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ABOUT THE COVER.

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VOLUME 27, NO. 2

ARTICLES

84 Food-handling Practices and Operators' Food Safety Attitudes at Faith-based Louisiana Organizations That Provided Hurricane Evacuee Shelters in 2005

Junebee Kwon, Dojin Ryu, and Lisa K. Zottarelli

90 Food Safety Knowledge and Behaviors of Cooks in Texas Childcare Centers Deanna M. Staskel, Margaret E. Briley, and Suzanne R. Curtis

ASSOCIATION NEWS

- 77 Sustaining Members
- 80 Point of View from Your President
- 82 Commentary from the Executive Director
- 125 New Members

DEPARTMENTS

- 126 Updates
- 128 News
- 132 Industry Products
- 144 Coming Events
- 146 Advertising Index

EXTRAS

- 96 Abstracts IAFP's Second European Symposium on Food Safety
- 104 2007–2008 Secretary Election
- 106 Call for Award Nominations
- 109 Audiovisual Library
- 124 Audiovisual Library Order Form
- **IAFP 2007**
 - 137 Networking Opportunities
 - 138 Event Information
 - 141 Registration Form
- 148 Journal of Food Protection Table of Contents
- 151 Booklet Order Form
- 152 Membership Application

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"POINT OF VIEW" FROM YOUR PRESIDENT

f someone were to ask you if you are committed to continual learning, what would your answer be? I suspect that many would quickly answer yes. But upon a critical and candid self-examination, would you really pass the test?

When it comes to food safety, staying focused on the traditional basics – such as time/temperature controls for safety, sanitation principles, and personal hygiene – are absolutely critical. But if you consider some of the more recent food safety concerns of our day – such as food defense, mad cow disease, and produce safety – you'll see why it's important to stay informed and continue to learn.

Sure, I know you can't become an expert in all specialized areas of food safety. However, I do believe that having a grasp of the relevant food safety issues of our day is important and it makes you a better overall food safety professional.

Let me summarize four points which I believe are essential in order to be a continual learner in food safety.

> 1. To be a continual learner, you have to work hard at it. Let's face it, we live in a fastpaced, action-oriented world and because we are focused on getting things done, many of us do not make the time to learn something new and stay informed. In fact, it's not uncommon for some to subscribe to scientific journals and not make the time to read them. We're so focused on getting things done that we



By FRANK YIANNAS PRESIDENT

"To be a continual learner, you have to work hard at it"

> keep "to do" lists. However, do you keep a similar list of things you want to learn? Learning something new requires effort and it begins with setting specific learning objectives. Do you have any new food safety learning goals established for 2007?

 To be a continual learner, you have to be open-minded and, at times, be willing to unlearn what you already know. In this era of rapid change, new scientific facts are being discovered at an

unprecedented rate. As a food safety professional, are you hanging onto old principles that have been disproved by the latest science? For example, for much of my career, I would read articles and hear other professionals state that the number one contributing factor of foodborne disease in foodservice establishments was the improper cooling of foods. In fact, I occasionally still hear this claim made today. However, with better epidemiology and more detailed foodborne outbreak data collection, we now know that this statement is no longer true (at least not in the United States). I came across a quote by Dee Hock that summarizes this point quite well. He said,"The problem is never how to get new, innovative thoughts into your mind, but how to get old ones out. Every mind is a room packed with archaic furniture. You must get the old furniture of what you know, think, and believe out before anything new can get in."

3. To be a continual learner, you have to be willing to change. Simply put, continual learning is about continual change. Sometimes, it requires change from within. If asked, how have you or your team changed for the better within the past year in regards to food safety performance, do you have one or two examples that quickly come to mind? If you don't, then you are not making progress. Progress is impossible without change.

4. To be a continual learner, you have to take action. If you are learning new food safety facts simply because you find it to be intellectually satisfying, then may I suggest that you really don't understand what learning is all about? All learning should be about action. Now, I know some might think that their area of focus or research is not really actionable, because it's not an applied science. Let me remind you of wise words from Louis Pasteur who said, "There are no such things as applied sciences, only applications of science." Continual learners don't let their learning lead to knowledge; they let their learning lead to action.

If you are truly committed to continual learning in the area of food

safety, I encourage you to start making plans now to attend the IAFP 2007 Annual Meeting at Disney's Contemporary Resort in Lake Buena Vista, Florida on July 8–11. You'll be joined by colleagues and friends from all over the world. Together, we'll learn from one another as we work to advance food safety worldwide.

As usual, if you have any questions, comments, or suggestions, please let me know. You can E-mail me at frank.yiannas@disney.com. Until next month, thanks for reading.

IS YOUR PROGRAM CRUMBINE MATERIAL? PUT IT TO THE TEST!

The Samuel J. Crumbine Consumer Protection Award for Excellence in Food Protection at the Local Level is seeking submissions for its 2007 program. The Crumbine Award is given for excellence and continual improvement in a comprehensive program of food protection at the local level. Achievement is measured by:

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For more information on the Crumbine Award program, and to download the 2007 criteria and previous winning entries, please go to www.fpi.org or call the Foodservice & Packaging Institute at (703) 538-2800. **Deadline for entries is March 15, 2007.**



"COMMENTARY" FROM THE EXECUTIVE DIRECTOR"

n this month's issue of Food Protection Trends, our Secretary candidates are announced on page 104. Lee-Ann Jaykus and John Sofos have agreed to stand for election and whoever receives the highest number of votes in the election will be the 2007–2008 IAFP Secretary. This month, I wanted to talk about commitment and dedication to IAFP.

Each year, the Nominating Committee devotes numerous hours of their time to reviewing potential candidates for the position of Secretary. They look at various elements including direct involvement in IAFP activities (Annual Meeting attendance, Committee and PDG work, symposia and poster presentations, workshop presentations or development, and similar activities). They look at potential candidate's interaction with other Members along with their leadership style. Each of these components becomes an important factor in determining the Committee's top selections for potential candidates.

Once the Committee identifies the top candidates, then the potential candidate must be invited to stand for election. IAFP has been very fortunate over the years to be able to attract top candidates to stand for election as Secretary for the Association. This year is no exception to our history! By committing to stand for election, candidates have agreed that they are willing to serve the Association for five-year periods of time as they ascend to President, then serve a final year on the Executive Board as Past President.

On the surface, five years sounds like a long-term commit-



By DAVID W. THARP, CAE

"This month, I wanted to talk about commitment and dedication to IAFP"

ment and it is a significant period of time. But when a Board Member reaches the end of his or her term, the typical remark heard is "I can't believe it is time for my term on the IAFP Board to end!" Certainly, we attempt to keep our past Board Members active within IAFP and most continue to communicate and provide input and guidance for the Association.

So both Lee-Ann and John have agreed to place themselves up for election to the position of Secretary, knowing that they could be making a five-year commitment to Board meetings, E-mail communications and an occasional teleconference. Knowing how busy they both are, this is a real complement to IAFP; that they are willing to devote their time in this way.

We thank Lee-Ann and John for their willingness to run for election and we encourage you to place your vote for the candidate of your choice. Watch your mail for your ballot, review the candidate bios, then record your vote and return your ballot to the IAFP office. Ballots are due back to the IAFP office for receipt not later than Friday, March 16.

Another sign of dedication to IAFP is shown through IAFP's Awards. Our Awards recognize Members' outstanding service to IAFP and the food safety profession. There are a number of Awards available to recognize those individual Members who show their active dedication to IAFP on a continuing basis. A list of Awards is shown on page 107 of this issue. Nominating criteria are available on the IAFP Web site, linked from the Annual Meeting page.

You may show your dedication to IAFP by recognizing a fellow Member through nominating them for an Award. Award nominations must be received in the IAFP office by Monday, March 12. We encourage you to prepare a nomination for a deserving colleague!

Many IAFP Members serve on Committees and PDGs each year and numerous have served in this way for a lot of years. This is another way you can show commitment to IAFP, by actively participating on a Committee or PDG. Through active participation, you will meet colleagues with similar interests, gain life-long resources for information, and continue learning new and exciting processes or procedures that can assist your career in food safety.

Now, back to where we started, with the Secretary candidates.

When you review their biographical information, you will see how committed and dedicated that both Lee-Ann and John are to IAFP. You can easily see their life-long commitment to food safety and to IAFP. They have both been involved from early in their careers, right up to the current moment. And whoever is not elected this year, we can be certain they will continue to be actively involved with IAFP. We only wish we could have both Lee-Ann and John elected to the IAFP Board!

Student Travel Scholarship Program

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Five Student Travel Scholarships will provide travel funds to enable selected students to travel to IAFP 2007 in Lake Buena Vista, FL.

Full details of the scholarship program are available on the IAFP Web site at www.foodprotection.org.

Application deadline is March 12, 2007.

ARTICLES

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Food Protection

Food-handling Practices and Operators' Food Safety Attitudes at Faith-based Louisiana Organizations That Provided Hurricane Evacuee Shelters in 2005

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SUMMARY

In 2005, the United States experienced two major hurricanes that forced evacuation of many people. Along with government and disaster-relief organizations, faith-based organizations, where non-professionals prepared food, provided food and shelter for evacuees. To assess food-handling practices and operators' attitudes toward food safety at evacuation shelters operated by faith-based organizations, a sample of 166 such organizations that provided food and shelter for \geq 20 evacuees was selected and contacted by telephone. Of the 61 that responded, many accepted food donations that included potentially hazardous prepared food items. Ten facilities reported a lack of refrigerator and/or freezer space, and 21 did not have hot-holding equipment. Twenty-two facilities did not offer food safety training, and only one offered extensive food safety training. Many used short verbal instruction (n=15), written materials (n=9), and local health inspector's instructions (n=15) for training. The majority did not perceive increased risk of illnesses because of well-maintained facilities (n=23), medical staff (n=7), and proper food preparation (n=6). Only a few identified the increased risk due to crowded living conditions and exposure to infectious diseases. The majority were willing to provide evacuation shelters in the future, and developing and implementing a food safety education program targeting these organizations may be needed to ensure food safety.

A peer-reviewed article

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INTRODUCTION

In August and September 2005, the United States (US) experienced two major hurricanes, Katrina and Rita. As of September 20, 2005, hurricane Katrina alone had resulted in 89.400 evacuees in affected states. 1.2 million registrations for individual assistance, and the distribution of 63.1 million liters of water and 26.8 million ready-to-eat meals (5). These numbers continued to grow, and as of June 19, 2006, Federal Emergency Management Agency (FEMA) alone disbursed \$5.9 billion in federal aid to more than 1.7 million registered households (2). These figures did not include other private contributions from faith-based organizations or agencies such as Salvation Army, which provided assistance to over 1.7 million people as of June 2, 2006 with food, drinks and other services (9).

At the forefront of the effort to respond to the needs of evacuees from affected areas, faith-based organizations were involved actively alongside government and other relief organizations (4). Many individual eitizens contributed time, donated food and other goods, and provided financial support. In Houston, Texas alone, there were more than 400 faithbased organizations contributed to the relief efforts, and the health and safety of both volunteers and evacuees became a concern (10).

There have been concerns regarding food safety in the US for the last two decades regardless of natural disasters. One of the targeted areas to ensure food safety in the US was consumers, where researchers found a lack of knowledge and improper food-handling behaviors (8, 14, 15). In addition, results from a metaanalysis of 20 studies (6) and review of 88 consumer food safety research studies (7) showed that consumers have engaged in risky behaviors such as consuming raw or undercooked food, not following good personal hygiene practices, and allowing cross contamination.

When a disaster strikes, organizations such as American Red Cross and Salvation Army provide shelter and food through established plans and trained personnel. However, in large disaster situations, many untrained citizens support the relief efforts through private organizations such as faith-based organizations. Considering consumer food safety knowledge and behaviors found in previous studies (6, 7, 8, 14, 15), precautions may need to be in placed to protect volunteers as well as evacuees from foodborne and other communicable diseases (10). Although some food safety information is available (10, 11, 12), few organized programs have been reported to reach out to these faith-based and private organizations to train food handling and personal hygiene practices.

Therefore, the purpose of this study was to assess food-handling practices and operators' attitudes toward food safety at evacuation shelters operated by faith-based organizations in Louisiana affected by hurricanes Katrina and Rita. The specific objectives of this study were (1) to assess a variety of food-handling practices in evacuee shelters, (2) to assess attitudes of evacuee shelter operators regarding food safety risks, and (3) to identify food safety education needs for these facilities.

MATERIALS AND METHODS

Telephone survey instrument

A telephone survey using a structured interview was selected as the research method. The telephone interview questions were developed by the researchers, and a panel of food safety education experts reviewed them for content validity. Prior to data collection, a pilot test was conducted with operators of evacuation shelters located in the North Texas area. Revisions were made based on expert feedback and pilot test results as appropriate.

Sample selection and data collection

A convenience sample of faith-based organizations that provided shelters and meals for evacuees of hurricanes Katrina and Rita was contacted by telephone. A list of facilities in Louisiana was obtained from the state government Web site that provided information on the location of shelters in Louisiana. Organizations that were faith-based and provided shelters and meals for at least 20 evacuees were included for data analyses.

Contact information for 233 facilities was obtained from the government Web site, and 166 facilities were contacted because they met the criteria (i.e., faithbased organizations that provided food and shelter for at least 20 evacuees). The telephone interview lasted about 15 minutes, and participants were informed fully regarding the voluntary basis of the survey and confidentiality prior to the interview. As an incentive for participation, each respondent was offered a \$10.00 gift card to local supermarkets upon completion of the survey. The questions were asked verbatim, using a script, and answers were recorded in pre-coded answer fields, except for answers to open-ended questions.

Statistical analyses

SPSS for Windows (version 12.0, 2003) was used to analyze the data. Descriptive statistics including frequency, means, standard deviations, and cross-tabulation were calculated to summarize the data. To evaluate the differences in data distribution between and among different groups, χ^2 analyses were conducted. In addition, t-tests and ANOVA were used to compare mean scores of Likert-type scale responses between and among different groups. Statistical significance was determined at P < 0.05.

RESULTS

Response rate and facility characteristics

Among 166 organizations contacted by telephone, 67 agreed to participate in the survey (40.4% participation rate); 61 responses provided usable data (36.7% completion rate), and six participants who agreed to participate did not provide complete data for data analyses or withdrew from the survey.

All participants were leaders or organizers of faith-based organizations or the evacuee support effort. Forty-two respondents identified their facilities as Christian (protestant) organizations, and one as Muslim; 19 considered themselves "other religion or denomination." The size of the faith-based organizations varied from 40 to 5000. At the peak, the participating facilities served between 21 and 600 evacuees with an average of 148 \pm 132 evacuees for an average of 67 \pm 45 days. A total of 9,163 evacuees were sheltered by the facilities that responded to this telephone survey.

The majority of respondents (n = 48) provided foods to evacuees by cooking on site as well as by accepting food donations from their members and volunteers. Only eight facilities served food prepared on-site only. Demographic characteristics of the faith-based organizations are listed in Table 1.

Food preparation, storage, and distribution

Most respondents indicated that members of the organizations (n=55), community volunteers (n=45), and evacuees themselves (n=43) participated in food preparation in the evacuation shelters. Only 16 facilities had paid cooking staff for food preparation. Most respondents (n=48) indicated that they had enough food preparation personnel during the duration of the evacuee stay.

TABLE I. Demographic characteristics of facilities where respondents worked (n = 61)

| Characteristics | Number of facilities |
|--|-------------------------------------|
| Number of membership | |
| 100 or less | 8 |
| 101-300 | 18 |
| 301–500 | 11 |
| 501-1,000 | 14 |
| More than 1,000 | 10 |
| Number of evacuees served at peak | |
| 50 or less | 15 |
| 51-100 | 14 |
| 101–150 | 11 |
| 151-200 | 7 |
| 201–300 | 8 |
| More than 300 | 6 |
| Number of days shelter was operated | |
| 30 or less | 13 |
| 31-60 | 23 |
| 61–90 | 13 |
| 91 or more | 12 |
| Did you have enough help during the duration of the evacuee | stay? |
| Yes | 48 |
| No | 13 |
| Did you have enough food donated during the duration of the | evacuee stay? |
| Yes | 48 |
| No | 11 |
| Don't know | 2 |
| Was there formal training about safe food handling? | |
| Yes | 37 |
| No | 22 |
| Don't know | 2 |
| Did you have enough refrigerator space for food donated or p | purchased during the evacuee stay? |
| Yee | 52 |
| No | 9 |
| Did you have enough freezer shace for food denated or burch | baread during the outgrup star? |
| Did you have enough freezer space for food donated or purch | |
| Tes | 50 |
| | 10 |
| Don't know | 1 |
| Would your organization provide food and shelter for evacuee | es again if a similar event occurs? |
| Yes | 55 |
| No | 1 |
| Don't know | 5 |

Sixty of 61 facilities accepted various food donations: 57 accepted canned food, 56 dry foods (e.g., flour, sugar, rice, and coffee), 39 fresh fruits and vegetables, 34 frozen food items, 30 prepared cold food such as a variety of salads (e.g., potato salad and macaroni salad), 48 hot food prepared at home or retail, and 31 fresh meat, chicken, eggs, and fish items. The majority of participants (n=48) indicated that enough food had been donated during the duration of the evacuee stay.

When asked if they had adequate refrigerator and freezer space for purchased and donated food, nine participants indicated that they did not have adequate refrigerator space. Also, 10 respondents reported that they did not have adequate freezer space for donated and purchased food. The lack of storage space was not related to any demographic characteristics, but six facilities that lacked sufficient refrigerator and freezer spaces served more than 120 evacuees daily. Eight facilities with a lack of refrigerator and freezer spaces provided shelter and food for over 30 days.

Most facilities had volunteers serve food (n=57), 36 facilities allowed evacuees to serve food, and 23 facilities hired paid staff for food distribution. When the length of the typical meal service time was asked, 21 reported one hour or less, 32 reported 1–2 hours, one reported 2–3 hours, and six reported longer than 3 hours. The number of evacuees housed at the facilities was not related to the time taken to complete meal service, and four of six facilities where meal service time was longer than 3 hours served less than 100 evacuees.

The majority of facilities used the cafeteria style of service (n= 9), followed by the self-serve buffet style (n=11) and family style (n=6). Facilities with fewer evacuees were more likely to have used buffet style service, as 10 of 11 facilities using self-service served \leq 50 evacuees at the peak ($\chi^2 = 29.7$, P < 0.05). During serving periods, 21 facilities indicated that they did not use hot-holding equipment to ensure that hot food items stayed hot. Of those, five served meals for \leq 1 hour, 13 for 1–2 hours, and three for longer than 3 hours.

Food safety training

Of 61 respondents, 22 reported that they did not offer any food safety training for volunteers and others who prepared and served food, and 2 were not sure if there was any food safety training. Of 37 facilities where some form of food safety training was offered, 15 respondents reported that the local health department or inspectors provided at least some food safety training, and 9 reported that only brief verbal training was given, without involving the health department. Two facilities had professionally trained staff certified for food handling. Two respondents reported that they gave written food safety information only (e.g., flyers and pamphlets), and an additional two respondents reported that they used guidelines provided by healthcare providers such as physicians and dietitians. One respondent reported that the facility provided a weeklong training session for volunteers and other food handlers.

More facilities where \leq 50 evacuees were sheltered did not provide food safety training. Cross-tabulation with χ^2 analysis showed that 10 of 15 facilities where \leq 50 evacuees stayed did not provide food safety training for food handlers. However, some facilities with a large number of evacuees did not provide food safety training either. Of 12 facilities where more than 200 evacuees were sheltered, six did not provide any food safety training ($\chi^2 =$ 22.4, P < 0.05).

In addition to on-site food safety training, respondents were asked if they provided safe food handling tips to those who brought food items to the facilities. Of those organizations where hot food item donations were accepted (n=48), only 20 facilities provided some tips for food donors to ensure food safety of donated food items.

Leaders'/organizers' attitudes toward food safety risks

When asked how likely various factors are to cause foodborne illnesses, the majority of respondents recognized some food safety risk factors. Table 2 includes more detailed results regarding respondents' attitudes. T-tests and ANOVA did not show any significant differences in attitudes among groups.

The majority of respondents agreed that evacuees were at increased risk of illnesses in general (n=43). However, the majority also agreed that at their evacuation shelters, evacuees were no longer at increased risk of illnesses (n=47). When asked why they perceived that evacuees were not at increased risk, 23 of the 47 indicated that the facility was clean, comfortable, and well maintained. Others reported that evacuees were not at increased risk at the shelter because of "care provided by medical staff" (n=9 of 47), "proper food preparation" (n=6 of 47), and "arrival before flooding" (n=3 of 47). Respondents perceived that evacuees were at increased risk in the evacuation shelter because of "crowded living conditions" (n=5 of 12), "exposed to sick people" (n=4 of 12), and "exposed to sickness before arriving at the facility" (n=2 of 12).

Willingness to provide shelters in the future

Most participants (n = 55) indicated that they would provide shelter for evacuees in the future. Twenty of these 55 participants who were willing to provide shelter and food in the future did not provide any food safety training for volunteers and evacuees last year in the wake of hurricanes Katrina and Rita. Eight facilities where future evacuation shelters will be provided did not have adequate refrigerator space, and nine did not have adequate freezer spaces during shelter operation for hurricanes Katrina and Rita.

DISCUSSION

A convenience sample was used, as the exact number of faith-based organizations that participated in the hurricane relief effort is unknown. Given the limitations of the method of obtaining contact information, it is difficult to assess how representative the results of this study are. The authors noted that there was no Catholic Church organization represented in the survey in Louisiana, where many residents are considered Catholic. Under representation of Catholic or any other groups may be due to simply not being listed in the source file that the authors used. Because there was no inclusive list of faith-based organizations that participated in disaster relief efforts in 2005, the best approach was to use the list provided by a government agency. Therefore, the results may not represent all evacuation shelters operated by faith-based organizations

Identified food safety risks and education needs

Sources of food items used in evacuation shelters raised food safety cautions for operators. In addition to accepting non-perishable food items, the majority of respondents accepted prepared food items, both hot and cold, and potentially hazardous food items such as meat, poultry, fish, and dairy. Although the supply of food was ample, there was a lack of refrigerator and freezer spaces at the onset of the disaster. This suggests that food acceptance must be better planned, and food donors must be educated about safe food handling at their homes and during transportation, Also, individuals at evacuTABLE 2. Evacuation shelter organizers' or leaders' perception on risk factors that may cause foodborne illnesses

| | SA | A | N | D | SD | DK | |
|--|--------------------------------|---------|---------|---------|-------|-------|---------------|
| Factors | < No. of respondents (%)> Mean | | | | | | →Mean ± SD ® |
| Unsafe food sources | 43 (71) | 18 (29) | 0 | 0 | 0 | 0 | 4.7 ± 0.5 |
| Poor personal hygiene of food preparers | 41 (67) | 20 (33) | 0 | 0 | 0 | 0 | 4.7 ± 0.5 |
| Unsafe water sources | 41 (67) | 20 (33) | 0 | 0 | 0 | 0 | 4.7 ± 0.5 |
| Not cooking meat, poultry, egg, and fish items thoroughly | 37 (61) | 22 (36) | 0 | 0 | 0 | 2 (3) | 4.6 ± 0.5 |
| Cross contamination | 40 (66) | 20 (33) | 0 | I (2) | 0 | 0 | 4.6 ± 0.6 |
| Keeping food at room temperature too long | 34 (55) | 25 (41) | 1 (2) | I (2) | 0 | 0 | 4.5 ± 0.6 |
| Keeping foods longer than 7 days in the refrigerator | 35 (57) | 22 (36) | 2 (3) | I (2) | 0 | I (2) | 4.5 ± 0.7 |
| Not washing fruits and vegetables before eating | 25 (40) | 33 (54) | I (2) | I (2) | 0 | I (2) | 4.4 ± 0.6 |
| Poor personal hygiene of consumers | 27 (44) | 31 (51) | 1(1) | 0 | 0 | 0 | 4.4 ± 0.7 |
| Not storing canned food items in the refrigerator ^b | 17 (28) | 18 (30) | 2 (3) | 19 (32) | 3 (5) | 1 (2) | 3.5 ± 1.3 |
| Not storing bread products in the refrigerator ^b | 9 (15) | 16 (26) | 11 (18) | 22 (36) | 3 (5) | 0 | 3.2 ± 1.1 |

SA = Strongly agree, A = Agree, N = Neutral/Undecided, D = Disagree, SD = Strongly disagree, DK = Don't know

^aBased on 5-point scale: Strongly agree = 5, Agree = 4, Neutral/Undecided = 3, Disagree = 2, Strongly disagree = 1

^bThese questions were included to ensure that respondents are not just answering one way (agree or disagree) without reflecting questions.

ation shelters must be trained about proper storing and reheating procedures to ensure safety of previously cooked hot food items brought to the facility. Food handled improperly prior to arriving or at the facility creates major food safety risks, and the importance of proper training that would address this risk cannot be overemphasized.

In addition, in many facilities, food production and distribution were carried out by volunteers and evacuees themselves. Considering results from previous research studies that reported a lack of proper food-handling behaviors (8, 14, 15), more efforts need to be made to train personnel. It may be especially true with regard to disaster relief situations, as there may be a lack of coordination in personnel assignment in evacuation shelters.

