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DAIRY, FOOD AND ENVIRONMENTAL

SANITATION

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Used by health department and public health personnel nationwide, these manuals detail investigative techniques and procedures based on epidemiologic principles for the identification and analysis of illness outbreaks and their sources.
- 3-A Sanitary Standards for Dairy and Egg Processing Equipment
Formulated by the cooperative effort of industry and regulatory groups, the standards represent criteria for the cleanability of dairy and egg processing equipment. The standards cover materials and fabrication of the equipment design.

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Announcement Developing Scientists Awards

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Awards

Five (5) awards will be presented: 1st place, \$500 and a plaque; 2nd place, \$200 and a certificate; 3rd place, \$100 and a certificate; 4th place, \$50 and a certificate; 5th place, \$50 and a certificate. All of the winners will receive a 1 year membership including both *Dairy, Food and Environmental Sanitation* and the *Journal of Food Protection*.

Purpose

1. To encourage graduate students to present their original research at the IAMFES annual meeting.
2. To foster professionalism in graduate students through contact with peers and professional members of IAMFES.
3. To encourage participation by graduate students in IAMFES and the annual meeting.

Who Is Eligible

Graduate students enrolled in M.S. or Ph.D. programs at accredited universities or colleges whose research deals with problems related to environmental, food and/or dairy sanitation, protection and safety. Candidates cannot have graduated more than one (1) year prior to the deadline for submitting abstracts.

Criteria

1. A short abstract of the paper must be submitted to the IAMFES office by January 10. (Use the blue abstract forms from the October issue, if possible).
2. The author must indicate on the abstract form the desire to be considered for the competition.
3. The paper and the student must be recommended and approved for the competition by the major professor or department head.
4. The paper must represent original research done by the student and must be presented by the student.
5. An extended abstract form will be sent to all who enter the competition, and must be completed and returned by the deadline date on that form.
6. Each student may enter only one (1) paper in the competition.
7. Papers are to be presented as oral papers and should be approximately fifteen (15) minutes in length with an additional five (5) minutes allowed for questions, for a total of twenty (20) minutes.
8. The use of slides or other visual aids is encouraged.
9. The papers will be judged by an independent panel of judges.
10. Winners are presented and honored at the annual Awards Banquet. All entrants will receive complimentary tickets and are expected to be present at the Banquet.

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ABOUT THE COVER . . . *Talimena Drive, Arkansas Department of Parks & Tour. Photo courtesy of A. C. Haralson.*

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Sanitation from Another Perspective



Ivan Parkin Lecture presented at the 77th Annual Meeting of IAMFES Woodfield Hilton Hotel, Arlington Heights, Illinois

George M. Burditt
Burditt, Bowles & Radzius, Chicago, Illinois

Thank you, Mr. Chairman, for that generous introduction. I am singularly honored to be invited to deliver this year's Ivan Parkin Lecture. Prof. Parkin has been an inspiration to generations of sanitarians, and I am very sorry that he isn't with us this year. Prof. Parkin was President of IAMFES in 1955, and has missed precious few meetings since that date. I wanted to thank Prof. Parkin in person for all he has done for the profession of sanitarian, and indirectly for consumers who have been the ultimate beneficiaries of his expertise, teaching and leadership.

It's also an honor to deliver this lecture because of my distinguished predecessors who have appeared before you. And finally, as a lawyer, it is a particular pleasure for me to speak to an audience of experts, many of whom have been my colleagues in legal matters involving sanitation.

When Bob Sanders suggested that I speak on "Sanitation From Another Perspective," I thought his suggestion was particularly appropriate because as a lawyer my association with sanitation problems necessarily has been from a perspective different from yours.

At first I thought I might speak on the increasing importance of microbiology, but my good friend Dr. Mike Foster (1) covered microbiology so thoroughly in his Ivan Parkin Lecture two years ago that I thought it might be better for me to concentrate on traditional sanitation matters -- insects, chemicals, rodents and, as pecan growers say, "varmints" in general -- and how sanitarians have worked closely with me in legal matters involving them.

As a food industry lawyer, I have had a particular opportunity to witness first hand the importance of your profession. Each of us has experiences different from others, so this evening I'd like to discuss some of my experiences in working with sanitarians to solve specific legal issues arising from sanitary problems. Cooperation between sanitarians and lawyers was necessary in each case.

And you know sanitarians and lawyers do work closely together regularly. I'm reminded of the story of the sanitarian and lawyer who ended up in heaven on the same day. While it was an absolutely wonderful place, neither the lawyer nor the sanitarian was happy about it. The lawyer was a young man, only 33 years old, and he remonstrated with St. Peter about bringing him up to heaven at such a tender age. St. Peter apologized profusely, and said they had misplaced his birth records and the only records they had to go on were his time records from the office which showed him to be 79 years old.

The sanitarian had quite a different story. He was 99 years old, and remonstrated with St. Peter for leaving him on earth so long. He said his last 10 or 15 years hadn't been so pleasant, and he would have been perfectly happy to come up to heaven a little earlier. St. Peter said, "Well, you could have come up much earlier if you hadn't been eating so much oat bran!"

Each of the experiences I am about to relate to you has a moral from which we as sanitarians and lawyers can benefit. In each case there was a breakdown in some aspect of quality control. And, in each case, Q.C. and legal had to work together to solve the problem.

Food Warehouses

Food warehouses are always a perpetual challenge to sanitarians, and the one I'm going to tell you about was particularly so because it was a warehouse of freshly imported roots, barks, spices, nuts, and other kinds of vegetable matter from third world countries. Fresh off the ship, you can believe that these products had more than their share of infestation, and the company, knowing this, had an excellent fumigation program. Nothing was alive after the material was fumigated. But the warehouse had not been as diligent in sweeping up the dead insects and other frass around the plant.

A FDA inspector came into the warehouse one day on a routine and very limited matter. The person handling the inspection for the company could easily have gone to another part of the warehouse, picked up the information and delivered it to the inspector. But instead, he invited the inspector to take a crunching walk with him through the warehouse. The result was a mass seizure of everything in the warehouse, and a criminal prosecution was a distinct possibility.

Now what are the morals of this story? First, sanitation isn't a half-hearted game; elimination of pests requires removal as well as extermination.

And from a legal point of view there is a second moral: Don't put a state or federal inspector in a position where he has no choice but to take unpleasant but appropriate action.

Manufacturing Areas

A client of ours received three barrels of natural cheddar cheese intended for use in making pasteurized process cheese. The small cheese factory at which the cheese had been manufactured had a sanitation problem, and FDA obtained an injunction against further shipments of those three barrels.

The injunction was based on Section 402(a)(4) (2) of the Federal Food, Drug and Cosmetic Act which provides that a food shall be deemed to be adulterated if it is "packed or held under unsanitary conditions whereby it may become contaminated with filth." In fact there was nothing wrong with these particular three barrels, but under that good manufacturing practice provision of the Act they were considered adulterated. The marshal put a red tag on them in our client's manufacturing plant.

About a year later, someone in inventory control in the main office saw three barrels of aged cheddar on the computer print-out, of course with no red tags on it, and sent word down to the floor to use the cheese. The people on the floor thought the red tags were overruled by the orders from upstairs and used the cheese. Technically, that use was contempt of court, and my client was in serious jeopardy. We settled the matter by agreeing with FDA that we would throw away all of the perfectly good process cheese made with the offending natural cheddar. No one was fined or went to jail for contempt of court.

Now, what are the morals? First, pay attention to red tags, and second, don't rely exclusively on computers. My son is in the computer business, and he told me the other day about a new computer he has which is truly remarkable: it can answer virtually any question you have. One of his friends doubted the computer could do it, so Bud told him to ask a question. His friend asked, "Where is my father?" Bud punched his friend's name and the question into the computer and the computer answered, "Your father is fishing in Nova Scotia." Bud's friend laughed and said, "I told you so. My father died 15 years ago!" Bud thought there must be some mistake so he punched the same information into the computer and the computer answered, "Your father is fishing in Nova Scotia. Your mother's husband died 15 years ago."

Grain Elevators

Grain elevators are particularly attractive to animal life. They are also particularly difficult to protect. We defended two legal actions brought by FDA, one in the Federal Court in Spokane, and one in the Federal Court in Portland. In one case the charge was that the grain contained too much malathion; in the other case it didn't contain enough malathion to do any good, with a resulting problem which you can imagine. In both cases we and FDA worked closely together to achieve the desired result. It wasn't painless, but consumers were protected, the Agency's objectives were accomplished and the grain elevator co-op members' interests were served.

The moral of these cases is that FDA is a very powerful consumer protection organization with most effective weapons at its disposal -- including a suit for an injunction to put the defendant out of business until FDA says that sanitary conditions are satisfactory. FDA is a little like the result of crossing a robin with a tiger: I'm not sure what the result would look like, but you'd better listen to him sing!

Wholesale Distributors

Wholesale distribution establishments are also particularly susceptible to insect and rodent infestation. Great varieties of food in soft containers come into these warehouses, and every once in a while, unwelcome visitors come in with

them. The visitors may like the warehouse better than the food, and stay when the food leaves, particularly if it is cold outside.

In situations like this, FDA may give a warning or two, but if its warnings are not heeded, more serious action, frequently a criminal prosecution, is inevitable. Let me tell you about one such prosecution which took place in the Federal Court in Orlando.

A food distributor and three brothers who operated it were criminally prosecuted. According to testimony at the trial, the distributor was clearly the most sanitary which had ever operated in that area. Nevertheless, the three brothers in the company were charged with violating both the "dirty products" (3) and "dirty warehouse" (4) sections of the Food and Drug Act.

At the trial, the government offered in evidence a series of beautiful 8 1/2 x 11 color photographs showing several products in the warehouse which were obviously contaminated. The firm had allowed the photographs to be taken without objection, and the judge, ruling in accordance with precedent, admitted the photographs in evidence.

Of course we had a great deal of evidence on our side, and the jury found all three of the individual defendants not guilty on all counts. They also found the company not guilty on the "dirty warehouse" counts but found the company guilty on the "dirty product" counts.

Now what are the morals of that story? There are two: don't let any product in your establishment become infested with insects or rodents, and second, if by accident you do, don't let FDA take pictures of the evidence!(5)

Rail Cars

As the chain of distribution from farm to consumer grows longer and more complex, the need for scrupulous sanitation practices at every step in the proceeding increases. One potential weak link is rail cars, trucks or other means of transportation. Let me tell you about a rail car case.

Our client operated a plant in Illinois at which corn-meal intended for animal food was manufactured. The company had a number of "assigned cars" big hopper cars assigned by the Pennsylvania Central Railroad to our client for its exclusive use. The railroad picked up a loaded assigned car at the plant, delivered it to the customer, and returned the car empty to the plant for the next shipment. It was a violation of law and the agreement between the parties for the railroad to divert such a car to any other purpose.

Nevertheless, after a delivery, the railroad diverted the car involved in the case to a chemical company which loaded the car with lead oxide. The lead oxide was delivered to a glass company, the car was returned to the railroad, and the railroad returned the car to the feed manufacturer without cleaning the car and without telling the feed manufacturer that it had been diverted to a chemical manufacturer.

Unfortunately lead oxide and corn-meal look a great deal alike -- they are both orange granular substances not easily differentiated. Unfortunately the routine inspection conducted at the feed mill did not detect the residue of lead oxide in the bottom of the hopper car, and it was filled with corn-meal on top of the lead oxide. The car was shipped to a dog food manufacturer, and very unfortunately many dogs died.

The government criminally prosecuted the Pennsylvania Central Railroad and our client, but no individuals were named as defendants. The jury found Penn Central guilty and our client not guilty.

The moral is obvious: Make certain that every step of the distribution chain is carefully checked for sanitation problems. Unfortunately, carriers are not necessarily as conscious of sanitation needs as are food manufacturers; that step requires particular scrutiny.

City Warehouses

Food warehouses in metropolitan areas may also be particularly susceptible. The story I'm about to tell you is not typical, but it does illustrate a point.

Our client was a small one-man warehouse in a very tough part of Chicago. As a result, the owner kept the door locked at all times. One day when his secretary was on vacation and he was the only one at the warehouse, the doorbell rang and he saw a man and a woman outside. They were well dressed and courteously said they were FDA inspectors assigned to make a routine inspection. The owner said, "I don't want to join FDA today," and declined to open the door. The next day the FDA investigators were back at the door still courteous although a little frustrated, and armed with a warrant from the Federal Court. The owner admitted them but said he was alone and they would have to leave when he did. An hour later they had to leave when he went to get the mail. After another half hour of inspection, they had to leave when he went to lunch for a couple of hours. That procedure was repeated for several frustrating days.

At the conclusion of the inspection, the two investigators had collected a number of samples, including some very moldy dates in a mason jar. The owner said they could take all of the samples except the dates. They insisted they had authority to take the dates since they were displayed in the warehouse with everything else, in spite of his claim that the dates were his personal property for making date wine. He said, "As a matter of fact, you can't take the dates because I'm not going to unlock the warehouse door to let you out until you agree not to take them."

To compound the problem, there was a terrible mix-up in the subsequent injunction papers. The court order served on my client prohibited him from shipping "dates," but on all other copies of the order, the word "dates" had been stricken out and "any food" had been substituted. My client, thinking he was in compliance with the order, continued to ship other food and was arrested at home one night and taken off in handcuffs in front of his eight children. The trial lasted one day, and the judge said both sides were even since my client had spent one night in jail on an improper charge, although there might have been a proper charge based on his imprisoning two federal officers.

The moral is clear: In any sanitation matter, know what your rights and obligations are before you get into trouble with FDA.

Thank you again ladies and gentlemen for your attention to my experiences with sanitarians. Thank you, Bob Sanders, for inviting me to speak. And, thank you Ivan Parkin for being the leader who made these lectures possible.

REFERENCES

1. Foster, E.M. 1988. A Half Century of Food Microbiology -- and a Glimpse at the Years Ahead, 8 Dairy and Food Sanitation, 11:586-592.
2. 21 U.S.C. § 342 (a)(4).
3. 21 U.S.C. § 342 (a)(3).
4. 21 U.S.C. § 342 (a)(4).
5. No statute or judicial decision has so far given FDA authority to take photographs over the objection of the inspecting plant. This is a hotly contested issue, however, and FDA's demand for permission to take photographs should be denied only after careful policy and legal consideration. FDA's position is set forth in its Inspection Operations Manual 523.

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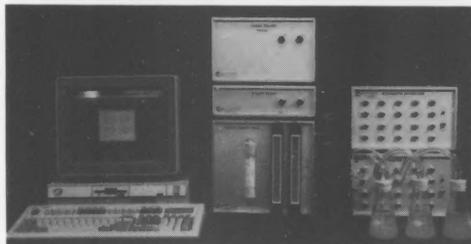
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Foodservice Disposables & Public Health

Charles W. Felix, Charles Felix Associates,
P.O. Box 1581, Leesburg, VA 22075

This paper explains how foodservice disposables—cups, plates, containers, cutlery and similar single use utensils—are an important measure of prevention against foodborne disease in the U.S., a fact that should be taken into consideration when single service articles are discussed in the context of the nation's solid waste problems.

Summary

Foodborne disease is a major problem in the U.S., accounting for more than 12 million cases each year. The cost of this illness to the economy, for medical care and lost productivity, is close to \$10 billion annually. One of the causes of foodborne disease is inadequately sanitized utensils. Poorly sanitized utensils enable bacteria to survive and grow so that they can cause foodborne infections. Studies show that foodservice disposables are significantly more sanitary in use than are reusables and, in fact, are required by law to be used wherever sanitizing facilities are unavailable. The public health properties of foodservice disposables are the result of their inherent sanitary condition (they are sanitized in the manufacturing process); their one-time, one person use; the less handling they receive; and the often poor quality of dishwashing and utensil handling in many foodservice operations. Most public health food protection officials are opposed to banning disposables in whole or in part because they know from experience that the use of disposables has improved sanitation in public food service. For that reason they view "the strategy of minimizing the use of single service in order to alleviate the solid waste and litter problems as a regressive step in food protection and contrary to the interests of public health."

The Severity and Cost of Foodborne Disease

In order to appreciate the public health significance of foodservice disposables, it is necessary to view them in the context of the nature and extent of the foodborne disease problem in the U.S. Because disposables have become so much a part of the background of foodservice operations, people generally take them for granted, forgetting that they have a historical and continuing connection with public health. The sanitation link was established in the beginning of the disposables industry with the banning of the common drinking cup in the State of Kansas in 1909. That prohibition was eventually adopted by all of the states as a primary measure of prevention against the spread of tuberculosis and other infectious diseases(12). Disease prevention continues to be a prin-

cipal function of single service articles. Health officials consider disposables to be "a desirable sanitary alternative to reusables under many conditions of modern food delivery (20)."

Although the Centers for Disease Control (CDC) recorded fewer than 100,000 reported cases of foodborne disease over the five year period of 1983-1987, the agency acknowledges that their data represents only the tip of the iceberg(4). Other experts estimate the true size of the foodborne illness problem to be several hundred to several thousand times higher than the reported number of cases. The Canadian researcher Ewen C.D. Todd calculates the number of cases of foodborne disease to be 12.6 million a year(24). This is a conservative figure compared to the estimate arrived at by U.S. Food and Drug Administration (FDA) microbiologists Douglas Archer and John Kvenberg who place the number at 24-81 million cases per year (2). By Todd's reckoning, the annual cost of these illnesses, in terms of medical bills and time lost from work, is approaching \$10 billion (Table 1).

Table 1. Incidence and Cost of Foodborne Diseases in the United States, 1976-1988

Etiologic agent	Cases	Deaths	Total \$ (millions)	Ave. Cost per case
Salmonella (not typhi)	2,960,000	31.9	3,991	1,350
Staphylococcus aureus	155,000	5.9	1,516	1,350
Listeria monocytogenes	25,000	67.9	313	12,520
Campylobacter spp.	170,000	1.0	156	920
E. coli (not O157:H7)	44,000	0.6	139	3,160
Clostridium perfringens	652,000	7.6	123	190
Yersinia enterocolitica	20,000	0.1	109	5,450
Clostridium botulinum	270	3.9	87	322,200
E. coli O157:H7	25,000	5.6	84	3,360
Shigella spp.	163,000	2.6	63	390
Vibrio vulnificus	29,000	30.0	37	1,275
Bacillus cereus	84,000	0.0	36	430
Streptococcus spp.	52,000	0.2	28	540
Vibrio cholerae/parahaemolyticus	13,000	1.7	13	1,000
Brucella spp.	1,000	0.1	7	7,000
Salmonella typhi	240	0.1	4	16,670
Other enteric bacteria	107,000	11.0	71	660
Total bacteria	5,500,510	170.2	6,777	1,240
Hepatitis A	35,000	1.6	176	5,030
Norwalk agent	181,000	0.0	161	890
Total viruses	216,000	1.6	337	1,540
Total parasites	1,486,500	313.8	625	420
Plant & Chemical poisons	103,000	11.3	33	870
Total seafood toxins	58,260	2.4	125	2,300
Total known	7,364,270	499.0	7,897	1,080
Total unknown	5,217,000	23.4	529	100
Total	12,581,270	522.7	8,426	670

Source: Ewen Todd in the Journal of Food Protection

The Problem is Growing

To say that foodborne disease is second only to the common cold in the number of ailments Americans suffer every year is to trivialize the severity of these illnesses. Foodborne disease leads to death for hundreds of its victims, hospitalization for many thousands more and possibly lifelong complications for untold numbers.

Only recently have we come to appreciate that the elderly, the very young and the immune-suppressed are at life threatening risk from foodborne diseases. An outbreak of *Salmonella* or *Listeria* that may only be a passing upset for healthy adults can take the lives of the residents of a nursing home or destroy the fetuses of pregnant women. The very young are always at greater risk from debilitating diseases than adults, and a case of simple gastroenteritis for a normal person may result in life-threatening complications for an individual with AIDS or some other immuno-suppressed condition.

These populations at risk are already large and are growing in significant numbers. The elderly—people over age 65—are expected to number 50 million by the year 2020; The AIDS-afflicted population will have grown to 1.4 million by the year 2000; and persons with HIV infections are accumulating by some 42,000 cases a year (1). As with the general population, these people will be eating out more than ever before, a circumstance that is also true of infants and young children who, in increasing numbers, will be taking their meals in day care centers as more and more women enter the workforce.

Even for healthy adults, for whom foodborne illness has heretofore been considered a self-limited disease, the risk of long-term consequences may be greater than we know. Archer and others make a strong case for foodborne diseases leading to long term chronic illnesses such as reactive arthritis(3).

Unsanitary Utensils are a Cause of Foodborne Disease

Food poisonings are mostly bacterial in origin. According to CDC, 92 percent of all reported cases are caused by pathogenic bacteria, five percent by viruses, and only two percent by chemicals (4). For the most part foodborne diseases are related to improper food handling—temperature abuse, cross contamination, poor personal hygiene, and improper cleaning of equipment and utensils (7). This last category re-fers more to food preparation utensils (cutting boards, pots and pans, carving knives, etc.) than to service items. Until recently, epidemiologists thought that the short period of time food is in contact with service utensils was not long enough to allow bacteria to grow to sufficient numbers to cause illness. Accordingly, even though there is ample evidence in the literature to support the suspicion that poorly sanitized eating and drinking utensils cause disease, (21) they did not look seriously at cups and plates as potential vehicles of infection.

In the light of recent discoveries in food microbiology, this can be viewed as a serious oversight. The fact that unclean utensils are found to be a significant cause of foodborne disease (6), coupled with the more recent discovery that certain pathogens are virulent in small numbers (10), suggests that improperly washed dishes may be more of a problem than has been suspected until now. *Listeria monocytogenes* and *Shigella* are known to be pathogenic in small doses (13), as are

drug-resistant bacteria for the immuno-suppressed(1). Viruses, too, are infective in very low doses, and we know now that such organisms as the Norwalk virus and hepatitis A virus are rampant in the environment and represent a significant cause of foodborne illness in the U.S. (5) In fact, viruses probably account for a good portion of the 62 percent of outbreaks for which CDC is unable to determine the causal organism, viruses being much more difficult to detect than bacteria (9).

Tracing foodborne illness to its ultimate cause is an extremely arduous procedure. CDC acknowledges that in six of every ten outbreaks they are not able to identify the type of pathogen, let alone the precise vehicle of its transmission (4). In most outbreaks the closest epidemiologists can come is to identify a probable cause of the illness. Likewise, most preventive measures are taken not on the certitude that they will keep diseases from occurring but on the probability that these precautions will inhibit the transmission of disease-causing organisms.

Similar assumptions underlie the requirements of our public health food codes in regard to serviceware. Reusable food service utensils are required by law to be sanitized after each use. "Sanitization" is defined in the federal model food code as a bactericidal treatment—usually with hot water or chemical sanitizers— "to reduce the bacterial count, including pathogens, to a safe level (17)." Wherever sanitizing facilities are not available the law specifies that only disposables should be used (17). The presumption behind these requirements is that utensils contaminated with bacteria are likely to lead to illness. In his microbiological study of hotel-motel glassware, in which 90 percent of the glasses tested were found to be unacceptable, Dr. Bailus Walker, Jr. concluded: "We know that questions involving the health effects of poor cleansing of glasses and dishes are particularly prone to uncertainty, and the health impact of various environmental levels of microorganisms on food or beverage contact surfaces are often unknown. Yet public health laws, basic esthetics and common sense demand action to prevent harm even if the regulators or other responsible persons are less certain that harm is otherwise inevitable(25)."

Disposables are Sanitary

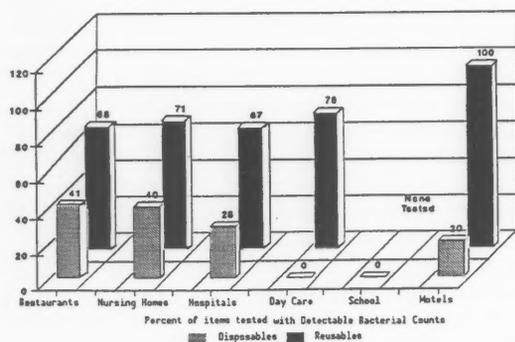
Disposables, on the other hand, are safe because they are clean to start with, are handled less, and are used only once by one person and then discarded. Foodservice disposables are subjected to high heat in the manufacturing process which kills any bacteria present, rendering these products practically sterile. The industry maintains a voluntary product sampling program in which products are regularly submitted for laboratory analysis as a sanitation check on the manufacturing process. The findings are almost always negative for the presence of bacteria(24).

