24-26, **Indiana Environmental Health Association, Inc., Fall Conference**, Holiday Inn, Columbus, IN. For further information, contact Helene Uhlman at 219.853.6358.

• 25-26, **Wisconsin Milk and Food Sanitarians Association 2001 Joint Conference**, Chula Vista Resort and Conference Center, Wisconsin Dells, WI. For further information, contact Kathy Glass at 608.263.6935.

• 25, **Washington Association for Food Protection Annual Conference**, Campbell's Lake Chelan Resort and Conference Center, Chelan, WA. For further information, contact Bill Brewer at 206.363.5411.



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ISSN: 0362-028X
Official Publication



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Vol. 64

April 2001

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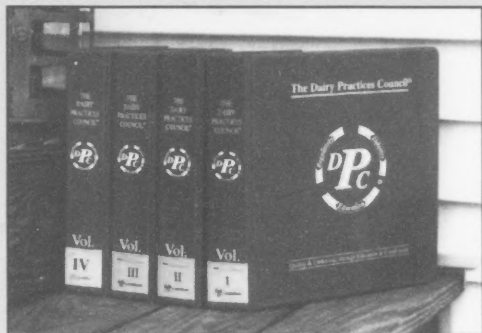
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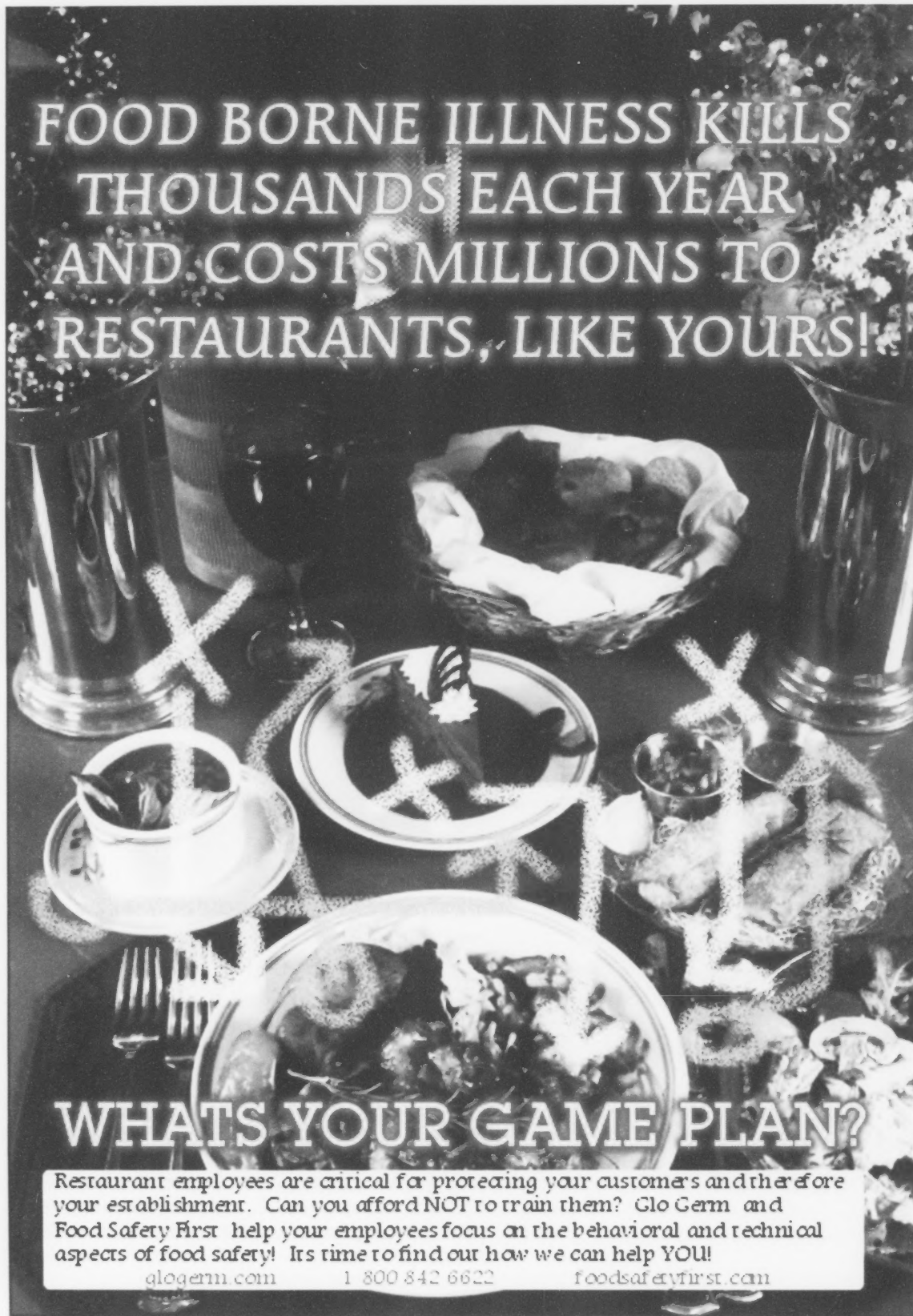
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