Hand washing and personal hygiene must take priority in the training of these volunteers and evacuees. Most respondents of this research project recognized that poor personal hygiene of food preparers and consumers is a risk factor for foodborne illnesses (Table 2). Proper hand washing has been identified as a consumer food-handling behavior that is associated with preventing 13 common foodborne illnesses (3). Our research showed that volunteers and evacuees were heavily involved in food production and distribution. Knowing that maintaining personal hygiene is identified as a challenge for consumers (3), the importance of hand washing and personal hygiene must be addressed before these non-professionals become engaged in food production and service. Without proper hand washing, one cannot ensure the safety of food items that have been handled by multiple individuals.

Maintaining a safe temperature during service is another area that needs

attention. More than one-third of the respondents indicated that they did not use some sort of hot-holding equipment to ensure food safety during distribution. Many finished food service in less than two hours, but three organizations reported that they served hot food items for longer than three hours without hot-holding equipment. Some of these facilities may have violated the current Food Code which limits the length of time hot foods can be left in the danger zone to four hours. Considering that it was often not known how donated food items were handled prior to arriving at evacuation shelters, enforcing time and temperature rules for hot and cold food holding at these facilities may be essential. In addition, it may be necessary to provide information about proper food handling (i.e., food preparation and holding time and temperature) for those who donate food items to ensure food safety.

Need for food safety training

Authors anticipated that proper food safety training at evacuation shelters may have been difficult because of crisis conditions caused by catastrophic events. This prediction was shown to be accurate; many respondents, especially smaller shelters, indicated that they did not have any food safety training at their facilities, and even when training was provided, it was delivered briefly by health inspectors or through reading materials. Only one facility indicated that it had extensive training in safe food handling. Regardless of the size of operation, food safety risks exist equally, and safe food handling training must be a priority of all operators.

Respondents' perceptions of risk of illnesses at the evacuee shelters were overly positive. Many associated the cleanliness of the facility and presence of medical staff as reasons for evacuees not being at risk of illnesses. Food safety training with risk identification may help shelter organizers recognize foodborne and other illness risks so that they can prevent them properly.

Information provided by many government offices for food safety in emergency situations has focused on brief food storage guidelines (11, 12) or communicable disease prevention information using written education materials for evacuees (1). Therefore, development and systematic implementation of a food safety training program that includes a variety of training materials (e.g., audiovisual media, support materials, lesson plans, etc.) specifically targeting evacuation shelters operated by faith-based organizations is imperative. This is especially true since many organizations that responded to this telephone survey indicated that they will provide emergency shelter in the future.

In addition to general food safety training, the increased risks that exist when natural disasters strike warrant additional training specific for evacuee shelter management. Some respondents to this survey recognized that crowded living conditions and exposure to sick people and unsanitary conditions prior to arrival at the facility increased the vulnerability of evacuees to illnesses. There are many faith-based organizations in hurricaneprone areas, and these organizations are critical components in the response and recovery efforts. To provide a better future disaster response, training should be conducted beforehand; then, during an actual disaster situation, proper food handling practices can be reinforced rather than taught.

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Food Safety Knowledge and Behaviors of Cooks in Texas Childcare Centers

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SUMMARY

The purpose of this study was to evaluate food safety attitudes, knowledge, and behaviors of cooks in a sample of Texas childcare centers. The Food Safety Demographic, Knowledge and Attitude Questionnaire (FSQ) was completed by the cook (n=36). Twentytwo (61%) head foodservice personnel reported having food safety certification, while 14 (39%) did not. Fifty percent of cooks achieved passing scores on the knowledge portion of the FSO. The Childcare Food Safety Assessment Form (FSA) was completed by the researcher while observing the cook during preparation of the lunch meal (n=35). The scores ranged from 23% to 92% (mean = 57%). Texas Department of Health food safety inspection scores were obtained from 18 Travis County centers and were compared to the results of the FSA. Health inspection score averaged 93.4% (82% to 100%), while the FSA scores averaged 58.3% (26.9% to 92.3%). This study showed that childcare center cooks are not adequately following food safety procedures and that current inspections are not effectively uncovering deficiencies. It is imperative that all food service workers in childcare be required to have food safety certification training and be monitored regularly to ensue that strict cleaning and sanitation procedures are followed.

A peer-reviewed article

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INTRODUCTION

Today, more than 250 known diseases are transmitted through food (5). The symptoms of foodborne illness range from mild gastroenteritis to life-threatening neurological, hepatic, and renal syndromes (26). Foodborne diseases can be caused by many different pathogens, including viruses, bacteria, parasites, and prions. In 2004, the CDC reported 1,319 disease outbreaks, up from 1,073 reported outbreaks in 2003, with the majority of them being caused by bacterial pathogens (4). Concern over food safety has prompted the federal government to develop food safety objectives for improving public health, published in Healthy People 2010 (11).

Although no one is immune to foodborne illnesses, several groups are considered high risk, including children, the elderly, pregnant women, and those with compromised immune systems (12). Statistics show that children less than 10 years of age experience one-third of all the reported foodborne illnesses in the United States and that a disproportionate number of enteric bacterial infections occur in children under the age of 5 (12, 20). Children are particularly susceptible to the serious health consequences of foodborne diseases because a smaller quantity of pathogens will cause them to become ill because of their lower body weights and uncompletely developed immune systems (3, 13). Persons in institutional settings are also more likely to experience foodborne illnesses, which places children attending childcare centers at an even greater risk (5, 12).

Food Protection,

FIGURE 1. Distribution of results from the attitudinal questions on the Food Safety Questionnaire in a sample of Texas childcare cooks (n=36)



Food safety can be defined as "controlling or eliminating hazards that might contaminate food and cause foodborne illnesses" (25). Incorrect holding temperatures, poor personal hygiene, and inadequate cooking are the most common foodborne illness risk factors at the food preparation stage (6). Bermudes-Millan, et al., in a study of the food safety knowledge, attitudes, and behaviors of caretakers of young children (n=100), observed that only 10% of subjects washed their hands before preparing food, even though 97% of them reported doing so (2). Also, 96% of subjects did not use a thermometer to check if meats were cooked properly, and 71% used the same cutting board for meats and vegetables

Most childcare centers prepare food in the same manner as in domestic kitchens. A study by Cody et al. assessed the food safety knowledge and practices of a sample of persons responsible for the majority of home meal preparation in the United States (n=1,006) (8). Respondents did not think it was common for people in the United States to get sick from foods prepared at home (70%), and most did not associate symptoms (nausea, fever, chills) with food prepared at home (60%) (8). In this study, 35% of respondents claimed to know the safe internal temperature for cooking ground beef but only 9% were able to state the correct temperature (8).

Little published research is available concerning the food safety knowledge and behaviors of foodservice staff in childcare centers. The purpose of this study was to evaluate food safety attitudes, knowledge, and behaviors of cooks in a sample of central Texas childcare centers.

MATERIALS AND METHODS

Subject sample

Before the start of this research project, researchers conducted a pilot study with a sample of Texas childcare centers that prepare and serve meals (9). Electronic spreadsheets listing the names of childcare centers, directors, and contact information were obtained from the Texas Department of State Health Services. From this list, researchers contacted childcare centers located in Travis and Williamson Counties that prepare and serve meals at the center and requested permission to send a questionnaire to the director of the center. This 42-item questionnaire, adapted from a foodhandling survey developed by Iowa State University (14), was mailed to 112 childcare center directors who agreed to participate in the pilot study. Seventy-one centers (63.4%) returned the pilot questionnaire. The details and results of the pilot study are reported elsewhere (9).

Childcare centers that completed and returned the pilot study questionnaire were invited to participate in this research study. In franchised childcare centers operated by the same organization, only one representative center was included, which eliminated 10 of the 71 centers from participating. Of the remaining 61 childcare centers, 36 (59%) agreed to participate. The childcare centers in this study had the capacity to care for 50 to 332 children, with an average capacity of 144 children per center. Researchers telephoned each childcare center director to request permission to visit their center and agreed on a possible time for an on-site visit within a 2-4 week period of time. This allowed researchers to avoid dates when directors would be unavailable but did not reveal the exact time of the onsite visit. The Institutional Review Board at The University of Texas at Austin approved the study protocol. One of the two researchers (both of whom are Registered Dietitians) visited each center during the preparation, serving, and cleaning activities in the childcare center kitchen. The cook observed in this study refers to the person at the childcare center most responsible for the preparation and handling of meals in that center.

Sampling methods

Researchers adapted the Demographic, Knowledge and Attitude Questionnaire and The Food Safety Assessment forms developed by Giampaoli, et al. (14) for use in childcare centers. Adaptation FIGURE 2. The sanitary conditions and observed food safety behaviors of cooks in a sample Texas childcare centers (n=35)



Percent of Centers Meeting, and Failing to Meet, Food Safety Standards

included changing wording and eliminating questions that were not relevant to childcare settings. These modified questionnaires are referred to as The Food Safety Demographic, Knowledge and Attitude Questionnaire (FSQ) and The Childcare Food Safety Assessment Form (FSA), respectively, in this paper. Researchers conducted the assessments between 9:30 a.m. and 1:30 p.m. to ensure that the entire range of food handling practices was observed.

RESULTS AND DISCUSSION

Food safety demographic, knowledge and attitude questionnaire

The Food Safety Demographic, Knowledge and Attitude questionnaire (FSQ), which was completed by the cook during the researcher's visit to the childcare center, included three demographic, seven attitudinal, and 20 multiplechoice food safety questions.

Responses to questions in the demographic portion of the FSQ showed that of the 36 cooks, nine (25%) had worked in foodservice for less than 3 years, eight (22.2%) for 3-5 years, nine (25%) worked for 6–15 years, and seven (19%) for more than 25 years. Results showed that 22 (61%) of the 36 cooks reported having some form of food safety certification, while 14 (39%) did not. In centers where the cook did not have food safety certification, the childcare center director had the required safe food handling certification.

The test scores ranged from 40% to 90%, with a mean score of 70.97%. A passing score on the FSQ was set at 75% (15 out of 20 questions correct), because 75% is the passing score established by the Texas Department of State Health Services for the certified food managers' exam. Results from the food safety knowledge portion of the FSQ showed that 50% (18 of 36) of the cooks passed the exam (18 of 36) while the other 50% failed to achieve a passing score.

Results of the attitudinal questions on the FSQ (Fig. 1) revealed that 100% of the cooks (n=36) strongly agreed or agreed with the statements "safe food handling is an important part of my job responsibilities", "learning more about food safety is important to me", "I believe how I handle food relates to food safety", and "I am responsible for making sure that the foods served to children are safe to eat". When asked if "my supervisor should have more responsibility for food safety than I do", 36% (n=13) of the cooks strongly agreed or agreed with the statement, 48% (n=17) disagreed or strongly disagreed, and 15% (n=6) remained neutral. The fact that 39% of the cooks did not have food safety certification, while their supervisors did,

may contribute to the attitude in some of the cooks that the supervisor should be more responsible for food safety than they are.

Childcare food safety assessment form

The results of the Childcare Food Safety Assessment Form (FSA) are shown in Fig. 2. The researcher completed the FSA while observing the cook during lunch preparation, serving, and cleaning. One of the 36 centers was used for researcher training to improve inter-rater reliability. When the scores on the FSA from the two different researchers were compared, no significant difference in scores was observed (73% vs. 77%). The FSA results from this center are not included, reducing subject sample to 35. Behaviors that were not observed in all of the centers, such as "leftovers are reheated rapidly to 140°F in 2 hours," were also not reported, because many of the centers did not keep, and therefore did not reheat, leftovers. Other behaviors not observed in all of the centers included "smoking only in designated areas away from food" and "employees take appropriate action when coughing or sneezing". The remaining 26 questions were used to determine a score. The lowest score received was 23% and the highest score 92%, with a mean score of 57% ± 2.6%. The FSA results revealed that 60% of the cooks (21 of 35) held hot foods at or above 140° Fahrenheit, while 40% did not. Even though all childcare centers are required by TDSHS to have a thermometer on site, a majority of cooks (71%, or 25 of 35) did not use thermometers to check the food temperatures to ensure they were cooked to the recommended temperatures. Also, none of the cooks recorded the temperature of the foods they served. Cold foods were not held at or below 41° Fahrenheit by 54% (19 of 35) of cooks, and in four instances this included the milk being served to the children. Only seven of the 35 employees (20%) were observed wearing hair restraints, as this is recommended but not mandated by the Travis and Williamson county health departments. Refrigerator and freezer temperatures were recorded in only 14% and 17% of centers, respectively. Despite the considerable research supporting handwashing as one of the easiest and most effective behaviors to control the spread of pathogens and disease, only 57% (20 of 35) of cooks were observed washing their hands while preparing and serving food (10, 15, 18, 19, 22, 23, 30, 31).

No significant correlation was seen between the scores on the knowledge portion of the Food Safety Demographic, Knowledge and Attitude Questionnaire (FSQ) and the scores on the Childcare Food Safety Assessment Form (FSA), suggesting that food safety knowledge alone may not predict food safety behaviors. These results are similar to results reported in other food safety knowledge and behaviors research (1, 7, 24, 33). Risk perception is a significant motivator of behavior (16). The foodborne illness risk perception of many Americans is low in spite of evidence to the contrary (16, 21). It is likely that childcare foodservice employees do not recognize the risk of children in their centers becoming ill due to foodborne illnesses and therefore do not strictly follow food safety procedures. It is vital that food safety training includes information on the serious risk of morbidity and mortality due to foodborne illnesses in children. Even one child needlessly becoming ill is too great a risk.

Texas Department of Health food safety assessment inspection scores were obtained from the 18 centers in this study that are located in Travis County and were compared to the results of the food safety assessment form (FSA) used in this study. A sample evaluation form used by the Travis county health inspectors was obtained to ensure that both forms evaluated on the basis of similar criteria. No significant correlation was seen between the two scores. The average health inspection score for the 18 centers was 93.4%, ranging from 82% to 100%, in stark contrast to the FSA scores for these 18 centers, which ranged from 26.9% to 92.3%, with a mean score of 58.3%.

Differences in the Travis county health inspection scores and the scores on our food safety behavior form (FSA) may be due to many factors. It is likely that childcare staff carefully perform all food safety procedures when an official inspection is anticipated or occurring. When researchers visited the centers to evaluate the food safety behaviors for this study, staff were assured that it would not be reported to any regulatory agencies and that only code numbers, not names, would be used. The researchers feel that this gave a more realistic picture of the day-to-day behaviors of childcare staff. Although the scores are not from an identical form and may not have been scored in exactly the same manner, the comparison does suggest that the health inspection process needs revising. Inspections that are unexpected, and at random, along with strict enforcement and stronger penalties, may encourage childcare centers to follow food safety procedures more closely.

The results of this study cannot be generalized to all childcare centers in the United States, since it was conducted in a small sample of childcare centers in Central Texas. Also, the centers in this study were a convenience sample obtained from the centers that completed the pilot study and allowed visits to their center, and they therefore may not represent a true cross section of childcare centers in Texas or the United States. There are many possible reasons why centers chose not to participate in the study. Some centers may have chosen not to participate because of time constraints, worry about strangers spending time in the center, or the unfavorable sanitary conditions in the center. Thus, it is possible that sanitary conditions and food safety behaviors in childcare centers may be more or less favorable than is indicated by these results.

CONCLUSIONS

Patrons expect foodservice operations to be clean and food to be served in a hygienic manner. Children at childcare centers and other high-risk groups deserve the same assurances and should expect that foodservice personnel handle and serve food in especially stringent sanitary conditions. Through observation of actual food safety behaviors in childcare centers, this study showed that foodhandlers are not adequately following food safety procedures. The lack of strict adherence to food safety measures may increase the risk for children at these centers to acquire foodborne illnesses. It is imperative that all foodservice workers in childcare be required to have food safety certification training and be monitored regularly to assure strict cleaning and sanitation procedures are followed.

Knowledge gaps are barriers to establishing appropriate food safety behaviors. This makes it especially important for childcare directors and local health authorities, such as state or county health inspectors, to educate workers and enforce food safety behaviors, such as frequent, proper handwashing; adequate cooking; and proper holding temperatures, which research has demonstrated to be the most influential in preventing foodborne illnesses (6, 17, 22, 27-29, 31. 32). If workers feel that they have too many tasks to be completed and if standards are not enforced, workers will be more likely to skip these tasks, which may jeopardize the safety of the food environment.

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ABSTRACTS

Barcelona, Spain 30 November – 1 December 2006

Abstracts

IAFP's Second European Symposium on Food Safety

SESSION 1: Advancement in Risk Analysis and Food Safety Management

Risk Analysis - Current Things and Applications

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Over the last two decades, food safety management has focused on control of hazards, culminating in the worldwide acceptance both from governments and industries of systems such as "best practice" food safety management deploying Hazard Analysis Critical Control Point (HACCP) in operational food manufacturing and serving practice. When properly built on Good Hygienic Practice (GHP) and Good Manufacturing Practices (GMP) systems and when adequately used and implemented, HACCP has contributed significantly to making food safety management in the supply chain more robust.

One of the most prominent developments in recent years is the move towards a more risk-based approach to food safety control at the governmental level. Led by *Codex Alimentarius* and under the auspices of the parent organisations WHO and FAO, governments around the world are adopting the Risk Analysis (RA) framework as a basis for their decision-making. A prominent part of the RA framework is Microbiological Risk Assessment (MRA), which is the process of assessing and characterising the risk currently posed by a hazard in a food within a certain population.

New concepts have been introduced in the process: Appropriate Level of Protection (ALOP), Food Safety Objective (FSO), Performance Objective (PO) and Performance Criterion (PC). These new standards complement existing governmental guidance, such as legislative requirements, prescriptive specifications, and descriptive guidelines, and also trade or private good practices guidelines. Governments can apply the new concepts to communicate their public health protection policy to particular food chains more specifically. One the one hand, these new concepts and techniques seem to present marked differences to the established food safety systems, while they actually are not, at least to a large extent. However, on the other hand, despite the advocated benefits it does not seem that the regulators around the world are ready to apply the new concepts. Maybe it is time to make sure conceptual feasibility is translated into operational feasibility. After all, so far we have just been able to design the somewhat complex new terminology and operational framework without it being ready for (inter)national challenges that will certainly be needed/helpful to increase robustness and added value. It is not surprising that, where some countries already have gathered some significant experience, intergovernmental agencies are doing the best they can to built capacity at a reasonable pace, still others are waiting for the (right?) moment to start looking into Risk Analysis. It might well be they will wait too long. To make a better judgment on this, some basic insight in the new developments may be of use.

Therefore, this paper briefly addresses current food safety assurance practices and the importance of governmental risk analysis and risk assessments as a basis for improving future food safety management (i.e., the operational aspect) and control (i.e., the governmental aspect), linked to policies for public health protection and (fair) trade. Examples regarding applications of MRA studies and their outcomes in risk management decision-making will be given, but a warning ahead is due: these will be few. Discussions on the criteria for "good microbiological risk assessment practices" (discussed in Prague during a joint ILSI-Europe and IAFP workshop) and "the development of practical

guidelines for the use of MRA in risk management decision-making" (developed in Kiel in April of 2006 under the auspices of FAO and WHO) will be included in the presentation as these two highlight the most recent state-of-affairs with regard to Risk Analysis and the utility of MRA in the area of microbiological food safety management.

The European Food Safety Authority's Scientific Panel on Biological Hazards and Its Approach to Cases

JOHN DANIEL COLLINS, School of Agriculture, Food Science and Veterinary Medicine, National University of Ireland, University College Dublin, Dublin 4, Ireland

- Panel on food additives, flavourings, processing aids and materials in contact with food (AFC)
- Panel on additives and products or substances used in animal feed (FEEDAP)
- Panel on plant protection products and their residues (PPR)
- Panel on plant health (PLH)
- Panel on genetically modified organisms (GMO)
- Panel on dietetic products, nutrition and allergies (NDA)
- Panel on biological hazards (BIOHAZ)
- Panel on contaminants in the food chain (CONTAM)
- Panel on animal health and welfare (AHAW)

The EFSA Scientific Committee provides guidance to the Panels on such issues as transparency and exposure assessment and advice on multi-sectorial issues falling within the competence of more than one Panel, and on issues which do not fall within the competence of any of the Panels.

The EFSA's Scientific Panel on Biological Hazards (BioHaz) addresses questions on biological safety and foodborne diseases including foodborne zoonoses and tranmissable spongiform encephalopathies (TSEs), microbiology, food hygiene and associated effluent management issues as previously addressed by designated committees of DG Sanco of the European Commission. In formulating its Opinions the EFSA recognises that its function is primarily to provide science-based conclusions on the risk assessment aspects of the issue described in mandates received by the EFSA from the petitioning body, that is, the European Commission, the European Parliament or a Member State. This process involves interaction with these bodies so as to ensure clarity regarding the nature and extent of the issue to be addressed, followed by the formation of a working group(s) who produce a report which, after detailed consultation and consideration, later forms the basis of the Panel's Opinion. For example, BIOHAZ recently launched a public consultation on a revision of the methodology for Geographical BSE-Risk (GBR) assessment. The European Commission uses this scientific advice as the basis for attributing BSE risk status to countries worldwide. The update takes account of new scientific knowledge on BSE and recent trends in BSE prevalence based on the most recent surveillance data. By allowing a more accurate assessment of geographical BSE risk, the revised methodology will assist risk managers in taking decisions to protect consumers which are commensurate with the risk identified.

BioHaz may issue conjoint Opinions and Guidance Documents in collaboration with one or more of the EFSA's other eight Scientific Panels. Also, the Panel prepares Reports and Opinions on issues which itself had proposed for consideration, under a self-tasking procedure authorised by the EFSA. One such report addressed the issue concerning foodborne transmission of highly pathogenic avian influenza virus, notably strain H5N1. At the EFSA's request BioHaz prepared a comprehensive background document on the state-of-science of the fate of highly pathogenic avian influenza (AI) viruses (mainly H5N1) in avian species and the possible transfer of the virus to other species including humans via the food chain. The Panel concluded that direct transfer of H5N1 to humans occurs rarely and particularly after very close contact with infected animals. The exact entry route(s) of the virus in humans is(are) not known but it is generally accepted that respiratory and/or oropharyngeal tissues are the entry sites. However, when one considers the low number of recorded human infections in relation to the high number of people that have been exposed to H5N1 virus infected animals, it is clear that a readily accessible portal of entry does not exist. The possibility of virus entry via the gastrointestinal (GI) tract after ingestion of virus with food has been raised. So far, there is no proof that virus replicates in the human intestine. The existence of an undisclosed virus entry site in the intestinal tract can, however, not be ruled out at this time.

Other publications include Opinions on, for example, the safety of infant formulae, the control and prevention of *Salmonella* infections in poultry, on the revision of inspection procedures of pigs from holdings in areas with a low prevalence *Trichinella* infestation status, the risk of transmission of TSEs to the consumer, and other current issues. These illustrate the nature and scope of the tasks undertaken by the BioHaz Panel's experts and, in turn, their dependence upon the Panel's Working Groups, on its TSE Task Unit and on the various expert groups within the EFSA. This is the platform upon which the BioHaz Panel formulates its Opinions and its other science-based documents in support of food safety measures within the European Community and beyond.

Risk Ranking of Different Food-related Factors Contributing to Public Health Burden

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Microbial risk assessment (MRA) has received a great deal of attention in recent years as a tool for improved food safety decision making. However, MRA is also often seen as a very expensive and time-consuming process, so there is interest in alternative risk-based approaches to food safety management. Risk ranking holds some promise as an alternative to conducting full-blown quantitative microbial risk assessments, by reducing costs and saving time while still providing a transparent auditable, risk based approach to decision making. This talk will highlight some of the advantages and disadvantages of the risk-ranking approach, using hypothetical as well as real-world examples from microbial and food safety risk assessment.

A Systems Approach to Food Safety Management

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In spite of over 100 years of research and millions of dollars spent, food safety remains a major worldwide public health issue. Food safety is not an accident and the production of consistently safe food is an interaction of different factors. These include the types of foods produced and how/where they are sourced. Changes in consumer preferences and requirements for more natural "preservative free" foods availabile all the year round can increase opportunities for foodborne illness. Foods have to be handled by food operatives, who's behaviour is critical. Food-handlers often do not implement known food safety requirements and there have been suggestions for a greater involvement of behavioural scientists in hygiene education and training. Additionally, how staff and premises are managed is an important element of producing safer foods. Management is an umbrella term encompassing facilities available/ provided, management systems used and the prevailing organizational food safety culture. Systems in use can be mandatory - required by local legislation, or optional. The latter includes awards and compliance with third party standards. Documentation of the systems, apart from assisting in establishing due diligence, demonstrates planning, control, consistency and should be proportionate to the business. A key aspect of food safety management is the type and format of the documented safety management system selected and implemented. In Europe, EU Regulation 852/2004 requires the safety management system in use to be based upon HACCP and to take account of Codex principles. This can allow considerable flexibility in interpretation. This flexibility is especially important for food service operations, whose functioning differs from classical food manufacturing in a variety of ways. One important key difference is that many food service operations work to order, when manufacturers work to stock. Additionally the food service working environment is often less structured than food manufacturing. These differences greatly affect the ability to implement food hygiene practices. Innovation in how HACCP principles can be translated and incorporated into a range of food safety management systems, suitable for a spectrum of businesses, will be presented and discussed. This discussion will include a comparison of the US FDA process approach with a range of models developed in the UK. Key differences in approach are highlighted as well as suggestions for their application and use. Such models form a base requirement and will be discussed in relation to voluntary schemes, including BRC, SQF 2000 and ISO 22000. The latter will be reviewed within the context of different challenges and requirements facing businesses within the food chain in Europe and elsewhere. Such developments are also considered within a framework of evolving views on what HACCP is and how it can be applied.