Disposables are more Sanitary than Reusables

Whether plastic, paper or aluminum, there is no doubt that disposables are far more sanitary in use than reusables. This has been proven time and again, most recently in a 1989 survey of the bacterial quality of disposables and reusables at the point of use in food service establishments in Fairfax County, Virginia.

Fairfax County is an affluent area adjacent to the nation's capital which is served by a highly respected health department. At the request of the Foodservice & Packaging Institute, the Fairfax County Health Department coordinated and participated in an independent study of disposables and permanentware in use in the county's public eating establishments. Twenty-one establishments were chosen at random for a microbiological sampling of both reusable and disposable (paper and plastic) cups, glasses, plates and cutlery. An independent laboratory performed swab tests of five of each kind of article at the point of use in each establishment. Included in the test were 13 restaurants, two hospitals, two nursing homes, two motels, a child day care center, and a secondary school. Altogether, several hundred items were sampled. Figure 1 shows the percentage of reusable and disposable foodservice articles that were found to have detectable counts of bacteria on their surfaces. For example, 75 percent of the utensils sampled in the day care center had detectable bacteria on them, whereas no bacteria were detected on the disposable items in use in the center.

Figure 1
Percent of Disposable and Reusable Samples
with Detectable Plate Count Bacteria, by Sample Site Classification



More significantly, the results (Table 2 and 2A) demonstrate that in ten of the establishments (48%), utensils were found with numbers of bacteria either too numerous to count or in excess of the allowable standard, or else contaminated with *Escherichia coli*, an indicator of the possible presence of enteric pathogens. The acceptable standard for bacteria on eating utensils, as established by the National Research Council, is less than 100 colonies per utensil (22). In all of the establishments, disposables were well within the standard and were free of any coliforms (15).

Table 2A. *E. coli* Testing of Disposable and Reusable Foodservice Items.

Test Site	Number of <i>E. coli</i> detected	
	Disposables	Reusables
<i>E. coli</i> Detected		
2	0	56
9	0	1
10	0	1
16	0	7
17	0	11
19	0	15 & 49
21	0	20
Total Number Detected	0	160

Table 2. Comparison of Mean Total Plate Count Per Item for Disposable and Reusable Food Service Items at Sample Sites Using Both Items

Site	Disposables	Reusables
1	1.8 ¹	12.5
2	<1. ¹	83.7*
3	2.5 ¹	32.3
4	<1. ¹	655.5
5	2.0	5.0
6	<1.	3.0
7	1.0 ¹	55.7
8	4.3 ¹	136.8
9	3.5 ¹	16.3
10	0.0 ¹	17.3
11	8.0	2.0
12	0.0 ¹	13.8
13	<1. ¹	51.4
14	0.0 ¹	4.8
15	0.0 ¹	327.3
16	<1.	<1.
17	1.0 ¹	53.7
18	<1.	-
19	2.5 ¹	4,620.4*
20	9.0	11.0
21	0.0 ¹	17.5**

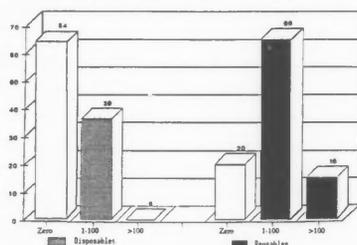
* Data for 1 sample too numerous to count not included.

** Data for 2 samples too numerous to count not included.

¹ Statistically significant at the 95 percent confidence level.

On average, the reusables had plate counts of more than 400 colonies per utensil, whereas disposables had a median count of only two colonies per item. In all, 15 percent of the reusables were found to have microbiological counts on the food contact surface exceeding the maximum recommended level (Figure 2)

Figure 2
Percent of Disposable and Reusable Foodservice Items
with 0, 1-100 and >100 Bacterial Counts Per Item



In its report of the study, the laboratory concluded that "there is a 50 percent greater probability of being served food on microbiologically contaminated foodservice items when reusables are used compared to when disposables are used." Remarkably similar results (Table 3) were obtained in earlier surveys conducted in Syracuse, New York in 1976 and Washtenau County, Michigan in 1983 (19).

Table 3. Comparison of Mean Bacterial Counts for Disposable and Reusable Foodservice Items from Three Studies -1989, 1983, and 1976 (Organisms per item)

Organisms	Disposables			Reusables		
	1989 Study	1983 Study	1976 Study	1989 Study	1983 Study	1976 Study
Total Bacteria Count	2.0 ^a	6.8	17.6	409.8	231.5	274.9
Staphylococcus	0.0	0.3	0.5	0.0	0.9	13.3
Streptococcus	0.0	0.0	0.2	0.0	2.5	10.6
<i>E. coli</i>	0.0 ^b	0.0	0.0	2.2	0.0	0.8

^aStatistically significant at the 1% level. ^bStatistically significant at the 5% level.

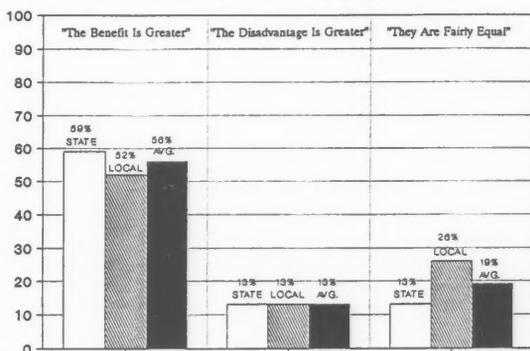
The 1976 study was designed by an ad hoc public health advisory council as the pilot of a planned national study to respond to the EPA's expressed intention at that time to curtail the use of disposables in food service as an exercise in source reduction. When the advisory council saw the results of the pilot, however, they recommended against any further sampling. They were convinced the findings were so conclusive that the results would be the same no matter where or when additional studies might be done. Their judgement has proven to be correct, and the findings of that initial survey helped to persuade EPA that reduction in the use of foodservice disposables was ill-advised (14).

The findings of these several studies also square with the experience of field sanitarians who regard disposables as a significant measure of prevention in food protection. A survey conducted of the chief food protection regulators in the 50 states and in 50 major cities in the U.S. in 1989 revealed that 99 percent view foodservice disposables as contributing, to one degree or another, to proper sanitation levels in public food service operations (16).

The vast majority (76%) of these officials regard disease prevention and sanitation to be the most important benefit of using single service articles. While the same number also see solid waste and litter to be disposables' greatest disadvantage, 56 percent perceive the benefit to be greater than the disadvantage.

Only 13 percent regard the solid waste disadvantage to be greater than the sanitation advantage, while another 20 percent think the advantage and disadvantage are "fairly equal." (Figure 3) Three out of four believe that sanitation levels definitely or probably would decrease if single service articles were eliminated or significantly curtailed.

Figure 3
State and Local Food Safety Officials Compare the Public Health Benefit and Solid Waste Disadvantage of Foodservice Disposables - 1989



Practically none of the respondents is in favor of eliminating all disposables from any foodservice settings where they are now used, and only a minority of local officials would curtail their use across the board. The majority are in favor of maintaining the same level of use in most situations, except for hospitals, schools, day care centers and nursing homes, where there is strong sentiment for increasing the level of disposables' use (Table 4). This is not surprising, given that the populations at greatest risk from foodborne disease are the infirm, the aged, and the very young.

Table 4. State and Local Health Officials Indicating the Degree to Which They Think Disposables Should Be Used in Various Types of Public Food Service Establishments - 1989

Type of Facility	Increase the level of Use		Maintain the Same level of Use		Curtail some of the use		Curtail much of the use		Eliminate All of the use	
	State	Local	State	Local	State	Local	State	Local	State	Local
Fastfood Restaurants	15%	20%	54%	43%	31%	20%	-	13%	-	3%
Hotel/Motel Foodservice	13%	7%	67%	59%	15%	10%	3%	21%	3%	3%
Hospitals	38%	38%	54%	28%	3%	17%	3%	14%	3%	3%
Schools	33%	35%	51%	31%	8%	14%	5%	14%	3%	7%
Day Care Centers	44%	53%	51%	13%	3%	13%	3%	17%	-	3%
Nursing Homes	35%	35%	57%	31%	3%	14%	3%	14%	3%	7%
Other Foodservice	13%	29%	77%	29%	10%	19%	-	14%	-	10%

Consumers, similarly, have a high regard for the public health benefits of disposable foodservice products. In April, 1990, 87 percent of the consumers surveyed in a Gallup national opinion poll indicated that the sanitary nature of disposables is "very important" or "somewhat important" to them. Almost two-thirds (63%) were on the "very important" side of the scale. Fifty-one percent saw sanitation as the "most important benefit" of using disposables in foodservice, with convenience, versatility and safety representing the other benefits (18).

Dishwashing Presents Problems of Contamination

Public health sanitarians are partial to disposables despite their solid waste consequences because, in their experience, the effectiveness of dishwashing often leaves much to be desired and, in many circumstances, is not a suitable substitute for the use of single service. In the Fairfax County survey, for example, sanitarians accompanied the lab technicians in their sampling and inspected the dishwashing equipment in each establishment. They found that eight of seventeen dish machines they inspected (47%) were in various stages of disuse or impaired efficiency, either because they were dirty, in disrepair, or not functioning properly (15).

These findings are consistent with a survey of dishwashing conducted in 1974 by the Food and Drug Administration at the request of the Comptroller General of the U.S. The FDA inspection of 185 restaurants selected at random in nine major cities found that 90 percent were "unsanitary" and that 54 percent had "inadequate facilities for washing and sanitizing equipment and utensils." These findings prompted FDA to issue the following caution: "Equipment and utensils that are not thoroughly cleaned, sanitized and maintained in good repair can harbor accumulations of food and other residues that support harmful bacterial growth, which may be transmitted to customers and employees (11)."

Even where dishwashing equipment is in good repair, it is not unfair to question the sanitary quality of reusables. The job of dishwasher has traditionally been a low paying, temporary position often assigned to workers who have received inadequate training in the practice of proper hygiene. Reusables

receive much more handling than disposables, a circumstance which helps to account for the higher bacterial load found on reusables in the Fairfax County study. It is one more reason why health officials are concerned about drug abuse among food workers. Intravenous drug use has been responsible for an increase in hepatitis A among food workers in many parts of the U.S. in recent years, obliging large numbers of people to seek immunization against infection (8). Hepatitis A virus is transmitted through food or objects that have been handled by infected individuals who have not washed their hands properly.

For all of these reasons, disposables for foodservice and packaging continue to be, in the words of a policy statement adopted in 1989 by the International Association of Milk, Food and Environmental Sanitarians, "a desirable sanitary alternative to reusables under many conditions of modern food delivery (20)." The members of this public health society went even further in their defense of disposables, warning the Environmental Protection Agency and others that "attempting to solve waste problems by minimizing the use of single service will have a deleterious impact upon the availability of safe and sanitary packaging for the retail sale and service of foods (20)."

In the light of these convictions, IAMFES declared "that single service products contribute significantly to sanitation in foodservice and packaging and constitute an essential element of preventing foodborne disease...[and that] IAMFES views the strategy of minimizing the use of single service in order to alleviate the solid waste and litter problems as a regressive step in food protection and contrary to the interests of public health(20)."

Conclusion

Foodservice disposables are an integral part of the preventive measures that have been introduced into modern foodservice systems to keep foodborne diseases from infecting the eating out public. To remove disposables from foodservice for reasons of solid waste control is to risk increasing the incidence of foodborne illness, already a problem of epidemic proportions. Under the circumstances, replacing disposables with reusable dishwashing systems is not a desirable alternative. Neither is replacing disposables of one material with those of another material. This will only result in shortages of foodservice disposables and higher prices, with a consequent reduction in the use of these sanitary utensils, especially in marginal establishments where they do the most good.

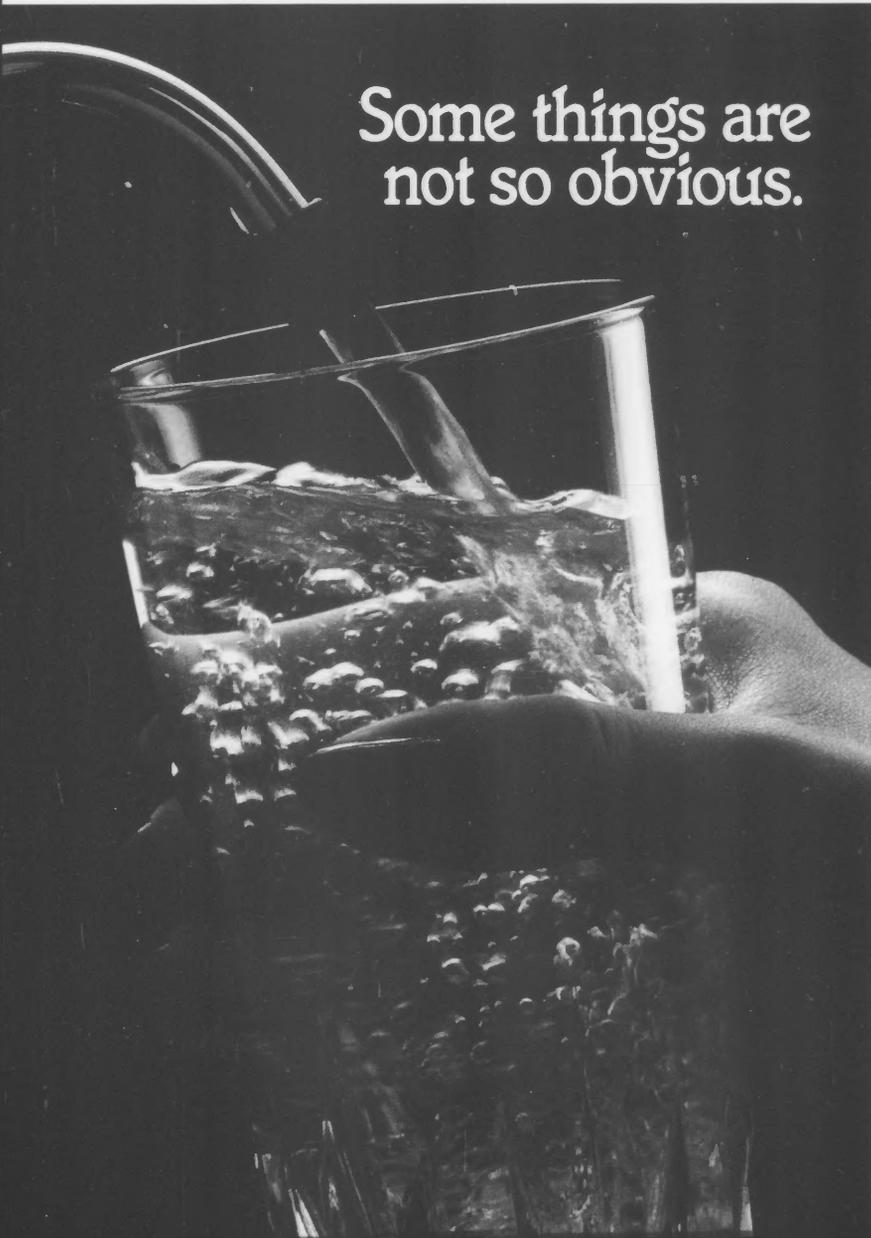
These considerations should be taken into account when the solid waste issue is debated at federal, state and local levels.

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International Association of Milk Control Agencies
54th Annual Meeting, Toronto, Ontario, Canada

First, let me briefly describe the regulatory scheme in the United States which governs milk safety and role of the National Conference on Interstate Milk Shipments. The Conference is a cooperative federal/state program for certification of interstate milk shippers. Its motto is "To promote the best possible milk supply for all the people." Perhaps its greatest achievement has been its contribution to eliminating unnecessary duplicate inspections and conflicting standards and regulations. The Conference has adopted the US Public Health Services Recommended Milk Ordinance and Code as its sanitary standard. The Conference Procedures provide that no regulatory agency may impose any requirements in excess of that spelled out in the Ordinance. Every two years the Conference meets, considers about ninety problems and typically adopts about twenty or thirty changes, the affect of which is to update the Ordinance. Each state has one vote. The states carry out their individual regulatory programs, rate plants and farm supplies in a manner prescribed by the Conference Procedures and report these ratings to the Food and Drug Administration who, in turn, issues a quarterly publication of all ratings. Through a series of check-ratings, FDA monitors the program and exercises a fair degree of influence on the state programs. In view of this arrangement you can easily see that the issue of animal drug residues in milk was of concern to the National Conference on Interstate Milk Shipments, to FDA, and to the various state regulatory agencies whose responsibility it is to assure the safety of milk.

Concerns about food safety have reached a new high. More than 30 food safety bills are before Congress and a number of states are imposing regulations on their own. The Commissioner of the Food and Drug Administration and his boss, the Secretary of Health and Human Services, have recognized the need to act quickly. A series of hearings were held throughout the United States to consider a variety of issues related to food labeling, nutrition information, health claims and so forth during the past year. The agency has set up a fairly ambitious goal to deal with these issues during the coming months. Whether or not those goals are achieved remains to be seen. Fortunately the NCIMS provides a means of making needed changes on a timely basis. The key is that the program is voluntary. The Conference delegates are therefore free to act in a timely manner. The member states generally follow by amending their rules and

regulations, but even without such action, the industry must comply to meet the voluntary program standard of the Conference. The industry is an active participant in the program and has been willing to abide by its rules. The widespread reliance on the National Conference's published ratings, make participation in this voluntary program, for all practical purposes, mandatory. The significance of this is that milk safety regulations are under constant review and are updated at least every two years to provide consumers with, as our motto says, the best possible milk supply.

Until recently it was generally accepted that we did not have a problem with drug residues. As a result, our regulatory schemes did not generally require testing for contaminants which we didn't expect to be present. Drug residues and sulfamethazine in particular, came to our attention in 1988, when a survey conducted by FDA found the presence of sulfamethazine in consumer samples of milk, a number of which were above the tolerance level of 10 ppb. Sulfamethazine is not approved for use on lactating dairy animals. It is considered a carcinogen and was therefore of particular concern.

In response to that finding, the NCIMS, FDA and the dairy industry met and developed a nationwide educational program for farmers to keep improper drugs out of the milk supply. A follow-up questionnaire several months later, showed considerable improvement had been achieved.

Nevertheless, in a desire to be extra cautious, at the 1989 Conference, strict penalty provisions were adopted relative to drug storage and use violations. A suggestion that the Conference recognize and accept certain new tests which could detect residues not detected by the disc assay method provided in the PMO, which was the Conference's official test for antibiotics, was not accepted. The delegates went home feeling they had taken effective measures to keep drugs out of the milk, only to find seven months later others didn't think so.

On December 29, 1989, the WALL STREET JOURNAL had a page 1 story entitled, "Dairy Dilemma - Milk Is Found Tainted With a Range of Drugs Farmers Give Cattle - Residues in 38% of the Samples." The article said "the trouble is regulators and processors automatically test for only a narrow category of contaminants. They rarely bother to check for a variety of drugs widely used to treat sick cattle, some potentially harmful to humans." The report

said they found sulfamethazine and other sulfa drugs in the range of 5 to 10 ppb.

FDA issued a press release stating that they saw no public health threat associated with the animal drug residues in milk at the levels reported by the WALL STREET JOURNAL. They immediately instituted a national - 14 city survey to see if they could confirm the reported findings. The release also pointed out that the test used by the WALL STREET JOURNAL could detect sulfanomides as a class, but further confirmatory tests are needed to identify which sulfa drug is present. FDA pointed out that such drugs have been used in human medicine for more than 40 years and all but sulfamethazine are approved for dairy use.

On February 5, 1990, FDA issued a release that they were unable to confirm the WALL STREET JOURNAL findings at 10 ppb. A subsequent release indicated they found sulfamethazine at the 1-3 ppb level in three samples and unconfirmed traces in a number of other samples, none of which represented a public health problem.

In response to the December 29, 1989 story, the dairy industry initiated a survey of its members testing activities. They reported over 95% of their plants screen for antibiotics and many screen for drug residues, such as sulfa drugs even though there may be no mandatory requirement to do so. The Milk Industry Foundation found that about 1/4 of 1% of their supplies from the farm were positive for such residues. The industry adopted a three point program to include the following:

An initiation of an immediate review of the present testing and monitoring procedures in the Pasteurized Milk Ordinance. That effort included examining the methodology for adequacy, efficiency, and developing recommended changes as necessary. They indicated they would coordinate their activities with the FDA and the NCIMS.

Their second initiative was to continue and expand a comprehensive dairy farmer and veterinary animal drug education program. The National Milk Producers Federation, in cooperation with the American Veterinary Medical Association has developed a 10 point protocol program which is expected to be delivered to dairy farmers this fall or winter.

The third initiative by the industry was to implement a public information program to accurately inform consumers about the safety of the Nation's milk supply. The NCIMS met and adopted a series of steps to assure the continued safety and quality of the milk supply. In addition to support for the educational program developed by the AVMA and the NMPF, the Conference established a program of action whereby any finding of illegal drugs in the milk supply reported by FDA would be effectively removed from the market until the problem was eliminated. Secondly, it requested FDA establish levels of concern; that is tolerance levels upon which regulatory agencies could take action. It asked that these levels be established on an appropriate risk assessment basis. Their hope was that we would avoid chasing zero. The Conference requested FDA to support regulatory authority to require drug sponsors of all new drug applications to provide as part of their new animal drug application, a quick screening method for determination of the drug and establish a sensitivity reflecting safe levels. If drugs can be detected

only in sophisticated labs, it's tough to keep them out of the consumer supply. The Conference also asked FDA to draft a compliance policy guide prohibiting the use of sulfamethazine for female dairy animals over twenty months of age.

Most people close to the dairy industry know that any public health risk associated with illegal drug residues in milk is minimal, if not non-existent. Our milk supply has never been safer. Nevertheless, great care is needed by dairy farmers to keep illegal drugs out and as regulatory authorities, we have to deal with public perception, even if it is erroneous. We have to face the fact that a certain faction of our population wants zero risk. They are not satisfied that 5 or 10 ppb presents no public health concern according to our best toxicologists. We need to cope with these attitudes and of course zero, or at least minimum risk is a worthy goal. But we have to be realistic and we need to use our resources responsibly. There is a danger of over reaction to the media in our attempt to assure the public that all is well. We need to avoid being stampeded into expensive and unnecessary testing. We don't need to test milk in New England for the presence of a specific drug that might be used to treat a specific disease in the Mississippi Delta Region or vice-versa.

What else do we need? We need good screening tests and good confirmatory tests. Much of the controversy from the WALL STREET JOURNAL study was the result of lack of good understanding about the test procedures used and their limitations. Penicillin Assays, Inc., the makers of the Charm II test used for the study, say:

1. That the test was not designed for survey work,
2. It was not intended to be used on aged milk, and
3. If they had conducted the study, they would have reported a clean milk supply.

The present confirmatory tests are not readily available to most farmers or even most processors and some of the confirmatory procedures are indeed expensive. Under the direction of one of the NCIMS Executive Board members, Dr. Russell Bishop at Virginia Polytechnical Institute, an evaluation of drug residue detection methods is underway. This is an effort to put to rest questions arising as to which drug residue methods are detecting drugs and antibiotics, especially sulfa drugs, and at what levels.

This and other work going on will surely be helpful, but it will take some time before we see the fruits of these studies. In the interim, if we are to escape the unfortunate pressures that can come from media scares, we need to use our best public relations experts, our university and our extension services, to get the real message to the public. What is that message? What could we hope consumers might have a better understanding about?

A. Drug Use in Dairy Cattle and Human Food Safety.

For one thing, we might hope consumers knew more about the use of drugs in dairy cattle and its relationship to human food safety. The majority of dairy cattle are given drugs for a short period of time to treat specific

illnesses. The drugs relieve suffering or prevent animal death and their use in food animals provides public health and protection. Disease organisms which are capable of being transmitted to people, are reduced or eliminated by use of animal drugs. Consumers should also know that before a drug can receive FDA approval, it must be found by FDA to be safe and effective. If the drug is intended to be used in food producing animals, food from treated animals must be proven safe for humans and the edible animal products must be free of unsafe residues.

B. Human Health and Drug Residues in Milk.

The second area where consumers need to be better informed is the relationship of human health and drug residues in milk. First of all they need to have a better understanding about allergic reactions. The WALL STREET JOURNAL article mentioned the possibility that drug residues in milk might be of particular concern to people who are allergic to certain drugs. That's true enough, but people need to know that most of them are resistant to allergic reactions. FDA reports an estimated 10% of our population may be sensitive during their lifetime to some food, drug, cosmetic or other substance, but there are few published reports of allergic

reactions in humans attributed to the presence of penicillin in cow's milk. No death has been attributed to penicillin residues in milk, and penicillin is considered to be the strongest allergen of any drug used in veterinary medicine. Based upon the results of the FDA survey conducted in February, it would appear that most consumers do not need to be concerned about suffering an allergic reaction to sulfa, penicillin or other drug residues in milk.

C. Bacterial Resistance.

The WALL STREET JOURNAL article mentioned the potential for antibiotic residues to induce bacterial resistance in humans. FDA reports that residue levels of a drug would have a negative effect on the number of resistant bacteria. Although residues may be detectable, they will not have an effect on bacterial resistance.

D. Carcinogens.

Carcinogens were the 4th substance of concern mentioned in the WALL STREET JOURNAL article. They specifically mentioned that sulfamethazine, a suspected carcinogen, was found in samples collected for their newspaper and the Center for Science In the Public Interest. However, sulfamethazine is not approved by FDA for use in lactating dairy animals. FDA has now advised manufacturers to revise their labeling to warn against the use of sulfamethazine in female dairy animals over twenty months of age. The important thing consumers need to understand is that FDA's tests did not confirm the presence of unsafe levels of sulfamethazine or any carcinogens in milk. There is no documented scientific evidence that these drugs, at the levels found, can cause cancer in humans.

E. State Testing.

The public also needs to know that, in addition to the milk safety efforts of the FDA, each state has an analytical testing program for residues in milk. It is estimated that states are testing a minimum of 1,200,000 samples of Grade A raw milk and thousands of samples of Grade A retail milk products per year. Extensive industry testing is on-going. Most processors and cooperatives are now screening each tanker load of milk at the time of receipt.

The NCIMS and the FDA are working closely with the dairy industry and state regulatory agencies to monitor and evaluate the milk safety programs and are actively supporting the industry efforts to bring better information and better control programs to the farm level. The ultimate goal is to establish a program to insure, insofar as possible, that no contaminated milk leaves the dairy farm.

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The Use of Freon Filled Thermo Pins to Reduce Cooking and Cooling Times of Beef Roasts

The Food Service Sanitation Manual, 1976 Edition, (1) published by the Public Health Service, Food and Drug Administration, requires that potentially hazardous foods (PHF) which are to be refrigerated be rapidly cooled to an internal temperature of 45°F or below in a period not to exceed four hours. The accepted safe temperature for hot PHF is 140°F. Therefore, PHF must be cooled from 140°F to 45°F or below within four hours or less. This requirement is intended to retard the growth of pathogenic microorganisms.

Large masses of foods cannot be cooled within these four hours utilizing only common refrigeration, without enhancing the cooling process. Use of shallow pans, agitation, chilled water circulated external to the food container is not always practical. Blast chillers are expensive. Alternatives are needed.

The Thermo Pin Manufacturing Corp. manufactures stainless steel pins with solid aluminum handles with freon sealed inside. Claims for these pins are that they can reduce cooking time and cooling time 40 to 50% when used in conjunction with cooking and cooling equipment normally found in most retail food establishments.

A decision was made to test and prove the claims.

Equipment and Materials

1. Blodgett Convection Oven - Model CTB-1/CTBR-1
2. Traulsen 2-door Reach-in Refrigerator - Model GHT 232-WUT
3. Two aluminum sheet pans - 12 1/2" x 17 1/2"
4. Two 16" Thermo Pins
5. Taylor Meat Thermometer
6. Oven Thermometer
7. Two USDA Choice Top Round Roasts of Beef, one weighing 11.44 lbs., one weighing 11.26 lbs - purchased from a local market. Shapes were identical to visual observation.

Procedure

The convection oven was preheated to 275°F as tested by the oven thermometer.

The 11.44 lb. roast was fitted with two 16" pins, spaced about four inches apart with the roast extended 4" to the left of the left pin, and 4" to the right of the right pin. Both pin handles were pointed down with the points higher at an angle of approximately 45 degrees. The roasts were placed one on each of the two sheet pans and inserted in the oven. Results are shown in Table 1.

Table 1. Comparison of Cooking Times and Temperatures

Time	Temperature With Pins	Temperature Without Pins
9:45	37.8°F	38.1°F
10:45	72.1	51.3
11:00	116.2	64.4
11:15	124.2	84.6
11:30	136.3	93.4
11:30	out of oven	93.4
11:45	141.2	103.7
12:00	145.7	114.2
12:15	151.3	126.2
12:30	152.4	140.2
12:30	152.4	out of oven
1:00	147.1	147.3
1:30	141.1	141.7

The pins were refitted in the roast with points down at an angle of approximately 45 degrees. Both roasts on pans were inserted into the refrigerator, the ambient temperature of which was 39°F. The results are shown in Table 2.

Table 2. Comparison of Cooling Temperatures

Time	Temperature With Pins	Temperature Without Pins
1:30	141.1°F	141.7°F
2:00	110.0	127.4
2:30	85.3	114.8
3:00	74.6	107.9
3:30	64.7	101.3
4:00	56.5	95.5
4:30	50.4	90.1
5:00	46.1	85.6
5:30	43.2	82.1

Discussion of Cooking

The roast with pins cooked to an internal temperature of 136.3°F within the oven in 1 3/4 hours.

The roast without pins required 2 3/4 hours to reach 140.2°F. This roast required over 36% more time to cook to an internal temperature of 140°F than the roast cooked with the pins.

The quicker cooking of the roast caused by the pins with heat being applied from the surface and from the center might

be more lethal to surface as well as internal microbial infections. The shorter cooking time would use less energy and result in less shrinkage for more servings.

Discussion of Cooling

The roast with pins cooled from 141.1°F to 43.2°F in four hours. This meets the requirement of FDA's Food Service Sanitation Manual, 1976 Edition. If temperatures of 120-127°F (rare roasts) were used, the cooling time would be even less.

The roast without pins had its temperature drop from 141.7°F to 82.1°F in four hours. The test was stopped there, but it did prove that an 11 lb. roast cannot be cooled from 140°F to 45°F or less in four hours as required.

Conclusion

This test yielded results consistent with results reported by other regulatory and industry officials in personal

communications. These results are not significantly different from claims made by the manufacturer of the equipment that was tested.

The Thermo Pins, when used according to the manufacturers directions, in conjunction with conventional refrigeration, make it possible to cool PHF in the four hours permitted. This fact and the pins relative inexpense should be of great interest to food industry and food regulatory officials.

Acknowledgments

Thermo Pins for this test were furnished by Marvin J. Spath, president of Thermo Pin Manufacturing Corp., P.O. Box 75, Carle Place, NY 11514, Tel. (516)574-0279. The test was conducted in the test kitchen of Tennessee Restaurant Equipment Sales, Inc., 7127 Cockrill Bend Road, Nashville, TN, Tel. (615)350-8188.

REFERENCES

1. FDA (Food and Drug Administration) 1976 Food Service Sanitation Manual, U. S. Dept. of Health, Education, and Welfare, Public Health Service, DHEW Publication No. (FDA) 78-2081, Washington, DC. 1978.

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"Achieving the Full Potential of Integrated Pest Management"

Washington, DC, February 26-27, 1990

Convened by the IFT Office of Scientific Public Affairs, this workshop was organized and chaired by the IFT Fruit and Vegetable Products Specialized Technology Group.

Prologue by Ginny McArthur, Hershey Chocolate Company, Hershey, PA - On February 26 and 27, Bob Richardson and I had the opportunity to attend a workshop sponsored by the Institute of Food Technologists on Integrated Pest Management (IPM). We were among 55 delegates representing 32 professional scientific societies attending the two-day meeting.

The workshop started with a general session during which time four excellent speakers addressed the delegates on:

- History of Integrated Pest Management, C. David McNeal, Jr., USDA Extension Service
- Constraints on the Implementation of IPM, Ann Sorensen, American Farm Bureau Federation
- An Extension Specialist's View of IPM, James Tette, New York State Agricultural Experiment Station
- Current Legislation Dealing with Pest Control, William A. Stiles, Jr., Staff Director, DORFA Subcommittee, U.S. House

Following the speakers, the delegates divided into five individual working groups: Citrus Fruits; Other Fruits; Vegetables, Grains; and Foods from Animal Sources. Bob attended the grains session, while I attended the Foods from Animal Sources session. Each session discussed: the benefits of IPM; demonstrated successes; and requirements for further implementation. The General Assembly then discussed each working group's issues, from which the final report "Achieving the Full Potential of Integrated Pest Management" was written.

Each participating society was then asked to endorse the final report, and this was passed at the August business meeting. IFT then forwarded the report to key federal and state policy makers and media to state the scientific community's position on the value and feasibility of IPM, in order to further promote IPM efforts and funding.

In endorsing the report, IAMFES joins a scientific consensus representing over 100,000 professional scientists promoting IPM.

Bob Richardson and I would like to thank the IAMFES board and its membership at large for allowing us the opportunity to represent IAMFES, and we congratulate IAMFES for participating in this activity.

Executive Summary

Integrated pest management (IPM) is an excellent systematic approach to the control of agricultural pests that acknowledges the importance of both an economic and environmental perspective. Although the judicious use of agrichemicals as well as biological control techniques will not resolve every pest problem, research will determine both pests and circumstances that will provide promising economic and biological information to encourage future understanding and use of integrated pest management by growers. An increase of \$32 million federal dollars - to supplement current expenditures of \$15.3 million - should be set aside to support research programs in year one with approximately a 10% increase each year through the 90's.

The following report resulted from a meeting of representatives of 32 professional scientific societies whose areas of interest include pest management for protection of plant or animal health. The meeting was organized to stimulate interest in Integrated Pest Management (IPM) as a valid scientific and economic approach to pest control. The goals of the workshop were to:

- Identify information, both available and needed, for the successful implementation of IPM.
- Expand IPM initiatives throughout the food production system as a means of increasing consumer confidence in the food supply.
- Promote federal and state government funding for education of growers and for increasing extension resources to make IPM economically feasible.
- Explore means to attract scientists to become IPM practitioners.

Below is a definition of IPM and other major points of consensus reached by the delegates. A general section which

addresses general aspects of IPM (benefits and constraints on further implementation) is included. This section is followed by the workshop report.

Definition

IPM is a systematic approach to crop protection and animal health which utilizes field-level information for better decision making and fosters the development, evaluation and use of biological, cultural, mechanical and chemical controls for pests (including weeds, insects, nematodes, pathogens and others) to meet socioeconomic and environmental goals.

Points of Consensus

1. IPM provides the following benefits:
 - Minimizes agricultural impacts on the environment, protecting the quality of water, the preservation of wildlife, and preserving natural resources.
 - Contributes to maintenance of a high quality, abundant and safe food supply.
 - Improves occupational safety.
 - Increases farm economic stability through more efficient use of available pest management tools.
2. Demonstrated successes of IPM include:
 - Economic benefits in 1989 of \$1.9 billion (a return of \$130 dollars in benefits for each dollar spent on IPM research programs) resulting from the expenditure of \$7.5 million in Smith-Lever funds plus \$7.8 million in state funds in support of IPM research programs at state and protectorate agricultural research centers.
 - Improved profitability to growers in states throughout the U.S. by reduction of operating

costs (such as pesticide application costs) and maintenance of efficient yield of high quality food products (through reduction of crop losses by improved control of pests). For example, according to USDA's Extension Service National IPM Program leader, IPM programs in Alabama resulted in \$3.85 million dollars in increased profit through reduced insecticide and fungicide applications in pecan groves. Programs in Illinois resulted in savings of \$60.5 million through the black cutworm program and \$66 million in systemic insecticide savings through crop rotation in corn. Further, the state of Florida reported \$1.8 million in increased benefits due to the improved vegetable quality resulting from IPM programs.

IPM had a direct positive impact on the agricultural community in 1989, with Cooperative Extension Service IPM programs training 149,275 growers (farmers and ranchers) and impacting 718,000 other individuals across the U.S. Further implementation of IPM programs requires:

- Collaboration among a variety of groups, including: university research and extension staffs, state departments of agriculture, USDA/ARS, USDA/APHIS, consultants, growers, agrichemical personnel, food processors, financial institutions as well as regulatory agencies and consumers, to effectively integrate pest

management practices into crops, livestock and their products.

- Availability to growers of known control strategies including the continued permitted use of minor crop pesticides.
- Additional interdisciplinary, as well as disciplinary research, (particularly during the planning of collaborative investigations for effective tactic development and problem-solving) to support current IPM efforts and to enable further development and implementation.
- A long-term commitment to a research effort, due to the complexities of the research, and means for implementation of the research.
- Informing federal, state, and local government officials about the utility of IPM.
- Informing growers, implementors (consultants and extension personnel), consumers (agrichemical industry, processors, and retailers) as well as providers of working capital about IPM's utility.
- Expansion of current information delivery systems, which are now presented by cooperative extension, independent consultants, and other clientele.
- Sufficient personnel and equipment to provide educational services, electronic technology and computer-based advisory support and on-site training of growers.

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NCI and ABI Announce Availability of HACCP Product Safety Program

The National Cheese Institute (NCI) and the American Butter Institute (ABI) have announced the availability of a HACCP - Hazard Analysis Critical Control Points - Product Safety Program. HACCP is a key element of a TOTAL QUALITY SYSTEM which provides continuous monitoring at each critical point of the food manufacturing process.

Commitment to food safety is the top priority of the dairy industry. NCI/ABI first held workshops in 1977 to introduce members to the HACCP concept. That was followed by a NCI/ABI sponsored Food Safety and Quality Controls Seminar in 1985 and a series of HACCP workshops in 1987-88.

In a further effort to assist members and the dairy industry, NCI and ABI have developed a comprehensive handbook that can be used to train and educate cheese and butter plant employees on the HACCP system in plant TOTAL QUALITY SYSTEMS. Step-by-step instructions are provided to establish a plant-wide HACCP program. The handbook has been designed for use in both butter and cheese plants, as well as to provide supplementary information that can be applied to any other dairy product line.

In addition, an 18-minute video has been developed to acquaint everyone from top management to on-line plant personnel with the HACCP system and its importance. The video is an appropriate orientation tool for new employees as well, to instill company commitment to product safety.

NCI and ABI have scheduled a series of three regional workshops for February 1991 which will provide "hands on" experience in implementing a HACCP program in dairy plants. The 1 1/2 day sessions are designed for management, procurement, production, maintenance and distribution personnel.

Additional information on the HACCP Handbook and Video as well as the upcoming Workshops may be obtained by contacting the NCI and ABI offices at (202)659-1454.

Klenzade Introduces Three-Point Program for CIP

Processors now have a new comprehensive three-point program for clean-in-place (CIP) sanitation from Klenzade, a Service of Ecolab Inc.

This program includes the Sentry™ CIP monitoring system, Ultra® premium chlorinated detergent and P3-oxonia active® peroxyacetic acid sanitizer, to enhance finished product quality and production efficiency and provide detailed record keeping to verify sanitation program integrity.

Klenzade's new three-point program helps assure consistently higher quality cleaning and sanitizing results through second generation CIP monitoring, and two of the

most advanced cleaning and sanitizing compounds available.

The Sentry system can monitor multiple CIP systems, automatically storing information in computer memory and floppy diskette format, and provide printed results in full or summary form in graphic or numeric format.

The Sentry system automatically tracks a full complement of CIP performance indicators including supply temperature, return temperature, flow rate, conductivity pH and pressure. Tracking this information allows management to make more informed decisions regarding CIP performance and cleaning results.

Ultra is a liquid chlorinated detergent formulated for circulation, spray, soak and foam cleaning of processing equipment. The product's free-rinsing formulation helps prevent films that can harbor bacteria, and its built-in phosphated water conditioners handle most water conditions. These factors combine for more efficient CIP cleaning.

P3-oxonia active is a premium peroxyacetic acid sanitizer formulated for a broad spectrum kill and superior sanitizing activity under most conditions, including colder water temperatures. P3-oxonia active works effectively even at neutral pHs and is non-foaming for quicker cleaning. P3-oxonia active is less corrosive than traditional iodophor and chlorinated sanitizers.

When used as part of a total cleaning and sanitization program, the Sentry system, Ultra and P3-oxonia active three-point program combine to help give processors consistently higher final product quality.

For more information on the Sentry system, Ultra, P3-oxonia active and other cleaning and sanitation products and services, contact Klenzade, a Service of Ecolab Inc., Ecolab Center, 370 Wabasha, St. Paul, MN 55102, (612)293-2233.

BioScience Management Names Manufacturing Chemist

Bioscience Management, Inc. has named Jay B. Hill as manufacturing chemist in charge of the company's new line of Chemical Oxygen Demand (COD) test products. Hill has been a research chemist with the firm since 1987.

A graduate of California University of Pennsylvania with a B.S. degree in environmental chemistry, Hill also did graduate work at Pennsylvania State University. Before joining Bioscience Management, he was a chemist with Hess Environmental Laboratories in Stroudsburg, PA.

Hill is the author of several technical papers on acid rain toxicity to fish and co-author of a study of biological degradation of polynuclear aromatics. He serves as a project judge for the Pennsylvania Junior Academy of Science.

Hill lives in Bethlehem, PA.

For more information contact Bioscience Management, Inc., 1530 Valley Center Parkway, Suite 120, Bethlehem, PA 18017, (215)974-9693.

New Literature from Hub States Introduces Cost-Effective Flying Insect Control for Food Handling Areas

Economical, refillable V-23, V-26 and V-34 Industrial Aerosols, insecticides that eliminate insecticide container disposal liability problems and reduce flying insect control costs for non-residential food handling establishments, are described in new literature published by Hub States Corporation, Indianapolis, IN.

The four-page, color brochure contains application and product information on the complete V-Series line. The economical aerosols detailed in the literature minimize the cost of equipment and maintenance and reduce employee insecticide application training. One 5 lb aerosol container costs less than 3 cents per 1,000 cu ft and does the work of 33 gallons of fly spray.

The industrial aerosols are formulated for use in non-residential food handling areas such as restaurants, hospitals, dairies, food plants and meat packing plants. The V-Series insecticides kill flies, wasps, mosquitoes, gnats and small flying moths and leaves no oily residue.

The V-Series line is available in 5 lb recyclable aerosol, 5 lb disposable, 30 lb mobile unit recyclable and 16 1/2 lb disposable containers.

For a copy of the brochure contact Hub States Corporation, 419 East Washington, Indianapolis, IN 46204, telephone (800)428-4416, (317)636-5255, FAX (317)637-2987.

Foss Food Technology Corporation Forms a New Company in Canada

Foss Food Technology Corporation of Eden Prairie, MN has announced the formation of a new company in Canada to take over the distribution of the Foss product line previously handled by the Dickey-john Corporation.

The new corporation, Foss Food Technology Canada, Inc., will provide sales, service, spare parts, and customer support to the Canadian market for the company's range of analytical instruments for milk, dairy products, pet food, and general food products.

Foss Food Technology has also announced the launching of a new NIR whole grain analyzer incorporating the latest advances in NIR transmission technology. These advances, for which patents have been applied, enable the company to market this new product at a substantial cost advantage over similar instruments currently available today.

For more information about this new company contact Foss Food Technology Canada, Inc., 2053 Williams Parkway #29, Brampton, Ontario, Canada L6S 5T4, Phone: (416)793-6440, FAX (416)793-6719.

IAMFES Prepared Media Winners

Micro Diagnostics, Inc., manufacturers of a complete line of prepared culture media and distributors of other microbiological supplies, announces the winners of its Prepared Media Drawing. The drawing was held at the 77th IAMFES Annual Meeting in Arlington Heights, IL. The winners were:

Grand Prize: Michael B. Frazel, Kraft General Foods.

Second Prize: James DeTolla, Dean Dairy Products Co.; Mike Neal, Grande Cheese; Joe Delaney, Prairie Farms; Dawn McIver, Silliker Labs.

Third Prize: Kelly Gutzmann, Ecolab; Thomas Graham, FDA; Cathy Minarik, Hills Pet Products; Reba Stuckey, Indiana State Board of Health; Dale Marcum, Kentucky Assoc. of Milk, Food and Environmental Sanitarians; Stephanie Bell, Kraft General Foods; Jackie Schmidt, Larsen Co.; Thomas M. Wagner, The Nutrasweet Co.; Vincent L. Zehren, Schreiber Food's, Inc.; Irene Wesley, U.S.D.S. - ARS.

New Company to Manufacture MUNOX® is Formed

Effective August 1, 1990, MUNOX Environmental Inoculant will be manufactured by Osprey Biotechnics, Inc., of Bradenton, FL. MUNOX was formerly a product of Microlife Technics, a company that has also produced and developed bacterial cultures for the food industry for over 30 years. Microlife Technics, now a unit of Quest International, will continue to produce products for the food industry.

Former president and founder of Microlife Technics, Larrick H. Glendening, has spun off the MUNOX product line and formed the new company. Under the MUNOX name, Osprey Biotechnics will manufacture and distribute a complete line of naturally occurring strains of living bacteria. MUNOX applications include treatment of wastewater treatment plants, remediation of soil and groundwater, and elimination of grease in restaurants and cutting oils in machine shops. Osprey Biotechnics will continue to provide users of MUNOX products with a comprehensive technical support program at no charge.

For more information contact Nancy Lawrence, Microlife Technics, 813-355-8561.

Soft Serve Sanitation Procedures Imperative

Taylor Outlines Steps for Equipment Maintenance

Assuring a clean, sanitary environment for customers in the foodservice industry is a constant battle. It takes dedicated managers and constant training of personnel to guarantee that the product you are serving to the customer

is safe and enjoyable. Dairy products need special attention because some bacteria can survive pasteurization and continue to grow in a refrigerated climate.

The two main areas of concern are standard plate count (SPC) and coliform counts. At present, the food safety requirements demand that SPC be held below a count of 50,000/ml and coliform not exceed 10/ml. When bacteria are allowed to live in a dairy environment, they will grow rapidly. That is why it's so important to clean and sanitize freezing equipment and all its related parts properly. When dairy products, like soft serve ice cream, yogurt or milk shakes are being dispensed, certain precautions are required to maintain a safe servable product.

Training of personnel is a major factor and can be simplified through the use of video tapes. Each Taylor freezer is shipped with an operator's manual and a video to provide a thorough understanding of the assembly and cleaning procedures. In addition, Taylor is currently working with the International Ice Cream Association, National Ice Cream Mix Association and National Ice Cream and Yogurt Retailers Association to develop a product safety video program. All areas that require particular attention when dealing with a dairy product are addressed.

When serving a soft serve product or a milk shake, there are three stages where contamination can develop: 1) the dairy where the mix is pasteurized, 2) the freezer where the mix is frozen and maintained, and 3) the restaurant where the product is served. Working with the local health authorities and following guidelines from the product safety program will give the foodservice operator an edge in controlling sanitary conditions within an establishment.

Because of issues concerning product contamination, shrinking labor forces, and rising minimum wage costs, Taylor has engineered a new line of freezers. These Labor Saver™ freezers assure product safety through a time heat process.

The heat treatment feature destroys bacteria by heating the product and holding it at a sufficient temperature for 30 minutes before cooling to a safe refrigerated temperature.

For this system to be acceptable, many safety features are necessary. This heat treatment cycle must be performed once every 24 hours. The machine can be programmed to automatically complete the cycle each day at a designated time. For example: midnight, or it can be manually cycled by the operator. However, this cycle must be completed once every 24 hours, or the freezer will lock-out and cannot be used to serve frozen product.

This process allows the operator to perform only minimal daily cleaning and sanitizing practices, i.e., wiping clean the external areas of the freezer, cleaning and sanitizing the draw spout area, checking the drip tray, etc., and yet assures the product served is "clean."

The heat treatment cycle and daily cleaning practices can be used a maximum of 14 consecutive days. If by the final hours of the 14th day, the machine has not been disassembled and cleaned, it will lock-out and discontinue automatic operation until the machine has been disassembled and thoroughly brush cleaned.

The evidence of these safety precautions can be

witnessed by an option recorder, or by the standard equipped liquid crystal display (LCD). The optional recorder provides a print out documenting dates and times that the heat treatment cycle started and ended, together with additional information pertinent to health officials.

The LCD feature is programmed to show on demand the number of heat cycles that have occurred since the last brush cleaning exercise and also the number of hours that have elapsed since the last heat cycle.