What About the SMEs? Has HACCP Been Forgotten in a World in Love with Risk Analysis?

WAYNE ANDERSON, Food Safety Authority of Ireland, Block DEF, Abbey Court, Abbey Street Lower, Dublin 1, Ireland

The HACCP system was adopted in Codex around 1991 and prior to that the system had been around since the 1960s. Despite many years of experience, uptake in small/medium enterprises (SMEs) is low, particularly in the retail and catering sectors. Adoption of HACCP by this sector has included the need to adapt HACCP and introduce 'HACCP-based' systems which on first inspection bear little resemblance to the system laid out by Codex. Alimentarius. It has taken 15 years to get to this point with major resource commitments both in academia and in governments.

Today, Codex has moved on to risk analysis and has developed guidelines for risk assessment and is working on guidelines for risk management. The model favoured at the moment is the one outlined by the ICMSF that utilises the metrics of food safety objectives, performance objectives, product and process criteria and microbiological criteria. Smaller food businesses have become aware of these developments and are concerned that more regulation will follow. The tangible benefits of the new risk analysis approach are evident for large, technically adept food businesses.

However, small food businesses are more numerous and are important to all national economies. Therefore, we must find a way to ensure that SMEs can benefit from risk analysis and this must be via HACCP. Consequently, governments will have to develop flexible regulatory systems that are proportionate for all. This will impose organizational challenges and bring with it new resource implications.

This presentation aims to explore some of these issues and proposes possible solutions for SMEs. In doing so, the new guidance to governments on the application of HACCP in small and/or less developed businesses, about to be published by WHO/FAO will be discussed.

SESSION 2: Innovation in Food Products

Application of Novel Procession and Preservation Technologies

MARTIN B. COLE, National Center for Food Safety & Technology, 6502 S. Archer Road, Summit, IL 60501, USA

The rapid globalization of the food processing and retailing industries, consumer demand for more natural and more convenient products and an overall increase in the susceptibility of the population are believed to be the most important factors that have led to fundamental changes in the nature of foodborne disease itself. The primary consumer trends within the mature food markets have been toward products perceived as offering pleasure, health and convenience benefits. Consumers in these markets are increasingly time-poor and may lack cooking skills, but they desire a wide range of sensory experiences. Mature markets also have a preoccupation with health and well-being, especially in the relatively wealthy "baby boomer" market. Research and business opportunities will arise as food processing companies move to meet consumer wishes for health promoting, convenient and pleasurable foods, with premiums arising through combinations of these desirable attributes (e.g., healthy 'functional foods' in a convenient form.). Within this environment, the food industry has been plagued by on going food safety issues and dietary concerns that include bacterial pathogens, BSE, chemical contaminants, allergens and obesity. Food safety is a recognized given in the market place yet consumer trends towards fresher, more natural, less preserved convenient foods are not always conducive to enhanced food safety as many traditional preservatives are also intrinsic stability or food safety factors.

Recent advances in food science and technology, such as risk assessment, genomics and novel preservation offer exciting new possibilities for innovation to meet the consumer drivers of health, convenience, pleasure and environment. In delivering these possibilities it is important that we do not introduce new food safety hazards. This will require not only the use of new technologies but also an intricate networking and collaboration among all stakeholders involved.

European Union Novel Food Regulations

MIKE GASSON, Institute of Food Research, Norwich Research Park, Colney, Norwich, NR4 7UA, UK

The regulation of novel foods in the UK started as a voluntary process that involved a pre-market risk assessment by the Advisory Committee on Novel Foods and Processes (ACNFP). In its early days, this Committee considered a variety of novel food ingredients and novel processes, including food irradiation, mycoprotein and GM soya. At a European level, a legal framework was created with the introduction of the Novel Food Regulation (EC) No 258/97. This effectively unified pre-market safety assessment across the EU, thereby eliminating the potential for unfair competition that might arise from separate safety evaluations in individual Member States.

The regulation made provision for the pre-market safety assessment of any novel food or food ingredient that had not hitherto been used for human consumption to any significant extent within the European Community. The regulation covered genetically modified organisms as well as food or food ingredients derived from them. It included foods and food ingredients that had modified molecular structures, or were derived from microorganisms, fungi or algae, plants and animals without a history of safe food use. It included foods and food ingredients to which novel production processes have been applied. The regulation made provision for a simplified procedure where it was possible to demonstrate 'substantial equivalence' to an existing food or food ingredient.

In practice, an applicant would approach one Member State whose novel food committee would undertake a primary safety assessment, which would then be commented on by other Member States. Where unresolved differences arose, the application was referred to a central EU committee.

This approach in essence remains in place for non-GM novel foods, but changes were introduced following the creation of the European Food Safety Agency (EFSA). A major impact came with the introduction of Regulation (EC) No 1829/2003, which addressed all genetically modified food and feed. The result of this regulation was to centralize all GM issues within Europe, making use of a dedicated expert scientific committee (The GMO Panel) that advises EFSA.

In this presentation, an overview of the European safety assessment process will be made, drawing on personal experience of the UK ACNFP and the European EFSA GMO Panel. The general approaches to safety assessment will be summarized, and supplemented with some specific examples of novel foods and ingredients that have been the subject of safety evaluation in Europe.

Canada's Approval Process for Novel Foods

JEFFREY M. FARBER and B. HARRISON, Food Bureau of Microbial Hazards, Food Directorate, Health Products and Food Branch, Health Canada, Tunney's Pasture Banting Research Centre, Postal Locator 2203G3, Ottawa, ON K1A 0L2, Canada

Novel whole foods and food ingredients may appear in Canada through the importation of new products, the introduction of a new species as a food source, the use of new processing techniques, or changes in the genetic makeup of the microorganisms, plants and animals from which foods are derived. In response to these developments, Health Canada published the *Novel Foods Regulation* in the *Canada Gazette*, Part II, on October 27, 1999. Novel foods are defined in the *Novel Foods Regulation* as a substance, including a microorganism, that does not have a history of safe use as a food; a food that has been manufactured, prepared, preserved or packaged by a process that has not been previously used for food or a food that has been genetically modified such that it exhibits new characteristics.

The Novel Foods Regulation under the Canadian Food and Drugs Act requires manufacturers of novel foods to notify the Department before the sale of the product in Canada. This pre-market notification permits Health Canada to conduct a thorough safety assessment according to the Department's Guidelines for the Safety Assessment of Novel Foods. Health Canada recently revised these guidelines to reflect the experience gained in the Department's evaluation of novel food products and advances in scientific knowledge and technology

To date, Health Canada has authorised the sale of over 90 novel foods following a thorough safety assessment of each product. Examples of approved foods will be presented for a number of novel foods to provide more details on the regulatory trigger for novelty and the safety assessment process. In addition, efforts to harmonize and refine the approaches to the safety assessment of novel foods with international regulatory agencies will be discussed.

SESSION 3: Innovation in Microbiological Methods

Microbiological Criteria for Foodstuffs: Rational and Examples

RON H. DWINGER and M. HATAKKA, European Commission, Directorate General Health and Consumer Protection, Unit Hygiene and Control Measures, Rue Belliard 232, 1049-Brussels, Belgium

In the framework of the recasts of community food hygiene legislation and zoonosis legislation, it was regarded necessary to review the old microbiological criteria. The review took into account recent developments in food microbiology and scientific advice from EFSA. During extensive discussions with Member States and stakeholders the criteria were developed and additional ones were introduced resulting in the publication of Commission Regulation (EC) No 2073/2005 on microbiological criteria for foodstuffs. The main objectives of the Commission Regulation are to ensure a high level of consumer health protection with regard to food safety and to harmonise the microbiological criteria in the Member States. In particular, the target of the Commission Regulation is to reduce the number of *Salmonella* and *Listeria* cases in humans and improve the safety of infant food. A main component of the Commission Regulation is to set two types of criteria for foodstuffs:

- · A food safety criterion defining the safety of a product or a batch during their entire shelf life
- A process hygiene criterion indicating the correct functioning of the manufacturing process. These criteria are applicable during or at the end of the process.

Microbiological criteria have been laid down for certain microorganisms which are common causes of foodborne diseases in humans, such as *Salmonella*, *Listeria*, toxins produced by staphylococci bacteria, *Enterobacter sakazakii* and histamine. If these criteria are exceeded the batch has to be withdrawn from the market.

Food safety criteria have been laid down for the following combinations of food category/microorganism:

- · A Listeria monocytogenes criterion for all ready-to-eat foods
- · A Salmonella criterion for certain ready-to-eat foods, minced meat, meat preparations and meat products
- · A criterion for staphylococcal enterotoxins in certain types of cheeses and milk powder
- · An Enterobacter sakazakii criterion for dried infant formulae
- An E. coli criterion for live bivalve molluscs
- · A histamine criterion for certain fishery products

In addition, the Commission Regulation includes process hygiene criteria, such as *Enterobacteriaceae* in dried infant formulae and *Salmonella* in carcases of slaughtered animals, coagulase-positive staphylococci in certain types of cheese and *E. coli* in pre-cut fruit and vegetables.

The Commission Regulation is addressed to food business operators whose responsibility is to ensure that food complies with the criteria. The competent authority will be required to verify the compliance.

Innovations in Microbial Testing Methodologies

PETER PAULSEN, Institute of Meat Hygiene, Meat Technology and Food Science in the Department of Veterinary Public Health, University of Veterinary Medicine in Vienna, Veterinaerplatz 1, A 1210 Vienna, Austria

Microbiological testing of foods is associated with a number of uncertainties and variabilities. The limitations of judging product safety solely based on testing of finished foods was recognised quite early (ICMSF, 1978, 1988) and emphasis was put on process control and modifying the intrinsic properties of the food to gain microbiological safety. Mossel coined the term that "safety cannot be inspected into foods, has has to be built-in".

In the past two decades, there were quite different opinions on the role of routine microbiological testing by the food industry. The acceptance of HACCP as a system to keep food production processes under control meant that the surveillance of process control criteria, (e.g., time-temperature), are sufficient to guarantee to a reasonable extent that a specific hazard cannot reach an unacceptable dimension. Further, "real-time" measurements were preferred, while microbiological testing can consume up to several days. Thus, microbiological testing would primarily be employed to verify that the HACCP system is operational, or in case of deviations in production, to check deviant batches of food to estimate if they could be released, reprocessed or need to be discarded. By no means, microbiological testing should be employed on a routine basis (i.e., batchwise) to release food batches.

In practice, strict adherence to this viewpoint has some shortcomings.

Trade between companies: auditing the HACCP of the supplying company is essential, but when product specifications have to be defined, HACCP control criteria have low portability, thus, analytical results for "typical" batches are needed, either chemical or microbiological.

A "control" or the establishment of CCPs is maybe not possible for all parts of the food chain. In the meat production area, a number of pathogens are symptomlessly carried in large numbers in the intestines of slaughter animals (e.g., *Campylobacter* in chicken; *E. coli* O157:H7 in cattle; *Salmonella* in pigs), whereas a few hundred of these organisms ingested by humans can cause disease. For those pathogens, traditional hygiene measures are sometimes of limited efficacy in prevention of the contamination of meat. Interventions, as decontamination by chemical agents, are either not accepted for fresh meat (EU) or are not sufficiently effective against certain pathogens (e.g., *E. coli* O157:H7). There are obviously commodities, where batchwise testing is useful to release the food batches (Arthur et al., 2005).

From the regulatory viewpoint, microbiological testing is essential not only in case of incidents, but has to be done on a regular basis:

- to check if foods put on the market are safe (e.g. EU Regulation 2073/2005);
- in the course of risk assessment studies, to know contamination levels of foods at various stages in the food chain. In particular, the concept of food safety objectives (FSO) requires such knowledge in depth;
- in case where data for risk assessment are insufficient, regular microbiological testing may constitute a measure according to the precautionary principle.

Thus, microbiological testing is not the only, but one valuable tool in the efforts to assure safety along the food chain. Much efforts have been made in changes of traditional techniques to simplify work, reduce manual labour (in terms of media preparation, GLP documentation...) in short terms: a sort of "convenience microbiology" has emerged. On the other hand, novel technologies may be of higher sensitivity and specifity than traditional ones. An important issue is "convenience" in terms of pre-prepared media and automated processes. From a practical viewpoint, the adoption of "novel" methods has not only to be accompanied by validation studies, but there should always be some critical thinking about the "fitness for use".

Evaluation and Equivalence of Innovative Microbiological Methods

ALEXANDRE LECLERCQ, Institute Pasteur, 25-28 Rue Dr. Roux, Paris 75015, France

Numerous microbiological methods for detection and enumeration of microorganisms in food have been developed and are extensively used in routine. However, the development of international trade, the linked food safety, and the requirement for qualitative assurance in laboratories has stressed the need for harmonization of these methods.

Standardisation is an appropriate way to solve this issue. It has been established at three levels: National (such as the French Association for Standardisation: Afnor), European (European Committee for Standardisation: Cen) and International (International Organisation for Standardisation: ISO). Currently, these organizations essentially promote

horizontal standards for microbiological analysis of food and mutual recognition of standards. The definition of microbiological criteria to consider the hygienic quality of food (which is the approach of the Codex Alimentarius Committee for Food Hygiene) cannot be carried out without combining it with a given method of analysis, since the result depends considerably on the methods selected. This is the reason new European regulation has linked the microbiological criteria with their methods on a legal basis and not on a voluntary states basis. Consequently, it is not easy to obtain the consensus required to establish the various standards (reference, routine, or validated commercial methods). Advantages and disadvantages of standardization depend on the type of service and the framework of analysis carried out by private or public laboratories.

On this last point, with the development of new analytical techniques and a new accreditation standard (NF EN ISO CEI 17025: 2005) with the concept of client satisfaction and validation of methods, numerous alternative or rapid methods have been commercialized or established by laboratories looking to replace the traditional methods of microbiology.

In the case of a commercialized methods, the users of these methods (both public laboratories for routine control, and agrofood industry laboratories within the general context of quality management and production process control) required guarantees. They requested certification bodies, such as Afaq Afnor, to set up a third party validation system for these commercial methods to ensure that these said methods provide results that are equivalent to those obtained with the corresponding reference ones.

In the case of accreditation process, food microbiology laboratories can design/develop an alternative or internal method (rapid analysis and/or results; simple and/or automated procedure; superior analytical characteristics; relevant to the client's needs, and used outside the intended scope of standard method) to reference or routine standards. In this case, a validation file with results recording and particular characteristics with regard to EN ISO 16140 standard about validation of quantitative or qualitative methods or procedure of accreditation body must be provided to accreditation body and technical assessors.

Thus, standardization simplifies technical aspects of food analysis, but also helps laboratories in quality assurance management and customer trade by defining a common language and clarifying its services. Disadvantages of standardization reside in its rigidity and slow evolution. Validation of methods should be the solution but we must not forget that it is always a balance between costs, risks, and technical possibilities while remaining relevant to the client's needs.

SESSION 4: Emerging Hot Topics in Food Safety

Med-Vet-Net - A European Network of Excellence on Zoonoses Research

TERESA BELCHER, Society for Applied Microbiology, Med-Vet-Net, Communications Unit, Bedford Heights, Brickhil Drive, Bedford MD41 7PH, UK

From September 2004, the European Union (EU) 6th Framework Programme, has provided five years of financial support for the development of Med-Vet-Net a Network of Excellence that aims to integrate research on the prevention and control of zoonoses. Med-Vet-Net comprises 16 European partners and over 300 scientists in 10 countries. For the first time, veterinary, medical and food scientists are developing collaborative projects and integrating research across the food chain.

Foodborne Viruses

MARION KOOPMANS, National Institute of Public Health and the Environment, P.O. Box 1, Bilthoven 3720 BA, The Netherlands

Food-related illness is common worldwide, and bacterial pathogens have historically been associated with this mode of transmission. In recent years, however, the importance of viruses as a cause of food- or waterborne illness has received increasing attention. The list of viruses that can successfully be transmitted via food is growing, ranging from viruses causing gastroenteritis (noroviruses) to viruses that cause hepatitis (hepatitis A virus, hepatitis E virus) and neurological problems (enteroviruses). Research into the epidemiology of noroviruses has demonstrated that foodborne transmission occurs frequently, with an incidence in the same range as that of *Campylobacter*. Hepatitis A and E infections are rarely diagnosed as foodborne because this is seldomly achieved through routine case or outbreak investigations. These viruses differ from noroviruses in that they have a much longer incubation period, a higher proportion of asymptomatic infections, and less secondary transmissions. Therefore, distribution of these viruses via food may go unnoticed, unless molecular typing data are used to link patients. Linking outbreaks of norovirus to common-source introductions nationally or internationally may be difficult due to the high secondary attack rate as a consequence of rapid person-to-person transmission. Thus, an initial seeding event will rapidly be masked by the occurrence of new cases or outbreaks, suggesting that person-to-person transmission is the primary mode of spread.
The likelihood of detecting such seeding events relies on effective surveillance, which combines epidemiological assessment of the outbreak, and molecular typing using agreed and standardized methods to underpin potential links between outbreaks.

In 1999, we established a combined research and surveillance network for foodborne viruses, the Foodborne Viruses in Europe network (FBVE; www.eufoodborneviruses.co.uk). This project group combines complementary expertise from the fields of diagnostic virology, molecular virology, epidemiology, and food microbiology to study modes of transmission of enteric viruses across Europe. Data collected over these years show that foodborne viral outbreaks are common, including international outbreaks. The proportion of outbreaks attributed to foodborne infection varies greatly from year to year and between countries. At least 15 international alerts were issued over the years about possible international foodborne outbreaks but complete outbreak investigations are often hampered by political barriers. A specific problem is the observation that often contaminated food contains mixtures of viruses, increasing the risk of generation of new recombinant strains. Such sudden but also more gradual changes in the circulating viruses have a clear impact on their epidemiology.

Avian Influenza

PETER K. BEN EMBAREK, World Health Organization, 20 Avenue Appia, Geneva 27 CH-1211, Switzerland

Ongoing outbreaks of highly pathogenic H5N1 avian influenza in poultry in Asia and, more recently in Europe and Africa have raised concerns about the source of infection and the risk to humans from various exposures. On present evidence, the vast majority of human cases have acquired their infection following direct contact with infected live or dead poultry. There have been ongoing concerns that the virus could also spread to humans through contact with contaminated poultry products. To date, no epidemiological data suggest that the disease can be transmitted to humans through properly cooked food or that products shipped from affected areas have been the source of human infections.

Unlike other strains of avian influenza virus, highly pathogenic viruses H5N1 viruses have been isolated from the GI tract, blood, bone, breast and thigh meat of infected poultry. Domestic cats, tigers, and leopards that consumed uncooked poultry carcasses in laboratory experiments and in a zoo have resulted in fatal infections suggesting that consumption of uncooked meat is a potential risk to humans. Avian influenza viruses including H5N1 have been isolated from live poultry from markets in several affected countries. These results suggest occupational and consumer risks associated with traditional live markets and traditional home slaughtering. Commercially produced poultry are also vulnerable to infection. H5N1 virus has been isolated in industrially produced and traded frozen duck meat. Avian influenza viruses retain their infectivity in raw poultry meat and their viability may be extended by the refrigeration and freezing processes common in the food industry. However, normal cooking (temperatures at or above 70°C in all parts of the product) will inactivate the virus.

From the information currently available, a large number of confirmed human cases acquired their infection during the slaughtering and subsequent handling of diseased or dead birds prior to cooking. The practice of home slaughtering, defeathering, and eviscerating sick or dead poultry is likely to results in high dose exposures. Given proper cooking practices, the preparation of infected poultry rather than its consumption, may then be the main source of concern.



2007-2008 Secretary Election

The following page contains biographical information for the 2007-2008 Secretary candidates. Review the information carefully as you make your voting decision. Ballots were mailed to all International Association for Food Protection Members during the first week of February. Completed ballots are due back to the Association office by March 16, 2007. Sealed ballot envelopes are forwarded to the Tellers Committee for opening and counting. Watch for the election results in the May issue of *Food Protection Trends*.

If you have questions about the election process, contact David W. Tharp, CAE, Executive Director at 800.369.6337, or 515.276.3344, or E-mail dtharp@foodprotection.org.

The Candidates



LEE-ANN JAYKUS



JOHN N. SOFOS

DR. LEE-ANN JAYKUS Raleigh, North Carolina

Dr. Lee-Ann Jaykus is a Professor of Food Science and Microbiology at North Carolina State University (NCSU) in Raleigh. She earned a B.S. degree in Food Science (1979) and an M.S. degree in Food Microbiology (1982), both from Purdue University. Her background is somewhat unique for an academician, as she worked in industry for six years prior to pursuing the Ph.D. In her first industrial experience, Dr. Jaykus served as a quality control manager (1981-1983) for Frito Lay, Inc. She later joined Dairy and Food Laboratories, Inc., in Modesto, CA, as their microbiology department manager. It was during her time in California, which coincided with a large listeriosis outbreak associated with the consumption of Hispanic-style cheese, that Dr. Jaykus became interested in the interface between food microbiology and public health. In 1988, she entered a Ph.D. program in the School of Public Health at the University of North Carolina at Chapel Hill to study foodborne viruses, molecular biology, epidemiology, and risk assessment. After completing her degree (1993), Dr. Jaykus joined the faculty of the Food Science Department at NCSU.

In her role as a professor, Dr. Jaykus is responsible for teaching the undergraduate course in Food Microbiology and graduate level courses in Microbial Food Safety. She has been instrumental in initiating a graduate food safety minor at NCSU and currently serves as chair of the NCSU Food Safety faculty. Over the last 13 years, she has had the opportunity to interact with over 400 students in the classroom, and she finds it particularly rewarding to mentor these young people as they mature, both personally and professionally.

Dr. Jaykus' research expertise lies in food virology, the development of rapid molecular methods for pathogen detection, and microbial risk assessment. She has served roles as lead investigator and collaborator on several large multi-institutional projects addressing the safety of fresh produce items and molluscan shellfish. Dr. Jaykus' research philosophy is collaborative, and she enjoys bringing together professionals from diverse disciplines to form teams which take on complex food safety problems. She currently supervises over 10 graduate students, post-doctoral researchers, and staff; to date, she has mentored the complete programs of 17 graduate students (several of whom have received IAFP Developing Scientists awards), 5 post-doctoral research associates, and various visiting scientists. She and her students/staff have authored over 60 peer-reviewed research publications, 14 book chapters, and numerous special interest papers.

In addition to IAFP, Dr. Jaykus' many professional affiliations include membership in the Institute of Food Technologists, the American Society for Microbiology, and the Society for Risk Analysis. She has served each of these organizations, most notably by participation in a variety of colloquia and as a member of expert panels. Recently, Dr. Jaykus has also been involved with the Council for Agricultural Science and Technology, for whom she chaired a working group on microbial risk analysis, and as a member of the Best Practices in Microbiological Methods working group of the Association of Official Analytical Chemists. She is currently serving her third term as a member of the National Advisory Committee on Microbiological Criteria for Foods (NACMCF).

Dr. Jaykus has been committed to the goals of IAFP since joining the Association in 1993, at which time she was the recipient of a Developing Scientist Award. Since then, she has organized and convened numerous symposia and has served as a speaker and participant in workshops. She was a founding member of the Foodborne Virus and Parasitic Protozoa PDG (chair, 1995–1999; 2002–2004) and the Microbial Risk Analysis PDG (chair, 1998–1999). She also served as a member of the *Journal of Food Protection* Management Committee (1998–2001) and editorial board (1997– present); chair of the Nominations Committee (2004); and judge (2005, 2006) and chair (2006) for the Developing Scientist Competition Committee. In 2006, Dr. Jaykus was the recipient of the IAFP Educator Award and she is currently serving as chairperson of the 2007 IAFP Program Committee.

DR. JOHN N. SOFOS Fort Collins, Colorado

Dr. John N. Sofos is Professor of Microbial Food Safety in the Department of Animal Sciences at Colorado State University, and holds B.S. (Agriculture), M.S. (Animal Science) and Ph.D. (Food Science) degrees from the Aristotle University of Thessaloniki, Greece, and from the University of Minnesota, respectively. In the past he has served as Research Associate at the University of Minnesota, and as Assistant and Associate Professor at Colorado State University. His research interests address the ecology, detection, stress-resistance and control of bacterial pathogens in foods, and he teaches Meat Safety and HACCP. In the past he has taught Food Processing, Food Microbiology, and Food Biotechnology. The major focus of research conducted by Dr. Sofos and his group during the past decade has targeted control of *Escherichia cali* O157:H7, *Salmonella* and *Listeria manacytogenes* in fresh and processed meat products, and other foods.