The heat treatment feature for soft serve and shake freezers is the latest development from Taylor to address the concern of frozen dairy product safety.

For more information contact the Taylor Company, 750 N. Blackhawk Blvd., Rockton, IL 61072-2199, Phone: (815)624-8333, FAX: (815)624-8000.

Emerging Issues in Food Science and Technology

The fourth annual Southern California Food Industry Conference will be held on campus of Chapman College in Orange, California on January 21-22, 1991. The theme for this year's conference will be "Emerging Issues in Food Science and Technology." Topics to be covered during this two-day conference include: Food Labeling, Nutrition and the Elderly, Gamma Processing and Poster Session.

The Poster Session is designed for student participation. Topics for the Poster Session will include, but not be limited to: General Food Research Projects, Food Fats Research Projects, Food Labeling Research Projects, Nutrition Studies, Processing Studies, and Food Product Development.

The registration fees are \$50 for the conference, and \$75 for late registration after January 5, 1991. Registration for students and retirees is \$15. This fee includes lunches. A dinner has been scheduled for Monday evening and will be ticketed separately. Reservations must be made in person or by mail. Phone-in reservations cannot be accepted.

If you are interested in receiving further information, please contact the committee at the following addresses:

Southern California Food Industry Conference

Walt Clark
Chapman College
Food Science & Nutrition Dept.
Orange, CA 92666
Ph: (714)997-6869
Fax: (714)532-6048

Patrick Cochran
International Multi Foods
P.O. Box 5647
Riverside, CA 92517
Ph: (714)782-7822
Fax: (714)782-7922

If you are interested in participating in the Poster Session, please contact:

Dr. Ramses Toma
CSULB
Department of Home Economics
1250 Bellflower Blvd.
Long Beach, CA 90840-0501
Ph: (213)985-4497

Food and Environmental Hazards to Health

Mass Sociogenic Illness in a Day-Care Center - Florida

On July 26, 1989, 63 (42%) of 150 children attending a summer program at a day-care center in Florida experienced a gastrointestinal illness. An epidemiologic investigation by Orange County public health officials and the Florida Department of Health and Rehabilitative Services concluded that this outbreak was the result of mass sociogenic illness (MSI).

Onset of symptoms occurred within 2-40 minutes after lunch and included abdominal cramps (77%), nausea (75%), headache (51%), dizziness (30%), malaise (30%), and sore throat (11%). Vomiting was reported in 67% of children, but no distinction could be made between actual vomiting and spitting out food. The median duration of illness was 1 hour (range: 1-8 hours). Ill children ranged in age from 4 to 14 years (median: 9 years); 47 (75%) were female. Within 1-2 hours after onset, all symptomatic children were evaluated in emergency departments at local hospitals; when the children arrived at the emergency departments, most symptoms were no longer present, and all physical examination findings were normal. More than 90% of the children returned to the center on July 27, and no further episodes occurred.

A prepackaged lunch was served in one large room to the children and consisted of a ham and cheese sandwich, diced pears, chocolate milk, and apple juice. The center's staff reported that the initial case occurred in a 12-year-old girl who complained that her food tasted bad. She subsequently had nausea and vomited. As more children developed similar symptoms, some of the staff suggested to the children that the food may have been contaminated.

On July 28, 121 children at the center were interviewed in person. After the interviews, a case was defined as vomiting or nausea with abdominal cramps during or within 1 hour after the July 26 lunch. Forty-eight (47%) of 102 children who had eaten any foods served at lunch became ill, compared with one (5%) of 19 children who had eaten none of the foods (relative risk [RR] = 9.1; 95% confidence interval [CI] = 1.3-50.0). Among children who had eaten any of the foods, those who had eaten the sandwich were at greater risk for illness (37 [56%] of 66 compared with 11 [32%] of 34). The attack rate did not differ by age but was greater for girls (39 [70%] of 56) than for boys (nine [20%] of 46). Employees and teachers at the center had not eaten any of the foods and did not become ill.

Meal samples collected and tested by the Food and Drug Administration did not detect pesticide contamination, staphylococcal toxin, or *Bacillus cereus*; atomic absorption screening for heavy metals, zinc, and copper was also negative. Review of the food processing, storage, and refrigeration at the manufacturing plant and the day-care center did not identify deficiencies in handling or a source of contamination. The plant that had prepared the prepackaged meal had produced 3600 similar meals served in 68 different sites in central Florida on July 26. No complaints of similar symptoms were

reported from the other sites. The investigation did not identify any chemical exposure, air conditioning failure, or unusually stressful situation at the center on July 26.

MSI was the suggested diagnosis by hospital physicians after children were examined on July 26. After the epidemiologic investigation, health department officials concurred with the diagnosis.

Editorial Note: In this outbreak, the rapid onset and disappearance of symptoms, the lack of physical findings, the preponderance of cases in females, and the absence of a laboratory-confirmed etiologic agent are consistent with MSI. However, three features of this outbreak distinguish it from the typical presentation of MSI: the young age of patients, the absence of documented hyperventilation, and the high prevalence of vomiting reported.

Other MSI outbreaks among children have been reported. Risk for illness was lower among the youngest children in at least two of these outbreaks. Age was not a risk factor in the Florida outbreak. In some outbreaks, the prevalence of hyperventilation, a common symptom in MSI outbreaks, has been low; in the Florida outbreak, hyperventilation symptoms could have been missed during the early phase of illness. Vomiting, although reported as the major symptom in two previous outbreaks, is not usually a principal symptom of MSI. Many of the children reported to have been vomiting in this outbreak may have been spitting out food because they had been told it was contaminated or because they were responding to the "line of sight" transmission that typically occurs in MSI outbreaks.

MSI outbreaks often generate substantial anxiety and concern in the community and, as illustrated in this report, may present with an atypical pattern or syndrome. Early statements by local physicians and the media about the likely psychogenic origin of the illness may have contributed to the absence of recurrence in this instance. Timely recognition of the nature of the outbreak and prompt reassurance that the illness is self-limited and not caused by a toxic exposure are important considerations for the effective control and prevention of recurrence.

MMWR 5/11/90

Viral Agents of Gastroenteritis

Public Health Importance and Outbreak Management

Summary

Each year, infectious gastroenteritis causes >210,000 children in the United States to be hospitalized and 4-10 million children to die worldwide. Since the mid-1970s, knowledge has increased dramatically concerning the viral agents that are responsible for much of this public health burden. Rotavirus, the most common cause of diarrhea among children, infects virtually every child in the United States by the age of 4 years and causes potentially lethal dehydration in 0.75% of children <2 years of age. Other recently identified pathogens include the enteric adenoviruses,

calicivirus, astrovirus, and the Norwalk family of agents. Conclusive diagnosis of these viruses requires electron microscopic examination of stool specimens, a laboratory technique that is available only at a few large centers, including CDC. Stool samples from an outbreak that are submitted to CDC for detection of viral pathology should be collected in bulk from 10 ill persons during their first 48 hours of illness, while feces are still liquid, and should be stored at 4 C (not frozen). Acute- and convalescent-phase serum samples should be collected from the same persons, plus from an equal number of controls, during the first week of illness and 3 weeks thereafter. Control measures for outbreaks of viral gastroenteritis should focus on the removal of an ongoing common source of infection (e.g., an ill food handler or the contamination of a water supply) and on the interruption of person-to-person transmission that can perpetuate an outbreak in a population after the common source has been removed. Because improvements in environmental hygiene may not be accompanied by reductions of endemic diarrhea caused by viruses, immunization may play an important role in future control; vaccine trials for rotavirus are in progress. In anticipation of vaccine development and use, CDC recently began national surveillance for the viral agents of gastroenteritis. Health-care facilities involved in the detection of rotavirus or the other viral agents of diarrhea can participate.

Copies of the 24 page report may be purchased from the Supt. of Documents, US Govt Printing Office, Washington, DC 20402-9325. Telephone: (202)783-3238.

MMWR 4/27/90

Monitoring Fish and Seafood Quality

Unlike the meat and poultry inspection programs controlled by USDA, the responsibility for seafood safety comes under a myriad of federal, state, and local agencies.

The **National Marine Fisheries Service (NMFS)**, part of the Department of Commerce, provides inspection services to seafood processors, packers, brokers, and users on a voluntary basis. NMFS checks raw fish and shellfish for hygienic processing and preparation. The service also certifies the quality and condition of the final products. Firms pay for inspections, and their products carry a federal grade or inspection mark. However, this program only covers about 20 percent of the seafood consumed in the United States annually.

The **Food and Drug Administration (FDA)**, within the Department of Health and Human Services (HHS), ensures that foods, including seafood (but excluding meat, poultry and eggs), destined for interstate commerce are safe to eat. FDA's mandatory program for inspecting seafood processors, shippers, packers, labelers, warehouses, and importers annually checks 25 to 30 percent of all U.S. seafood firms. FDA uses visual and laboratory examinations to catch an array of problems, including toxins, diseases, parasites, decomposition, preservatives, mislabeling, and poor sanitation. However, most FDA inspections focus on plant sanitation. Further investigations by the agency generally stem from problems found at individual plants.

The **Centers for Disease Control (CDC)**, also part of

HHS, is not directly involved in regulating the safety of fish and seafood but becomes involved when foodborne disease occurs. CDC epidemiologists monitor health problems, establish quarantines, and enforce disease prevention and control programs.

The **Environmental Protection Agency (EPA)**, the third federal agency involved in fish and seafood safety, has responsibility for protecting fish and wildlife from contamination. An independent agency, EPA ensures that U.S. navigable waters remain safe for recreational purposes like fishing. EPA is also directly responsible for regulating the transportation and disposal of materials in the ocean. The regulation is aimed at reducing risks to aquatic or human life and includes evaluating the dangers of chemical contamination of fish and shellfish.

The **Fish and Wildlife Service** of the Department of Interior also gauges the safety of the U.S. fish and seafood supply through the National Contaminant Biomonitoring Program. The program reviews nationwide levels and trends of various contaminants in freshwater fish.

State governments also inspect seafood processors and packers, analyze fish and shellfish samples, assess water quality, and patrol harvesting areas. States have jurisdiction over waters within their borders, and hence the authority to inspect the fish taken from them. According to FDA, 28 states have their own fish inspection services, based on FDA guidelines. Many local governments also run inspection and quality control programs in conjunction with the state efforts.

USDAERS Farmline 1990

The Threat of Seafoodborne Illnesses

Between 1973 and 1987, the Centers for Disease Control (CDC) in Atlanta, Georgia, received 3,703 reports of foodborne disease in the United States, involving nearly 163,000 individual illnesses. Servings of seafood were identified as the source in more than 20 percent of these outbreaks, with fish accounting for 14.7 percent and shellfish 5.7 percent.

Compared with illnesses caused by servings of beef and poultry, the number of outbreaks involving seafood have been relatively small, says Dave Harvey, an economist with USDA's Economic Research Service.

Americans eat more beef and poultry - in 1988, they ate 72.1 and 64.6 pounds per person retail weight equivalent, compared with 19.8 pounds of seafood per person. Their exposure to possible foodborne illnesses from beef and poultry is obviously higher.

But Harvey points out that when data are adjusted for differences in consumption, fish and shellfish servings appear more likely to be the sources of a disease outbreak: about 171 cases per billion pounds consumed between 1973 and 1987. During the same period, poultry servings were the source of illness in 102 cases per billion pounds consumed. Beef servings were the source in only 57 cases per billion pounds consumed.

Raw shellfish account for most seafood-related illnesses, says Harvey. When raw shellfish are dropped from the data, the number of illnesses caused by seafood servings drops to 75 per billion pounds consumed.

USDAERS Farmline March 1990

The holiday season is here. Season traditions that we still enjoy have been passed on from earlier generations. Many of the seasonal traditions are well known and practiced by all.

There are other traditions that are important for sanitarians. These traditions are the foundation of this unique profession. In recent years some experts have blamed the traditional role of the sanitarian for current problems in the administration of food safety and other environmental/public health programs. Getting your eight inspections completed or 16 samples collected is not the traditional role of the sanitarian.

Few, if any, schools offer courses in history, traditions and values of the sanitarian. I was fortunate to have had such a course and one heck of a group of instructors. This was not a formal course taught in the normal classroom setting and the instructors were not Ph.D. professors.

The classroom was the Buffalo Ranch Cafe in N.E. Oklahoma where area county sanitarians would meet for coffee and talk about business. The instructors were professionals like Rex Netherton, Glen Early, and Rural Warren. Registered Sanitarians. I would like to share a few of the lessons learned at the Buffalo Ranch Cafe.

Rural Warren was county sanitarian in Cherokee County. As a new state employee I was assigned a 30 day internship with Rural. The first day he gave me a list of 20 food service facilities and said "see me when you get done." I studied the state food code at night and completed all inspections on the list in two days.

I proudly reported my results and all the deficiencies I had found. Rural then asked me "What did you accomplish besides completing 20 inspections. Was that your real objective and did it meet your plan, if you had a plan? What were the problems of the owners and managers of these facilities? Did you ask them what help they needed?" This was my first lesson learned at the Buffalo Ranch Cafe: Without planning and identifying objectives you will have a hard time measuring what you accomplished.

At the end of my 30 day orientation I was assigned as Delaware County Sanitarian. My first two months were spent developing a plan based on talking and listening to owners and managers, school administrators, county commissioners and other community leaders. Thanks to Rural's lesson in planning I would be able to measure and what was being accomplished and not just count the number of inspections completed and samples collected.

After a couple of weeks on the job I received a call to conduct a final inspection of a newly constructed swimming pool. I had never inspected a swimming pool and began to panic. In desperation I called Rex Netherton, a sanitarian in an adjacent county, and asked if he would make the inspection for me.

Rex said to meet him at the Buffalo Ranch Cafe for coffee. Rex assured me that I would have no problem

conducting the final inspection and that the technical aspects would be easy to master. He gave me the phone number of a state health department engineer to call for assistance. Rex left me with my second lesson learned: Technical aspects are the easiest part of being a Sanitarian, you just need to know when to talk to an expert.

The next week over coffee I let Rex know that everything had turned out OK. I passed on that I had learned a great deal about the technical aspects of swimming pool design from the state engineer. The biggest problem I had found was that the pool operator didn't seem to know how or just didn't care about maintaining proper water chemistry.

Rex then passed on another lesson learned at the Buffalo Ranch Cafe: People aspects are the hardest part of being a Sanitarian. What people don't know and what they do or don't do with what they do know. The next summer we held the first swimming pool operators course in N.E. Oklahoma.

Glen Early was District Sanitarian. He visited about once a month to pass on the latest information from the state health department to evaluate how things were going. Glen never said anything in a negative manner. He would ask what you thought about this or that. He would describe what was being tried in other counties. After a visit from Glen you always felt like trying to do more and do it better.

During an informal District Sanitarians meeting at the Buffalo Ranch Cafe Glen passed out information on some newly developed homestudy courses available from the Centers for Disease Control. One of the more senior sanitarians attending made a remark about why experienced sanitarians would need to take a homestudy course. Glen's response was a true lesson learned: "If your 20 years of experience are the first year repeated twenty times you will be able to learn a great deal."

OFF THE CLIPBOARD: FDA has issued its code interpretation on shelled eggs. Next month information will be provided on how to obtain a copy.

- A new edition of the CDC "Control of Communicable Diseases in Man" has been printed. Contact the American Public Health Association at 1015 Fifteenth Street NW, Washington, DC 20005 for more information.

- Due to an increased workload, due to Operation Desert Shield, the Field Inspection Quiz will not be included.

- Next month we will pass on a few more of the traditions and lessons learned at the Buffalo Ranch Cafe.

Homer C. Emery, RS
Chair, FDA Interpretations Committee

Answers to the October Field Inspection Quiz will appear in the December, 1990 issue of *Dairy, Food and Environmental Sanitation*.

Industry Products

CSC Digital Moisture Balance for Precise Moisture Measurements

The CSC Digital Moisture Balance is the answer for precise moisture measurements. It is used on a wide variety of dairy products such as cheeses, whey powders, whey liquids, dry milk, and ice cream mixes. The Digital eliminates operator error and is rugged enough to use in the production setting as well as the lab. The Digital also has printer and computer capability through RS232 interface.

CSC Scientific Company Inc. -
Fairfax, VA

Please circle No. 279
on your Reader Service Card

Kosempel Manufacturing Company Now Offers New Sanitary Containers and Sanitary Processing Equipment

Kosempel Manufacturing Company is now producing a variety of products which are used by industries with specific sanitary requirements.

Kosempel has expanded capabilities for a number of products, including: sanitary containers for the storage, transport and processing of materials and substances which must be kept in a controlled environment for a period of time. Kosempel also manufactures specialized sanitary machinery, such as coating machines, funnels, vats, tanks, and mixing units. These can all be customized or adapted to accommodate a customer's specific needs. These improvements will enable a number of businesses to purchase the most up-to-date products available, and also have these products customized to suit their individual needs.

The potential for new products to be developed exists since all customers will be able to communicate their specific needs to Kosempel engineers and designers.

Kosempel Manufacturing Company -
Bloomsburg, PA

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on your Reader Service Card



Atkins Introduces a New Weighted Griddle Probe

A new Atkins weighted griddle probe is becoming an integral part of food service quality assurance systems, ensuring consistency in all products cooked on flat top ranges, grills and griddles.

The improved probe has several advantages over all previous designs:

- The weighted, flat surface area of the probe allows for hands-free temperature measurement during thermostat calibration setting checks, and during test cooling.
- The sensor assembly is extremely durable, but replacement parts can be easily installed in the field when needed - completely eliminating the need for returning the instrument for routine repairs.
- Faster response time - It takes just nine seconds to check the continuously changing surface temperatures on the oiled surfaces of griddles, grills and chutes.

"Users are particularly pleased with the speed of the response time. It enables them to observe changes in the surface temperature as the thermostat cycles, allowing for rapid calibrations of cooking surfaces for optimum setting of thermostats," said Liddon Dell, Atkins food service market manager. "This improves the accuracy of calibrations performed, thereby improving product quality. With any food item, the better the temperature controls are, the more consistent products will be."

The new weighted probe (model #50014-K) will work with any Atkins Type K digital thermometer. It sells individually for \$140.

Atkins Technical Incorporated -
Gainesville, FL

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on your Reader Service Card



Radiometer America Inc. Offers New Malthus M1000S System

The new Malthus M1000S System, a computer-Automated *Salmonella* Detection instrument capable of detecting *Salmonella* within 24 hours, is now available from Radiometer America Inc. The Malthus M1000S System provides a fast, reliable test for detecting *Salmonella* using a simple 2-step procedure. The M1000S System consists of a bench top incubator with control and scanning electronics (sufficient for screening up to 60 individual samples simultaneously for *Salmonella*), and software capable of recording, interpreting and reporting test data. Using the M1000S your lab can now perform continuous and precise *Salmonella* analyses - 24 hours a day! In addition to the incubator and software, the system is supplied complete with a starter kit of new Malthus disposable *Salmonella* cells and *Salmonella* pre-enrichment media.

Radiometer America/Malthus Instruments -
Westlake, OH

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on your Reader Service Card

Glass Fiber Filters From Dyn-A-Med Products

Dyna-Filters combine fast flow rate with high retention. Used in industrial, environmental, or clinical laboratories. Many uses include analysis of suspended solids in water and wastewater, air pollution monitoring, and blood or urine filtration. The POLYESTER reinforced glass fiber filter is used in high pressure or vacuum filtration.

Dyn-A-Med Products - Barrington, IL

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on your Reader Service Card

Letters to the Editor

Dear Editor:

I was greatly honored to be selected as this year's recipient of the IAMFES Educator Award. I appreciated your presentation and the kind introduction that you gave. Please convey to the Executive Board my sincere appreciation for honoring me in this way.

I tried to say in accepting the Award that teaching is, in itself, a rewarding profession. However, having my teaching recognized through IAMFES is especially rewarding.

I have written to IBA Incorporated thanking them for their sponsorship.

Congratulations on an excellent conference.

Yours sincerely,

Michael E. Stiles

Professor of Food Microbiology

Dear Editor:

That was some program you all put on! In looking through the titles of the speeches on Sunday afternoon, I wanted to hear every one of them, and would have spent a lot more time with you if the American Bar Association meeting in Chicago hadn't intervened. I think I mentioned to you that I'm giving two speeches in the next two days, we have house guests all week, and we're having receptions at our apartment for about 10 people on Monday night and about 40 people on Tuesday night. That takes me a little out of circulation.

I particularly appreciate the plaque and the check. I really hadn't expected either one, and of course that makes it all the more pleasant to receive them. The plaque is just beautiful, and the check is very generous.

It was a pleasure to meet you and your staff. Sanitarians are obviously very well served by you all.

Sincerely,

George M. Burditt

Please circle No. 124 on your Reader Service Card

The First Course in Sanitation is Education.

National Restaurant Association

THE EDUCATIONAL FOUNDATION

Doing right starts with knowing right. Foodservice operators know how vital sanitation is to their success.

The Applied Foodservice Sanitation program of the Educational Foundation of the National Restaurant Association has been raising operator consciousness, and the standards of sanitation for over 15 years.

We educate to motivate a change in sanitation practices; then we test and certify. That's what sets our program apart. And the operator's cost is less than testing alone.

We provide an operator with complete training and testing materials to initiate a course that can be tailored to their particular needs, and is consistent with FDA model codes and interpretations.

Assist operators in your jurisdiction by helping them put first things first. Call toll free: 1-800-522-7578.

**Applied
Foodservice
Sanitation**

250 S. Wacker Drive, Chicago, IL 60606 (312) 715-1010

Updates . . .

Candidates Sought for 1991 Harold Macy Award

The Minnesota Section of IFT is seeking nominations for suitable candidates from all IFT sections for the 1991 Harold Macy Food Science and Technology Award.

The award, which was established in 1981, is to be given annually for an outstanding example of food technology transfer or cooperation between scientists or technologists in any two of the following settings: academic, government, and private industry. The purpose of the award is to advance the profession and practice of food technology and to honor Harold Macy, former Dean Emeritus of the University of Minnesota and a founding member of IFT. The award consists of a \$1,000 honorarium and travel expenses. Nomination forms are available from the address given below.

Nominations for the award should be made on the appropriate form and sent, by **DECEMBER 30, 1990** to:

Frank F. Busta, Chairperson
Macy Award Committee
Dept. of Food Science
University of Minnesota
1334 Eckles Avenue
St. Paul, MN 55108

Telephone: (612) 624-3086
FAX: (612) 625-5272

Previous Recipients

1981 - Harold Macy
1982 - E.M. "Mike" Foster
1983 - Gary H. Richardson
1984 - Robert C. Pearl
1985 - Joseph C. Olson, Jr.
1986 - Norman E. Olson
1987 - Howard E. Bauman
1988 - Philip E. Nelson
1989 - Rose Marie Pangborn
1990 - Arnold E. Denton

For more information contact Frank Busta at (612)624-3086.

Establishing Hazard Analysis Critical Control Point (HACCP) Program

December 11-12, **Establishing Hazard Analysis Critical Control Point (HACCP) Program**, will be held at the University Club, University of California at Davis, Davis, CA, and is sponsored by The Food Processors Institute. For more information contact The Food Processors Institute, 1401 New York Avenue, NW, Suite 400, Washington, DC 20005 or call (202)393-0890.

A New Seafood Inspection Program

A new seafood inspection program is the subject of an advance notice of proposed rule-making issued by FDA and the National Marine Fisheries Service (NMFS). The voluntary, fee-for-service program would extend the use of Hazard Analysis Critical Control Point (HACCP) principles in the fish and seafood industries. For further information, contact George Hoskin, Center for Food Safety and Applied Nutrition (HFF-400), FDA, 200 C St., S.W., Washington, DC 20204, (202)245-1231, or Richard Cano, Office of Trade and Industry Services, NMFS, 1335 East-West Highway, Silver Spring, MD 20910, (301)427-2355. (FR June 27).

Proceedings Detail Techniques for the Prevention and Control of Listeria Food Contamination

In recent years, problems of foodborne listeriosis have drawn great attention. In a number of epidemics (due to soft cheeses and coleslaw), approximately one third of the affected patients died. In other foods, such as poultry, raw meats and seafoods, the causative agent, *Listeria monocytogenes*, could be isolated in relatively high percentages. With recent problems associated with salmonellosis and other various foodborne diseases, food industries are again confronted with a potential public health hazard.

A new report, *Foodborne Listeriosis*, proceedings of *Problems of Foodborne Listeriosis: European Symposium*, provides new information on the problems of Listeria contamination in the food industry in general and in the dairy industry in particular.

The eight reports, including a transcription of a panel discussion, examine the bacteriology and epidemiology of foodborne listeriosis. Special attention is given to techniques for the prevention and control of listeria contamination in food production and preparation. Topics range from identification and typing to toxin production, detection procedures, and control criteria. A case history documenting a listeriosis outbreak is also included.

The contributing authors are noted European specialists in the field from universities, research organizations, and industry. The principles and practices described in *Foodborne Listeriosis* are applicable to food industries worldwide.

Many tables accompany the text to provide useful reference data, and numerous references are given for those who seek further information.

For more information contact Jeff Perini at Technomic Publishing Co., Inc. at (800)233-9936.

Highlights of the 77th

Combine three outstanding days of educational sessions, networking with colleagues, seeing old friends and making new ones, informative exhibits, social events and committee meetings, along with all the people involved and you have another successful IAMFES Annual Meeting.

Attendance was over 800 at the beautiful facilities of the Woodfield Hilton, August 5-8 in Arlington Heights, Illinois.

The following is a summary of the 77th IAMFES Annual Meeting. If you weren't able to attend, plan now for the 78th in Louisville, Kentucky, July 21-24, 1991. All meeting and hotel registration forms will be in the February issue of both journals. Look for the Preliminary Program in the spring issue! If you haven't submitted an abstract for your presentation at the Louisville meeting, check your October issues for the blue Abstract forms. Deadline for abstracts is January 10, 1991.

A special thanks goes out to the Associated Illinois Milk, Food and Environmental Sanitarians and the Wisconsin Association of Milk and Food Sanitarians, the IAMFES Board, the Program Committee, all Annual Meeting Sponsors and the Ames Office for their hard work and devotion. The meeting was a great success.

See you in Louisville!

Photos by Bob Crombie, The Crombie Company, 521 Cowles Avenue, Joliet, IL 60435-6043, (815)726-1683.



1990 Presidential Address



R. A. Case, President

Presented at the
77th Annual Meeting in Arlington Heights, IL
August 7, 1990

This has been a very exciting year for IAMFES. Many things have happened. Some of them are positive and some are not. In the next few minutes I will give you a summary of major accomplishments and some of the shortcomings.

This year your Executive Board and association office have worked to improve communications and to be responsive to members. In an association the size of ours it is not easy to find out how members feel about issues. Likewise it is not easy to let the members know what is happening with the management of their association. To find out what concerns members, we have conducted surveys, solicited comments during the annual meeting, attended affiliate meetings, and have contacted some members directly to get their feelings about key issues. In addition a number of members have contacted the Ames office, the board members and me about things that were concerning them.

As a result, changes have taken place and opportunities are being investigated to improve the association, its journals and this meeting. At last year's meeting, members and exhibitors had complaints about the exhibit's hours, length, and facilities. Based upon this feedback we lengthened the amount of time the exhibits were opened during the day but reduced the number of days by one. In addition, things, such as the way refreshments were handled, were changed to allow you better access to the exhibitors. I hope you had an opportunity to visit them and found their information useful.

We have had complaints about not being able to stay in the hotel where the meeting was being held. This has still not been corrected. Our meeting has become the major meeting on food protection and, as a result, attendance has increased to the point where room shortage may be an ongoing problem. We increased the number of rooms this hotel blocked for us twice in the last two years. We have 350 of 420 rooms at this hotel, but this is not nearly enough. Hopefully, the hotels in Louisville and Toronto will be large enough to hold everyone at one place. We have tried to keep the meetings out of large city hotels but may have to change this in the future in order to house everyone without inconvenience.

Bill Coleman, the chair of the Affiliate Council, has taken an active role in working with the affiliates and bringing their concerns to the board. To provide additional support for affiliates, Dee Buske of the Ames office is now working with the affiliates. As the result we have been able to help find speakers and provide publications for affiliate meetings, and have helped affiliates to strengthen their groups. The international members and affiliates are more of a team in support of the same objectives. We are chartering a new affiliate tomorrow night. The Louisiana Association of Milk, Food and Environmental Sanitarians will be our 32nd affiliate. Discussions are under way with other groups and we hope to be able to add two new affiliates next year. If we are to be a truly international organization it is time we moved beyond North America, therefore we are having active discussions with members in Europe about forming a European affiliate. During a recent trip I met with members in Great Britain and they are excited about the possibility of an-IAMFES affiliate before Europe '92 becomes a reality.

I received a letter from Bob Brackett expressing concern that third world countries are not able to obtain our journals because of the cost. As a direct result of that letter, the IAMFES board has agreed to supply extra copies of both of our journals to universities, health departments, and other health related groups in these countries. Contacts have been made with agencies of the United Nations and with the International Dairy Federation to find means to accomplish this. Bob Sellers became aware of this effort and presented a similar proposal to The American Dairy Science Association which has agreed to take part with their journal. Thank you Dr. Brackett for bringing this need to our attention. May the world be better because you took the time to express your concern.

Last year at this meeting you approved a resolution dealing with the solid waste issue and food safety. Copies of the resolution were sent to local, state and federal officials. This is still an issue in many areas and your stance on the problem is helping keep a balance between food safety and solid waste concerns. In response to requests for more information, tomorrow morning we are having a follow up symposium on the Solid Waste Crisis.

Three years ago our Long Range Planning Committee recommended we work closer with other organizations which have interests similar to IAMFES. For many years IAMFES has been the leader in the 3-A program to have food equipment with sanitary design. The National Conference on Interstate Milk Shipments has worked closely with us on common concerns. This year we took part in a workshop with 31 other professional scientific societies to address Integrated Pest Management. You will hear more about this in a few minutes. We sponsored a session on Food Safety in the Nineties this past fall at the Dairy and Food Industries Supply Association show. We became a key part of an advisory council of the Conference on Food Protection. By working with other groups toward common goals we can accomplish more than by each group working alone.

I have received letters from some members who felt the name of our association should be changed. This has been considered before and rejected. Since these members felt so strongly about the issue and since it has been some time since it was discussed, I appointed a committee, chaired by Mike Doyle, to consider the matter. This committee will make an evaluation of the pros and cons of the name, get members' input and make a recommendation to the board. A name change will require a constitutional change which could be voted on at next year's meeting. The entire procedure for considering a name change was outlined in March's Thoughts from the President.

I have been writing this monthly column to keep you informed on what is happening with the association. Bob Gravani started a monthly column last year and Bob Sanders will continue it this coming year. I feel this is a good way to let you now what the board is thinking and what we are doing.

We started the year with a new Executive Manager, Steve Halstead, whom you met last year at the annual meeting. Steve's broad background in association management has given us a different look at how we manage the association. We have restructured the Ames office to give more efficient service and to use the skills of our staff to their best advantage. This has cut cost while providing better service to the members.

A personnel policy manual was developed and approved. This puts our personnel policies in writing for our employees and helps to ensure equal treatment of all employees. In addition an operational manual has been developed over the last three years for the association. This has been a big help to the Executive Board as actions taken on different issues over the years affect what we do now. Leon Townsend was instrumental in establishing this during his term on the board. We have had our policies, operational procedures, contracts, and other items reviewed by an attorney to ensure we are within the law and are taking advantage of everything coming to us. This has been somewhat costly but was necessary to protect IAMFES and our employees.

Our publications are a mainstay of the organization. They take lots of effort on the part of many people to get them out on time and to ensure their content is fitting for the publication. We have taken a close look at how the journals are published and what can be done to improve them. Steve Taylor has been named Associate Editor of the Journal of Food Protection to assist the Editor, Lloyd Bullerman. We have recently purchased a MacIntosh computer, scanner, and laser printer in order to do more desktop publishing. Sanitation and parts of JFP are now being put together with desktop publishing. Logistics are now being worked out to scan manuscripts into the computer and drastically reduce the typing required. These changes allow us to prepare the journals faster and with more flexibility than in the past. You may have noted you received your July journals during the first week of the month instead of the last. We will continue this schedule. In addition we are saving money with our printer.

In fact we have worked hard this year to save money without restricting our services. There has been a deficit for the last four years. This year we wanted to turn this around and have a surplus. Our income was about \$715,000 and expenses about \$707,000. That gave us a surplus of \$8,300. Most of our expenses are related to publications and overhead. With expected increases in postage, printing, and other overhead items, we can't do enough cost cutting this year to stay in the black without increasing income.

Our major sources of profit are publications, advertising and the annual meeting. We have to look at each of these items to increase income. The possibility of a major income increase from the annual meeting is small without large increases in registration or fees. A large increase in registration fees would reduce attendance and services to members.

We are making a reasonable profit from our advertising, but when we compare our rates to similar publications, we are already charging more than most others. At this time we feel we cannot add more advertising to our journals and still keep their professional image.

This leaves our publications as the best place to get the necessary income. Income from publications comes from three sources: dues, subscriptions to journals and sale of other publication such as 3-A Standards and Procedures to Investigate booklets. There may be some opportunity to increase income from these other publications, but we will not know until we have completed a full review of our pricing policy in this area.

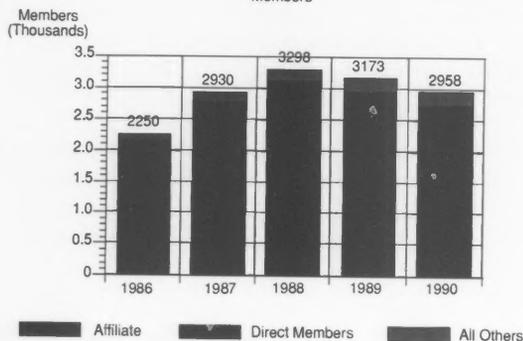
The last two times we needed more income we increased dues and left subscriptions alone. This year we will be increasing dues for basic membership, including DFES, from \$36 to \$40, and from \$64 to \$70 for both journals. Subscription rates are increasing from \$83 to \$100 for DFES, \$110 to \$135 for JFP, and \$151 to \$185 for both. We have about 1,400 subscribers taking one or both of the journals. This should increase our income by \$50,000 to \$60,000. The additional resources will be used to increase our desktop publishing and computer capability and to start building a reserve. We are told by financial people we should have at least half our yearly budget and preferably the entire yearly budget in reserve. At the end of June we did not have a reserve.

Another way to increase income is to increase the number of members. Our membership has been dropping since 1988. Between 1986 and 1988 we gained about 1,050 members. Between 1988 and 1990 we lost about 350 members. In 1986 we established a membership department in the Ames office to recruit new members. In mid 1989 we disbanded this department. During the growth period our yearly deficit increased from \$4,000 to \$53,000. Although there were other reasons for the deficits, this type of membership recruiting was very expensive. We do need new members. Many people do not know about IAMFES and what we do. You as members can be our greatest recruiters. Tell others who we are and what we do then help them to sign up.

I thank you for making this a memorable year for me and for your support in our efforts to improve the association.

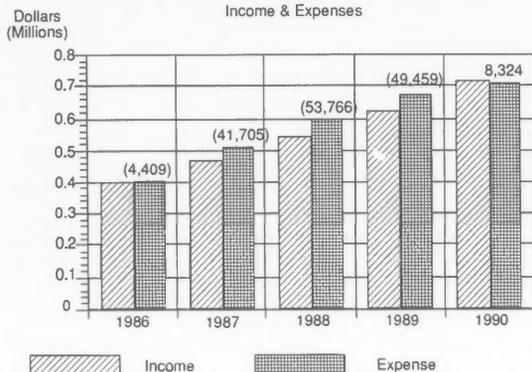
IAMFES

Members



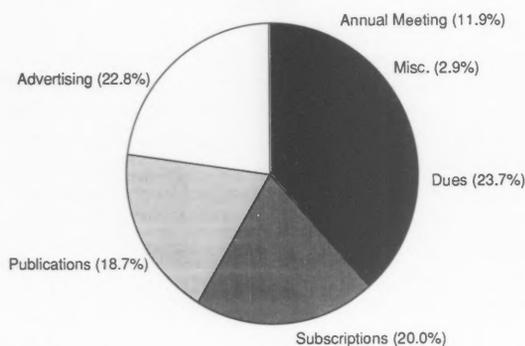
IAMFES

Income & Expenses



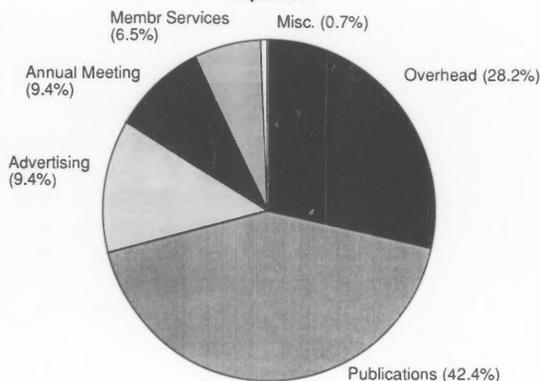
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Income



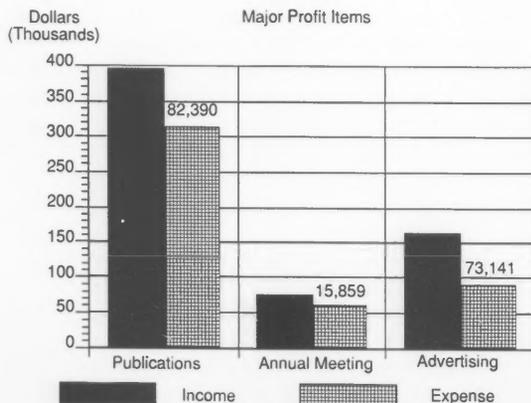
IAMFES

Expenses



IAMFES

Major Profit Items



	Before 9-1-90	After 9-1-90
Basic Membership	36	40
with JFP	64	70
Subscriptions		
DFES	83	100
JFP	110	135
BOTH	151	185

Minutes of the IAMFES 77th Annual Business Meeting

3:15 p.m. August 7, 1990 Arlington Heights, IL

Welcome and Introduction: President Elect Robert Sanders welcomed those assembled and introduced IAMFES President Ronald A. Case.

Presidential Address: Mr. Case proceeded to deliver the 1990 Presidential Address.

Business Meeting:

I. Call to Order: Following his address, President Case called the 77th Annual Meeting of the International Association of Milk, Food and Environmental Sanitarians, Inc. to order at 3:47 p.m. on Tuesday, August 7, 1990 at the Woodfield Hilton located in Arlington Heights, Illinois. A quorum, as defined by the IAMFES Constitution, was declared to be present.

II. Moment of Silence: Mr. Case asked the audience to rise and to observe a moment of silence in memory of departed colleagues.

III. Minutes of the Last Meeting: Secretary Michael Doyle reminded the meeting that the Minutes of the 76th Annual Meeting had been printed in the July, 1990 issue of *Dairy, Food and Environmental Sanitation*. He proceeded to identify highlights of the meeting.

MOTION To dispense with the reading of the Minutes Haverland of the 76th Annual Meeting and to approve Brazis as printed in the July, 1990 *Dairy, Food and PASSED Environmental Sanitation*.

IV. Reports: The meeting then received the following reports:

- A. Executive Manager: Steven Halstead
- B. Affiliate Council: William Coleman
- C. Foundation Fund: Harry Haverland
- D. *Dairy, Food and Environmental Sanitation* Management Committee: Harold Bengsch
- E. *Journal of Food Protection* Management Committee: Robert Marshall
- F. Program Advisory Committee: Gale Prince
- V. **Old Business:** There was no Old Business to come before the meeting.

VI. New Business: President Case called upon Michael Doyle to report on the activities of the Name Change Committee. Mr. Doyle identified the members of the committee and reported that the committee had received both written and verbal comments from the membership. The committee decided to submit a binding straw ballot to the membership at the same time as the Election for Secretary in an effort to determine the sense of the membership.

Comments were received from the audience.

President Case named Charles Felix as Chairman of the Nominating Committee for the 1991 election of the IAMFES Secretary.

VII. Resolutions: Immediate Past President Robert Gravani presented three resolutions to the meeting for its consideration:

Resolution #1: Relating to the meeting's gratitude to the Illinois Affiliate and the Wisconsin Affiliate for their outstanding performance as hosts of the 77th Annual Meeting.

MOTION To adopt Resolution #1
Bengsch
Brazis
PASSED

Resolution #2: Relating to the meeting's gratitude to the Woodfield Hilton for its outstanding performance in serving the 77th Annual Meeting.

MOTION To adopt Resolution #2
Fry
Bruhn
PASSED

Resolution #3: Relating to Integrated Pest Management.

Mr. Gravani, by way of background information, informed those assembled that IAMFES had been represented by Ginny McArthur and Bob Richardson at a two day conference on Integrated Pest Management held in Washington, DC and sponsored by the Institute of Food Technologists. Resolution #3 was a product of that conference. A discussion followed.

MOTION To adopt Resolution #3
Sanders
Prince
PASSED

President Case directed that the resolutions be attached to these Minutes as Addenda and that they be printed in an upcoming issue of *Dairy, Food and Environmental Sanitation* (see page 684).

VIII. Adjournment: There being no further business to come before the meeting, President Case declared the meeting adjourned at 4:37 p.m.

Respectfully submitted,
Michael P. Doyle
Secretary

Resolutions Adopted by IAMFES

RESOLUTION #1

WHEREAS: The Associated Illinois Milk, Food and Environmental Sanitarians and the Wisconsin Association of Milk and Food Sanitarians and their Local Arrangements Committees have labored long and hard to plan, coordinate and host the Seventy-seventh Annual Meeting of the International Association of Milk, Food and Environmental Sanitarians in Arlington Heights, Illinois, and,

WHEREAS: The entire Annual Meeting was conducted and planned with style and grace by the two affiliates and their Local Arrangement Committees, and,

WHEREAS: The same hosts coordinated the efforts of their industry, educational and governmental members towards the success of this Annual Meeting and,

WHEREAS: The 1990 Meeting was truly outstanding and contributed to the goals of our Association.

THEREFORE, BE IT RESOLVED:

That the International Association of Milk, Food and Environmental Sanitarians, Inc. adopt this resolution of appreciation and gratitude to the Associated Illinois Milk, Food and Environmental Sanitarians, and the Wisconsin Association of Milk and Food Sanitarians and their Local Arrangements Committees and further that a copy of this resolution be sent to the Illinois and Wisconsin Affiliates and be published in the Journal of Dairy, Food and Environmental Sanitation.

RESOLUTION #2

WHEREAS: The personnel of the Woodfield Hilton in Arlington Heights, Illinois were very accommodating to the needs of the members and guests of the International Association of Milk, Food and Environmental Sanitarians, Inc., and

WHEREAS: The facilities for the entire program including the technical sessions and social activities were outstanding,

THEREFORE, BE IT RESOLVED:

That an appropriate expression of our gratitude be sent to the management and staff of the Woodfield Hilton.

RESOLUTION #3

WHEREAS: Integrated pest management is a systematic approach to the control of agricultural pests that acknowledges the importance of both economic and environmental perspectives, and

WHEREAS: The International Association of Milk, Food and Environmental Sanitarians actively participated in an Institute of Food Technologists workshop to evaluate integrated pest management as a valid scientific and economic approach to pest control, and

WHEREAS: 55 workshop participants representing 32 professional scientific societies whose areas of interest include pest management for protection of plant, animal or public health, discussed many issues related to integrated pest management, and

WHEREAS: A report entitled "Achieving the Full Potential of Integrated Pest Management" was developed by conference participants to reflect the consensus of the scientific community's position on the feasibility and value of integrated pest management.

BE IT THEREFORE RESOLVED:

That the members of IAMFES endorse the report and encourage the Institute of Food Technologists to distribute the document to appropriate state and federal policymakers.

Committee Reports

If you wish to serve on a committee, please contact this office so that we may put you in contact with the committee chairperson, 800-369-6337 or 515-232-6699.

#685-1



Affiliate Council Meeting

Affiliate Council Meeting August 5, 1990 Arlington Heights, Illinois

Secretary's Report

Chairperson, Bill Coleman, MN, called the meeting to order at 2:00 p.m. Twenty-eight of the 32 Affiliates were represented. Also present were members of the IAMFES Executive Board, Personnel from the IAMFES Ames, Iowa, office and guests.

Minutes from the 1989 Affiliate Council Meeting were approved with the addition that the Affiliate Nominating Committee shall consist of only affiliate delegates.

Executive Board Report

President Ron Case explained that many of the Affiliates would like to have more support from the International Office. Therefore Dee Buske has been given the assignment to work full time with the Affiliates. Dee will attend most of the Affiliate annual meetings and hopefully this cooperation will strengthen the overall program. Two hours were scheduled for the Affiliate Council meeting to provide more time for business and interaction. Dee provided folders to each Affiliate delegate. Outlined in the folders are the requirements that each Affiliate must meet to maintain their charter. A written report to the International within six weeks of their annual meeting, plus a current membership list is definitely needed.

Dee Buske explained her goals and how she plans to work with the Affiliates. She will continue to contact the Affiliates and whenever possible provide names of potential new members.

Steve Halstead, Executive Manager, outlined changes made in the International Office and encouraged Affiliates to maintain contact and ask for help when needed.

Old Business

1. Requirements to retain Affiliate Charter:
 - A. Only 50% of the Affiliates are sending in annual reports. According to the By-Laws, these reports must be submitted. These reports can also be used to select the Shogren Award if the Affiliate so desires.

- B. Second major concern is those Affiliates with less than ten members of the International. Those Affiliates with less than ten International members must be reviewed in two consecutive years by the Affiliate Council to determine if that group can be maintained as an Affiliate of IAMFES.

Affiliates not meeting this criteria are: Idaho, South Dakota, Wyoming, Mississippi and Oregon. Dee Buske asked for more time to work with these Affiliates to increase their membership. Contact has been made with all of these Affiliates and interest exists in maintaining their charter and progress has been made. Dick Jolley moved and Jim Steele seconded the motion that no action be taken at this time. Motion passed. Bill Coleman explained that the ten member requirement is specified in the Charter. Also being reviewed by the Affiliate Council does not necessitate automatic loss of the charter.

Considerable discussion occurred concerning the status of the Oregon Affiliate. Oregon has not had an Affiliate meeting in the last seven years, however, Affiliate dues have been collected by IAMFES and sent to the Secretary-Treasurer of the Oregon Affiliate. Apparently these dues have been used by another organization. Most of the Affiliate members are also members of this second organization. A motion was made and seconded to withdraw the Oregon Affiliate Charter. Motion passed. Ron Case emphasized this is only a recommendation to the Executive Board. Oregon will be urged to reorganize.

New Business

- A. Bill Coleman emphasized that all Affiliates must report new officers, updated membership list, and year-end report.
- B. Each Affiliate delegate was presented with a copy of the following: (1) Goals for the Affiliate Council; (2) IAMFES Central Office expectations for the Affiliates; (3) Responsibilities of the Affiliate delegate and (4) IAMFES Affiliate Council discussion questions. The above were developed by Bill Coleman, Steve Halstead and Ron Schimdt.
- C. Question was raised concerning the continuation of door prize drawings prior to starting the various meeting sessions. Reason for the door prizes and other possibilities were discussed. General consensus was to continue with the awarding of door prizes that have been donated by the Affiliates.

- D. Affiliate Council officers are nominated, selected by the nominating committee, and elected by one vote from each Affiliate. Each Affiliate decides who will vote. If the Chair cannot attend the annual Affiliate Council meeting, the Secretary will serve as the Chair. A motion was made and seconded that would allow the Chair to select a new voting delegate as a replacement from their Affiliate. Discussion resulted in a motion to table the previous motion. Seconded and passed. Therefore, the Affiliate Council chair will remain as the official delegate from their Affiliate.
- E. Bill Coleman asked if the Council wanted the IAMFES office to continue collecting the Affiliate dues, but the money collected would not be returned until the Affiliate has met all the criteria of submitted reports, membership lists, etc. Resulting discussion showed this was not an acceptable idea. However, if an Affiliate is not organized and meeting some of the criteria, then the money should be returned to the individual members with an explanation.
- F. IAMFES original new membership forms do not have a place to check if the applicant wants to become a member of the local affiliate. IAMFES office will investigate.
- G. Meeting sites after 1994 will not be selected by a competitive bidding process. Meeting size is such that facilities and sites need to be carefully selected. Those Affiliates interested in hosting a meeting will need to work with the IAMFES office.

New Officers

Bill Coleman introduced Ron Schmidt as the new Affiliate Council Chair and Ruth Fuqua as the new Secretary.