Listed as a "Highly Cited Scientist" by Thomson Scientific (www.ISIHighlyCited.com), Dr. Sofos has authored or co-authored approximately 220 refereed scientific journal articles, six books, over 50 book chapters, and more than 600 other publications (including abstracts, popular press articles, bulletins, conference proceedings, and research reports). He has received numerous awards, including the Distinguished Research Award of the American Meat Science Association, the Distinguished Meats Award of the American Society of Animal Science, the Educator Award of the International Association for Food Protection, and the United States Department of Agriculture Secretary's Honor Award for Superior Service for leading studies on bacterial pathogen control. He is a Fellow of the American Academy of Microbiology, the Institute of Food Technologists, the American Society of Animal Science, and IAFP.

Dr. Sofos has served on 90, and has chaired 55 M.S. and Ph.D. graduate student committees, and his graduate students, postdoctoral fellows and visiting scientists have come from the United States and other countries including Belize, Botswana, Brazil, Bulgaria, Canada, China, Greece, India, Indonesia, Iran, Italy, Ivory Coast, Kenya, Korea, Saudi Arabia, South Africa, Spain, Thailand, Turkey, Ukraine, United Arab Emirates, Venezuela, and Zimbabwe. Many of them hold industry, academic and government positions in various countries. He has presented over 140 invited lectures, seminars, workshops and research papers on food safety related topics, approximately half of which were presented in countries such as Argentina, Australia, Austria, Belgium, Bulgaria, Canada, France, Greece, Hungary, Indonesia, Italy, Japan, Mexico, New Zealand, Poland, Portugal, Spain, The Netherlands, and United Kingdom.

Currently, Dr. Sofos serves as a Scientific Co-Editor for the Journal of Food Protection. In addition he has served on the United States National Advisory Committee on Microbiological Criteria for Foods; the American Council on Science and Health, Board of Scientific and Policy Advisors; the United States National Academy of Sciences Institute of Medicine Committee on the Review of the United States Department of Agriculture Escherichia coli O157:H7 Farm to Table Process Risk Assessment; as Task Force Chair on Natural Antimicrobials for the Council for Agricultural Science and Technology; as Panel Manager for the United States National Integrated Food Safety Initiative; and on numerous committees of professional associations.





Award Nominations

The International Association for Food Protection welcomes your nominations for our Association Awards. Nominate your colleagues for one of the Awards listed below. You do not have to be an IAFP Member to nominate a deserving professional. To review nomination criteria, visit the IAFP Web site or contact:

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

Nominations deadline is March 12, 2007.

You may make multiple nominations. All nominations must be received at the IAFP office by **March 12, 2007.**

- Persons nominated for individual awards must be current IAFP Members. Black Pearl Award nominees must be companies employing current IAFP Members. GMA-FPA Food Safety Award nominees do not have to be IAFP Members.
- Previous award winners are not eligible for the same award.
- Executive Board Members and Awards Committee Members are not eligible for nomination.
- Presentation of awards will be during the Awards Banquet at IAFP 2007

 the Association's 94th Annual Meeting in Lake Buena Vista, Florida on July 11, 2007.

Nominations will be accepted for the following Awards:

Black Pearl Award

Award Showcasing the Black Pearl, *Sponsored by Wilbur Feagan and F&H Food Equipment Company* Presented in recognition of a company's outstanding commitment to, and achievement in, corporate excellence in food safety and quality.

Fellow Award

Distinguished Plaque

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

Honorary Life Membership Award

Plaque and Lifetime Membership in IAFP

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

Harry Haverland Citation Award

Plaque and \$1,500 Honorarium, Sponsored by Zep Manufacturing Co.

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

Harold Barnum Industry Award

Plaque and \$1,500 Honorarium, Sponsored by Nasco International, Inc.

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

Elmer Marth Educator Award

Plaque and \$1,500 Honorarium, Sponsored by Nelson-Jameson, Inc.

Presented to an individual for dedicated and exceptional contributions to the profession of the Educator.

Sanitarian Award

Plaque and \$1,500 Honorarium, Sponsored by Ecolab Inc.

Presented to an individual for dedicated and exceptional service to the profession of Sanitarian, serving the public and the food industry.

Maurice Weber Laboratorian Award

Plaque and \$1,500 Honorarium, Sponsored by Weber Scientific

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

International Leadership Award

Plaque, \$1,500 Honorarium and Reimbursement to attend IAFP 2007, Sponsored by Cargill, Inc.

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

Food Safety Innovation Award

Plaque and \$2,500 Honorarium, Sponsored by 3M Microbiology

Presented to a Member or organization for creating a new idea, practice or product that has had a positive impact on food safety, thus, improving public health and the quality of life.

GMA-FPA Food Safety Award

Plaque and \$3,000 Honorarium, Sponsored by GMA-FPA

This Award alternates between individuals and groups or organizations. In 2007, the award will be presented to a individual in recognition of a long history of outstanding contributions to food safety research and education.

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 124 of this issue) 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 [Manderin/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 Lani McDonald, Association Services at 800.369.6337 or 515.276.3344 if you wish to make a donation.



AUDIOVISUAL LIBRARY

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DAIRY

- D1010 The Bulk Milk Hauler: Protocol & Procedures – (8 minutes). 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)
- 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)
- D1031 Dairy Plant (28 minutes). Join in on this video as it follows a tour of the University of Wisconsin Dairy Plant. Observe the gleaming machinery and learn the ins and outs of milk processing, packaging, and storage. Watch as workers manufacture butter, cheese, yogurt, sour cream and ice cream, and learn about secondary dairy products. (Chipsbooks Company–2003)
- D1040 Ether Extraction Method for Determination of Raw Milk – (26 minutes). Describes the ether extraction procedure to measure milk fat in dairy products. Included is an explanation of the chemical reagents used in each step of the process. (CA–1988) (Reviewed 1998)
- D1050 Food Safety: Dairy Details (18 minutes). Dairy products are prime targets of contamination because of their high protein and water content, but this presentation shows how to maintain dairy foods. It explores techniques such as selection, handling, preparation and storage for milk, yogurt, cheese and other dairy products. (Chipsbooks Company–2003)
- D1060 Frozen Dairy Products (27 minutes). 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, 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 minutes). Describes the Gerber milk fat test procedure for dairy products and compares it to the Babcock test procedure. (CA–1990) (Reviewed 1998)

D1080 High-Temperature, Short-Time Pasteurizer - (59 minutes). 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 minutes). 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 (Two-45 minute tapes). This video is ideal for one-on-one or small group presentations. Section titles include: Mastitis Pathogens, Host Defense, Monitoring Mastitis, Mastitis Therapy, Recommended Milking Procedures, Post milking Teat Dip Protocols, Milk Quality, and Milking Systems. (Nasco-1993)
- D1105 Milk Hauling Training (35 minutes). This video covers the procedures and duties of the milk hauler from the time of arrival at the dairy farm, to the delivery of the milk at the processing plant. It also provides the viewer with a general understanding of the quality control issues involved in milk production and distribution. Topics include milk composition breakdown, milk fat content measurement, testing for added water, antibiotic and pesticide residues, somatic cell and bacteria counts, sediment, and aflatoxins. (Avalon Mediaworks LLC–2003)
- DIIIO Milk Plant Sanitation: Chemical Solution (13 minutes). 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, 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 minutes). Developed by the California Department of Food and Agriculture. It covers preand post-inspection meetings 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 lockers and restrooms. Recommended for showing to plant workers and supervisors. (CA–1986)

- D1125 Ohio Bulk Milk Hauling Video (15 minutes). Milk haulers, weighers, and samplers are the most constant link between the producer, the producer cooperative, and the milk processor. This video shows their complete understanding of all aspects of farm milk collection and handling, milk quality and quality tests, and sanitation and sanitary requirements that contribute to the trust between the producer and the dairy plant. The video educates prospective haulers, weighers, and samplers throughout Ohio. (Ohio State University–2001)
- D1130 Pasteurizer: Design and Regulation (16 minutes). 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)
- DII40 Pasteurizer: Operation (II minutes). 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 minutes). 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 postpasteurization 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)
- D1180 10 Points to Dairy Quality (10 minutes). Provides in-depth explanation of a critical control point in the residue prevention protocol. Illustrated with onfarm, 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)

ENVIRONMENTAL

- E2012 Better TEDs for Better Fisheries (42 minutes). Introduces the usefulness of turtle excluder devices (TEDs) and demonstrates the working nature of the devices. It covers the major sea turtles and the specific TEDs needed for each. It precedes two segments on installation of appropriate TEDs in shrimp trawl nets. (MS Dept. of Marine Resources– 2003)
- E3010 The ABC's of Clean A Handwashing and Cleanliness Program for Early Childhood Programs–For early childhood program employees. This tape illustrates how proper hand washing and clean hands can contribute to the infection control program in daycare centers and other early childhood programs. (The Soap & Detergent Association–1991)

Acceptable Risks? – (16 minutes). 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)

F3020

- E3030 Air Pollution: Indoor (26 minutes). In–door 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)
- E3031 Allergy Beware (15 minutes). Designed to educate food and beverage company employees about their role in preventing an accidental allergic reaction caused by a product their company produces. Recommended for product development, production, labeling, scheduling and cleaning. Everyone has an important role to prevent cross contamination and mislabeling issues. (Food and Consumer Products Manufacturers of Canada–2003)
- E3040 Asbestos Awareness (20 minutes). 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 – (3.5 minutes). 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 minutes). Demonstrates the Ceriodaphnia Sevenday 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 Toxicity Tests (Using Fathead Minnow Larva) – (15 minutes). A training tape that teaches environmental professionals about the Fathead Minnow Larva 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 minutes). 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 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 minutes). This program traces the water cycle, beginning with the collection of rainwater 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 floculation, 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 minutes). 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 minutes). 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; and effects of deforestation, planting of trees and recycling as means of slowing the build-up of greenhouse gases. (Churchill Films–1995)

- E3125 Good Pest Exclusion Practices (28 minutes). Most pests you find inside come from outside your food plant. This video covers numerous tactics of keeping pests out of food processing and distribution operations. Tactics include grounds, landscaping and building design; inbound trailer and bulk transportation materials inspection; and key employee actions. Learn how to defend your perimeter with one of the best weapons in the battle against pests – exclusion. (CTI Publications–2004)
- E3128 Integrated Pest Management (IPM) (28 minutes). This video develops the IPM concept into a comprehensive 12-point program. To emphasize this concept, computer-animated, digital graphics are used to piece together the IPM puzzle. This dramatic effect assists participants in visualizing and retaining key points of the video. To paint the complete picture, each of the 12 points is discussed providing an IPM overview. (CTI Publications–2004)
- E3130 Kentucky Public Swimming Pool and Bathing Facilities – (38 minutes). 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)
- E3131 Key Pests of the Food Industry (28 minutes). Many types of pests can cause waste and loss of profits. Keeping food processing operations free of pest problems is a challenge. This video will assist food plant employees in the review of basic identification, biology, habits and control options of three key groups of pests frequently associated with food processing operations: birds, insects, and rodents. (CTI Publications–2004)
- E3133 Physical Pest Management Practices (28 minutes). Do you feel that you cannot do your job without pesticides? There are solutions. Many of them are what we call physical controls. This video will provide you with some of the things which can help you manipulate the physical environment in a manner that will prevent the growth of the pest population, causing them to leave or die. (CTI Publications–2004)
- E3135 Plastics Recycling Today: A Growing Resource – (26 minutes). Recycling is a growing segment of our nation's solid waste management program. It 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 minutes). 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 minutes). This videotape explains the danger associated with hazardous chemical handling and discusses the major hazardous waste handling requirements presented in the Resource Conservation and Recovery Act.
- E3160 RCRA-Hazardous Waste (19 minutes). 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.)
- E3161 The Kitchen Uncovered: Orkin Sanitized EMP - (13 minutes). This video teaches restaurant workers what they can do to prevent pest infestation, and what health inspectors look for. An excellent training tool for food service workers that can be used in conjunction with HACCP instruction. (Orkin–1997)

The New Superfund: What it is and 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 I Changes in the Remedial Process: Clean-up Standards and State Involvement Requirements – (62 minutes). 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 minutes). 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 minutes). 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 minutes). A major part of SARA is a freestanding act known as Title III: the Emergency Planning and community Rightto-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 and hazardous chemical inventory and the toxic chemical release inventory.
- E3220 Tape 5 Underground Storage Tank Trust Fund & Response Program – (48 minutes). Another additional 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 minutes). An important new mandate of the new Superfund are the technical provisions for research and development to create more permanent methods in the 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.
- E3235 Regulatory and Good Manufacturing Practices - (42 minutes). This video comes in two parts. Part one is a professional, 20-minute drama using real actors emphasizing the importance of food safety and GMPs. This dramatization will focus your emotions on the importance of cleanliness. Part two is a comprehensive 22-minute video introducing your

employees to basic GMP elements. This training video uses numerous split screens of "good" and "bad" practices, and will help viewers understand GMPs and basic food safety. (CTI Publications-2004)

- E3236 Rodent Control Strategies (22 minutes). Pest control is a vital part of food safety, and leading pestcontrol specialist Dr. Bobby Corrigan shows you how to design and maintain a rodent-control program at food processing establishments. (J.J. Keller–2004)
- E3240 Sink a Germ (10 minutes). A presentation on the rationale and techniques for effective hand washing in health care institutions. Uses strong imagery to educate hospital personnel that hand washing is the single most important means of preventing the spread of infection. (The Brevis Corp.–1986) (Reviewed 1998)
- E3245 Wash Your Hands (5 minutes). Hand washing is the single most important means of preventing the spread of infection. This video presents why hand washing is important and the correct way to wash your hands. (LWB company–1995)
- E3250 Waste Not: Reducing Hazardous Waste (35 minutes). 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)
- E3251 Would Your Restaurant Kitchen Pass Inspection? – (29 minutes). Help ensure a perfect score on any health inspection with this video by addressing safe food-handling techniques in the food service industry. Learn how foodborne illness is spread and how it can be prevented. Dramatizations display specific techniques students and employees can use to help any restaurant kitchen meet the highest standards. (Chipsbooks Company–2003)
- E3260 Swabbing Techniques for Sampling the Environment and Equipment – (DVD) (60 minutes). This training program is designed to assist in providing effective training to technicians that collect environmental samples for APC and Listeria. It will help assure that technicians understand the basic principles and best practices, and can demonstrate good sample collection techniques. (Silliker Labs-2005)

FOOD

F2005 A Lot on the Line – (25 minutes). 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)

- F2007 The Amazing World of Microorganisms (12 minutes). This training video provides your employees with an overview of how microorganisms affect their everyday lives and the foods they produce. The video explores how microscopic creatures are crucial in producing foods, fighting disease, and protecting the environment. In addition, certain microorganisms – when given the proper time and conditions to grow – are responsible for food spoilage, illness, and even death. Equipped with this knowledge, your employees will be better able to protect your brand. (Silliker Laboratories Group, Inc.–2001)
- F2008 A Recipe for Food Safety Success (30 minutes). This video helps food–industry employees understand their obligations in the areas of safety and cleanliness...what the requirements are, why they exist, and the consequences for all involved if they're not adhered to consistently. Critical information covered includes the role of the FDA and USDA; HACCP systems; sanitation and pest control; time and temperature controls that fight bacteria growth; and the causes and effects of pathogens. (J. J. Keller–2002)
- F2009 Basic Personnel Practices (18 minutes). This training video covers the practical GMPs from the growing field to the grocery store with a common sense approach. Employees learn the necessary training to help them understand the basic principles of food safety. (AIB International–2003)
- F2010 Close Encounters of the Bird Kind (18 minutes). 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)
- F2011 Available Post Harvest Processing Technologies for Oysters – (8 minutes). This video explains three currently available post-harvest processing (PHP) technologies for oysters that continue to be developed to provide safer oysters to consumers. The Gulf oyster industry increasingly adopts solutions offered by modern technology in its efforts to continue to promote quality, food safety and extended shelf life of oysters. (MS Dept. of Marine Resources–2003)
- F2013 Control of Listeria monocytogenes in Small Meat and Poultry Establishments – (26 minutes). (English and Spanish) – This video addresses a variety of issues facing meat processors who must meet

revised regulations concerning *Listeria monocytogenes* in ready-to-eat meats. Topics covered include personal hygiene, sanitation, biofilms, cross contaminations, in plant sampling, and microbiological testing. (Penn State college of Ag Sciences–2003)

- F2014 Controlling Food Allergens in the Plant (16 minutes). This training video covers key practices to ensure effective control in food plants and delivers current industry knowledge to help companies enhance in-plant allergen training. Visually communicates allergen-specific Good Manufacturing Practices, from checking raw material to sanitation, to prevent serious, costly problems. (Silliker Laboratories, Inc.–2004)
- F2015 Controlling Listeria: A Team Approach (16 minutes). In this video, a small food company voluntarily shuts down following the implication of one of its products in a devastating outbreak of *Listeria monocytogenes*. This recall dramatization is followed by actual in-plant footage highlighting 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)
- F2016 Bloodborne Pathogens: What Employees Must Know – (20 minutes). This program provides an overview of the hazards and controls for worker exposure to bloodborne pathogens. Specifically, the program covers the basic requirements of the standard; definitions of key terms (including AIDS, contaminated sharps, and occupational exposure); engineering controls and work practices; housekeeping techniques; Hepatitis B and more. (J.J. Keller– 2005)
- F2020 Egg Handling and Safety (11 minutes). Provides basic guidelines for handling fresh eggs which could be useful in training regulatory and industry personnel. (American Egg Board–1997)
- F2021 Egg Production (46 minutes). Live action footage of a completely automated operation follows the egg from the chicken to the carton. Watch the eggs as they roll down onto the main line, are washed, "candled," sorted by weight, placed into their packing containers, and prepared for shipment. Sanitation and health concerns are addressed. (Chipsbooks Company–2003)
- F2030 "Eggs Games" Foodservice Egg Handling & Safety – (18 minutes). 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-bystep information in an entertaining, visually exciting format. (American Egg Board–1999)
- F2035 Fabrication and Curing of Meat and Poultry Products – (2 tapes – 165 minutes). (See Part 2 Tape F2036 and Part 3 F2037) This is session one of threepart 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)

- F2036 Emerging Pathogens and Grinding and Cooking Comminuted Beef – (2 tapes – 165 minutes). (See Part I Tape F2035 and Part 2 Tape F2037) This is session two of a three-part meat and poultry teleconference co-sponsored by AFDO and the USDA Food Safety Inspection Service. These videotapes present an action plan for federal, state, and local authorities, industry, and trade associations in a foodborne outbreak. (AFDO/USDA-1998)
- F2037 Cooking and Cooling of Meat and Poultry Products - (2 tapes - 176 minutes). (See Part | Tape F2035 and Part 2 Tape F2036) This is session three of a three-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)
- F2039 Food for Thought - The GMP Quiz Show - (16 minutes). In the grand tradition of television guiz 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 - 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 minutes). 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, over-ripening, 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 tapes 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 and Its Application to the Food Industry (Parts I & 2) – (2 tapes – 16 minutes each). (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 videos) - (4 tapes - 10 minutes each). (1) "Receiving and 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 Facility 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) "Foodservice 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 videos) (4 tapes 10 minutes each). 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 videos) (4 tapes 10 minutes each). 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)
- F2081 Food Safety Begins on the Farm (DVD) (15 minutes). From planting to consumption, there are many opportunities to contaminate produce. This is an excellent resource for training fruit and vegetable

growers Good Agricultural Practices (GAPs). It includes seven PowerPoint presentations that deal with all aspects of food safety relative to growing, harvesting, and packing fresh fruits and vegetables. (Cornell Good Agricultural Practices Program–2000)

- F2090 Food Safety: An Educational Video for Institutional Food Service Workers – (10 minutes). 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. (US Dept of Health & Human Services–1997)
- F2095 Now You're Cooking (DVD and video) (15 minutes). Using a food thermometer can improve the quality and safety of meat. This 15-minute video describes the why and how of using a food thermometer when cooking small cuts of meat like meat patties, chicken breasts, and pork chops. Topics include: why color is not a good indicator of doneness; how to choose an appropriate food thermometer for small cuts of meat; quick and easy steps for using an instant-read thermometer; how to calibrate an instant-read thermometer; and the most effective cooking methods for reducing *E. coli* O157:H7 in hamburger patties. (University of Idaho–2005) (Reviewed–2005)

Food Safety for Food Service Series I – An employee video series containing quick, 10-minute videos that teach food service employees how to prevent foodborne illness. This four video series examines sources of foodborne illness, plus explores prevention through awareness and recommendations for best practices for food safety. It also looks at how food safety affects the food service employee's job. (J.J. Keller & Associates–2000)

- F2100 Tape I Food Safety for Food Service: Cross Contamination – (10 minutes). Provides the basic information needed to ensure integrity and safety in foodservice operations. Explains proper practices and procedures to prevent, detect and eliminate cross contamination.
- F2101 Tape 2-Food Safety for Food Service: HACCP - (10 minutes). This video takes the mystery out of HACCP for your employees, and explains the importance of HACCP procedures in their work. Employees will come away feeling confident, knowing how to make HACCP work. The seven steps of HACCP and how HACCP is used in foodservice are some of the topics discussed.
- F2102 Tape 3 Food Safety for Food Service: Personal Hygiene – (10 minutes). This video establishes clear, understandable ground rules for good personal hygiene in the foodservice workplace and explains why personal hygiene is so important. Topics include: personal cleanliness; proper protective equipment; correct hand washing procedures; when to wash hands; hygiene with respect to cross contamination; and prohibited practices and habits.

F2103 Tape 4 – Food Safety for Food Service: Time and Temperature Controls–(10 minutes). This video examines storage and handling of raw and cooked ingredients, and explains how to ensure their safety. Employees learn how to spot potential problems and what to do when they find them. Topics include: correct thermometer use, cooling, thawing and heating procedures, food storage procedures, holding temperature requirements, and handling leftovers.

Food Safety for Food Service Series II – An employee video series containing quick, 10-minute videos that boost safety awareness for food service employees and teach them how to avoid foodborne illness. (J.J. Keller & Associates–2002)

- F2104 Tape I Basic Microbiology and Foodborne Illness – (10 minutes). Covers four common microorganisms in food, how they get into food, and simple ways to prevent contamination. Stresses the importance of keeping food at the right temperature, having proper personal hygiene, and cleaning and sanitizing work surfaces.
- F2105 Tape 2 Handling Knives, Cuts, and Burns – (10 minutes). Explains why sharp knives are safer than dull ones, provides tips for selecting a good knife, and gives techniques for cutting food safely. Also explains first aid for cuts and burns and the most common causes of burns.
- F2106 Tape 3 Working Safely to Prevent Injury – (10 minutes). Discusses common lifting hazards and how back injuries can happen. Gives proper lifting and carrying techniques to prevent soreness and injury. Also covers how to prevent slips, trips, and falls.
- F2107 Tape 4 Sanitation (10 minutes). Provides tips for good personal hygiene habits, including the proper way to wash your hands, dress, and prepare for work. Also covers cleaning and sanitizing equipment; storing chemicals and cleaning supplies; and controlling pests that can contaminate work areas and food.

F2110 Food Safety is No Mystery – (34 minutes). This is an excellent training visual for foodservice 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 foodservice 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) (Reviewed 1998)

F2111 Controlling Salmonella: Strategies That Work – (16 minutes). This training video provides practical guidelines to prevent the growth of Salmonella in dry environments and avoid costly product recalls. Using this video as a discussion tool, supervisors can help employees learn about water and how it fosters conditions for the growth of Salmonella in dry processing plants with potentially devastating consequences. (Silliker Laboratories–2002)

- F2120 Food Safety: For Goodness Sake Keep Food Safe – (15 minutes). Teaches food handlers 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 Extention–1990) (Reviewed 1998)
- F2121 Food Safety the HACCP Way (11.5 minutes). Introduces managers and line–level staff to HACCP, or the Hazard Analysis Critical Control Point food safety system. The HACCP system is a seven–step process to control food safety, and can be applied to any size and type of food establishment.