Affiliate Reports

Each Affiliate representative gave a brief report on their activities for the past year.

Audio Visual Library Committee Annual Report August 7, 1990

The Audio Visual Library Committee convened on August 5, 1990, in conjunction with the 77th Annual Meeting of IAMFES.

A report from Sandy Engelman, former IAMFES staff person, showed that from July 1, 1989 through June 30, 1990, there were 1,218 requests for materials from the library and 772 requests were filled. During the same period, nine (9) new video tapes were added to the library and two additional sets of the Safe Food Handling I and II tape series were purchased to reduce the delay in filling requests for those programs.

The AV Committee has created three sub-committees (Dairy, Food Safety, and General Environmental Health) to facilitate the previewing of new materials and reviewing current holdings (those over 5 years old) for accuracy, timeliness, and balance between technical content and commercial emphasis. In the future, these three subcommittees will be

responsible for recommending new materials for purchase and the elimination of existing materials from the library.

The Committee agreed to develop a survey form to be enclosed with each tape or slide series loaned from the library after January 1, 1991. This survey will seek information about the user, intended audience(s), number of showings, and other pertinent information. It is believed this information will be helpful when choosing new educational materials for the library.

The AV Library Committee voted to ask the Executive Board to establish a small user fee to offset postage and handling costs associated with filling orders. This fee would allow better service and would enable the Association to use its funds to buy new materials for the library. The Executive Board approved a user fee of \$5 per title.

In closing, all IAMFES members are invited to participate in the activities of the AV library committee and provide suggestions for new educational materials. We are pleased with the increased usage of the library and promise to continue to improve the service in every possible way.

Respectfully submitted,
David McSwane, Chairman

Annual Report of the IAMFES BISSC Committee

BISSC was founded in 1949 by six national organizations, serving the baking industry to formulate construction standards for baking equipment in an effort to eliminate major sanitation problems attributed to improper design.

In addition to industry support, BISSC sought advisory assistance from public health agencies and associations.

IAMFES and other health-related associations and national Public Health Regulatory Agencies joined BISSC with the ultimate goal that all BISSC standards would be formulated to insure that all food contact surfaces of bakery equipment would be readily accessible for easy and thorough cleaning by regular employees using ordinary cleaning methods.

The IAMFES BISSC Committee has participated in all meetings of BISSC since its inception, including the 75th meeting in 1990.

The BISSC Office of Certification was established in 1966 which permitted the Registration of Equipment Manufacturers with BISSC and formulated the equipment authorization system wherein equipment meeting the requirements of a particular standard could be authorized to display the BISSC symbol.

The BISSC Office of Certification is composed of the BISSC Chairman, one member representing the baking industry, one member selected by the Bakery Equipment Manufacturers Association, and one member representing a nationally recognized professional sanitation organization.

For the past several years the Chairman of the IAMFES BISSC Committee has served on the Board of Certification representing a professional organization.

In 1989 a new dimension was added to the International Baking Expo by the addition of a professional Baking Consultant to be available for consultation to Equipment Manufacturers, Design Engineers and Bakery Operators.

As Chairman of the IAMFES BISSC Committee, I was requested to serve as a Consultant to the Baking Industry at the

International Expo in Las Vegas, NV, in the Fall of 1989.

An informative and in depth discussion was directed to formulating plans to promote the activities of the BISSC Committee to Sanitarians and a greater segment of Bakery Equipment manufacturers and distributors.

The standing committee on Future Projects and Public Relations was delegated to form guidelines to accomplish this and requested to report back to the General BISSC Committee at the next BISSC Meeting.

At present there are BISSC Standards covering the forty-two (42) categories of baking equipment with seventy-seven (77) registrations and one hundred seventy-two (172) authorizations for equipment manufactured in compliance with the standards.

A BISSC Video Tape presentation is now available, without charge, to members of IAMFES upon request. Requests for use of the slide presentation, as well as copies of all BISSC Standards and information booklets, should be addressed to the BISSC Administrator.

Ms. Bonnie Sweetman, Administrator
Baking Industry Sanitation Standards Committee
111 E. Wacker Drive
Chicago, IL 60610

We urge all Sanitarians and members of IAMFES to acquire a set of these standards and adopt them as guidelines and subscribe to the principles of the BISSC Standards and Criteria.

The IAMFES BISSC Committee extends a standing invitation to all sanitarians and members of IAMFES to make every effort to attend the next BISSC meeting, which is scheduled to be held in Chicago in February or March of 1991. The exact date will be published in all the major Trade Journals later this year.

The following are the Goals for the coming year:

1. In depth discussion of the BISSC Certification Program.
2. Discuss contacting academia and requesting their participation in the formulation of an agenda to create an interest in field sanitarians, in the bakery field, and to assume an active role in the BISSC Certification Program.
3. Contact and request that Regulatory Agencies conducting sanitation surveys, in baking facilities, incorporate in their procedures of inspection the use of the BISSC Standards as a guideline.
4. Enlist the input of field sanitarians currently engaged in the review and evaluation of baking equipment and, if possible, their active participation in the formulation of new BISSC Standards and the upgrading of the present BISSC Standards.
5. Contact Public Health Regulatory Agencies and request that Field Sanitarians evaluate baking equipment during the course of routine sanitation surveys and alert the BISSC Committee of all violations of BISSC Standards on equipment displaying the BISSC Seal of Acceptance.

We, the members of the IAMFES BISSC Committee would appreciate any and all ideas and suggestions from Public Health Regulatory Agencies and Field Sanitarians in

the baking field, as to what we can do to help your personnel do a better job of upgrading equipment and sanitation in the production of bakery products.

Respectfully submitted,
Martyn A. Ronge, Chairman

Dairy, Food and Environmental Sanitation **Publications Committee**

The Publications Committee has only two recommendations this year. They are:

1. Establish a new column entitled, "Sanitation, Twenty-Five and Fifty Years Ago."
It is suggested that responsibility for this column be rotated through the past presidents.
2. The committee is requesting that IAMFES Committee chairpersons, in addition to their annual report, develop interim reports on their committee's actions for publication in DFES.

It is hoped that this action will develop into an IAMFES Committee Chairman's column.

Currently, the backlog of articles is approximately three months. We would like to see this increase to at least four to six months. Therefore, we are once again urging our membership and affiliates to submit articles of general interest which will be of benefit to the professional activity of our readers and membership.

The publication is now in its tenth year of service with subscriptions numbering approximately 3,400. Over those years, your publications committee has tried to improve DFES to better meet its mission in a rapidly changing world of technology and information exchange.

The mission statement of DFES is:

"To serve as an information magazine for both associational and affiliate activities together with timely articles on subject matters applicable to the practicing sanitarian and environmental health professional."

As outgoing chairman of the Publications Committee, I want to take this opportunity to thank those who eleven years ago had the foresight and courage to step out in the bold venture of developing a second journal for our association. I also wish to thank the Executive Board for their faithful support of the Publications Committee and Article Review Committee. The excellent professional guidance, support and hard work from the Ames office has been superb. Most of all to those of you who have taken time to develop articles for publication, a great big thank you.

Under the able leadership of your new Committee Chairperson, Ruth Fuqua, I am certain the journal will continue to grow in readership and use in the promotion of our association and the professionalism of our membership.

Thank you,
Harold Bengsch, Chairman

Dairy Quality and Safety 1990 Report

The Dairy Quality and Safety Committee works to improve quality and safety in production processing and distri-

bution of dairy products from farm to consumer.

The key activities of this committee include identification of needs of the dairy industry, development of procedures and recommendations which address those needs and dissemination of this information to appropriate dairy industry groups.

The Dairy Quality and Safety Committee first met in 1988 after the 1987 Farm Methods Committee chose to disband and regroup in this new format.

The Dairy Quality and Safety Committee is divided into two parts: The Farm Section is chaired by Mr. John Scheffel and the Plant Section is chaired by Mr. Gaylord Smith. Each section also has a leadership cadre. These leaders guide individual task groups in their work to resolve specific problems or concerns.

The Farm Section leadership cadre includes Mr. Ted Hickerson, Mrs. Brenda Holman, Mr. Terry Mitchell, Mr. Charles Price, Mr. Joseph Scolaro and Mr. Gary Trimmer.

The Plant leadership cadre includes: Dr. Sid Bernard, Mr. Robert Darrah, Mr. J.J. Jazeski, Ms. Diane Lewis, Ms. Ginny McArthur, Mr. William McCarthy, Mr. Vince Mills, Mr. Bruce Meyers and Mr. Roger Scheibe.

Both sections of the Dairy Quality and Safety Committee meet each year at the IAMFES summer meetings. In addition, the Farm Section often meets in conjunction with the National Mastitis Council winter meeting. The Plant Section has met in conjunction with the National Conference on Interstate Milk Shipments. Individual task groups meet and/or correspond frequently on an as needed basis.

The most recent meetings of each section were held Sunday, August 5, 1989, in the Chicago Room of the Woodfield Hilton and Towers, Arlington Heights, Illinois.

The Farm Section met at 9:30 a.m.

John Scheffel conducted. Twenty-four committee members and visitors were present. Several task groups reported their accomplishments. The pre-dipping and education task groups reported that their charges were completed.

The project to develop uniform pictograms for voluntary use by farm chemical companies reported that their charge is essentially complete. Some company liability questions must be resolved before the symbols will appear on chemical container labels.

Charles Price was added to the leadership cadre and will assist the task group developing a uniform "pipeline installation application." This is a form to be made available to states. The task group exploring the need for pictograms on animal drug labels did not report.

Brenda Holman was added to the farm section leadership cadre. Ms. Holman will lead a task group developing materials for use by IAMFES affiliates. These materials will provide resources which IAMFES affiliates can use to help meet their training needs and plan their annual meetings. The materials will consist of regional speakers lists for timely dairy topics as well as course materials which an affiliate could use to plan and present an entire course for a particular subject i.e. "Dairy Farm Inspection."

The Plant Section met at 10:30 a.m.

Chairman, Gaylord Smith presided. There were 24 members and guests present.

The minutes of the previous meeting of August 13, 1989, were distributed as well as the list of committee members.

Through the use of the previous minutes, Mr. Smith reviewed the recent past history of this committee which pointed out that it has functioned as an advisory resource for training materials, VHS, slides, etc.

Robert Darrah then presented draft copies to the members of a booklet he had recently revised for possible distribution by IAMFES. The booklet was originally called "Food Handlers Pocket Guide for Food Safety and Quality" and was presented to the committee at the August, 1989, meeting for possible revision for use in milk plants. The draft presented was called "Employee Pocket Guide for Dairy Product Safety and Quality." The committee agreed that Steve Sims should present the draft to the executive board and seek their guidance. (Note: This was presented to the executive board on August 6, 1990. They suggested that a final version be produced for their review at the spring board meeting. They plan to publish this document before the next summer meeting). It was also agreed that all comments from committee members should be sent back to Mr. Darrah by November 30, 1990.

The FDA training manual where all available training aids (slides, VHS, etc.) are listed was presented to the committee. It was suggested possibly that the listing of training VHS, slides, manuals, etc. in this publication could also be put in the journals with reference to availability through FDA. Many members and guests were unaware of this publication.

Steve Sims stated that there is a video about one-on-one training available for review called, "You'll Soon Get the Hang of It." Another VHS/GMP type training tape called "Purely Coincidental" was also mentioned. Joe Burns said that his organization had several copies and he would look into making this available to the audio visual committee for review.

A desire was also noted for more training type videos, in regard to pasteurization. Joe Burns stated that his organization had just made one and he would review this and if possible, make it available to the audio visual committee.

Steve Sims then reviewed two recent memos from FDA, one regarding cross connections and one regarding flow rate testing of HTST pasteurizers. Several questions were discussed.

The meeting was adjourned at 11:35 a.m.

Respectfully submitted,
Steven T. Sims, Chairman



FDA Interpretations Committee

FDA Interpretations Committee Report
August 1989 to August 1990
Chair, Homer C. Emery, RS

1. A plan to reorganize IAMFES committees related to food safety was proposed. Pending approval the FDA Interpretations Committee will become a new Federal Agency Liaison Subcommittee.
2. The following documents from federal agencies and other organizations were reviewed by committee members:
 - a. FDA Draft Translations of Key Code Requirements
 - b. FDA Draft Code Interpretation on Shell Eggs
 - c. American Public Health Association draft standards for out of home child care services.
3. Other committee activities:
 - a. Co-sponsored FDA Vacuum Packaging Course (360), March 1990, Rockville, Maryland.
 - b. Attended/Participated in workshops:
 - "Superfund 89" November 1989, Washington, DC
 - "NRA Solid Waste Seminar" Jan. 1990, Washington, DC
 - "Developing Markets for Recyclables," U.S. Conference of Mayors, March 1990, Washington, DC
 - "Food Policy Conference" March 1990, Washington, DC
 - c. Provided monthly column and submitted articles for *Dairy, Food and Environmental Sanitation*.

Food Service Sanitation Committee

Mission Statement: This IAMFES Committee works to assist the Public Health Sanitarian and Food Service Operator to Effectively address Food Safety involving Food Service and Sanitation Issues to protect the customer's health.

Key Activities:

Temporary Food Service Sub-Committee: Charles Otto, Chairman, distributed for review a "draft" copy of the proposed pamphlet for operators of food stands of a temporary nature. Recommendations were: (1) prepare a handout the operator fills out to Evaluate the HACCP concerns of menu and equipment needs, (2) use a picture of the "Taste of Chicago" on the cover, and (3) add a statement addressing single service use and refuse handling. We are ready to seek endorsement by our association of this proofed draft copy and for its distribution to the public.

Time-Temperature Concerns Through Distribution: Gale Prince, committeeman, presented an overview of concerns, status of monitoring equipment and the standards, as well as update of AFDO's committee on the issues of labeling "Keep Refrigerated." Recommendations were: (1) develop this presentation into an IAMFES Annual Meeting program topic "Refrigeration Concerns for Food Safety," (2) call for refrigeration monitoring information in journal.

Recommendations:

Consolidation of Food Committees: Homer Emery, committeeman, discussed the benefits and mechanics of re-organization. Recommendations were: Present to IAMFES

Committee Chairperson's breakfast meeting the proposal for adoption.

IAMFES to adopt a Leadership Role in Developing Issues for Food Protection Conference: Homer Emery and Gale Prince, committeemen, discussed ideas how we can benefit our association. Recommendations were: (1) propose to IAMFES Committee Chairperson's breakfast we appoint a spokesperson to attend this Food Protection Conference to update our membership, develop regular articles for our readership, and programs for IAMFES to sponsor or recommend.

Future Directions for 1990:

Development of a "Computer Software for Food Safety" awareness for our members through a call in the journal. Actively develop software packages of our "Procedures to Investigate Foodborne Illness" series of booklets and add additional information from CDC, FDA, USDA, and other agencies.

Bennett Armstrong
Committee Chairman

Foundation Fund Committee Report

The Foundation Fund is an entity within the International Association of Milk, Food and Environmental Sanitarians, Inc. (IAMFES) and managed by a Committee of at least four (4) individuals in which one (1) must be a member of the IAMFES Executive Board. Dr. Damien A. Gabis is the current Board representative and Ms. Dolores Taylor is the Committee's contact in the business office. The Committee met on August 5, 1990, at the Annual Meeting, to carry out Foundation Fund business. During the year Committee responsibilities are carried out through correspondence or telecons.

Budget for the Year (July 1, 1990 - June 30, 1991)

Ivan Parkin Lectureship	\$1,400.00
Loaning Library	7,000.00
	(\$5,000 for new materials & 2,000.00 for shipping costs)
Developing Scientist Awards	1,200.00
DFES Journal Awards	750.00
Total	\$10,350.00

In reference to the Loaning Library the Business Office indicates that many members have utilized this service. The Audio-Visual Committee has the statistics on the number of training aids borrowed.

The Developing Scientist Awards program continues to grow. This year there were eighteen (18) entries with fourteen (14) students actually participating in the competition. Additionally, more schools are becoming aware of this Program.

In conclusion, one hundred twenty-five (125.00) dollars is placed in the Foundation Fund each time a Sustaining Member joins or renews their annual membership. There are currently seventy-nine (79) Sustaining Members. A list of these members are published in the Journal(s) you receive.

Respectfully submitted,
Harry Haverland, Chairman

Report of Journal Management Committee
Journal of Food Protection
August 7, 1990

The committee has monitored publication of the *Journal of Food Protection* during 1989-90 and has been pleased with the quantity and quality of the publication, with the editorial process and with the distribution process. Editor Bullerman's annual report reflects a sound status of this internationally recognized journal.

The IAMFES Board of Director's approved and implemented the five recommendations the Journal Management Committee made at the 1989 Annual Meeting.

At the 1990 Annual Meeting the committee recommended to the IAMFES Board that the position of Editorial Assistant be continued in the office of Editor Bullerman for an indefinite time at the present rate of pay.

Instructions to Authors, to be published in January, 1991, will call for submission of three copies of manuscripts (instead of two) at the time authors submit final versions for publication. This will permit use of the new scanning equipment at the Ames Office to translate hard copy into diskette copy for use by the printer.

The Journal Management Committee recommended to the IAMFES Board that a five year index, compiled by Editor Bullerman from indexes of 1985-89 volumes be made available by IAMFES at cost to interested individuals.

Editor Bullerman was asked to work closely with authors to ensure that each manuscript has appropriate key words and a running head and that all domestically offered manuscripts have numbered lines on each page (to facilitate review and revision).

The Journal Management Committee expresses appreciation to Editor Bullerman, Managing Editor Halstead, Margie Marble and the Executive Board for their good work in regard to the *Journal of Food Protection* during the past year.

The JMC for 1990-91 is as follows: Stan Bailey, Michael Davidson, Joe Frank, Lloyd Leudecke, Bill Sperber, Ewen Todd and Bob Marshall (Chair).

Respectfully
Robert T. Marshall
Chair, Journal Management Committee

Name Change Committee

Committee members present: Harold Bengsch, Bill Coleman, Michael Doyle, David Frye, Ruth Fuqua, Bonnie Humm (representing Allan Katsuyama) and Lawrence Roth.

President Case opened the meeting by briefly reviewing why the Committee was organized. Many IAMFES members have indicated an interest in changing the organization's name to better reflect the background and interests of the membership. Committee Chairperson Doyle distributed comments that have been received from members regarding a name change.



Name Change Committee

Following considerable discussion of the benefits and disadvantages of a name change, the committee decided the question of a name change should be sent to the membership for a vote. The question should be included with the ballot for IAMFES Secretary and should read as follows:

Should the name of the organization International Association of Milk, Food and Environmental Sanitarians, Inc. (IAMFES), be changed?

Yes

No

Would you please provide rationale?

Do you wish to suggest an alternative name?

To provide time to analyze the results, the Committee recommends a May 15, 1991 deadline for voting. It was decided that if more than 50% of the respondents voted NO, then the issue should not be pursued. If more than 50% of the respondents voted YES, then at the 1991 Annual Meeting the Committee should prepare a ballot of names for a vote by the membership.

The Committee encourages IAMFES members to provide through the "Letter to the Editor" section of *Dairy, Food and Environmental Sanitation* their thoughts about the advantages or disadvantages of a name change. The Committee shall keep the membership apprised of its activities through DFES.

Michael P. Doyle, Chairman

**Notes of IAMFES Program Advisory
Committee Meeting
Woodfield Hilton, Arlington Heights, Illinois
August 8, 1990**

The IAMFES Program Advisory Committee (PAC) for the 1991 Annual Meeting in Louisville, Kentucky, met on August 8, 1990 at the Woodfield Hilton. Committee members present were John Bruhn (Chair), Mark Banner (Vice-Chair), Russell Bishop, Damien Gabis, Steve Halstead, Ewen Todd, Mike Doyle, Jack Guzewish, Jim Marshall, Dale Marcum, Ellen Koenig, and Ann Draughon. Absent were Randy Daggs and David Henning. Newly appointed members who were not present included Anna Lammerding, Bruce Langlois, and

Jenny Scott. Other members interested in the work of the committee who attended the meeting were Bob Gravani, Bob Sanders, Susan Ciani, Ed Zottola, Robert Tiffin, and John Cristy.

John Bruhn (Chair) welcomed all to the meeting. In order to provide a focus for the committee, he presented the principal duties of the Program Advisory Committee which are to recommend topics and speakers for the annual meetings, to help organize symposia and select speakers, to review submitted papers for acceptance, and to participate in preparing the schedule for the technical program.

Discussion began with a review of the 1990 meeting and the presentation of revision of the abstract form.

General Comments on the 1990 meeting:

- Good program. Size of rooms nurtured this.
- For future programs, brief biographies and/or instructions from the speakers would be helpful. It was suggested that this would be administered through the Ames office.
- Introduction time was not needed, though some felt it depended on the topic.
- Suggested no Committee reports to be given during the technical program, perhaps during the business meeting on an as-needed basis.
- This year there were 40 submitted papers of which 18 were by students.

Mike Doyle suggested the possibility of having poster sessions for the 1991 meeting. Group discussion suggested perhaps on Wednesday in the exhibit hall: discussion of poster sessions was deferred to Doyle and Bishop. The Executive Board will consider the proposal and make the decision based on recommendations from the PAC.

It was suggested to audiotape future technical sessions. Steve Halstead is to investigate the options and report to the Executive Board.

National Mastitis Council for Thursday needs arrangements for a meeting room. John Bruhn will contact Ann Saemen to make any arrangements that they need.

The consensus was that the Committee would meet on January 25-27, 1991. The meeting would convene Friday evening and adjourn Saturday evening. Location was not decided. Some suggested a warm climate. Expenses would be covered for those individuals needing financial assistance for reasonable meals, lodgings and inexpensive airfare (Saturday stayover required). It was discussed that the most likely site will be Chicago because of the cost savings in airline fares.

Suggested topics and/or suggested conveners for the 1991 Meeting:

1. Preparing for the Unexpected
2. Epidemiology - VTEC - Microbiology (Todd/Doyle)
3. New Processing Equipment
4. Hazard Waste Handling in the Laboratory
5. FDA Training Program
6. Packaging - User friendly/Labeling/Re-cycling
7. Issue Update (General Session)
8. Sanitizers/Detergent Workshop perhaps in conjunction with symposium for fieldmen (Dale Marcum)
9. Labels and Nutrition Workshop
10. Food Allergies (e.g. MSG)

11. Employee Training - What's available, perhaps demos Wednesday p.m.
12. Environmental and Water Quality (R. Carawan/A. Draughton)
13. Food Handlers as Related to Foodborne Illness - Problems and Solutions (J. Guzewich)
14. Modeling Systems for Food Microbiology - Quantitative Hazard Analysis
15. Communicating and Motivating of Professionals (R. Gravani)
16. Computer Applications for Food Safety (D. Gabis/H. Emery)
17. Dairy - subject to be determined - perhaps shelf-life
18. Seafood (Jim Marshall)
19. Total Quality Systems involving Crosby's Quality College and HACCP as a component (E. Zottola)

The meeting was adjourned by the Program Advisory Committee.

Respectfully submitted,
Ellen Koenig and Damien Gabis

**Water Quality and Waste Disposal
Committee Report
August 1990
Roy E. Carawan, Chairman**

The meeting began with a brief introduction by the Committee Chair, Roy E. Carawan. Roy related some problems and concerns recently brought to his attention and asked for suggestions on how the committee and IAMFES could address these issues. These issues included the following:

- Dairy and other food plant managers are concerned with the quality of the water they use for processing and for making products.
- Current dairy regulations often make the recovery of product for waste reduction uneconomical.
- Experts predict water costs will increase by 500% over the next five to ten years. This will result in an annual increase of \$500,000 to \$1,000,000 for dairy processing plants, and \$2,500,000 to \$12,500,000 for poultry processing plants.
- Pretreatment permits are placing limitations on conventional pollutants at levels requiring expensive pretreatment systems. Heavy metal limitations are often below drinking water standards.
- Most state and federal regulations do not take into consideration the fact that food plant residues are not harmful or toxic and could have beneficial use.
- Food processors are embroiled in the municipal solid waste dilemma. Costs are escalating and current practices are often perceived as a threat to human health and to the environment. Selected food packages have been banned in several localities and at least one state.

Following these remarks, a lively discussion ensued over what IAMFES had done in the past, what the committees of IAMFES had addressed in the past, what other groups and associations had been doing, and what the Water Quality and Waste Disposal Committee should address in the future.