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 four topics are: Basic Microbiology, Cross Contamination, Personal Hygiene, and Sanitation. (J.J. Keller & Associates–1999)

- F2125 Tape 1 Basic Microbiology and Foodborne Illness – (10 minutes). Covers four common microorganisms in food, how they get into food, and simple ways to prevent contamination. Stresses the importance of keeping food at the right temperature, having proper personal hygiene, and cleaning and sanitizing work surfaces.
- F2126 Tape 2 Food Safety Zone: Cross Contamination – (10 minutes). 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 (English and Spanish) - (10 minutes). 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 minutes). 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 the 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.
- F2129 Food Technology: Irradiation (29 minutes). Video covers the following issues: history and details of the irradiation process; effects of irradiation on treated products; and consumer concerns and acceptance trends. Other important concerns addressed include how food irradiation affects food cost, the nutritional food industry, food science and research, and irradiation regulatory industries (such as the Nuclear Regulatory Commission) add insight into the process of irradiation. (Chipsbooks–2001)
- F2130 Food Safety: You Make the Difference (28 minutes). Through five food workers from differing backgrounds, this engaging and inspirational documentary style video illustrates the four basic food safety concepts: hand washing, preventing cross contamination, moving foods quickly through the danger zone, and hot/cold holding. (Seattle–King County Health Dept.–1995)
- F2131 Fruits, Vegetables, and Food Safety: Health and Hygiene on the Farm (DVD and video) – (15 minutes). This presentation shows ways to prevent contamination of fruits and vegetables while you work. It was filmed in real production fields and packinghouses in the United States. Organisms of concern in fruits and vegetables are discussed, along with proper hygiene practices when handling and harvesting fruits and vegetables. (Cornell University– 2004)
- F2133 Food Safety First (English and Spanish) (DVD and Video) – (50 minutes). Presents causes of foodborne illness in foodservice and ways to prevent foodborne illness. Individual segments include personal hygiene and hand washing, cleaning, and sanitizing, preventing cross contamination, and avoiding time and temperature abuse. Food handling principles are presented through scenarios in a restaurant kitchen. (GloGerm–1998)
- F2134 Food Safety: Fish and Shellfish Safety (21 minutes). Seafood tops the list for foods that can become contaminated with bacteria-causing foodborne illness. This video shows how to protect yourself from fish and shellfish contamination by learning proper selection, storage, preparation and safe consumption. (Chipsbooks Company–2003)
- F2135 Get with a Safe Food Attitude (40 minutes). 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 women 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 Dept. of Agriculture–1999)

- 136 GLP Basics: Safety in the Food Micro Lab (16 minutes). This video is designed to teach laboratory technicians basic safety fundamentals and how to protect themselves from inherent workplace dangers. Special sections on general laboratory rules, personal protective equipment, microbiological, chemical, and physical hazards, autoclave safety, and spill containment are featured. (Silliker Laboratories–2001)
- F2137 GMP Basics: Avoiding Microbial Cross-Contamination – (15 minutes). This video takes a closer look at how harmful microorganisms, such as *Listeria*, can be transferred to finished products. Employees see numerous examples of how microbial cross-contamination can occur from improper traffic patterns, poor personal hygiene, soiled clothing, unsanitized tools and equipment. Employees need specific knowledge and practical training to avoid microbial cross contamination in plants. This video aids in that training. (Silliker Laboratories–2000)
- F2140 GMP Basics: Employee Hygiene Practices (20 minutes). 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 minutes). Developed specifically for maintenance personnel working in a food processing environment, this video depicts a plantwide 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)
- F2147 GMP Basics: Process Control Practices (16 minutes). 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 activites in the plant have an impact on product safety. (Silliker laboratories–1999)
- F2148 GMP GSP Employee (38 minutes). 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 and Practices in Food Manufacturing (English, Spanish, and Vietnamese) – (14 minutes). 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

F2136

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)

A GMP Food Safety Video Series – This fivepart video series begins with an introduction to GMPs and definitions, then goes on to review specific sections of the GMPs: personnel, plant and grounds, sanitary operations, equipment and utensils, process and controls, warehousing, and distribution. Developed to assist food processors in training employees on personnel policies and Good Manufacturing Practices (CMPs), the series includes different types of facilities, including dairy plants, canning factories, pasta plants, bakeries, and frozen food manufacturing facilities. (J.J. Keller–2003)

- F2151 Tape I Definitions (12 minutes). Provides the definitions necessary to understand the meaning of the CMPs.
- F2152 Tape 2 Personnel and Personnel Facilities–(11 minutes). Covers selection of personnel, delegation of responsibilities, development of plant policies for employees, and operational practices.
- F2153 Tape 3 Building and Facilities (16 minutes). Discusses guidelines for the construction and maintenance of the manufacturing plant and grounds around the plant.
- F2154 Tape 4 Equipment and Utensils (12.5 minutes). Provides guidelines for the construction, installation, and maintenance of processing equipment.
- F2155 Tape 5 Production and Process Controls – (20 minutes). Covers establishing a food safety committee, inhouse inspections, analysis of raw materials and ingredients, cleaning schedules and procedures, and more.

F2160 GMP: Sources and Control of Contamination during Processing – (20 minutes). 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)

> GMPs for Food Plant Employees: Five-Volume Video Series Based on European Standards and Regulations – Developed to assist food processors in training employees in the Good Manufacturing Practices. Examples are drawn from a variety of processing facilities including dairy plants, canning facilities, pasta plants, bakeries, frozen food facilities, etc. (AIB International–2003)

> F2161 Tape I – Definitions – (13 minutes). Begins with an introduction to the GMPs

and traces a basic history of food laws in Europe, ending with the EC Directive 93/ 43/EEC of June 1993 on the hygiene of foodstuffs.

- F2162 Tape 2 Personnel and Personnel Practices – (13 minutes). Selecting personnel, delegating responsibilities, developing plant policies for employees and visitors, and establishing operational practices.
- F2163 Tape 3 Building and Facilities (17 minutes). Guidelines for the construction and maintenance of the manufacturing facility and grounds around the factory.
- F2164 Tape 4 Equipment and Utensils (13 minutes). Guidelines for construction, installation, and maintenance of processing equipment.
- F2165 Tape 5 Production/Process Controls – (22 minutes). Covers production and process controls, establishing a food safety committee, conducting in-house inspections, analyzing raw materials and ingredients, developing operational methods, establishing cleaning schedules and procedures, creating pest control programs and record keeping.
- F2168 HACCP Advantage - Good Manufacturing Practices - (English and Spanish) - (DVD) (40 minutes). The HACCP Advantage is based on HACCP principles and was developed by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMARFA). HACCP Advantage was designed to be a practical, cost-effective and preventative food safety system for all nonfederally registered food processing facilities, regardless of size, commodity or volume processed. OMAFRA has developed a 3-step approach to food safety management that makes it easier for small and medium-sized food processors to adopt a HACCP food safety program that meets their requirements. These three components - GMP Advantage, HACCP Advantage and HACCP Advantage Plus+ - collectively encompass all the elements of the original HACCP Advantage program as well as new elements to meet the evolving needs of modern food safety systems. (OMARFA-2006)
- F2169 HACCP: Training for Employees USDA Awareness – (15 minutes). This video is a detailed training outline provided for the employee program. Included in the video is a synopsis of general federal regulations; HACCP plan development; incorporation of HACCP's seven principals; HACCP plan checklist; and an HACCP employee training program. (J.J. Keller & Associates–1999)
- F2170 The Heart of HACCP (22 minutes). 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 a critical limits, monitoring systems, and corrective actions that are vital to the success of a HACCP plan. (Silliker Laboratoraies–1994)

- F2171 HACCP: The Way to Food Safety - (53 minutes). The video highlights the primary causes of food poisoning and stresses the importance of selfinspection. Potentially hazardous foods, crosscontamination 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)
- F2172 HACCP: Training for Managers (17 minutes). Through industry-specific examples and case studies, this video addresses the seven HACCP steps, identifying critical control points, record keeping 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–2000)
- F2173 Inside HACCP: Principles, Practices and Results (English and Spanish) – (15 minutes). This video is designed to help you build a more knowledgeable work-force and meet safety standards through a comprehensive overview of HACCP principles. Employees are provided with details of prerequisite programs and a clear overview of the seven HACCP principles. "Inside HACCP" provides short, succinct explanations of how HACCP works and places special emphasis on the four principles – monitoring, verification, corrective action, and recordkeeping – in which employees actively participate. (Silliker Laboratories–2001)
- F2175 Inspecting for Food Safety Kentucky's Food Code – (100 minutes). 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. (Dept. of Public Health Commonwealth of Kentucky–1997) (Reviewed 1999)
- F2180 HACCP: Safe Food Handling Techniques (22 minutes). 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 food service operation. A leader's guide is provided as an adjunct to the tape. (The Canadian Restaurant & Foodservices Assoc.-1990) (Reviewed 1998)
- F2190 Is What You Order What You Get? Seafood Integrity – (18 minutes). 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)

- F2191 Microbial Food Safety: Awareness to Action (DVD PowerPoint presentation) –(90 minutes). An overview of GAPs and resources by the United Fresh Fruits and Vegetables Association, a hazard identification self–audit, a sample farm investigative questionnaire, copies of relevant California state information, and US federal regulations. Contains numerous commodity flow charts and photos for more than 30 fruits and vegetables, one dozen PowerPoint presentations containing more than 400 slides, including may in Spanish and two dozen supplemental documents on a variety of food safety topics. (UC Davis–2002)
- F2210 Northern Delight From Canada to the World – (13 minutes). 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. (Ternelle Production, Ltd.) (Reviewed 1998)
- F2220 Proper Handling of Peracidic Acid (15 minutes). Introduces peracidic acid as a chemical sanitizer and features the various precautions needed to use the product safely in the food industry.
- F2230 Purely Coincidental (20 minutes). 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)
- F2240 On the Front Line (18 minutes). 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 (English and Spanish) (30 minutes). 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. (The Food Processors Institute–1993) (Reviewed 1998)
- F2260 100 Degrees of Doom...The Time and Temperature Caper – (14 minutes). 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)

A Day in the Deli: Service, Selection, and Good Safety – (22 minutes). This training video provides basic orientation for new deli department employees and highlights skills and sales techniques that will build department traffic and increased sales. The focus will be on the priorities of the deli department freshness, strong customer service, professionalism, and food safety. By understanding the most important issues for their position(s), employees can comprehend their contribution to the financial interests of the store. (Food Marketing Institute–2003)

- F2266 HACCP: A Basic Understanding (32 minutes). Explore applications for Hazard Analysis Critical Control Points (HACCP), a system of process controls required by federal and state governments for most areas of the food service industry. Learn to minimize the risk of chemical, microbiological and physical food contamination while focusing on the seven principles of HACCP and the chain of responsibility. (Chipsboosk company–2003)
- F2270 Pest Control in Seafood Processing Plants (26 minutes). 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.
- F2271 Preventing Foodborne Illness (10 minutes). This narrated video is for food service workers, with emphasis on insuring food safety by washing one's hands before handling food, after using the bathroom, sneezing, touching raw meats and poultry, and before and after handling foods such as salads and sandwiches. Safe food temperatures and cross contamination are also explained. (Colorado Dept. of Public Health and Environment–1999)
- F2280 Principles of Warehouse Sanitation (33 minutes). 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 and Shelf Life (40 minutes). 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 problem 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, Inc.–1987) (Reviewed 1997)
- F2310 Safe Food: You Can Make a Difference (25 minutes). 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 hand washing as methods of foodborne illness control is provided. The video provides an orientation to food safety for professional food handlers. (Tacoma-Pierce County Health Dept.-1990) (Reviewed 1998)

F2320 Safe Handwashing – (15 minutes). Twenty-five percent of all foodborne illnesses are traced to improper hand washing. The problem is not just that hand washing 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 & Management–1991) (Reviewed 1998)

- F2321 All Hands On Deck (12 minutes) Germ Tells All. A Benedict Arnold of the germ world comes clean by teaching the audience to "think like a germ" when it comes to hand washing. The reasons for hand washing are outlined and proper technique is demonstrated along with suggestions for avoiding immediate recontamination before even leaving the rest room. Interesting, informative, humorous and appropriate for virtually any age group.(Brevis Corporation – 2005)
- F2322 The Why, The When and The How Video (5 minutes) An excellent tool for motivating good hand hygiene behavior with existing and new employees. Fast paced. Three modules train the why, when, and how of hand washing. (Brevis Corporation-2005)
- F2325 Safe Practices for Sausage Production - (180 minutes). 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/semidry) 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/ofo/hrds/STATE/RETAIL/manual. htm(1999)
- F2330 Sanitation for Seafood Processing Personnel -(20 minutes). A training video suited for professional food handlers working in any type of food manufacturing plant. The film highlights Good Manufacturing Practices and their role in assuring food safety. The professional food handler is introduced to a variety of sanitation topics including: (1) food handlers 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)

F2265

- F2340 Sanitizing for Safety - (17 minutes). Provides an introduction to basic food safety for professional food handlers. 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)
- F2341 Science and Our Food Supply - (45 minutes). Becoming food safety savvy is as easy as A-B-C! This video includes a step-by-step journey as food travels from the farm to the table; the Fight BAC®! Campaign's four simple steps to food safety, clean, cook, separate (combat cross contamination), and chill, and the latest in food safety careers. Other topics covered include understanding bacteria, food processing and day Alliance training courses. There are 12 training modules in the course that cover all of the information on HACCP principles, their application to seafood products, and the FDA regulation. Experience has shown that HACCP implementation can be more effective when a number of key people in the operation have a good understanding of the system and its requirements. (Cornell University-2004)
- F2350 ServSafe Steps to Food Safety (DVD and Video) (English and Spanish) - 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. (National Restaurant Association Education Foundation-2000)
 - Tape I Step One: Starting Out with Food Safety - (12 minutes). Defines what foodborne illness is and how it occurs; how foods become unsafe; and what safety practices to follow during the flow of food.
 - Tape 2 Step Two: Ensuring Proper Personal Hygiene - (10 minutes). Introduces employees to ways they might contaminate food; personal cleanliness practices that help protect food; and the procedure for thorough hand washing.
 - Tape 3 Step Three: Purchasing, Receiving and Storage - (12 minutes). Explains how to choose a supplier; calibrate and use a thermometer properly; accept or reject a delivery; and store food safely.
 - Tape 4 Step Four: Preparing, Cooking and Serving - (11 minutes). Identifies proper practices for thawing, cooking, holding, serving, cooling, and reheating food.
 - Tape 5 Step Five: Cleaning and Sanitizing -(11 minutes). 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 set up a cleaning program.
 - Tape 6 Step Six: Take the Food Safety Challenge: Good Practices, Bad Practices - You Make the Call - (35 minutes). Challenges viewers to identify good and bad practices presented in five short scenarios from different industry segments.

F2370 Supermarket Sanitation Program - Cleaning and Sanitizing - (13 minutes). 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 minutes). Contains a full range of basic sanitation information with minimal emphasis on product. Filmed in a supermarket, the video is designated as a basic program for manager training and a program to be used by managers to train employees. (1998) (Reviewed 1998)
- F2390 Take Aim at Sanitation (English and Spanish) - (8 minutes). Produced by the Foodservice & Packaging Institute in cooperation with the US Food and Drug Administration, this video demonstrates how to properly store and handle foodservice disposables so customers are using safe, clean products. This video demonstrates: the problem of foodborne illness: how foodservice disposables are manufactured for cleanliness; tips for storing foodservice disposables; tips to help your customers in self-serve areas: guidelines for serving meals and maintaining proper sanitation; and tips for cleaning up after meals. Throughout the program a roving microscope "takes aim" at common mistakes made by workers to help audiences identify unsanitary handling and storage practices. (Foodservice & Packaging Institute, Inc.)
- F2391 Understanding Foodborne Pathogens - (40 minutes). Explore the major causes of foodborne illness and review the practices used to minimize the risk of contracting or spreading a foodborne disease. Learn about microorganisms associated with foodborne illness such as parasites, viruses, fungi and bacteria. Study ways to reduce harmful pathogens through proper handling, storage, and cooking. (Chipsbooks Company-2003)
- F2410 Wide World of Food Service Brushes - (18 minutes). 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)
- F2420 Your Health in Our Hands, Our Health in Yours - (8 minutes). For professional food handlers, the tape covers the do's and don'ts of food handling as they relate to personal hygiene, temperature control, safe storage, and proper sanitation. (Jupiter Video Production-1993) (Reviewed 1998)
- F2430 **Smart Sanitation: Principles and Practices for** Effectively Cleaning Your Food Plant - (20 minutes). A practical training tool for new sanitation employees or as a refresher for veterans. Employees will understand the food safety impact of their dayto-day cleaning and sanitation activities and recognize the importance of their role in your company's food safety program. (Silliker Laborabories-1996)

FEBRUARY 2007 | FOOD PROTECTION TRENDS 121

- F2440 Cleaning and Sanitizing in Vegetable Processing Plants: Do It Well, Do It Safely! (English and Spanish) – (16 minutes). 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 a processing plant as it is for washing dishes at home. (University of Wisconsin Extension–1996)
- F2450 A Guide to Making Safe Smoked Fish (21 minutes). 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–1999)
- F2451 A HACCP-based Plan Ensuring Food Safety in Retail Establishments (DVD) – (11 minutes). This is an educational DVD that provides a brief summary of HACCP. It explains the purpose and execution of each of the seven principles. Can be used as part of a wide range of HACCP training programs beyond retail establishments. The major emphasis is on proper documentation and validation. (Ohio State University–2004)
- F2460 Safer Processing of Sprouts (82 minutes). 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 Service, Food & Drug Branch–2000)

Fast Track Restaurant Video Kit – These five short, direct videos can help make your employees more aware of various food hazards and how they can promote food safety. (Diversey Lever–1994)

- F2500 Tape I Food Safety Essentials (23 minutes). This video provides an overview of food safety. All food service employees learn six crucial guidelines for combating foodborne illness. Prepares employees for further position-specific training to apply the six food safety principles to specific jobs.
- F2501 Tape 2 Receiving and Storage (22 minutes). Make sure only safe food enters your doors! Receiving and storage staff learn what to look for and how to prevent spoilage with proper storage with this video.
- F2502 Tape 3 Service (22 minutes). Servers are your last safety checkpoint before guests receive food. This video helps you make sure they know the danger signs.

- F2503 Tape 4 Food Production (24 minutes). Food production tasks cause most food safety problems. Attack dangerous practices at this critical stage with this video training tool.
- F2504 Tape 5 Warewashing (21 minutes). Proper sanitation starts with clean dishes! With this video, warewashers will learn how to ensure safe tableware for guests and safe kitchenware for co-workers.

Worker Health and Hygiene Program for the Produce Industry

- F2505 Manager Guide to Worker Health and Hygiene: Your Company's Success May Depend on It! (English) – (18 minutes). Covers the importance of foodborne illness as related to the produce industry and provides practical hands-on information of managers/operators on teaching health and hygiene to the workers in their operations (University of Florida/ IFAS-2006)
- F2506 Worker Health and Hygiene: Your Job Depends On It! (English and Spanish) – (11 minutes). Covers the importance of personal health and hygiene and simple hands-on information on foodborne illness and how produce handlers could spread disease if proper personal hygiene is not practiced. Also provides stepwise handwashing procedures for produce handlers in any situation (University of Florida/IFAS–2006)
- F2600 Food Industry Security Awareness: The First Line of Defense – (24 minutes) (Video and DVD). This video reinforces the importance of security awareness in all phases of product handling, from receiving ingredients to processing and shipping. With this program, you can have an immediate impact on plant security with very little time or resources, all while helping maximize the effectiveness of your overall security investment. Everything you need to turn your biggest security challenge into your biggest security asset is covered. (J. J. Keller–2006)

OTHER

- M4010 Diet, Nutrition and Cancer (20 minutes). 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 minutes). 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 minutes). 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)
- M4050 Personal Hygiene and Sanitation for Food Processing Employees – (15 minutes). Illustrates and describes the importance of good personal hygiene and sanitary practices for people working in a food processing plant. (Iowa State University– 1993)
- M4060 Psychiatric Aspects of Product Tampering (25 minutes). 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 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 minutes). 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)
- M4071 Understanding Nutritional Labeling (39 minutes). Learn why the government initiated a standardized food labeling system and which foods are exempt. Explore each component listed on the label including cholesterol, carbohydrates, protein, fat, health or nutritional claims, service size, percentage of daily value, and standard calorie reference/ comparison. (Chipsboosk Company–2003)



For more than 30 years, the IAFP Foundation has been working hard to support the mission of the International Association for Food Protection. But we would like to do more. Much more. Food safety concerns and food defense challenges continue to grow. As a result, it is more important than ever that we provide additional programs and services to achieve our common mission of Advancing Food Safety Worldwide₈. Remember, when you support the IAFP Foundation everyone benefits, including you.

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| - | | DAIRY | 7 | F2016 | Bloodborne Pathogens: What Employees Must | | E2172 | HACCP: Training for Managers | |
| а. | D1010 | The Bulk Milk Hauler, Protocol & Procedures | 3 | F2020 F2021 | Know Egg Handling and Safety Fee Production | | E2175 | Inside HACCP Principles, Practices and Results | |
| 3 | D1030 D1034 | Cold Hard Facts Dairy Plant | ٦ | F2030 | "Egg Games" Foodservice Egg Handling & Safety | | 12113 | Code Code | |
| 1 | D1040 | Ether Extraction Method for Determination of Raw Milk Faced Safety, Date: Details | - | 1/2035 | Fabrication and Curing of Meat and Poultry Products | r | F2190 | Is What You Order What You Get? Scafood | |
| 7 | D1070 | Frozen Dairy Products The Gerber Boueria Test | | E2037 | and Cooking Communed Beet Canking and Cooking of Mest and Boaltra- | 7 | F2191 F2210 | Microbial Food Safety: Awareness to Action Northern Delight - From Canada to the War | |
| 7 | D1080 D1090 | High-Temperature, Short-Time Pasteurizer Managing Milking Quality | | F2030 | Products Food for Thought - The GMP Quiz Show | 7 | F2220 | Proper Handling of Peracidic Acid Proper Gamescontal | |
| 3 | D1100 D1405 | Mastitis Prevention and Control Milk Hauling Training | 7 | F2040 F2045 | Food Irradiation Food Microbiological Control | - | F2240 | On the Front Line | |
| 3 | D1110 D1120 | Milk Plant Sanitation: Chemical Solution Milk Processing Plant Inspection Procedures | α. | F2050 | Food Safe-Food Smart – HACCP and Its Application to the Food Industry (Part 1 & 2) | Ť. | F2260 | 100 Degrees of Doom The Time | |
| 1 | D1125 | Ohio Bulk Milk Hauling Video Pasteorizer: Design and Regulation | | F2050 | Food Safe Series I (4 videos) Food Safe Series II (4 videos) | П | F2265 | A Day in the Deli: Service, Selection, | |
| 7 | D1150 | Processing Fluid Milk | 7 | F2080 F2081 | Food Safe Series III (4 videos) Food Safety Begins on the Farm | 7 | F2260 | HACCP: A Basic Understanding | |
| _ | DITO | to rouns to oury Quanty | 7 | F2090 | Food Safety: An Educational Video for Institutional Food Service Workers | 7 | ¥2271 | Preventing Foodborne filness | |
| | | ENVIRONMENTAL | | F2095 | Food Safety for Food Service Series I New You're Gooking | - | F2280 F2290 | Principles of Warehouse Sanitation Product Safety and Shelf Life | |
| 7 | E2012 E3010 | Better TEDs for Better Fisheries The ABC's of Clean - A Handwashing and | - | F2100 | Tape 1 – Food Safety for Food Service. Cross Contamination | - | F2320 | Safe Food: You Can Make a Difference Safe Handwashing | |
| - | 1110.00 | Cleantiness Program for Early Childhood Programs | T. | F2101 F2102 | Tape 3 – Food Safety for Food Service: HACCP Tape 3 – Food Safety for Food Service: | - | F2321 F2322 | All Hands on Deck The Why, The When, and The How Video | |
| E. | 13030 | Acceptable Risks Air Pollution: Indoor | | F2103 | Tape 4 - Food Safety for Food Service: Time | - | 1-2,325 1-2,350 | Safe Practices for Sausage Production Sanitation for Seaford Processing Personnel | |
| 77 | E3040 E3055 | Asbestos Awareness. Effective Handwashing - Preventing Cross- | - | | Food Safety for Food Service Series II | 7 | F2340 F2341 | Sanifizing for Safety Science and Our Food Supply | |
| 7 | F-30667 | Contamination in the Food Service Industry EPA Test Methods for Freshwater Efficient | | 02100 | Illness | 7 | F2342 | Seafood HACCP Alliance Internet Training Course | |
| ٦ | E3070 | Toxicity Tests (Using Ceriodaphinia) EPA Test Methods for Freshwater Toxicity | ź | F2105 | Tape 3 – Working Safely to Prevent Injury | 7 | F2350 F2350-1 | Servsale Steps to Food Safety Step One: Starting Out with Food Safety | |
| 7 | E3075 | Tests (Using Fathcad Minnow Larva) EPA. This is Super Fund | 7 | F2107 F2110 | Tape 4 – Santanon Food Safety is No Mystery | 7 | F2450-2 F2450-3 | Step Two, Ensuring Proper Personal Hygien Step Three, Purchasing, Receiving and Stora | |
| 11 | E3080 E3110 | Fit to Denk Garbage. The Movie | 7 | F2120 | Controlling Salmonella: Strategies That Work Tood Safety: For Goodness Sake Keep Food | 3 | F2450-4 F2350-5 | Step Four-Preparing, Cooking and Serving Step Five, Cleaning and Sanitizing | |
| i | E3125 | Good Pest Exclusion Practices | ٦ | F2121 | Safe Food Safety the HACCP Way | ٦ | F2350-6 | Step Six. Take the Food Safety Challenge Good Practices. Bad Practices - You Make | |
| n | E3130 | Kentucky Public Swimming Pool and Batling | 7 | F2125 | Food Safety Zone Video Series Tape I – Food Safety Zone, Basic | 7 | 12370 | the Call Supermarket Sanitation Program - Cleaning | |
| 3 | E3131 F3133 | Key Pests of the Food Industry Physical Pest Management Practices | 7 | F2126- | Microbiology Tape 2 – Food Safety Zone, Cross | 7 | F7380 | and Samiliang Supermutiket Similation Programs Fred Sate | |
| 7 | E3145 E3140 | Plastics Recycling Today: A Growing Resource Putting Aside Pesticides | 7 | F2127 | Containination Tape 3-Food Safety Zone, Personal Hygiene | 7 | F2.900 F2301 | Take Ann at Sanitation Linderstanding Facellyame Pathanens | |
| 77 | E3150 E3160 | Radon RCRA-Hitzardous Waste | 77 | F2128 F2129 | Tape 1-Food Safety Zone: Santation Food Technology, Irradiation | 2 | F2410 F2420 | Wide World of Food Service Brushes | |
| - | 15161 | The Kitchen Uncovened: Orkin Sanitized LMP The New Superfund. What It Is and How It Works | 77 | F2130 F2131 | Food Safety, You Make the Difference Fruits, Vegetables, and Food Safety, Health | | E2150 | in Yours Smith Similation, Provinces and Receiving | |
| 3 | 1,6170 | Tape 1 – Changes in the Remedial Process Clean-up Standards and State Involvement | 7 | 12133 | and Hygiene on the Farm Food Safety First | | 62100 | for Effectively Cleaning Your Food Plant | |
| ٦ | £3180 | Tape 2 - Changes in the Removal Process | 2 | F2154 F2135 | Food Safety Fish and Shellfish Safety Get with a Safe Food Attuide | | E2450 | Processing Plants Do It Well, Do It Safely | |
| | | Removal and Additional Program Requirements | 77 | F2130 F2137 | GLP Basics Safety in the Food Micro Lab GMP Basics Avoiding Microbual Cross- | n | 1/2451 | A HACCP-based Plan Ensuring Food Safety in Retail Establishments | |
| 7 | 13210 | Tape 5 - Enforcement & Federal Facilities Tape 4 - Emergency Preparedness | 7 | F2140 | Contamination GMP Basics Employee Hygiene Practices | ٦ | 1/2460 | Safer Processing of Sprouts Fast Track Restaurant Video Kit | |
| л | E3220 | & Community Right-to-Know Tape 5 - Underground Storage Tank Trust | ٦ | F2145 | GMP Basics: Guidelines for Maintenance Personnel | 7 | F2500 F2501 | Tape 1 - Food Safety Essentials Tape 2 - Receiving and Storage | |
| ٦ | F3250 | Tunu & Response Program Tape 6 – Research & Development Closing | 3 | F2147 F2148 | GMP Basics: Process Control Practices GMP - GSP Employee | 77 | F2502 F2503 | Tape 3 - Service Tape 4 - Food Production | |
| 7 | E3235 | Regulatory and Good Manufacturing Practices Redent Control Strategies | ٦ | #2150 | GMP: Personal Hygicne and Practices in Food Manufacturing | 7 | F2504 | Tape 5 - Warewashing Worker Health and Hygiene Program for the | |
| 77 | E3210 13245 | Sink a Germ Wash Your Hands | ٦ | F2151 | GMP Food Safety Video Series Tape 1 – Definitions | г | F2505 | Produce Industry Manager Guide to Worker Health and | |
| 77 | E3250 E3251 | Waste Not: Reducing Hazardous Waste Would Your Restaurant Kitchen Pass | 7 | F2152 F2154 | Tape 2 - Personnel and Personnel Facilities Tape 3 - Building and Facilities | | | Hygiene: Your Company's Success May Depend on It' | |
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| - | | the Environment and Equipment | ŕ | F2160 | GMP, Sources and Control of Contamination during Processing | ٦ | F2000 | Food Industry Security Awareness The first Line of Defense | |
| | | FOOD | | | GMPs for Food Plant Employees, Five-volume Video Series Based on European Standards | | | OTHER | |
| - | F2005 1/2007 | A Lot on the Line The Amazing World of Microorganisms | 7 | F2161 | and Regulations Tape 1 - Definitions | - | Magle | | |
| 3 | F2008 F2009 | A Recipe for Food Safety Success Basic Personnel Practices | 77 | F2162 F2163 | Tape 2 – Personnel and Personnel Practices Tape 3 – Building and Facilities | 7 | M4020 | Fating Defensively, Food Safety Advice | |
| 20 | F2010 F2011 | Close Encounters of the Bird Kind Available Post Harvest Processing | | F2164 F2105 | Tape 4 – Equipment and Utensils Tape 5 – Production Process Controls | 7 | M4030 | for Persons with AID5 fee. The Forgotten Food | |
| - | 12013 | Technologies for Oysters Control of Listeria nonicentration in Secul | 3 | F2168 | HACCP Advantage - Good Manufacturing Practices | - | M1050 | Personal Hygiene and Santation for Food Processing Employees | |
| 7 | 12014 | Meat and Poultry Establishments | 1 | F2169 | HACCP: Training for Employees – USDA Awareness | 10 | M4060 M4070 | Tampening The Issue Examined | |
| 7 | F2015 | Controlling Listeria: A Team Approach | 2 | F2170 | HACCP: The Way to Food Safety | 0 | M0071 | Understanding Nutritional Labeling Processing Employees | |
| | | | | | | | | | |

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UPDATES

3-A SSI Announces New Leaders for 2007

The 3-A Sanitary Standards, Inc. (3-A SSI) Board of Directors recently named Greg Marconnet (Kraft Foods, Inc.) chair for a twoyear term and elected other officers for 2007. Dan Meyer (American Dairy Products Institute) was elected vice chair; David Tharp (International Association for Food Protection) was elected treasurer, and Warren Clark, Jr. (3-A Symbol Administrative Council, Inc.) was named secretary.

Two new appointees also began service on the 3-A SSI Board of Directors, including Stephen Schlegel (Food Processing Suppliers Association) and Lou Beaudette (Admix, Inc.).

Other members of the 3-A SSI Board of Directors include Lee Blakely (Cheese and Protein International), Paul Gold (Pfizer Global Manufacturing Services), Larry Hanson (Johnsonville Sausage, LLC), Robert Hennes (Chief, FDA/CFSAN-Milk Safety Branch), Allen Sayler (International Dairy Foods Association), Ronald Schmidt (Food Science and Human Nutrition, University of Florida), Tracy Schonrock (3-A Steering Committee), and John Mengel (US Department of Agriculture, Dairy Grading Branch).

Sigun Wang, M.D., Ph.D. Named R&D Director for DuPont Qualicon

DuPont Qualicon has recently named Siqun Wang, M.D., Ph.D., as global director of research and development. In this position, Siqun is responsible for overseeing research, new product development and validation programs for DuPont Qualicon, based in Wilmington, DE. Since joining the company in 2004, Siqun had served as business development manager, working with food companies and regulatory agencies throughout the world to identify new technologies and business opportunities.

Gainco Appoints John Blyther Regional Sales Manager

ainco, Inc., a manufacturer of J scales, automated sorting and other yield enhancement systems for the meat, poultry and food processing industries, announces the appointment of John Blyther as regional sales manager. In this position, Mr. Blyther will be responsible for managing customer relationships and developing new business with red meat and poultry processing facilities located in the Western United States, including the West Coast, the Rocky Mountain region, West Texas plus the Plains states of Nebraska, Kansas and Oklahoma.

Mr. Blyther has more than 30 years of experience in the meat processing industry. Prior to joining Gainco, he was a national sales manager for Scanvaegt and Marel, where he provided a wide variety of processing equipment solutions to key national accounts. Mr. Blyther has also served as a consultant to the meat processing industry, as well as having held operations management positions at meat processing firms in New England and Chicago.

John Solomon Appointed Market Leader, Specialty Foods for Multisorb Technologies

Multisorb Technologies, a manufacturer of sorbent, desiccant and oxygen absorbing technologies, has announced the promotion of John Solomon to the position of market leader, Specialty Foods. In this role Mr. Solomon will be responsible for expanding Multisorb's business in diverse food packaging markets, including organics and natural foods.

"John brings over 15 years of experience in the packaging industry to this position," said Multisorb director of sales Steve Lloyd. "He has helped expand our market reach into new areas through his deep understanding of customer needs. Multisorb will rely on his leadership to develop partnerships with all customers in the specialty foods industry, including in the ever expanding market of organic foods."

Prior to joining Multisorb in 1998, Mr. Solomon spent several years working to build various markets and cultivate customer relationships for companies including the Alloyd Company, the EFP Corporation and Facile Holdings Incorporated. Solomon has been elected to the Board of Directors of the Research and Development Association for the past eight years and is a member of International Food Technologists and the Institute of Packaging Professionals.

DFA Board Director Named Chairman of National Dairy Board

L es Hardesty, a Greeley, CO dairy farmer and member of the Dairy Farmers of America, Inc. (DFA) Board of Directors, was elected chairman of the National Dairy Board (NDB). He is serving his second three-year term on the board and was twice elected vice chairman.

Mr. Hardesty, who also is chairman of DFA's Mountain Area Council, has been a DFA member since its inception and owns and

UPDATES

milks 700 cows on two farms situated on 305 acres. He was elected to serve a one-year term as chairman of the National Dairy Board and will have the opportunity to be elected chairman for an additional one-year term. He succeeded NDB Chairman Charles "Woody" Bryant, an Arkansas dairy producer and DFA Board member. "Les is a fine example of the passion and commitment to the industry that many of our members exemplify," says DFA's Chief Executive Officer Rick Smith. "We are proud that the industry's leading promotion and regulatory organizations all have dairy farmer leaders from DFA actively involved." Mr. Hardesty is enthusiastic about the strategic direction the board is pursuing for the Dairy Checkoff program. Perhaps best known in the past for its image advertising, Mr. Hardesty says the checkoff is now more focused on leveraging funds to increase dairy sales by meeting consumers' unmet demands.



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E. coli Scare Tops List as Number One Food Story of 2006

ews surrounding a particularly virulent strain of *E. coli* bacteria associated with contaminated spinach, topped the charts as the country's No. I food-related news story in 2006, according to a recent survey of the nation's food editors.

The survey was conducted by Hunter Public Relations, one of the nation's leading public relations agencies serving the food and beverage industry. Based in New York, Hunter Public Relations reached out to more than 1,200 food editors across the country for this survey.

In September, E. coli traced to farmed spinach from California's Salinas Valley killed three people and infected more than 200 in 26 states. Adding to consumers' food safety concerns, in just the past week, more than five dozen people have been sickened by scallions contaminated with the bacteria.

Will this actually affect how consumers shop? When asked if the recent rash of food scares will motivate people to shop at green markets so that they know where their fruits and vegetables originate, 63 percent said no.

Listed at No. 2 in the survey is the school soft drink ban. In response to the growing threat of lawsuits and state legislation, the country's top three soft-drink companies announced that they would remove sweetened carbonated soft drinks and iced teas, from school cafeterias and vending machines.

Securing the No. 3 spot is organic goes mainstream. Organic food will soon be available to the tens of millions of Americans who cannot currently afford it. Wal-Mart, the nation's largest grocer, plans to roll out a complete selection of organic foods in its 4,000 stores. Just as significant, the company says it will price all this organic food at only a tiny premium over its already-inexpensive conventional food.

Moms rejoice! In an effort to deal with high childhood obesity rates, the Federal Trade Commission and the Department of Health and Human Services issued a report urging food companies to develop products that are more nutritious and to "review and revise" their marketing practices. Industry urged to offer more nutritious foods for children turned up at No. 4 in the survey.

Putting the "whole" back in "whole grains" claimed the No. 5 spot. In an effort to help consumers sort through a confusing — and sometimes misleading — array of foods that purport to contain whole grains but often do not, the FDA issued an official definition.

According to the FDA's new guidelines, "whole grain" includes "cereal grains that consist of the intact and unrefined, ground, cracked or flaked fruit of the grains whose principal components — the starchy endosperm, germ and bran — are present in the same relative proportions as they exist in the intact grain." Examples include: barley, buckwheat, bulgur, corn, millet, rice, rye, oats, sorghum, wheat and wild rice.

Since Americans now consume about one-third of their caloric intake outside of the home, the FDA has released a report encouraging restaurants to include lower calorie choices in their marketing efforts and on their menus. The FDA urging restaurants to help downsize America came in at No. 6 in the survey.

Not far behind, Big Apple holds the fat, claimed its place on the survey at No. 7. Just this past week, the New York City Board of Health voted to make New York the nation's first city to ban arteryclogging artificial trans fats at restaurants. The plan will prohibit the city's 20,000 restaurants from serving food that contains more than a tiny amount of artificial trans fats.

High-fructose corn syrup has become the nutritional "bogeyman du jour." With scientific articles and news reports noting that obesity rates have climbed at a rate remarkably similar to that of high-fructose corn syrup consumption, more people than ever before are trying to eliminate this sweetener from their diets. Voters ranked the socalled "devil's candy" No. 8 in the survey.

Low-fat diet benefits rejected was such a surprise that it ranked at No. 9 on the survey. Contradicting the popular belief that a low-fat diet is a cornerstone of a healthy lifestyle, a major study found that lowfat diets do not protect women against heart attacks, strokes, breast cancer, or colon cancer.

The No. 10 spot was all about Rachael. In addition to hosting three of the Food Network's top-rated television shows, authoring a series of cookbooks that have sold more than two million copies, and serving as editor-in-chief of Every Day with Rachael Ray, Ms. Ray launched a one-hour daytime syndicated show, The Rachael Ray Show, which currently ranks #5 in the daytime talk category.

In addition to ranking the year's top food stories, those surveyed were asked their opinions on several hot topics within the industry. Whole grain products, organic foods and ready-to-eat meals topped the list of what they thought would be in shoppers' carts in 2007. When asked if home economics should be reinstituted in school so that youngsters have the

NEWS

opportunity to learn about healthful foods and how to cook them, a whopping 49 percent said yes.

Cool-water Wash for Eggs Can Help Prevent Microbial Contamination

sing cooler water to wash shell eggs during a second washing can help cool them quicker. This reduces the potential of foodborne pathogen growth both inside the eggs and on the eggshell surface, according to scientists with the Agricultural Research Service (ARS).

ARS food technologists Deana Jones and Michael Musgrove in the agency's Egg Safety and Quality Research Unit at Athens, GA working with Auburn University colleagues A. Brooke Caudill and Patricia A. Curtis—looked at the frequency of Salmonella, Campylobacter, Listeria and other bacteria in eggs commercially washed in cool water. Their findings have been reported in the Journal of Food Safety.

Currently, processors who choose to produce eggs that qualify for the USDA quality shield are required to wash them in water that is at least 90°F, or 20° warmer than the warmest egg entering the processing line. Furthermore, these eggs are required to be sprayed with a sanitizing rinse at least as warm as the wash-water temperature. To prevent the growth of potential foodborne pathogens associated with eggs, these warm eggs must then be cooled quickly for storage.

To ensure the eggs are safe for human consumption, USDA requires that all shell eggs be stored at 45°F or lower after processing. That's because Salmonella—the organism most often associated with foodborne disease and eggs—and other bacteria don't grow well at refrigerated temperatures. Getting to the target temperature quickly can make a big difference. The researchers tested three water-temperature schemes in commercial dual-washer systems: water at 120°F for both washers; water at 120°F for the first wash and 75°F for the second; and both washers at 75°F. They found that using a warm temperature in the first washer, followed by a cool temperature in the second one, could provide the greatest benefit in terms of both reduced egg temperature and acceptable microbial levels.

While Salmonella, Campylobacter and Listeria were all detected in shell emulsion and wash-water samples from cool-water washing treatments, none were detected in the egg contents throughout the storage period of eight weeks.

French Ministry of Agriculture and Fisheries Launches "French Food Safety" Web Site

he French Ministry for Agriculture and Fisheries announces the launch of an educational Web site www.French FoodSafety.com to suit the needs of professionals and consumers alike.

Visitors will be able to access the most up-to-date news and information about the safety, rules and practices that govern French agriculture and food products — for both the domestic and international markets.

www.FrenchFoodSafety.com outlines the principles of The Safety Plan for French Food, including the following:

A Real Expertise communicates facts and statistics regarding French agricultural production and consumption;

Five Guiding Principles display the major principles shared by all players in the food chain that guide the food safety policy in France;

Who Does What? Who Checks What? Explains the monitoring system from the government to the laboratories, and the missions of each group, within the regulatory framework of the European Union;

Traceability & Transparency illustrates the Ministry's endeavor to make use of every available source to ensure complete knowledge about the origin of ingredients and materials used to make any French food product.

A Shared Responsibility profiles the players in the food production chain who work together to assure both consumers and professionals about the quality and safety of French products in France and abroad.

Also available on the Web site, to be downloaded in 12 different languages, is an 18-page Food Safety System Guide. This report provides a thorough introduction to France's food safety system by showcasing the various organizations and key players involved and their various responsibilities in contributing toward French food safety.

www.FrenchFoodSafety.com aims to be the most current and comprehensive source of information for consumers and professionals around the world regarding the collective effort undertaken by the French industry and authorities to ensure the safety of all French agricultural products "from the field to the plate!"

Agencies Agree on Plan for Food Safety, Animal and Plant Health Assistance

ive international organizations, donors and representatives of beneficiary countries have approved a new medium-term strategy for their joint efforts to help developing countries implement internationally agreed standards for food safety and animal and plant health.

The strategy will strengthen the Standards and Trade Development Facility (STDF) in its continued efforts to assist developing countries in implementing international

NEWS

sanitary and phytosanitary (SPS) standards. To date, the STDF has approved 23 projects and 21 project-preparation grants benefiting developing and least-developed countries.

The STDF was created in 2002 as a trust fund by the five organizations: the UN Food and Agriculture Organization (FAO), the World Bank, World Health Organization (WHO), the World Organization for Animal Health (OIE) and the World Trade Organization (WTO). This followed a joint commitment made at the WTO's Ministerial Conference in Doha in November 2001. The STDF is administered by the WTO.

The new strategy for the STDF aims to advance the facility in its capacity-building efforts. It places much greater emphasis on the facility acting as a vehicle for coordination, fund mobilization and the identification and dissemination of best practice in the provision of SPS-related technical cooperation and capacity building. With increasing donor funds going into SPSrelated technical cooperation projects, identifying and implementing good practices is of benefit to donors and recipients alike.

So far, 11 donors have committed funds to the STDF. With a new operating strategy in place, it is hoped that the annual funding target of US\$5 million will be met. The medium-term strategy also sees a role for the facility to act as a vehicle for facilitating grant applications mobilization, with projectpreparation grants being used to channel funds from the wider donor community. Forty percent of facility resources are committed for leastdeveloped countries and other lowincome economies.

Assisting developing countries in the use of international standards developed by the Codex Alimentarius Commission, International Plant Protection Convention and World Organization for Animal Health helps developing countries gain and maintain market access. It also improves their domestic human, animal and plant health situation.

Outbreak of Foodborne Botulism Linked to Barbecue, Austria, 2006

n July 3, 2006, public health authorities in northern Austria were informed by a local hospital of a possible botulism outbreak affecting four people who had been admitted two days earlier. A fifth patient had been admitted to another hospital in the same province on July 2. An outbreak investigation was started on July 4. The investigation linked the disease to a private barbecue party which took place on June 25.

The barbecue party was organized by a local farmer and was attended by approximately 20 people. The menu included homeslaughtered pork and bacon (both homemade) and a homemade cold dessert (a pastry served with cream called 'Schaumrolle') and several salads containing commercially canned kidney beans, boiled potatoes, cucumbers, tomatoes and onions with a dressing of oil, vinegar and sour cream. Other commercially prepared items available included bratwurst (veal and pork sausages), tomato ketchup, two different dip sauces, bread, and various cold sausages. Fresh strawberries soaked overnight in white wine at room temperature in a tightly closed plastic bag were served as another dessert.

The patients ranged in age from 24 to 55 years (median age 29 years), and four were men. All five affected patients developed symptoms on June 28, three days after the party. The main clinical symptoms were a dry mouth, blurry vision and difficult swallowing. Two patients reported constipation and decreased sweating. Four patients were admitted to hospital on June I, and the fifth on June 2.

The five patients lived in three households in three different villages but all attended the barbecue and had consumed various dishes there. Detailed food histories were only collected from the patients, not from the other attendees at the barbecue. All five had consumed barbecued pork. This product originated from a pig that had been home slaughtered four weeks earlier. The carcass had been aired at ambient temperature for approximately 24 hours before being cut up and put into airtight freezer bags (up to five cuts of meat per bag), and frozen. The meat was defrosted at room temperature the evening before the barbecue. None of the five patients had consumed bratwurst

Routine laboratory tests from sera drawn on day of admission revealed an abnormal increase of aspartate aminotransferase in three of the five patients as the sole abnormality. None of the patients required mechanical ventilation and none was given antitoxin. One patient stayed in hospital for four days, and the remaining four stayed for three days. There was no illness reported among the other barbecue guests.

Although botulism can be diagnosed by clinical symptoms alone, differentiating it from other diseases may be difficult. The most direct and effective way to confirm the clinical diagnosis of botulism in the laboratory is to demonstrate the presence of toxin in serum or feces, or in samples of food consumed by the patient. Isolation of Clostridium botulinum (as well as the detection of toxin) from feces of the patients gained four to five days after admission was attempted unsuccessfully. Currently, the most sensitive, simple and widely used method for detecting toxin is the mouse neutralization assay. Sera drawn from the patients on the day of admission were diluted two-fold with saline (test group) and polyvalent antitoxin against toxin types A, B, E (Chiron-Behring, Marburg, Germany) (control group), respectively. Two Balb/c mice each were injected intraperitoneally with 0.5 ml of these dilutions. The two mice challenged with sera from four patients, and one of two mice

NEWS

challenged with serum from the fifth patient all developed a typical waspwaist and palsy after 18–24 hours and died from respiratory paralysis within 30–48 hours. All control mice survived without any symptoms of paralysis. Attempts to isolate *C. botulinum* from fecal samples of the patients were unsuccessful.

If food is contaminated with C. botulinum, oxygen levels and other conditions can allow the C. botulinum spores to grow and to produce toxin. Foodborne botulism has often been caused by homecanned foods with a near-neutral pH, such as asparagus, green beans, beetroot and sweetcorn. However, outbreaks of botulism from more unusual sources, such as chopped garlic in oil, chilli peppers, tomatoes, improperly handled baked potatoes wrapped in aluminum foil, and home-canned or home-fermented fish have also been reported. The last documented laboratory confirmed case of botulism in Austria was due to home-canned vegetables.

Botulinum toxin is heat-labile and can be destroyed if heated at 80°C for 10 minutes or longer, which may not be the case in barbecuing. Although samples of the frozen pork from remaining bags tested negative for C. botulinum and botulinum toxin, we hypothesise that one of the bags was contaminated and five cuts of meat (accounting for 5 cases), despite heating, still contained enough botulinum toxin to cause illness. The mild clinical symptoms experienced by these patients can be linked to the relatively long incubation period of approximately 36 hours: the longer the incubation period, the less severe the disease. It is also thought that storage of contaminated pork in airtight bags (before freezing) can provide the anaerobic environment required for C. botulinum to produce toxin. Hygiene conditions during home slaughtering are often worse than conditions in authorized slaughter houses. In 2003, a case of botulism connected to home slaughtering was described in Germany.

The symptoms shown by all patients are consistent with, but not diagnostic for, mild cases of foodborne botulism, and could be due to other causes. However, toxin was detected in the sera from all patients, and was neutralized by addition of commercial polyvalent antiserum in the mouse bioassay. For mild cases of botulism it is unusual for toxin to be detected in the sera of all the patients. The absence of a European reference laboratory accepting such specimens for confirmation and for toxin typing limits further laboratory insights. The actual source of the outbreak presented here remains unclear. To our knowledge, barbecuing has not previously been associated with botulism.

Although the local health authority considered the barbecued pork served at the barbecue to be the most likely source of intoxication, the food source was not confirmed. As further epidemiologial investigation (e.g., by a case control or cohort study) with detailed food histories was not conducted, it was not possible to rule out other food, such as strawberries, as the source of the intoxication.

Fresh Chicken is Safe and Healthful, Notwithstanding "Consumer Reports"

resh chicken is a healthful and natural food that is safe to eat when handled and prepared according to simple, common-sense procedures printed on the wrapping of every package of fresh poultry and meat sold in the United States. *Consumer Reports* says what every cook already knows, that fresh poultry may carry naturally occurring bacteria and should be properly handled and cooked. The *Consumer Reports* story, as far as we know, contains nothing new and should not be cause for alarm to anyone. The story contains some statements that are not in line with known facts. For example, the prevalence of *Salmonella* and *Campylobacter* on raw chicken is apparently greatly exaggerated. Official government testing shows that *Salmonella* can be found, usually at very low levels, on about 12 percent of chickens processed nationwide. This data can be found on the Web site of the USDA Food Safety & Inspection Service at http://www. fsis.USDA.gov/Science/Q3_2006

Salmonella_Testing/index.asp. As far as *Campylobacter* is concerned, a large-scale study by Dr. Norman Stern, an expert with the USDA Agricultural Research Service, showed that only 26 percent of the chickens sampled had any detectable level of *Campylobacter*. Dr. Stern's study took place over 13 months, in 13 poultry complexes, and included 4,200 samples, and is thus far more definitive than a much smaller sample. This study was published in the *Journal of Food Protection* earlier this year.

Thus, reputable scientific studies show that Salmonella and Campylobacter are present on raw chickens to a far lesser degree than indicated by Consumer Reports.

As for the suggestion that chicken was responsible for a person's illness with Guillain-Barre syndrome, the magazine apparently gives no clinical proof that this was the source of the person's illness. Guillain-Barre syndrome is also very rare.