It was suggested that a multifaceted approach is necessary. For that reason, the areas listed in Table 1 were suggested as areas of emphasis. It was concluded that IAMFES should seek a subcommittee chairman for each area.

Table 1. Suggested Areas of Emphasis for the IAMFES Water Quality and Waste Disposal Committee

Area	Description of Emphasis
Water Quality/Pollution Farm	What is the impact on human safety of water quality on milk, meat, fruit, vegetables and grains?
Processing Plant	Should all food plants routinely analyze their water supplies and what should be monitored? Does the decline in quality of water used in agribusiness threaten human health? Does poor water quality degrade product quality?
Food Packaging	How can the consumer become better educated about the real problems with municipal solid waste? Will recycling packages lead to threats to human safety?
Food Safety	Are natural toxicants a concern? How can we insure proper use of pesticides/herbicides so that residues are not a threat? How can the consumer become educated in understanding risks?
Food Processing	
Water Conservation	Can food plants use less water?
Clean Technologies for Pollution Prevention	What methods work to reduce pollution from food processing?
Process Residues	How can regulations and practices change to encourage beneficial use of food plant residues?
Treatment/Pretreatment Residues	Can these residues be utilized safely?
Organic (Clean) Foods	Will consumers be willing to support the cost of "green label" foods? How will processing and distribution practices change, and what impact will these changes have on food safety?

From these areas, the Water Quality and Waste Disposal Committee suggested the following course of action for the year:

1. The Committee should provide food processing companies with information and encourage development of an Environmental Policy.
2. IAMFES should consider working with other professional and trade associations on conducting a forum with EPA to promote timely communications, data sharing, and development of environmental action plans.
3. IAMFES should consider supporting the creation of an academic "center of excellence" to foster fundamental research, data sharing, and technology transfer to develop publicly credible solutions to environmental issues.
4. IAMFES should acquire education materials and A-V materials that address environmental issues for the lending library.

5. The editors of the IAMFES publications should solicit and print more materials relating to environmental issues.
6. The Committee should consider conducting a symposium next year emphasizing environmental issues.
7. The Committee should seek additional members to ensure a functional committee.
8. The Committee should request the IAMFES Board to plan a meeting during the year to fully activate the Committee and to make plans.
9. The Committee should make an effort to coordinate its activities with other IAMFES Committees to prevent duplication of effort and to encourage their involvement in environmental issues.
10. The Committee should develop a mission statement, and should select specific goals and objectives to address the proposed areas of emphasis.

Volunteers are needed to address the above and other issues. Please call or write Roy Carawan to volunteer for this important committee. Also, any comments, corrections or suggestions are welcome. IAMFES needs to take this opportunity to address these emerging environmental issues. The Committee needs your help.

Dr. Roy E. Carawan
NCSU-Dept. of Food Science
P.O. Box 7624
Raleigh, NC 27695
Phone: (919)737-2956
FAX: (919)737-7124

IAMFES Awards Presented . . .



Leon Townsend receiving the Sanitarian's Award

SANITARIAN'S AWARD PRESENTED TO LEON TOWNSEND

In recognition of outstanding service to the profession of Sanitarian, the Sanitarian's Award was presented to **Leon Townsend**, Frankfort, Kentucky.

Townsend is presently the Executive Secretary of the National Conference of Interstate Milk Shipments. In this position he has been engaged in hearings with Washington, D.C. on various milk-related subjects.

But, he has already left a lasting impression on the milk industry through his work at the Kentucky State Dept. of Health. First he helped bring the Manufacturing Milk Program of Kentucky into compliance with USDA standards to develop a modern Grade A Milk Program for the state, then he helped to initiate a computer-controlled producer and plant program to keep it that way. Under his leadership, the rapidly changing milk industry has evolved smoothly over the past decade.

Townsend received a plaque and \$1,000 in recognition of his work. The Sanitarian Award is sponsored and presented annually by H.B. Fuller Co., Monarch Chemicals Division, Minneapolis, MN; Economics Laboratory, Inc., Klenszade Division, St. Paul, MN and; Diversey-Wyandotte, Wyandotte, MI.



Bob Gravani (l) presents the Educator Award sponsored by IBA, Inc. to Dr. Michael Stiles

1990 IAMFES EDUCATOR AWARD PRESENTATION

Presented to an educator in recognition of outstanding service in academic contributions to the profession of the

Sanitarian went to **Michael Stiles**, sponsored this year by IBA Incorporated, Milbury, MA. Stiles is a professor appointed jointly to the Departments of Food Science and Foods and Nutrition and also an adjunct professor for the Department of Microbiology, all at the University of Alberta, Canada.

Stiles teaches six food-related courses, while working with 25 graduate students and actively researching and writing. In his research, he has examined normal and contaminating bacteria in food, particularly meat, and has studied the efficacy of sanitary procedures in meat handling. To date, he has published 60 research papers in refereed journals.

Stiles was presented with a plaque and \$1,000 for his contributions. The money will be put to the further education of Stiles' graduate students, by helping them attend professional meetings. The award is sponsored by IBA Inc., Milbury, MA.



Roy E. Ginn receiving the Harold Barnum Industry Award

HAROLD BARNUM INDUSTRY AWARD

Given in recognition of outstanding service to the public, IAMFES, and the profession of the Sanitarian, this award was presented to **Roy E. Ginn**. He is General Manager and President of the Board of the Dairy Quality Control Institute, Inc., Minneapolis, MN, a business he established.

Through his work at DQCI, he has promoted cooperation among academic, industry and government organizations in the Minneapolis/St. Paul market, resulting in a quality milk supply. Quality has also been the goal in Ginn's work as associate referee for the Association of Official Analytical Chemists.

Ginn has been an active member of IAMFES, holding most offices, including president. Under his leadership, IAMFES now sponsors a student paper contest and has established an exhibitor's function at the annual meeting.

Ginn has authored or co-authored 45 scientific papers while continuing research. Two control sample programs he developed - one that analyzes milk components for pricing purposes and the other for somatic cell counting - now serve the national dairy industry.

For his service, Ginn received a plaque and \$500 from NASCO International, Fort Atkinson, WI.



Bob Gravani (l) presents the Honorary Life Membership Award to Joseph E. Edmondson

HONORARY LIFE MEMBERSHIP

For devotion to the high ideals and principles of IAMFES, the Honorary Life Membership Award was presented to **Joseph E. Edmondson**, professor emeritus of food science, University of Missouri, Columbia, MO.

As an educator, "Dr. Joe" excels. In his 47 years at the University of Missouri, he has taught over 8,874 students on campus, over 200 extension programs and approximately 3,200 students in the National Institute for the Foodservice Industry manager certification program. He was also research advisor for 32 Master of Sanitary Science degree students.

Edmondson has been a member of IAMFES since 1951 and has completed his 50th year of service to the Missouri affiliate. He is a past president and has been the primary organizer of the annual educational conference for over 30 years.

Edmondson has served 12 years on the 3-A Sanitary Standards Committee, is a member of the Laboratory Practices Committee, has periodically refereed the Journal of Food Protection, and was a representative to the Affiliate Council for three years.

This award, presented by the IAMFES Foundation Fund, entitles Edmondson to lifetime membership to IAMFES. A plaque was also presented with this award.



Satyakam Sen receives the Sherman Award.

SHERMAN AWARD

Is presented in recognition of outstanding articles on foodservice food protection selected from the Journal of Food Protection and Dairy, Food and Environmental Sanitation was presented to **Satyakam Sen**, public health sanitarian, Hartford, CT, by the Educational Foundation of the National Restaurant Association. The award honors Norbet F. Sherman, late treasurer of the Educational Foundation, and an advocate of improved industry standards in food protection.

Sen was selected for his article, "Selfcare, Self Inspection and S.A.F.E. Program in Food Related Health Services", published in the October 1989 issue of *Dairy, Food and*

Environmental Sanitation. He has authored many papers and has written weekly columns on food-health topics.

SHOGREN AWARD

Is presented to an affiliate of IAMFES for service to their members in the past year. This year, the **Texas Association of Milk, Food and Environmental Sanitarians** received a certificate and \$100 for services bestowed upon members.

CERTIFICATE OF MERIT

Is presented to the IAMFES affiliate members who are active within their state/province affiliate group and IAMFES. This year's recipients were: **Linda Knotwell**, Hershey Chocolate Co., Hershey, PA; **Virginia McArthur**, Hershey Chocolate Co., Hershey, PA; **W. Thomas Moore**, MD & VA Milk Prod. Assn.; **Allen Murray**, R. Bruce Fike & Son's Dairy, Inc., Oakland, MD; and **Eugene Wolff**, Cornell University, Ithaca, NY.

MEMBERSHIP ACHIEVEMENT AWARD

Is presented to the IAMFES Affiliate with the most new members in the past year. The **California Association of Dairy and Milk Sanitarians** received this award for the second year in a row.



SAMUEL J. CRUMBINE CONSUMER PROTECTION AWARD

Is presented for excellence in a comprehensive local program of food and beverage sanitation. This year's recipient was the **Environmental Health Division, Public Health Services**, San Joaquin County, CA.

San Joaquin was selected for its proactive approach to program improvement. They not only developed a strong enforcement program to prevent substandard scores in food facilities, but also developed training programs and audio-visual and print aids to assist foreign born workers in understanding food safety principles.

San Joaquin received a medallion for this award, which has been sponsored by the Foodservice and Packaging Institute, Inc., since 1955. It is presented in honor of Dr. Samuel J. Crumbine, pioneer Kansas health official who outlawed the common drinking cup in 1909.



Doug Marshall receiving charter for the Louisiana affiliate

LAMFES Becomes the 32nd IAMFES Charter

Louisiana was adopted into the IAMFES family at the Awards Banquet on Wednesday Night. A motion was passed at the Board Meeting on Friday, August 3, 1990. After meeting all the requirements the **Louisiana Association of Milk, Food and Environmental Sanitarians** officially became the 32nd Affiliate of IAMFES.

DEVELOPING SCIENTIST AWARDS

Were presented to five students, judged on their paper and presentation at the IAMFES Annual Meeting. These are sponsored by the IAMFES Foundation Fund.



Ed Zottola accepting the plaque for Bob Roberts

First place went to **Bob Roberts**, University of Minnesota-St. Paul, for his presentation, "Development of a Nisin-Producing Starter Culture Suitable for Cheddar Cheese Manufacture." For this, Roberts received \$500 and a plaque.



Mike Doyle accepting for Anne Lammerding

Anne Lammerding, University of Wisconsin-Madison, took second place, receiving a certificate and \$200. "Virulence of *Listeria monocytogenes* in a Pregnant Animal Model," was the title of her presentation.



Hassan Gourama receiving his Third Place certificate

Third place went to **Hassan Gourama**, University of Nebraska-Lincoln, for his presentation, "Relationship Between Aflatoxin Production and Mold Growth as Measured by Ergosterol and Plate Count." For this, he received a certificate and \$100.

Anna Lambert, McGill University, Quebec, Canada, took fourth place with her presentation, "Combined Effect of Modified Atmosphere Packaging and Low Dose Irradiation on Toxin Production by *Clostridium Botulinum* in Pork." Lambert was presented with a certificate and \$50 for her presentation.

Mona Wahby, Wayne State University, Troy, MI, took fifth place with her presentation, "Capitan Induction of Gastric Mucosal Cell Proliferation: Role of Tyrosine Kinases and Epidermal Growth Factor." She also received a certificate and \$50 for her efforts.

Exhibitor Review

A & B Process Systems Corp.

Process Flow Systems Specialists displayed a broad range of Products and Services which include Process Flow Engineering, Project Management, Process/Mechanical Installation and Custom Stainless Steel Fabrication/Machining. A & B Process Systems vast experience with the Design/Implementation of CIP Units/Systems and Auxiliary Equipment was featured. Other items included Tanks, Transfer Panels, Manifolds, Platforms and Hanger Accessories.

Circle Reader Service No. 231

Advanced Instruments, Inc. Needham Heights, MA

Advanced Instruments presented two new products for the dairy laboratory: the Fluorophos Test System®, an AOAC-approved 3-minute quantitative assay for alkaline phosphatase activity in all fluid dairy products, including cheese; and the 4D3, a microprocessor controlled cryoscope, which requires no cooling bath, runs 45 tests per hour, and automatically displays % added water. Call (617)449-3000 for a demonstration.

Circle Reader Service No. 232

American Type Culture Collection (ATCC)

Microorganism, Cell Lines, Viruses, and Recombinant Genetic Materials (clones, probes, libraries, oncogenes, vectors, hosts, molecularly clones viruses) from the SOURCE for biological cultures. The ATCC is a nonprofit organization dedicated to the preservation and world-wide distribution of biological cultures for industry, research and education. Free catalogues are available with extensive information on all ATCC cultures. (800)638-6597.

Circle Reader Service No. 233

AquaTec, Inc.

AquaTec is an equipment/supply and turn-key construction company specializing in industrial water and wastewater treatment. Our registered professional engineers are experienced in most engineering disciplines such that we can offer complete turnkey services. We have built treatment systems for Food, Dairy, Pulp and Paper, Chemical, Plating, Landfill Leachate and other industrial wastes. AquaTec provides innovative solutions to wastewater problems.

Circle Reader Service No. 234

Aquionics Inc. Erlanger, KY

Manufacturer of Ultraviolet Disinfection Equipment for use in Food and Dairy Industries.

Applications include water, air and surface disinfection. Use UV to kill Microorganisms in plant water, sweet water, cottage cheese curd wash water and all captive water systems.

Aquionics have experienced personnel on hand to review your application.

Circle Reader Service No. 235

Atkins Technical, Digital Food Thermometers

3401 SW 40th Blvd., Gainesville, FL 32608
Tel: (800)284-2842. Atkins manufactures a line of digital thermocouple thermometers and 150 thermocouple probes. Kits for the sanitarian, restaurant operator, dairy, food processor, or food safety specialists with accuracy and durability in mind. Featured are O-ring sealed digital thermometers with an accuracy of $\pm 1^\circ\text{F}$, and multiple probe kits.

Circle Reader Service No. 236

Becton Dickinson Microbiology Systems

Becton Dickinson Microbiology Systems, Cockeysville, MD displayed products utilized for the cultivation and identification of foodborne pathogens, including *Salmonella* and *Listeria*. In addition, the company has autoclave controls and a complete line of bottled media utilized in sterility testing and environmental monitoring

Circle Reader Service No. 237

L. J. Bianco and Associates

Consultants in Food Production Controls and Production Operations. We provide QC and QA Audits; Evaluation Programs in Sanitation and QC; Technical and Employee Training. We have GMP (Good Manufacturing Practices) and GSP (Good Sanitation Practices) manuals and training slides, booklets and videos. We have plant and warehouse sanitation and pest control procedures and programs. Expert Witness on Product Quality, Plant Sanitation and Plant QC and QA.

Circle Reader Service No. 238

Capitol Vial, Inc. New Tamper Evident Vials

Capitol Vial introduced their All New Tamper Evident and Tamper Proof Vials, produced in a class 10,000 FDA certified clean room. Capitol Vial manufactures one piece, hinged top cap, leak proof, airtight (over 30 psi internal pressure) plastic sterile vials. In addition to various size vials, Capitol has a complete line of accessory items such as: automatic vial opener and closer, styrofoam vial shippers, poly cell rafts and wire racks to transport vials.

Circle Reader Service No. 239

Chem Bio Consultants and Laboratories

Chem Bio is an independent laboratory and consulting organization serving the food, cosmetic, and pharmaceutical industries with expertise in the areas of testing, consulting, education, and research. Microbiological and chemical testing is done according to FDA, USDA, AOAC, and USP methods. Chem Bio is a USDA recognized and IDPH certified laboratory and operates under the direction of Dr. Robert H. Deibel.

Circle Reader Service No. 240

Commercial Testing Laboratory, Inc.

Internationally recognized independent laboratory founded in 1952. We provide chemical and microbiological analyses for the food industry, agribusiness arena, as well as all generators of wastewater. Our staff of 40 pros, 7 of which are degree biologists or chemists, stands ready to perform tests you need; accurately and quickly. Please let us know how we can help you. (800)962-5227. FAX (715)962-4030, (715)962-3121. Ask for Arlan Henke or Pam Cane.

Circle Reader Service No. 241

Custom Control Products, Inc.

We are an Electrical Process Engineering Group that designs and builds Electrical Automation Control Systems for the Food, Dairy, and Beverage Industries. Custom Control Products seeks to provide our customers with the most cost effective systems, allowing them to grow and serve the needs of their customers. By providing the highest quality Process/CIP Control Design, together with Field/Start Up Service, we offer a complete Engineering package.

Circle Reader Service No. 242

DQCI Services Inc.

DQCI Services, Inc. understands your need for consistent, dependable, accurate component milk samples. After all, we know your profits are hanging in the balance ... and there's not much room for error. So, whether you need high-quality control and somatic cell samples for calibrating your testing equipment or custom dairy-related testing, don't take chances. Depend on DQCI Services.

Circle Reader Service No. 243

Difco Laboratories Microbiological Testing Supplies

For nearly 100 years, Difco Laboratories has manufactured quality products for microbiologists worldwide. We are the market leader in materials for Salmonella, Listeria and other microbiological examination of food products. Difco invites you to contact our Technical Service Dept. for Product Performance Inquiries and Information, or to discuss new product ideas TOLL FREE: (800)521-0851.

Circle Reader Service No. 244

Diversey Corp.

Featuring Shur-Graph™ for Diagnostic Monitoring and data transmission of your plant's cleaning and sanitation operation. Shuregel™ Spray Gel cleaner that clings to surfaces allowing for extended contact time for better biological cleaning. Water treatment programs. Monitor test strips.

Circle Reader Service No. 245

EEV, Inc.

EEV's P7000 Thermal Imaging Systems has been specifically developed for the food industry. The camera, using thermal images, can monitor the temperatures of cooked and uncooked packaged foods to ensure consistency of quality, and that freezing/chilling has occurred uniformly within the required limits. Temperature can be read to ±1°F accuracy.

Circle Reader Service No. 246

Educational Testing Services/ COPA

Educational Testing Service/Center for Occupational & Professional Assessment (ETS/COPA) provides the Food Protection Certification Program to test the knowledge of food service personnel responsible for prevention, detection and correction of foodborne illness in food service establishments. For more information contact the Program Director, Betsy Willey, (215)750-8427.

Circle Reader Service No. 247

Charles Felix Associates

Charles Felix Associates is a consulting firm specializing in public health promotion, particularly in the area of food safety. The CFA exhibit offered sample sof CFA publications: *Food Protection Report* and *Food Talk*; also materials from CFA clients relating to single service (the Foodservice & Packaging Institute) and ice sanitation (the Packaging Ice Association).

Circle Reader Service No. 248

Foss Food Technology Corporation

BactoFoss - Rapid, automatic bacterial count in raw meat and milk. Performs bacterial count in raw milk in just 3 minutes. AutoSampler - For inline continuous sampling. Gives truly representative samples of milk and other fluids flowing in pipeline systems. MMA90 - Microwave moisture analyzer gives reliable, accurate microwave moisture/solids testing at a reasonable cost. Complete determination achieved in minutes.

Circle Reader Service No. 249

H B Fuller Company Monarch Division

Monarch demonstrated the Full-Guard Reporter CIP monitoring system during a simulated wash cycle. The demonstration unit will plot flow rate, temperature, and conductivity versus time to generate a graph printout of the wash cycle.

Monarch also featured its new non-phosphate cleaning program for food plants, including six new non-phosphate products.

For more information call Monarch at (612)781-8071.

Circle Reader Service No. 250

Glengarry Biotech Div. of Flockton Analytical

The Company is dedicated to supplying analytical tests for food safety. These tests are in kit form. Displayed were Redigel, the Pectin Gel Agar replacement with the featured product Cholicrome II. Also on display was the BR Test for the detection of Veterinary Drug Residues in Milk, Meat, Fish, Egg and Honey. Phone: (613)936-2722; FAX: (613)936-2716.

Circle Reader Service No. 251

GRiD Systems Corporation

GRiD Systems Corporation manufactures and markets a comprehensive range of battery-powered laptop computers, industry standard desktop computers, operating systems, software development tools, portable peripherals and electronic mail/networking systems. GRiD, with installed systems in more than one third of Fortune 500 companies, has a worldwide direct sales and support organization.

GRiD displayed its breakthrough handheld computer, GRiDPAD, at the recent IAMFES exhibit. GRiDPAD is a fully MS-DOS compatible keyboardless computer that accepts hand-printed characters. It weighs 4.5 pounds and is shaped like a clipboard.

Circle Reader Service No. 252

Gustafson Inc., Plano, TX Automatic Sampler Div.

Gustafson displayed a new Dairy Sampler for sampling milk powder in gravity chutes and hoppers. The sampler is USDA approved for 3A Dairy applications and is constructed of 304 SS with high polish auger and Tri-Clover connections for quick breakdown and cleaning. The sampler can be used with a special sample viewing chamber for on-line moisture control using NIR type equipment. Contact Joseph Armao for further details at (214)985-8877.

Circle Reader Service No. 253

Hach Company Loveland, CO (800)227-4224

Hach Company produces complete systems for analysis of food and agricultural products, water and wastewater. Products featured include microbiological and chemical testing equipment such as Paddle and Swab Testers, Disinfectant Testing Equipment and Kits, ColiQuik (simultaneous total coliform and *E. coli* testing), Total Bacterial Direct Count Kit (AODC), DR/3000 Spectrophotometer, and Portable and Laboratory pH/ISE meters and electrodes.

Circle Reader Service No. 254

Hub States Corporation

Manufacturer of commercial and institutional insecticides for use in food and dairy industries. Product line includes: recyclable aerosol insecticides, automatic insect control systems, metered aerosol dispensers, dispenser aerosol refills, liquid ready-to-use insecticides both residual and nonresidual, bird control, rodenticides, and odor control products.

Free catalogs are available with extensive information on all H.S.C. products 800-428-4416.

Circle Reader Service No. 255

IDETEK San Bruno, CA 800-IDETEK1 (-IDETEK2 in CA)

IDETEK is the leader in bringing biotechnology, convenience and reliability to food and dairy quality control. The LacTek™ family of

milk antibiotic residue tests is the fastest growing product in the industry. All LacTek kits use the exact same procedure and can be run simultaneously. The inexpensive LacStation II™ reduces technician time to 2 minutes and produces printed, objective test results. Residue tests for meat were also displayed.

Circle Reader Service No. 256

IDEXX Corporation

IDEXX Corp., the world leader in biodetection, manufactures the CITE® and CITE® Probe® lines of advanced dairy and food quality assurance tests. These easy-to-use tests provide accurate answers in minutes - making them ideal for field or laboratory use. Call for information on new antibiotic residue tests.

Circle Reader Service No. 257

Klenzade, A Service of Ecolab, Inc.

Klenzade is a full service supplier of sanitation products and systems for the dairy and food processing industries. Featured products included solid products, promoting ease of handling, safety and economy, the Sentry monitoring system and P3 oxonia active, non-foaming sanitizer.

Circle Reader Service No. 258

Michelson Laboratories, Inc.

A complete independent analytical testing laboratory conducting chemical, microbiological, and microanalytical analysis on foods, dairy products, environmental, pesticides, etc.

Also offering: Milk Calibration samples for Infra-red Milk Analyzer and Electronic Somatic Cell Count.

Circle Reader Service No. 259

Micro Diagnostics, Inc.

Manufacturer of prepared culture media serving the needs of microbiologists and laboratory technicians. Our reputation for producing at competitive prices and being a dependable supplier are well established. We also provide dehydrated media, microbiological supplies and equipment. Custom services for your specific needs are available (specialty formulations, special packaging requirements, custom quality control procedures).

Circle Reader Service No. 260

MIDCO

MIDCO exhibited the complete line of Mojonner Sample Bags and, also, bags for use in Stomacher lab blenders. Mojonner bags are used

world wide for collecting and transporting milk, food and water samples for lab testing. Mojonner Sample Bags are 20% thicker than other sample bags and their unique construction gives 20 & 33% larger top openings on the two most popular sizes. Top quality bags at competitive prices. Call (608)825-6633 for information.

Circle Reader Service No. 261

Minnesota Valley Testing Laboratories

Independent laboratory which offers confidential microbiological and chemical analyses of food, water, agricultural, and environmental samples. (507)354-8517.