As for the suggestion that bacteria that may be found on raw chicken are becoming more resistant to antibiotics, the fact is that *Campylobacter* is notoriously resistant to some antibiotics regardless of whether they are used in chicken or not. We are not aware of any actual human cases in which antibiotics have failed to work because of any usage in live chickens. The use of antibiotics in live chickens has declined sharply in recent years.



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Monitor Over Six IEQ/IAQ Parameters with Only One Instrument from Carltex Inc.

The new multinorm is a universal all-in-one instrument for monitoring indoor environmental and air quality parameters.

Available measurements include air temperature, air velocity, relative humidity, dew point, illuminance, luminance, CO, CO_2 and sound (Class I and 2) analyses.

Additional features of the Multinorm include luminance measurement, contrast, globe temperature, thermocouple (contact temperature), PMV (predictive mean vote), PPD (predictive percentage of dissatisfied) and WBGT (wet bulb globe temperature).

Multinorm can operate in two modes. In the on-line mode it displays current measurements or in the logger mode, it automatically stores all measurement values per logging interval. Software is included for data analysis, charting and reporting. Firmware is upgradeable for future new probe additions.

> Carltex Inc. 631.754.2580 Centerport, NY www.carltex.com

TEMPO[®] EB, the First Automated Test for Enterobacteriaceae Enumeration and Confirmation

bioMérieux launches TEMPO® EB, the first automated test for *Enterobacteriaceae* enumeration in food products in 24 hours, including confirmation.

TEMPO EB is a new automated test associating an innovative card with a selective medium, to ensure rapid enumeration of *Enterobacteriaceae*. TEMPO EB delivers an *Enterobacteriaceae* count as early as 22 hours, confirmation included, compared to 72 hours for the reference method EN-ISO 21528-2 which requires a twostep confirmation. This easy-to-use method offers significant time savings, especially when large numbers of positive samples are processed, and allows faster reporting of results.

"TEMPO EB gives results equivalent to the ISO method and allows us to gain time throughout all the analysis stages. We will use TEMPO EB for routine testing in order to expand our customer portfolio without increasing our staff," comments Jean-Yves François, technical manager of Quality Partner, after having successfully evaluated TEMPO EB. "TEMPO EB is based on the well proven and accepted MPN (Most Probable Number) method which facilitates its integration in both industrial and official laboratories," adds Alexandre Mérieux, corporate vice president of bioMérieux, Industrial Microbiology.

With TEMPO EB, bioMérieux reinforces the current TEMPO menu, which already contains TEMPO TVC (Total Viable Count), TEMPO EC (*Escherichia coli*) and TEMPO TC (Total coliforms), providing an enlarged menu for wider market fit. TEMPO EB is currently undergoing validation by AFNOR according to the ISO 16140 standard.

Increasing emphasis on a total quality approach in food production, HACCP plans and risk assessment procedures enhance the role that quality indicators such as Total Viable Count, coliforms, *Escherichia coli* and *Enterobacteriaceae* have in monitoring the hygienic and commercial quality of food.

Enterobacteriaceae enumeration is the key hygiene parameter in the latest European regulation on microbiological criteria for food, EC 2073/ 2005. The Enterobacteriaceae family includes important food spoilage agents and certain intestinal pathogens such as Salmonella spp., Shigella spp., among others.

> bioMérieux, Inc. 800.638.4835 Hazelwood, MO www.biomerieux-usa.com

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E-Control Systems Presents Its IntelliHACCP[™]

-Control Systems IntelliSense™ family of wireless hot and cold temperature monitoring solutions includes low cost hardware and software elements needed to monitor equipment and processes for school food service and healthcare food service. Temperature monitoring and other data is collected through wireless temperature sensor units (IntelliSensor[™]), transmitted wirelessly to an IntelliGate[™] unit that consolidates, encrypts and sends the data over Ethernet. Data can then be viewed with a standard web browser anywhere over the web. Abnormal conditions (alerts) generated by the system are sent over e-mail, cell phones, or pagers. Each IntelliGate™ (the school Gateway) has a dry contact output that allows it to be connected to a local alarm system at each school. This allows local, in addition to remote notifications of any alarms in the refrigeration system. These alarm notifications operate even if the network connection is not working.

IntelliCheck[™] is a complete webbased handheld PDA for taking product temperature readings, managing and deploying HACCP inspection programs for the Food Service Industry. IntelliCheck[™] includes an integrated corrective action system that makes sure operators fix problems as soon as they are detected.

IntelliCheck[™] is designed to eliminate cumbersome form-based data collection. No more filling out checklist by hand and stuffing them into a filing cabinet.With this Intelli PDA you simply press a single button and let the system do the rest.All the data is automatically uploaded to the central server.

IntelliProbe[™] combined with the IntelliCheck[™] provides a complete mobile temperature logging solution. Press the button on the IntelliProbe[™] to measure temperatures, and the data is automatically sent to your computer for convenient retrieval at a later time. IntelliCheck[™] stores all of your sensitive data in a secure central location for easy retrieval from any computer on your network.

Temperature readings are done through the IntelliProbe[™], E-Control Systems new Bluetooth Wireless Temperature Probe, the only completely wireless temperature logging solution on the market. No need to worry about dangling wires into food or burning wires on the stove. The IntelliProbe[™] features an iButton[™] reader at its base for reading iButton[™] data tags. Coin-sized buttons can be easily installed at any inspection station. Operators checking that station simply touch the base of the IntelliProbe[™] to the button, which automatically brings up that station's checklist or schedule.

> E-Control Systems, Inc. 818.885.5228 Chatsworth, CA www.econtrolsystems.com

Sunnex Announces Availability of FDAapproved Stainless Steel Mounts for Food and Dairy Manufacturing Applications

S unnex, Inc. has announced the availability of its FDA-approved stainless steel H3A-Series machinery mounts for food and dairy processing equipment and manufacturing applications.

Made of ANSI 304 stainless steel, the hygienic leveling mounts meet all FDA requirements and feature:

- 304 SS for high chemical resistance
- Wide temperature range: -20 to 100°C
- 10° swivel for increased stability
- Thread casing that eliminates contamination
- Thread casing that functions as a lock-nut

The stainless steel H3A-Series machinery mounts have rubber vulcanized to the mount housing to provide a completely hygienic seal. A full range of motion starting at a 10 degree pivot provides secure footing and complete vibration control.

Available in two versions, the H3A-Series comes with or without thread casings to eliminate contamination. The mounts are also available with ANSI 316 stainless steel for aggressively corrosive environments, and with one or two anchoring holes that secure to the floor.

Sunnex's stainless steel H3Aseries leveling mounts for food and dairy manufacturing applications are available immediately.

> Sunnex, Inc. 800.445.7869 Natick, MA www.sunnexonline.com

High-speed Checkweighing Systems from Gainco

C heckweigher Systems from Gainco, Inc. provide accurate high-speed, in-motion weighing of both raw and boxed poultry and red meat products against a variety of pre-set

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accept or reject parameters. The equipment is specially designed to withstand the rigors of heavy use in virtually all processing environments.

Constructed using heavy-duty type 304 stainless steel tubing, Gainco checkweighers feature a hermetically sealed loadcell design with 8-point overload protection and NEMA 4 controller enclosure to prevent damage to "smart" components from harsh washdown and production processes. The ultra-reliable controller features increased uptime, reduced maintenance costs and user-friendly operator screens. Hardware and software packages are custom-configured to meet specific customer throughput and accuracy requirements.

Gainco Checkweighers feature a reject arm to quickly yet carefully divert product, thereby optimizing quality and appearance of the product prior to re-work. Highly durable plastic belting is also used for reliability and enhanced sanitation.

Dataman[®] Data Collection System, available for use with Checkweighers and other Gainco yield management systems, is a software/hardware combination allowing for the integration of all remote units on the production floor. Operators can set parameters for individual pieces of equipment, monitor yield and throughput, and create customized reports all from a single location. Data can be provided to both plant managers and corporate executives via a network interface. The raw data can then be moved to popular databases like Oracle, SQL Server, and DB2.

Gainco Inc. 410.778.2184 Gainesville, GA www.gainco.com



Fluid Metering, Inc.

Fluid Metering Has Introduced the IDS2000 Industrial Dispenser with the New Quick Run Module

T his new model provides a standalone solution for precision fluid dispensing in production and process environments.

The IDS2000 Dispenser consists of FMI's patented valveless ceramic piston pump direct-coupled to a precision stepper motor. The stepper motor and stepper driver electronics are packaged in a rugged, splash-proof stainless steel enclosure.

The integrally mounted quickrun-module provides a ready-to-use interface accepting a foot switch or an external relay to activate dispensing.

The IDS will dispense from 2 μ l to 7 mL and is ideal for dispensing solvents, lubricants, cleaning agents, flux, and adhesives.

This new model has wide application for medical component assembly or any industrial dispensing application. The unit is supplied complete with dispenser, quick-run-module, power supply and foot switch.

> Fluid Metering, Inc. 800.223.3388 Syosset, NY www.fmipump.com

Hardy Diagnostics Introduces ComfortPRO Lab Coats

Microbiological laboratories are a published source of infections, and laboratory-associated cases of typhoid, cholera, glanders, brucellosis and tetanus have beeen reported. Laboratory workers are exposed to potentially hazardous agents on a daily basis. The use of effective primary containment is of great importance, and the personal protection offered by lab coats is an essential part of every laboratory.

Hardy Diagnostics' new line of disposable lab coats offers excellent protection and comfort and are available at reduced cost. Features include breast and hip pockets, snap-front buttons and knit cuffs and collars. They are made from a tri-laminated, spunbound, polypropylene material (SMS) that is fully breathable and splash resistant for increased safety. ComfortPRO lab coats are available in both blue and white and come in five sizes for the best fit.

> Hardy Diagnostics 800.266.2222 Santa Maria, CA www.hardydiagnostics.com

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International pbi S.p.A.

Air Sampling in Isolator from International pbi S.p.A.

The microbiological air monitoring in isolated and restricted areas is now simplified and without risk of contamination.

International pbi has developed and produced the most advanced and at the same time simplest system for isolator: the "SAS Isolator" where the stainless steel sampling chamber and the operation unit of the air sampler are separated and connected by a small cable, avoiding large air tubing.

The very compact stainless steel aspirating chamber may positioned or suspended in any convenient place inside the isolator and is sterilized by VHP. The operation unit is totally outside. The operation unit can be connected to a printer or computer to record all sampling data.

The normal routinary calibration can be performed inside the isolator using the digital "Pyramid" anemometer.

> International pbi S.p.A. 39.002.48779245 Milano, Italy www.internationalpbi.it/

Bio Tek Instruments HTRF Certification Awarded for Synergy 2 Multi-Detection Microplate Readers

B ioTek Instruments, Inc. announced that Cisbio International has awarded HTRF[®] certification for the Synergy[™] 2 multi-detection Micro-Plate readers. With this certification, Cisbio International guarantees that Synergy 2 meets or exceeds all the strict performance and functional criteria for optimal HTRF readout. The new combination of Synergy 2 and the Cisbio reagent system will provide researchers in life science and drug discovery with increased productivity and extended flexibility. "Cisbio's HTRF assay platform is very popular in screening laboratories because it allows assay developers to design robust homogeneous assays that can easily be miniaturized and automated," noted Xavier Amouretti, product manager at BioTek Instruments. "To be HTRF certified, a microplate reader must meet a set of strict criteria, and requires a very sensitive TRF measurement system. This certification highlights the exquisite sensitivity and performance one can achieve with Synergy 2 while still offering multi-detection flexibility."

Synergy 2, powered by BioTek's Gen5[™] data analysis software, is a modular multi-detection microplate reader incorporating detection modes for fluorescence intensity, fluorescence polarization, time resolved fluorescence, luminescence and UVvisible absorbance. Synergy 2 uses a unique combination of monochromator, filters, and dichroic mirrors and three broad-spectrum light sources for optimal illumination that provide the best possible level of performance in all detection modes without performance degradation typical in most multi-detection systems.

> BioTek Instruments, Inc. 802.655.4040 Winooski,VT www.biotek.com

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IAFP 2007 Networking Opportunities

IAFP FUNCTIONS

WELCOME RECEPTION

Saturday, July 7 • 5:00 p.m. - 6:30 p.m.

Reunite with colleagues from around the world as you socialize and prepare for the leading food safety conference. Everyone is invited!

AFFILIATE EDUCATIONAL SESSION

Saturday, July 7 • 4:00 p.m. - 5:00 p.m.

Affiliate Officers and Delegates plan to arrive in time to participate in this educational session. Watch for additional details.

COMMITTEE MEETINGS

Saturday, July 7 • 3:00 p.m. – 4:30 p.m. Sunday, July 8 • 7:00 a.m. – 5:00 p.m.

Refreshments sponsored by Springer

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 committees or PDGs. Everyone is invited to attend.

STUDENT LUNCHEON

Sunday, July 8 • 12:00 p.m. - 1:30 p.m.

Sponsored by Texas A&M Agriculture, Department of Animal Science, Food Safety

The mission of the Student PDG is to provide students of food safety with a platform to enrich their experience as Members of IAFP. Sign up for the luncheon to help start building your professional network.

EDITORIAL BOARD RECEPTION

Sunday, July 8 • 4:30 p.m. - 5:30 p.m.

Editorial Board Members are invited to this reception to be recognized for their service during the year.

OPENING SESSION

AND IVAN PARKIN LECTURE

Sunday, July 8 • 6:00 p.m. - 7:00 p.m.

Join us to kick off IAFP 2007 at the Opening Session. Listen to the prestigous Ivan Parkin Lecture delivered by Carl S. Custer.

CHEESE AND WINE RECEPTION

Sunday, July 8 • 7:00 p.m. – 9:00 p.m. Sponsored by Kraft Foods

An IAFP tradition for attendees and guests. The reception begins in the Exhibit Hall immediately following the Ivan Parkin Lecture on Sunday evening.

IAFP JOB FAIR

Sunday, July 8 through Wednesday, July 11

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

COMMITTEE AND PDG CHAIRPERSON

BREAKFAST (By invitation) Monday, July 9 • 7:00 a.m. – 9:00 a.m.

Chairpersons and Vice Chairpersons are invited to attend this breakfast to report on the activities of your committee.

EXHIBIT HALL LUNCH

Monday, July 9 • 12:00 p.m. – 1:00 p.m. Sponsored by JohnsonDiversey

Tuesday, July 10 • 12:00 p.m. – 1:00 p.m. Sponsored by SGS North America

Stop in the Exhibit Hall for lunch and networking on Monday and Tuesday.

EXHIBIT HALL RECEPTIONS

Monday, July 9 • 5:00 p.m. – 6:30 p.m. Sponsored by DuPont Qualicon

Tuesday, July 10 • 5:00 p.m. - 6:00 p.m.

Join your colleagues in the Exhibit Hall to see the most up-to-date trends in food safety techniques and equipment. Take advantage of these great networking receptions.

PRESIDENT'S RECEPTION (By invitation)

Tuesday, July 10 • 6:00 p.m. - 7:00 p.m.

Sponsored by Fisher Scientific

This by invitation event is held each year to honor those who have contributed to the Association during the year.

PAST PRESIDENTS' DINNER (By invitation)

Tuesday, July 10 • 7:00 p.m. - 9:30 p.m.

Past Presidents and their guests are invited to this dinner to socialize and reminisce.

BUSINESS MEETING

Tuesday, July 10 • 12:15 p.m. - 1:00 p.m.

You are encouraged to attend the Business Meeting to keep informed of the actions of YOUR Association.

JOHN H. SILLIKER LECTURE

Wednesday, July 11 = 4:00 p.m. - 4:45 p.m.

The John H. Silliker Lecture will be delivered by Dr. Terry A. Roberts.

AWARDS BANQUET

Wednesday, July 11 • 7:00 p.m. - 9:30 p.m.

Bring IAFP 2007 to a close at the Awards Banquet. Award recipients will be recognized for their outstanding achievements and the gavel will be passed from Frank Yiannas, M.P.H. to Incoming President, Dr. Gary R. Acuff.

IAFP 2007 Event Information



EVENING EVENTS

American Adventure at Epcot[®] Monday, July 9 • 6:30 p.m. – 10:00 p.m.

Travel backstage $Epcot^{\otimes}$ where you will be escorted to the American Adventure Rotunda. Relive America's glorious past in the beautiful setting of a classic 18th century American Rotunda. A reception-style dinner will be offered as you enjoy the magnificent setting. The finale of the evening takes you outside to an exclusive dessert party in a viewing area overlooking the World Showcase Lagoon. Here, experience the premier nighttime spectacular at $Epcot^{\otimes}$, IllumiNations: Reflections of Earth. This one-of-a-kind show tells its story and touches the spirit by combining video technology, water fountains, lasers, special lighting effects, and pyrotechnics, all programmed to an original musical score. A perfect finish to your $Epcot^{\otimes}$ Adventure.

IAFP Foundation Fundraiser – Adventurers Club at Downtown Disney $^{\otimes}$

Tuesday, July 10 • 6:30 p.m. - 9:30 p.m.



This will be a night to remember! You will be transported to Downtown Disney[®] and escorted through the streets of Pleasure Island to the Adventurers Club.

The entertainment here is outrageous as the world's most eccentric explorers welcome you to their legendary club of the 1930s. Swap tall tales with a marvelously mad professor, a dashing daredevil pilot, a frisky French maid, and other characters while you enjoy live shows featuring everything from talking masks and a floating head to a ghostly piano. A reception-style buffet will be offered while the show happens all around you. At the conclusion of the event you will have the option to remain at Downtown Disney[®] and experience all of the clubs of Pleasure Island or return to the *Contemporary* Resort.

GOLF TOURNAMENT

Golf Tournament at Disney's Magnolia Golf Course

Saturday, July 7 • 6:30 a.m. - 12:30 p.m.

Join your friends and colleagues for a relaxing round of golf before IAFP 2007. Step onto the first tee and into the shoes of champions. These beautifully manicured links, designed by Joe Lee, are named for an abundance of fragrant Magnolias. Elevated tees, spacious greens and tranquil water hazards immerse you in a natural setting fit for a fulfilling round of championship golf. Enhance your on-course experience with the latest GPS Technology in each golf cart. *Disney's Magnolia* has provided a backdrop for the PGA Tour's elite for over 30 years. A classic Florida golf course, complete with a Mickey Mouse bunker!

Price includes transportation, greens fees with cart, range balls, lunch and prizes.

DAYTIME TOURS

Kennedy Space Center Saturday, July 7 • 8:30 a.m. – 4:30 p.m.



Each year, millions of visitors make the trek to Kennedy Space Center, NASA's launch headquarters, where many of mankind's greatest accomplishments take

place. Your exploration starts with a world-renowned tour where you see many NASA landmarks, including the massive launch pads, the gigantic Vehicle Assembly Building, the awe-inspiring Apollo/Saturn V Center and the International Space Center. View 10-story high rockets from all eras of space exploration in the Rocket Garden, walk through a full-size Space Shuttle mock-up, enjoy IMAX Theater space films on gigantic five-story screens and see an actual Gemini program capsule on display. You will also have lunch with an astronaut. Share in the excitement of space exploration through the eyes and personal stories of one of NASA's best while enjoying a buffet meal. You will have an inspiring day at Kennedy Space Center!

NOTE: Government-issued photo identification is required.
Merritt Island Airboat Excursion Sunday, July 8 • 9:00 a.m. – 3:00 p.m.



Merritt Island National Wildlife Refuge is certified as the greatest endangered wildlife experience in North America. Our first stop is at the visitors' center for a 20-minute

orientation film. Then, take an easy one-hour nature walk through one of the diverse, critical hardwood hammock habitats. Infused with wildlife, more than 1,000 species of plants are found throughout the refuge. Enjoy a picnic lunch at the refuge before heading to the Manatee over-look area. Then it's off to St. John's River for refreshments and gator tail. Certified eco-guides and Coast Guard captains will then take you on a 30-minute airboat tour through central Florida's everglades. Binoculars will be supplied for your viewing pleasure.

Disney Behind-the-Scenes Tour – Innovation in Action

Monday, July 9 = 9:00 a.m. - 12:00 p.m.

When most people hear the name "Walt Disney," they think of *Mickey Mouse*, classic movies, and theme parks. What they often don't think of, or even know about, are his many innovative ideas that eventually led to the creation of the *Walt Disney World®* Resort. Innovation in action highlights Walt's many accomplishments and takes you on an unforgettable journey where you will see, firsthand, how Disney makes "magic"! Tour places most Guests never get to see including:

- The Walt Disney World[®] Nursery and Tree Farm See how Disney horticulturists create worldfamous topiaries.
- Textile Services Visit the new state-of-the-art laundry facility, one of the largest in the world.
- Main Street, U.S.A.[®] Discover how Walt's life and film career heavily influenced this turn-ofthe-century location.
- The "Utilidor" System Journey beneath the Magic Kingdom[®] Park to visit support systems located in the "tunnel."

NOTE: You must be 16 years old and carry a government-issued photo identification. There is walking involved, so comfortable shoes are recommended and attire should be suitable for current weather conditions.

Disney Behind-the-Scenes Tour -Gardens of the World

Tuesday, July 10 • 9:00 a.m. - 12:00 p.m.



Everywhere you look at the Walt Disney World® Resort, the trees, shrubs and flowers play a vital role in setting the stage for recreation, entertainment, and beauty. Disney landscaping has become a recognized show in itself, providing color and enjoyment throughout the year. Your horticulture instructor turns *Epcot*[®] into a living classroom, using facilities "on stage" to describe the basic process of plant design and how it is incorporated in the landscape for the World Showcase pavilions. In addition, you will learn how you can apply many of these design elements to theme your home garden.

NOTE: You must be 16 years old and carry a government-issued photo identification. There is walking involved, so comfortable shoes are recommended and attire should be suitable for current weather conditions.

FIELD TOURS

Food Safety is Magical, But It Doesn't Magically Happen

Saturday, July 7 or Thursday, July 12 9:00 a.m. – 12:00 p.m.

During this tour, you will learn about the worldclass food safety program at the *Walt Disney World®* Resort. This tour will include a presentation on the theory and operational aspects of Disney's food safety program, followed by a walking tour of one of the largest food service operations on property to illustrate the application of principles.

Behind the Seeds Tour

Saturday, July 7 or Thursday, July 12 9:00 a.m. – 12:00 p.m.

Get "up close and personal" with plants, insects and fish to explore and discover how scientists are working on innovative technology to support the future of food production. You will learn about the use of aquaculture in production of fish and shellfish, innovative plantgrowing techniques and the use of predator insects to control pests.

Reedy, Set, Go – Behind the Scenes of Environmental Services

Thursday, July 12 • 9:00 a.m. - 12:00 p.m.

Go behind the scenes of the Reedy Creek Improvement District Environmental Services lab. This tour will include an overview of the history of the Reedy Creek Improvement District, a discussion of the essential role they play in monitoring the environment on and around the *Walt Disney World®* Resort property and a tour of the environmental services laboratory operations.

Food Irradiation Facility Tour

Thursday, July 12 • 8:30 a.m. - 11:30 a.m.

This is your opportunity to tour the Food Technology Service, Inc. facility. Food Tech was constructed as the nation's first commercial food irradiation company. Since 1992, the facility has been the leader in processing irradiated produce, poultry, and meat products for processors, retailer, and foodservice companies.

Food Tech has a long history of partnering with its customers to educate, introduce and implement irradiation as a food safety tool. Don't miss this exciting opportunity to see a working gamma food irradiation plant and learn more about this technology.



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

MEETING INFORMATION

Register to attend the world's leading food safety conference. Full Registration includes:

- Technical Sessions
- · Awards Banquet

• Exhibit Hall Admittance

· Cheese and Wine Reception • Exhibit Hall Reception (Mon.-Tues.)

- Symposia
- Poster Presentations
- Ivan Parkin Lecture
- · John H. Silliker Lecture
- Program and Abstract Book • Exhibit Hall Lunch (Mon.-Tues.)

4 EASY WAYS TO REGISTER

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



Des Moines, IA 50322-2864, USA



Phone: 800.369.6337; 515.276.3344

The early registration deadline is June 5, 2007. After this date, late registration fees are in effect.

CANCELLATION POLICY

Registration fees, less a \$50 administration fee and any applicable bank charges, will be refunded for written cancellations received by June 22, 2007. No refunds will be made after June 22, 2007; however, the registration may be transferred to a colleague with written notification. Refunds will be processed after July 16, 2007. Event and tour tickets purchased are nonrefundable.



EXHIBIT HOURS

| 7:00 p.m 9:00 p.m. |
|---------------------|
| 10:00 a.m 6:00 p.m. |
| 10:00 a.m 6:00 p.m. |
| |

DAYTIME EVENTS

| Saturday, July 7, 2007 | 8:30 a.m 4:30 p.m. |
|--|---------------------|
| Kennedy Space Center (Lunch included) | |
| Sunday, July 8, 2007 | 9:00 a.m 3:00 p.m. |
| Merritt Island Airboat Excursion (Luni | ch included) |
| Monday, July 9, 2007 | 9:00 a.m 12:00 p.m. |
| Disney Behind-the-Scenes Tour-Inne | ovation in Action |
| Tuesday, July 10, 2007 | 9:00 a.m 12:00 p.m. |
| Disney Behind-the-Scenes Tour-Gard | lens of the World |

EVENING EVENTS

| Sunday, July 8, 2007 | |
|---|------------------------|
| Opening Session | 6:00 p.m 7:00 p.m. |
| Cheese and Wine Reception Sponsored by Kraft Foods | 7:00 p.m. – 9:00 p.m. |
| Monday, July 9, 2007 | |
| Exhibit Hall Reception Sponsored by DuPont Qualicon | 5:00 p.m 6:00 p.m. |
| Monday Night Social – American Adventure at Epcot [®] | 6:30 p.m. – 10:00 p.m. |
| Tuesday, July 10, 2007 | |
| Exhibit Hall Reception | 5:00 p.m 6:00 p.m. |
| IAFP Foundation Fundraiser – Disney's Adventurers Club | 6:30 p.m. – 9:30 p.m. |
| Wednesday, July 11, 2007 | |
| Awards Banquet Reception | 6:00 p.m 7:00 p.m. |
| Awards Banquet | 7:00 p.m 9:30 p.m. |
| | |

FIELD TOURS

| Saturda | ıy, | July | 1, | 200 | 1 | (Limite | ed | number | ot | tickets | available) | |
|---------|-----|------|----|-----|---|---------|----|--------|----|---------|------------|--|
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| Food Safety is Magical, But It Doesn't Magically Happen | 9:00 a.m. – 12:00 p.m. |
|---|------------------------|
| Behind the Seeds Tour | 9:00 a.m 12:00 p.m. |
| Thursday, July 12, 2007 (Limited number of | tickets available) |
| Food Safety is Magical, But It Doesn't Magically Happen | 9:00 a.m 12:00 p.m. |
| Behind the Seeds Tour | 9:00 a.m 12:00 p.m. |
| Reedy, Set, Go – Behind the Scenes of Environmental Services | 9:00 a.m 12:00 p.m. |
| Food Irradiation Facility Tour | 8:30 a.m 11:30 a.m. |

GOLF TOURNAMENT

Saturday, July 7, 2007

Golf Tournament at Disney's Magnolia Golf Course 6:30 a.m. - 12:30 p.m.

HOTEL INFORMATION

Hotel reservations can be made online at www.foodprotection.org.



IAFP 2007 Registration Form



| * Lake Bocov | | Member Number: | | | |
|----------------------------------|----------------|----------------|-----------------|--|--|
| First name (as it will appear on | your badge) | Last name | | | |
| Employer | | Title | | | |
| Mailing Address (Please specify | Home Work) | | | | |
| City | State/Province | Country | Postal/Zip Code | | |
| Telephone | Fax | F-mail | | | |

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 JUNE 5, 2007 TO AVOID LATE REGISTRATION FEES

| REGISTRATION FEES: | MEMBERS | NONMEMBERS | TOTAL |
|--|---|--|----------------------|
| Registration Association Student Member Retired Association Member One Day Registration® I Mon. I Tues. Ved. Spouse/Companion® (Name): Children 15 & Over® (Names): Children 15 & Over® (Names): *Awards Banquet not included Additional Awards Banquet Ticket – Wednesday, 7/11 Student Luncheon – Sunday, 7/8 | \$ 405 (\$ 455 late) \$ 80 (\$ 90 late) \$ 220 (\$ 90 late) \$ 220 (\$ 245 late) \$ 60 (\$ 60 late) \$ 25 (\$ 25 late) FREE \$ 50 (\$ 60 late) \$ 10 (\$ 15 late) | \$ 615 (\$ 665 late) Not Available \$ 340 (\$ 365 late) \$ 60 (\$ 60 late) 5 25 (\$ 25 late) FREE \$ 50 (\$ 60 late) | |
| DAYTIME EVENTS | | # OF TICKETS | |
| Golf Tournament – Saturday, 7/7 (Lunch included) Kennedy Space Center – Saturday, 7/7 (Lunch included) Merritt Island Airboat Excursion – Sunday, 7/8 (Lunch included) Disney Behind-the-Scenes Tour–Innovation in Action – Monday, 7/9 Disney Behind-the-Scenes Tour–Gardens of the World – Tuesday, 7/10 | \$ 165 (\$ 175 late) \$ 99 (\$ 109 late) \$ 110 (\$ 120 late) \$ 105 (\$ 115 late) \$ 104 (\$ 114 late) | | |
| EVENING EVENTS | | | |
| Monday Night Social – American Adventure at Epcot® – Monday, 7/9 IAFP Foundation Fundraiser – Disney's Adventurers Club – Tuesday, 7/10 | \$ 45 (\$ 55 late) \$ 150 (\$ 160 late) | | |
| FIELD TOURS | | | |
| Saturday, 717 (Limited number of tickets available) Food Safety is Magical, But It Doesn't Magically Happen Behind the Seeds Tour | \$ 10 (\$ 20 late) \$ 10 (\$ 20 late) | | |
| Thursday,7/12 (Limited number of tickets available) Food Safety is Magical, But It Doesn't Magically Happen Behind the Seeds Tour Reedy, Set, Go – Behind the Scenes of Environmental Services Food Irradiation Facility Tour | \$ 10 (\$ 20 late) \$ 10 (\$ 20 late) \$ 10 (\$ 20 late) \$ 10 (\$ 20 late) \$ 10 (\$ 20 late) | | |
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| Check box if you are a technical, poster, or symposium speaker. | | EXHIBITORS DO NO | T USE THIS FORM |



Contribute to the Tenth Annual IAFP Foundation Silent Auction Today!

The Foundation of the International Association for Food Protection will hold its Annual Silent Auction during IAFP 2007, the Association's 94th Annual Meeting in Lake Buena Vista, FL, July 8–11, 2007. The Foundation supports:

- Student Travel Scholarships
- Ivan Parkin Lecture
- ♦ John H. Silliker Lecture (Funded through a contribution from Silliker, Inc.)
- Travel support for exceptional speakers at the Annual Meeting
- Audiovisual Library
- Developing Scientist Competition
- Shipment of JFP and FPT journals to developing countries through FAO

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

- Taste of Chicago Gift Card
- New York Maple Syrup
- Galileo Thermometer
- Team Canada Hockey Jersey
- Ipod Shuffle

3

- Waterford Crystal Wine Bottle Coaster
- Purdy's Chocolates Gift Basket
 Food Microbiology: An Introduction
 - Food Microbiology. All Introdu
- Ontario Ice Wine
- "Six Nations" Rugby Shirt
- Cow Parade Figurines
- Brazil Vacation Package

Complete the form and send it in today.

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The Perfect Fit



Many job seekers and employers are discovering the advantages of shopping online for industry jobs and for qualified candidates to fill them. But the one-size-fits-all approach of the mega job boards may not be the best way to find what you're looking for. **IAFP Career Services** gives employers and job seeking professionals a better way to find one another and make that perfect career fit.

Employers: Tailor your recruiting to reach qualified food safety industry professionals quickly and easily. Search the database of resumes and proactively contact candidates, and get automatic email notification when a candidate matches your criteria.

Job Seekers: Get your resume noticed by the people in the industry who matter most: the food protection industry employers. Whether you're looking for a new job, or ready to take the next step in your career, we'll help you find the opportunity that suits you.

Visit http//careers.foodprotection.org today to post or search job listings in the food protection industry.

COMING EVENTS

MARCH

- 5-6, ISO 22000 Food Safety Essentials, Edmonton, Canada. For more information, contact Michael Loreto at 416.747.2705; E-mail: michael.loreto@csagroup.org.
- 6–7, AIB International Food Plant GMP/Sanitation Workshop, Marriott Ontario Airport Hotel, Ontario, CA. For more information, call 800.633.5137 or go to www. aibonline.org.
- 6–8, Food Safety Summit, Washington Convention Center, Washington, D.C. For more information, go to www.foodsafetysummit.com/ 2007events.php.
- 6–9, Better Process Control School, University of Georgia Food Science Outreach Program, Athens, GA. For more information, contact Marian at 706.542.2574; E-mail: marianw@uga.edu.
- 7-8, ISO 22000 Food Safety Internal Auditor, Mississauga, Ontario, Canada. For more information, contact Michael Loreto at 416. 747.2705; E-mail: michael.loreto@ csagroup.org.
- 8–9, AIB International HACCP Workshop, Marriott Ontario Airport Hotel, Ontario, CA. For more information, call 800.633.5137 or go to www.aibonline.org.
- 14–15, Arizona Environmental Health Association Meeting, Tempe, AZ. For more information, contact Mohammed Heydari at 602. 867.1780; E-mail: president@azeha. org.
- I4–I6, Idaho Environmental Health Association Annual Education Conference, Boise State University, Boise, ID. For more information, contact Dee Johnson at 208.547.4375; E-mail: djohnson@ phd6.idaho.gov.
- 20-23, ISOPOL XVI, Marriott Riverfront Hotel, Savannah, GA. For more information, contact Terry Reamer at 240.485.2776; E-mail: terry.reamer@aphl.org.
- 21–24, Food Processing Suppliers Association (FPSA) Conference, Renaissance Esmeralda Resort and

Spa, Palm Springs, CA. For more information, call 703.761.2600 or go to www.fpsa.org.

 27–30, Michigan Environmental Health Association's 63rd Annual Education Conference, Radisson Plaza, Kalamazoo, MI. For more information, contact Kristen Schweighoefer at 734.222.3968; E-mail: schweigk@ washtenaw.org.

APRIL

- 3-4, Hands-On HACCP Workshop, University of Georgia Food Science Outreach Program, Athens, GA. For more information, contact Marian at 706.542.2574; E-mail: marianw@uga.edu.
- 4–6, Missouri Milk, Food and Environmental Health Association Annual Educational Conference, Stoney Creek Inn, Columbia, MO. For more information, contact Gala Jaramillo at 573.893.3066; E-mail: galaj@socket.net.
- II, The Society for Applied Microbiology Spring Meeting, Manchester Metropolitan University, London.
 For more information, call 44.(0) 1234.326661; or go to www.sfam.org. uk/springmeeting.html.
- I2, Metropolitan Association for Food Protection Spring Seminar, Cook College Campus Center, New Brunswick, NJ. For more information, contact Carol Schwar at 908.689.6693; E-mail: cschwar@co.warren.nj.us.
- 24–25, AIB Food Plant GMP/ Sanitation Workshop, Sheraton Gateway Hotel, Atlanta Airport, Atlanta, GA. For more information, call 800.633.5137 or go to www. aibonline.org.
- 26–27, AIB HACCP Workshop, Sheraton Gateway Hotel, Atlanta Airport, Atlanta, GA. For more information, call 800.633.5137 or go to www. aibonline.org.
- 26–28, United Fresh Tech, Palm Springs Convention Center, Palm Springs, CA. For more information, call 202.303.3400 or go to www. unitedfresh.org.

 27, Eleventh Annual Symposium on Industrial and Fermentation Microbiology, Radisson Center, LaCrosse, WI. For more information, contact Dr. S. N. Rajagopal at 608. 785.6976; E-mail: rajagopa.s@uwlax. edu.

MAY

- 5–8, United Fresh Marketplace, McCormick Place Convention Center, Chicago, IL. For more information, call 202.303.3400 or go to www. unitedfresh.org.
- 5–10, The 31st National Conference on Interstate Milk Shipments, Little America Hotel, Salt Lake City, UT. For more information, contact Leon Townsend at 502.695.0253; E-mail: Itownsend@ncims.org.
- 15–16, Pennsylvania Association of Milk, Food and Environmental Sanitarians 68th Annual Conference, University Park, PA. For more information, contact PSU at 814. 865.8301; E-mail: shortcourse@ psu.edu.
- I5–I7, Fresh-cut Produce Handson HACCP Workshop, University of Georgia Food Science Outreach Program, Athens, GA. For more information, contact Marian at 706.542.
 2574; E-mail: marianw@uga.edu.
- 16–17, Associated Illinois Milk, Food and Environmental Sanitarians Spring Meeting, Bloomington, IL. For more information, contact Steve DiVincenzo at 217.785.2439; E-mail: sdivince@idph.state.il.us.
- 21–24, 3-A Sanitary Standards, Inc. Annual Meeting, Milwaukee, WI. For more information, call 800.
 633.5137 or go to www.3-a.org.

JUNE

 4-6, Texas Association for Food Protection's 26th Annual Meeting, Omni Southpark, Austin, TX. For more information, contact Howard Depoy at 936.756.6455; E-mail: hwdepoy@milkproductslp. com.

- 7–8, Food Mycology 2007: Emerging Mold Problems and Spoilage in Food and Beverages, Westin Key West, Key West, FL. For more information, contact BCN Research Laboratories at 800.236.0505; E-mail: emilia.rico@bcnlabs.com.
- I5-22, XXVII International Workshop/Symposium on Rapid Methods and Automation in Micro-

biology, Kansas State University, Manhattan, KS. For more information, contact Daniel Y.C. Fung at 785. 532.1208; E-mail: dfung@ksu.edu.

 26–27, In-Plant Control of Microbial Contamination in Refrigerated and Processed Foods, University of Georgia, Athens, GA. For more information, contact Marian at 706.542.2574 or E-mail: marianw@ uga.edu.

JULY

 8–11, IAFP 2007, Disney's Contemporary Resort, Lake Buena Vista, FL. For more information, contact Julie Cattanach at 800.369.6337; E-mail: jcattanach@foodprotection.org. See our registration form on page 141.



Sponsorship Opportunities Available for TATP 2007

Contact Dave Larson at 515.440.2810 or E-mail www.larson6@mchsi.com



JULY 8-11, 2007 Lake Buena Vista, Florida

AUGUST 3-6, 2008 Columbus, Ohio

JULY 12-15, 2009 Grapevine, Texas

IT'S A FACT

More than 1,800 attendees are expected at IAFP 2007.

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Potentially Hazardous Food



Do Not Work If Ill

Cross Contamination

Wash, Rinse, and Sanitize





140°F 60°C



Cooling



Refrigeration/Cold holding

Hot Holding

Temperature Danger Zone



For additional information, go to our Web site: www.foodprotection.org or contact the IAFP office at 800.369.6337; 515.276.3344; E-mail: info@foodprotection.org

41°F

5°C

The Table of Contents from the Journal of Food Protection is being provided as a Member benefit. If you do not receive JFP, but would like to add it to your Membership contact the Association office.

| | Food Protection. | |
|--|--|------------|
| /ol. 70 | rmg, US. Pat.OH January 2≢a7 | lo. 1 |
| Scientific Editors' Report P. Micha | el Davidson, Joe Frank, Elliot Ryser, and John N. Solos | 4 |
| | Articles | |
| Decurrence wil Escherichis coli 015 Richards, J. R. Mount, D. R. Golden, | 77:H7 III Diverse Farm Environments C. A. Doane, P. Pangloli, H. A. and F. R. Draughon* | 6 |
| Prevalence in Finishing enterocolitie Candace Glendening, Thomas E. Wit | ce in Different Phases of Production on Swine Farms Andrew S. Bowman," turn, Jeffrey T. LaJeune, Roger W. Stich, and Julie A. Funk | 11 |
| Impact of Transportation of Feedlo H7, Salmonella, and Total Aerobic I | LCatElle to lite Harwest Facility on lite Prevalence of Escherichia coli 0157; Microorganisms on Hides A. L. Reicks, M. M. Brashears, K. D. Adams, J. C. | |
| Brooks, J. R. Blanton, and III. F. Mille Biofilm Farmation by Multidrug-Re- | n". sistant Sallauwalla enterica Serotype Typhimurium Phage Type DT104 and | 17 |
| Other Pathogens Shin-Hee Kim" an Colonization of Toestations by Salima | nd Cheng-i Wei | 22 |
| Temperature Montserrat H. Iturriaga | I, Mark L. Tamplin, and Eduardo F. Escartin' | 30 |
| Anita Luckner-Hornischer, Gerda Hol: Pichier, Ingeborg Lederer, Andreas B | zhammer, Dielmar Rokita, Martin Federspiel, Heimo Lassnig, Anna-Margareta eranek, Christian Kornschober, Christian Berghold, and Franz Allerberger* | 35 |
| External Contan ination of Campyle G. Rasschaert, K. Houl,* and L. De 2 | obacter-Free Flocks after Transport in Cheaned and Disinfected Containers Julier | 40 |
| Recovery I Salmonella, Listeria m Suite through a Noncommercial L Cathy Adams, Bichard I, Walker, Sh | ionocytogenes, unil Mycobacterium bovis from Cheese Entering the United isini Port of Entry Hallu Kinde," Andrea Mikolon, Allonso Rodriguez-Lainz, annon Cemek-Horkins, Scaldet Trevis, Mikolon, Ginsbarr, Bohart Bast, Beth | |
| Harris, Janet II. Payeur, Steve Water Rapid Enrichment Strategy for Isol | man, and Alex Ardans ation III Listeria from Bovine Hide, Carcass, and Mind Samples Michael M. | 47 |
| Guenni," Joseph III. Bosilevac, and N Protein Weikiliams in Listeria mono | Iohammad Koohmaraie | 53 |
| Combination Evelyne Mbandi," Bre Effect of Acid Adaptation on Grow | tt S. Phinney, Douglas Whitten, and Leora A. Shelef | 58 |
| Listeria monocytogenes Inoculated Formato, Iligenia Geomaras, Ioanna | I unime Bologna Formulated wills or without Antimicrobiats Giovanni M. Barmpalia, Panagiolis N. Skandamis, Keith E. Belk, John A. Scanga, | |
| Patricia A. Kendall, Gary C. Smith, a Modeling and Predicting the Grow | nd John N. Solos" | 65 |
| Ole Mejiholm [®] and Paw Dalgaard Contamination Profile of Listeria w | m. in Three Types of Ready-to-Eat Chicken Meat Products Sumain | 70 |
| Lekroengsin, Summer Keeratipibul,* Real-Time PCR Method for Quantit | anii Kasame Trakoonlerswila. | 85 |
| Y, Segawa, H, Hayashidani, II, Taka Titanium Dioxide/UV Photocatalvili | ton, and Y. Hara-Kudo" | 90 |
| Kwansik Kim, Gun-Jo Woo, and Jiyo Efficacy iii Neutral Electrolyzed III | ng Park* | 97 |
| aeruginosa, and Staphylococcus a M. Araujo, and M. J. Garrido | noncorrection of the second contraction of the second seco | 102 |
| Management of Risk of Microbial (Hand Sanitizer Donald W. Schaffn | Cross-Contamination from Uncooked Frozen Hamburgers by Aucufus Salamer's and Kristin M. Schaffner | 109 |
| Use of Lemon Estant To Inhibit th | e Growth of Maintactic Bacteria A. Conte, M. Singaglia, and | 114 |
| Antibiotic Susceptibility al Bilidot Animal Sources Sigrid Mayrholer, | Acterium thermophilum and Bifidobacterium pseudolongum initiates from Konrad J. Domig." Ernst Amtmann, Angela H. II., M. van Hoek, Agnes | |
| Petersson, Christiane Mair, Helmul I Adhesive and Chemokine Stimula | K. Mayer, and Wolfgang Kneifel. tory Properties of Potentially Probiotic Lactobacillus Strains Maria G. | 119 |
| Vizoso Pinto, Tobias Schuster, Karli Pretrictile Preparation Has line Cap Maria De Angelis, Carlo G. Rizzello, | s Briviba, Bernhard Watzl, Wilhelm H. Hotzapfel, and Charles M. A. P. Franz* sacity To Hydrolyze Proteins Responsible for Wilmait Allergy Enrico Scala, Claudio De Simone, Giovanni A. Farris, Francesco Turnin, and | . 125 |
| Marco Gobbetti* Weinstaker Confirmation of Oyster | s milliher Vector for Hepatitiis A in a 2005 Illumistance Outbreak Y C. Shieh," | 135 |
| Y. E. Khudyakov, G. Xia, L. M. Gan M. B. Glatzer, S. R. Bialek, and A. I | ova-Raeva, F. M. Khambaty, J. W. Woeds, J. E. Veazey, M. L. Motes, E. Fiore | . 145 |
| Returnal Occurrence of Fusarium 1 Fumonisins B, and B, in Convention | Species, Fumonisin Production by Toxigenic Strains, amit Concentrations of anal and Organic Maize Grown in Spain Agustin Ariño," Teresa Juan, Giona | |
| Estopanan, and Jose F. González-O Effect of Chemical Treatments un | Ochratoxigenic Fungi and Common Mycobiota of Grapes (Vitis vinifera) | 101 |
| Neus Bulli, Sonia Marin, Elionor An Effect of Temperature and Insiation and Ochratoxin & Production His | glies, Antonio J. Haimos, and Vicente Sanchis' a Humidity during Transportation im Green Coffee Beam Molecum Content scotor A. Palacios-Cabrera, Hilary C. Menezes, Beatriz T. Iamanaka, Frederico | . 127 |
| Canepa, Aldir A. Teixeira, Nelson C Marta H. Tamisuki* | arvalhaes, Domenico Santi, Plinio T. Z. Leme, Katumi Yotsuyanagi, and | . 164 |
| Evaluation of Cymbopogon inarti Legumes Rajesh Kumar, Manishi | and Oil Extract for Control of Postharvest Insect Deterioration in Cereals and a Srivastava, and N. K. Dubey* | 172 |
| Development of an Enzyme-Links Been Oil Stef J. Koppelman," Per | ed Immunosorbent Assay Mexicut To Detect Mustard Protein in Mustard & Vlooswijk, Gina Bottger, Gert van Duijn, Peter van dier Schaft, Jacco Dekker, | 120 |
| Determination al Quantitative Fo | od Consumption Levels for Use in Microbial File Assessments: Crindicar | 1/9 |
| Elizesie as an Example Gyung-J | In Bahk and Ewen C. D. Todd* | 109 |
| Impact of Antibiotic Stress on A 0157:H7 Reha Onur Azizodu an | cid and Heat Tolerance amil Virulence Factor Expression of Escherichia coli d MaryAnne Drake" | 194 |
| Efficacy of a Peroxyacetic Bala Escherichia coli 0157:H7 on Est | Formulation as an Antimicrobial Intervention To Reduce Levels of Inoculate armai Carcass Surfaces of Itea Based Seel and West Nick Penney, Teresa | d |
| Bigwood, Hazel Barea, David Pulli Effect of Negative Air June on Fi | ord, Guill LeRoux, Roger Cook, Graeme Jarvis, and Gale Brightwell* | 200 ult |
| Xuetong Fan," William F. Fett, and | i Bailey W. Mitchell Dataseta in Celatoria (Spain), 1990 to 2003 Angela Dominguez.' Nutia | 204 |
| Torner, Laura Ruiz, Ana Martinez, Inhibition of Line monocotor | Rosa Bartolome, Elena Sulleiro, Angel Telxido, and Antoni Plasencia. | . 209 |
| Semanate, and Propionate Kath Carvacrol, Cinnamatchude Or | leen Glass," Dawn Preston, and Jeffrey Veesenmeyer. | 214 |
| Outgrowth in Ground Turkey du Factors Influencing Autoangree | ring Chilling Vijay K. Juneja' and Mendel Friedman | 218 |
| from Handlande Yogurt Thinking Biopreservation by a setatement | Aslim, Derya Onal, " and Yuvuz Beyatli an per example in Coculture with Streptococcus thermoohilus in Potentially | |
| Problotic and Synbiotic Fresh I Susana M. I. Saad" | Seam Cheeses Flavia C. A. Burti, Haissa R. Cardarelli, anti | 228 |
| Validation of Mout Inspection R Polymorphism Dirk Geysen," K Jel Brandt, and Pierre Dorry | exuithe flat Fammia saginate Cysticercoals by PCR-Restriction Fragment Leng irezi Kanobana, Bjorr Victor, Richar Rodriguez-Hidalgo, Jean file Borchgrave, | 236 |
| | Supplements | |
| Analytical Utility at Campyloba Foods* | cter Methodologies National Advisory Committee cm Microbiological Criteria for | 24 |
| Response to the Guerstients Print | and by the Food Safety and Inspection Service Regarding Consumer | |

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 Control of Antibacterial Drugs & Growth Inhibitors in Milk and Milk Products
 Preventing Rancid Flavors in Milk

- 29 Cleaning & Sanitizing in Fluid Milk Processing Plants 30 Potable Water on Dairy Farms 31 Composition & Nutritive Value of Dairy Products

- 31 Composition & Nutritive Value of Dairy Products
 32 Fat Test Variations in Raw Milk
 33 Brucelosis & Some Other Milkborne Diseases
 34 Butterfat Determinations of Various Dairy Products
 35 Dairy Plant Waste Management
 36 Dairy Farm Inspection
 37 Planning Dairy Stall Barns
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- 245 construction Materials for Milking Parlors 56 Dairy Product Safety (Pathogenic Bacteria) for Fluid Milk and Frozen Dessert Plants 57 Dairy Plant Sanitation 58 Sizing Dairy Farm Water Heater Systems 59 Production and Regulation of Quality Dairy Goat Milk 60 Trouble Shooting Microbial Defects: Product Line Sampling & Hygiene Monitoring 61 Frozen Dessert Processing 62 Resources For Dairy Equipment Construction Exclusion 60 Trouble Shooting Microbial Defects: Product Line Sampling & Hygiene Monitori 61 Frozen Dessert Processing
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