Circle Reader Service No. 262

Monsanto Agricultural Company

The Monsanto Agricultural Company, based in St. Louis, MO, is an international company that develops and markets products for plant and animal agriculture specifically designed to meet the consumer's and farmer's needs. We are pledged to developing products that will aid the agricultural industry deliver safe, abundant and affordable food to the consumer's table through the use of innovative and environmentally sound principles.

Circle Reader Service No. 263

Nasco

Nasco featured their new Stomacher® bags with white write-on strips designed for use with Stomacher® lab blenders at this year's convention. The Stomacher bags range in size from 4-1/2" x 4-1/2" to 7-1/2" x 11-3/4". Nasco's complete line of Whirl-Pak bags, and other related sampling equipment were also displayed.

Circle Reader Service No. 264

National Automatic Merchandising Association

NAMA presented a new video designed for training vending service personnel on cleaning hot beverage, cold cup drink and cold food vending machines. NAMA also displayed information on the many food products sold by the vending industry through machines.

Circle Reader Service No. 265

The National Food Laboratory

The National Food Laboratory, Inc. (The NFL) provides reliable, comprehensive and confidential research, development and consulting services to the food industry as follows: Analytical Services; Microbiology/Sanitation; Process Development/Engineering; Product Development; Sensory Evaluation/Market Research.

Circle Reader Service No. 266

Nelson-Jameson, Inc.

A food and dairy laboratory specialist, Nelson-Jameson stocks a complete line of lab supplies and equipment for the industry. Staff experts are available to help you select and use appropriate products for food & dairy testing. Stocked for immediate shipment are hundreds of products, from scores of manufacturers, such as GARVER, CORNING, KIMBLE, BBL & OHAUS. For a free catalog, call (800)826-8302 or (715)387-1151.

Circle Reader Service No. 267

Northland Food Lab. Green Bay & Manitowoc, WI

41 years in microbiology and consulting services. Microbiological testing for *Salmonella* and *Listeria*. Primary nutrients testing for Proximabohydrates, fats & oils, vitamins, minerals & metals, residues & additives. Milk testing for all components for payment. Consulting services including HACCP Design, Sanitation Audits, Regulatory Compliance, Pathogen control, sampling plans, nutritional information. Call (414)682-7998 or (414)336-7465.

Circle Reader Service No. 268

Organon Teknika Durham NC 800-654-0331 800-682-2666

Organon Teknika offers a complete line of rapid Microbiology Test Kits. Two EIA assays are available: Salmonella-Tek is a 90 minute assay for the detection of *Salmonella*; Listeria-Tek for the detection of *Listeria*. Both systems are complemented by Micro-ID: Micro-ID enteric offers 4 hour identification of Enterobacteriaceae; Micro-ID Listeria provides rapid ID of all listeria species. Pathotec Cytochrome Oxidase aids in screening non-enteric and non-listeria.

Circle Reader Service No. 269

Penberthy Inc. P.O. Box 112 Prophetstown, IL 61277

Penberthy manufactures the Model HSW 750 series of steam/cold water mixing washdown

stations. The Models 750L, 750 and 750H are designed for use with low, medium and high pressure steam supplies. Model 750D provides an economical method of injecting detergent into hot water output of the Model HSW 750. Penberthy also manufactures gages, gage valves, 8 flow indicators, jet products and the Levelmark line of electronic level controls. (815)537-2311.

Circle Reader Service No. 270

Penicillin Assays, Inc.

Introducing the Charm Farm Test, a new generation microbial assay that detects beta lactams, sulfonamids (5-15 ppb) gentamicin (40 ppb) tetracycline (250 ppb) etc. in a single assay. Charm receptorgram combines the simplicity of Charm Test II with the specificity of HPLC. New semi-automated Charm Test II system tests up to 100 samples for seven families plus aflatoxin. Used in central laboratories.

Circle Reader Service No. 271

Promega Corporation

Promega, a leading biotechnology company, introduced a simple, 2-hour test for total viable organisms (bacteria, yeasts, molds) in raw milk. Rapid tests for *Salmonella*, *Staph aureus* and *Campylobacter* will be available soon. Promega also offers expertise and facilities for producing genetically engineered and improved food processing enzymes.

Circle Reader Service No. 272

Q Laboratories, Inc.

Q Laboratories, Inc. is an independent testing and consulting laboratory providing microbiological and analytical chemistry support to the dairy, food, beverage, cosmetic and specialty chemical industries. Services provided include QC/Release Testing, Nutritional Labeling, complete pathogen testing, plant sanitation audits and antimicrobial testing of preservatives and sanitizers. Phone: (513)662-1300.

Circle Reader Service No. 273

Radiometer America Malthus Microbiology Systems

Newly introduced to the Malthus line of Automated Microbiology Systems: Malthus 1000S Automated Salmonella Analyzer with AOAC approved disposable cells. The fastest, simplest, automated screening technique available. Malthus disposable total count, coliform and yeast, mold cells, prefilled with appropriate media. Just inoculate and test. Talk with Radiometer to determine which of many Malthus Systems can make your microbiology lab state of the arts!!

Circle Reader Service No. 274

Rio Linda Chemical Co., Inc.

RLCC is a specialty company dedicated to Chlorine Dioxide products. We have a patented generation system for Water Treatment as well as patented ClO₂ Conveyor Lubricant for conveyors. Literature is available by writing RLCC at 410 N. 10th Street, Sacramento, CA 95814 or call (916)443-4939.

Circle Reader Service No. 275

Sani-Matic Systems Division of DEC International

Sani-Matic displayed material describing major equipment lines of their plant sanitation equipment. Their product line includes: CIP Wash Tanks, CIP Systems, Central High Pressure Systems, Continuous Wash Tunnels, In-Line Strainers, CIP Spray Equipment, Rotary Drum Strainers and Parts Handling Equipment. Sani-Matic designs equipment to suit each processor's particular application and budget.

Circle Reader Service No. 276

Serim Research Corporation

Serim Research develops and manufactures "on-site" tests for disinfectants. These include reagent strip tests for chlorine, iodine, bromine, glutaraldehyde, formaldehyde and peroxide. Custom development for specific applications is also available.

Circle Reader Service No. 277

Silikal North America, Inc.

Silikal North America, Inc. manufactures acrylic resins and polymer concrete coatings and restoration. Materials cure to 6,000+ PSI and full chemical resistance in about one hour to reduce down time. Impact, abrasion and chemical resistant. Silikal acrylics are the fast, safe, reliable solution to concrete problems. The materials are manufactured in the USA.

Circle Reader Service No. 278

Silliker Laboratories Group, Inc.

A leading independent testing, consulting and research laboratory providing services to the food industry. Services include: analytical microbiology and chemistry, research, technical services and consulting, video and presentation graphics production, and education and training. Labs are located in CA, IL, OH, GA, NJ, PA and Canada. For more information call (708)756-3210. Or write us at 1304 Halsted Street, Chicago Heights, IL 60411.

Circle Reader Service No. 279

SmithKline Beecham Animal Health

SmithKline Beecham Animal Health simplifies Q.A. with technology to screen food products for aflatoxin and antibiotic residues. The PENZYME III Antibiotic Residue Screen Test for milk detects beta-lactam antibiotics. SIGNAL AccuCup™ Aflatoxin Detection Test screens to 20, 10 and 5 ppb aflatoxin in corn, and raw and roasted peanuts. SIGNAL Sulfamethazine, Gentamicin and Neomycin Detection Tests screen milk, tissue, and serum for antibiotic residue.

Circle Reader Service No. 280

Sparta Brush Company, Inc.

Sparta Brush Company has developed a Tri-Zone color-coded brush program which is designed to help food service facilities and food processing plants prevent bacterial cross contamination. The Tri-Zone program will keep brushes in their designated work areas, thus helping to control the transmission of bacteria.

Circle Reader Service No. 281

Spiral System Instruments Bethesda, MD (301)657-1620

The Spiral System, used in over 1,500 labs worldwide, automates Micro Labs. The Spiral Plate, AOAC approved and listed in the BAM manual as a semi-automated method, eliminates the need for most serial dilutions; the Laser Bacteria Counter accurately reads bacterial colonies in 4.3 seconds. CASBA Microbiology Software Modules, used with the Laser Counter, include: Bacterial Enumeration, Preservative Effectiveness, Kill Curves and MIC (SGE) testing.

Circle Reader Service No. 282

Taylor Company Rockton, IL

Taylor Company, the leading manufacturer in soft serve and shake dispensing equipment, has recognized product safety as a major concern in the foodservice industry. Taylor has engineered a new, NSF approved Labor Saver™ series of freezers, assuring product safety through a timed heat treatment process.

Circle Reader Service No. 283

Tekmar Company Stomacher Lab Blender

Food Microbiology: The Stomacher may be used for bacterial counts in food samples including fruits, grains, meats, and dairy products. Damage to microbial cells and tissues is minimal. A temperature rise in the sampling is reduced during blending.

Features:

- No sample cross contamination
 - No machine clean up;
 - Fast operation
- Circle Reader Service No. 284

3-A Symbol Council

The 3-A Sanitary Standards Symbol Administrative Council authorizes equipment manufacturers to display the 3-A Symbol on Equipment which complies with existing 3-A Sanitary Standards. The 3-A Symbol is recognized world wide as a mark of excellence on Dairy and Food Processing equipment. Information on the function of the program, its administration and benefits was distributed at the 3-A Symbol Council Booth.

Circle Reader Service No. 285

3M Microbiology Products

Featuring quality control made easy. Report immunoassay is the easiest method available for *Salmonella*, *Listeria* and *Staphylococcal Enterotoxin* testing. Petrifilm plates are quick and simple; just inoculate incubate and read. The Petrifilm plate family includes plates for: Aerobic Count, Coliform Count, E. coli Count, Yeast and Mold

Count. NEW-Petrifilm Test Kit-L for liquid samples and the Petrifilm Test Kit-HEC for hemorrhagic E. coli 0157:H7.

Circle Reader Service No. 286

Tuohenhagen North America Milwaukee, WI

Tuohenhagen specializes in Process Integration and CIP. The integration of process equipment in the sanitary industry is accomplished by addressing three essentials: Sanitary Matrix Piping, Cleaning in Place and Process Control. Our single seat and double seat valves together with other Tuohenhagen components and systems are available to end users and OEM's at reasonable prices and are designed to permit completely automated plant operations.

Circle Reader Service No. 287

Unipath Company Oxoid Division

The Oxoid Division displayed a range of diagnostic kits including an *E. coli* 0157 latex test, 5 RPLA Kits for bacterial toxins, a *Salmonella* Rapid test, and Aflatoxin test kits for total and M,

aflatoxins. We have a new *E. coli* Stable Toxin EIA test, and a complete line of dehydrated media, supplements, and peptones.

Circle Reader Service No. 288

Walker Stainless Equipment Company, New Lisbon, WI

Quality manufacturer of Stainless Steel Sanitary Transportation tanks, storage tanks, processing tanks, and custom fabrications for food, dairy, chemical, pharmaceutical, and biotechnical industries.

Circle Reader Service No. 289

Weber Scientific

Weber Scientific distributes Laboratory and Sanitarian Supplies to the Dairy, Food, Water and Wastewater Industries. On Display at the Weber booth during the IAMFES Exhibit, were items ranging from Gerber and Babcock equipment for butterfat analysis to brushes and antimicrobial cleaners. Included also were equipment and supplies needed for bacteriological testing of water and wastewater.

Circle Reader Service No. 290

Please circle No. 141 on your Reader Service Card

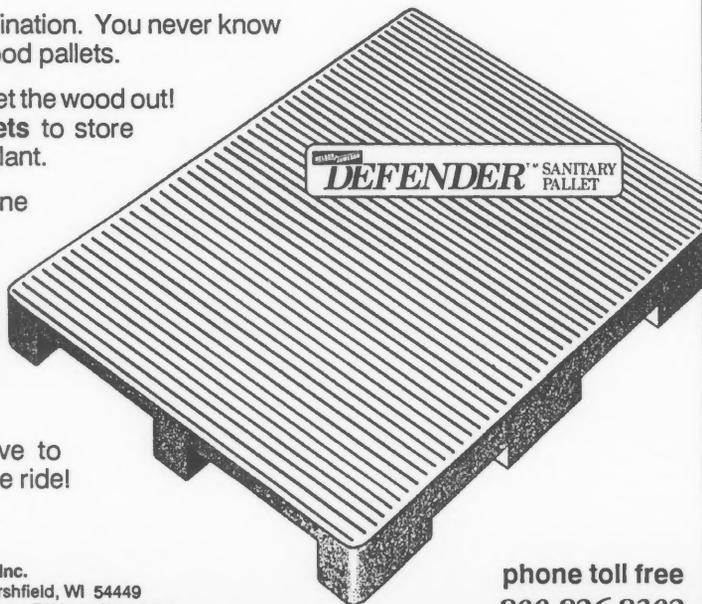
Guess what's riding on your wood pallets?

Bacteria. Dirt. Insects. Contamination. You never know what rides into your plant on wood pallets.

But you can defend against it. Get the wood out! Use **Defender™ Sanitary Pallets** to store products and supplies in your plant.

USDA/FDA accepted polyethylene does not support bacterial growth. Solid top protects products against moisture on the floor. No splinters or nails to tear bags or boxes. Cleanable. Durable. Lasts far longer than wood.

And, of course, you don't have to guess what's come along for the ride!



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City of Norwalk
Norwalk

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Robinson

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St. Paul

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Wayne Weldon
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Put MVTL to the test

Put Minnesota Valley Testing Laboratories to the test. You'll find a conscientious group of professionals whose first concern is helping you achieve quality control for all your food products. MVTL offers competitive prices on simple and complex procedures — microbiological, organic and inorganic chemical testing.

Put us to the test. We guarantee fast, turn-around and accurate testing. You'll see why hundreds of food and dairy processors rely on MVTL. They've put us to the test, time and time again. And we passed with flying colors.

For more information about how MVTL can handle all your testing requirements, call Kate O'Connor at 800-782-3557.



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 Manton Gaulin Pump Model 2700 HCPG8TPN.
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- Silo Tanks
- Horizontal Storage Tanks
- Culture Processors
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CIRCLE READER SERVICE NO. 353

BENTLEY INSTRUMENTS, INC.

Milk Testing Equipment

New and rebuilt milk analyzing equipment for fat, protein, lactose and solids testing. Installation, training, parts and service available.

Call for more information
 (612) 448-7600
Bentley Instruments, Inc.
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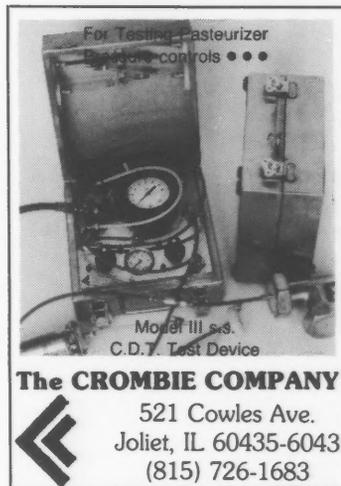
CIRCLE READER SERVICE NO. 330

- 1 — 30,000 Gal. Cold Wall Silo w/front Agit.
- 1 — 14,500 Gal. Horizontal Storage Tank w/Agit.
- 1 — 12,000 Gal. Horizontal Storage Tank w/Agit.
- 1 — 10,000 Gal. Cold Wall Storage Tank w/Agit.
- 1 — 8,000 Gal. Cold Wall Rect. Storage Tank w/Agit.
- 2 — 7,000 Gal. Horizontal Storage Tank's w/Agit's.
- 2 — 6,000 Gal. Cold Wall Storage Tank's w/Agit's.
- 3 — 1,000 Gal. Dome Top Processor's w/Wide Sweep Agit.
- 1 — 800 Gal. Cherry Burrell Dome Top Processor w/ Agit.
- 1 — 150 Gal. Lanco Likwifier w/heating & cooling surface.
- 1 — 40 H.P. Cleaver Brooks Boiler.
- 2 — 35,000# Damrow Cheddar Vat's w/external Tubular Heat Exchange.



Div./W. M. Sprinkman Corp.
 504 Clay St., Waterloo, IA 50704 1-800-553-2762

CIRCLE READER SERVICE NO. 292



The CROMBIE COMPANY

521 Cowles Ave.
 Joliet, IL 60435-6043
 (815) 726-1683

CIRCLE READER SERVICE NO. 339

Services / Products



DQCI Services, Inc.

Bacteriological & Chemical Testing

- Component Samples for Infrared Equipment
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Maricopa County Department of Health Services, Division of Public Health is currently seeking applicants to fill the position of Chief, Bureau of Environmental Health. This management level position requires a self-motivated, goal oriented individual who can work as a team member in an Environmental Services unit which also includes air quality, engineering, and vector control.

Qualified applicants must have a Master's Degree in Public Health or related field and a minimum of six years of increasingly responsible experience in the field of public health sanitation. Three years of supervisory experience as a Sanitarian is also required. Experience working in a multi-disciplined environmental health program is desirable. Applicants must also be currently registered as a Sanitarian in the State of Arizona or qualified for registration through reciprocity or testing within one year of appointment. Base salary is \$36,337 per year. Appointment over the base is possible depending on experience.

Maricopa County, situated in central Arizona, includes the Phoenix greater metropolitan area and serves the needs of more than two million residents. The Bureau of Environmental Health currently consists of sixty-two Registered Sanitarians and seven clerical staff. Program areas include retail food, swimming pools, transient dwellings, water, sewerage, and environmental nuisance investigations.

If you are interested in this position, please send a current resume to:

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Coming Events

1990

December

•**3-5, Pesticide Applicator Certification Seminar**, Okumura Biological Institute, Clarion Hotel, Sacramento, CA. For more information contact George Okumura, 6669 14th Street, Sacramento, CA 95831 (916)421-8963.

•**3-5, Introduction to Food Processing Systems**, UC Davis, Davis, CA. For more information contact Sharon Munowitch, University Extension, University of California, Davis, CA 95616-8727, (916)757-8899.

•**4-5, Pests Associated with Food Industry and Environmental Sanitation Seminar**, Okumura Biological Institute, Clarion Hotel Sacramento, CA. For more information contact George Okumura, 6669 14th Street, Sacramento, CA 95831 (916)421-8963.

•**6-7, Advanced Course on Pest Recognition and Food Industry Problems**, Okumura Biological Institute, Clarion Hotel, Sacramento, CA. For more information contact George Okumura, 6669 14th Street, Sacramento, CA 95831 (916)421-8963.

•**10-12, Microbiology and Engineering of Sterilization Processes** three-day course will be given at the University of Minnesota, St. Paul Minnesota campus. For more information contact Dr. William Schafter, Department of Food Science and Nutrition, 1334 Eckles Avenue, St. Paul, MN 55108 (612)624-4793.

•**10-14, Recombinant DNA Techniques**, sponsored by Life Technologies, Inc., will be held at Life Technologies Training Center Workshops, Germantown, MD. For more information contact Garland Tinney, Workshop Coordinator, at (301)921-2250

•**11-13, Flavours from Agro-Food Products and By-Products International Symposium**, sponsored by APRIA (Association pour la promotion industrie agriculture), will be held in Paris. For registration information contact APRIA, 35 Rue du General Foy 75008 Paris.

•**11-13, Producing Top Quality Mexican Foods**, Country Side Inn, Costa Mesa, CA. For more information contact Sharon Munowitch, University Extension, University of California, Davis, CA 95616-8727, (916)757-8899.

•**12-18, American Society of Agricultural Engineers** will be sponsoring the **International Symposium on Agricultural and Food Processing Wastes**. For more information contact: Jon Hiler, American Society of Agricultural Engineers, 2950 Niles Road, St. Joseph, MO 49085 (616)429-0300.

1991

January

•**7-10, Better Process Control School**. For more information contact Ralph L. Price, Ph.D., University of Arizona, Department of Nutrition and Food Science, 308 Shantz Building, Tucson, AZ 85721, (602)621-1728.

•**7-16, 41st Annual University of Maryland Ice Cream Short Course**. For more information contact Dr. James T. Marshall, Department of Animal Sciences, University of Maryland, College Park, MD 20742, (301)405-1375.

•**21-22, Emerging Issues in Food Science and Technology** is the theme for the Fourth Annual Southern California Food Industry Conference to be held on the campus of Chapman College in Orange, CA. For more information contact Walt Clark, Chapman College, (714)997-6869 or Patrick Cochran, International Multi Foods, (714)782-7822.

•**22-23, Third Annual Southern California Food Industry Conference** will be held on the campus of Chapman College in Orange, California. For more information contact: Walt Clark, Chapman College, Food Science & Nutrition Department, Orange, CA 92666 (714)997-6869 FAX: (714)532-6048 or Patrick Cochran, LaLoma Foods, P.O. Box 8863, Riverside, CA 92515 (714)351-4300 FAX: (714)351-3635.

•**29-February 1, Better Process Control School**. For more information contact Mark Daeschel, Ph.D., Oregon State University, Dept. of Food Science & Technology, 100 Wiegand Hall, Corvallis, OR 97331, (503)754-3463.

February

•**13-14, Dairy and Food Industry Conference**, The Ohio State University, Department of Food Science & Technology, 2121 Fyffe Road, Columbus, OH 43210-1097. For more information contact Dr. John Lindamood (614)292-7765.

•**20-22, National Research & Development Conference on the Control of Hazardous Material**, sponsored by the Hazardous Materials Control Research Institute, to be held at the Disneyland Hotel, Anaheim, CA (301)589-0182.

March

•**4-7, Better Process Control School**. For more information contact William Schafer, Ph.D., University of Minnesota, Department of Food Science and Nutrition, 1334 Eckles Avenue, Room 265, St. Paul, MN 55108, (612)624-4793.

•**6-7, CDR Cheese Research and Technology Conference** will be held at the Holiday Inn West Towne, Madison, WI. Sponsored by the Center for Dairy Research, University of Wisconsin-Madison. For additional information, call Sarah Quinones, at (608)262-2217.

•**10-13, IIEFP '91**, sponsored by the Food Processing Machinery & Supplies Association, to be held at the McCormick Place, Chicago, IL. For information contact FPM&SA at (703)684-1080.

•**11-14, Better Process Control School**. For more information contact Robert Price, Ph.D., University of California, Department of Food Science, 250 Cruess Hall, Davis, CA 95616, (916)752-2194.

•**13, Indiana Dairy Industry Conference**, sponsored by the Food Science Department at Purdue University. For more information contact James V. Chambers, Purdue University, (317)494-8279.

•**18-20, Better Process Control School.** For more information contact Jack Matches, Ph.D., University of Washington, HF-10, Institute for Food Science and Technology, Seattle, WA 98195, (206)545-1941.

•**18-21, Better Process Control School.** For more information contact Jorg Augustin, Ph.D., University of Idaho, Food Research Center, Moscow, ID 83843, (208)885-6456.

•**25-28, Better Process Control School.** For more information contact Winston Bash, Ph.D., Ohio State University, Food Industries Center, 140 Howlett Hall, 2001 Fyffe Court, Columbus, OH 43210, (614)292-7004.

•**25-28, Better Process Control School.** For more information contact Walter L. Clark, Ph.D., Chapman College, Food Science & Nutrition Department, 333 North Glassell, Orange, CA 92666, (714)997-6869.

•**25-29, Better Process Control School.** For more information contact Robert C. Wiley, Ph.D., University of Maryland, Food Science Program, Holzappel Hall, 1122A, College Park, MD 20742-5611, (301)454-2829.

•**25-29, Mid-West Workshop in Milk and Food Sanitation,** The Ohio State University, Department of Food Science & Technology, 2121 Fyffe Road, Columbus, OH 43210-1097. For more information contact Dr. David Dzurec (614)292-7723.

•**26-28, Western Dairy and Food Industry Conference** to be held at the University of California-Davis. For more information contact John Bruhn and Shirley Rexroat, Department of Food Science & Technology (916)752-2191.

April

•**2-5, Better Process Control School.** For more information contact C.E. Johnson, Ph.D., University of Wisconsin, Department of Food Science, Babcock Hall, 1605 Linden Lane, Madison, WI 53706, (608)263-2013.

•**10, 41st Annual University of Maryland Ice Cream Conference.** For more information contact Dr. James T. Marshall, Department of Animal Sciences, University of Maryland, College Park, MD 20742, (301)405-1375.

•**15-18, Better Process Control School.** For more information contact James V. Chambers, Ph.D., Purdue University, Food Science Department, Smith Hall, W. Lafayette, IN 47907, (317)494-8279.

•**29-May 2, Better Process Control School.** For more information contact Gerald D. Kuhn, Ph.D., Pennsylvania State University, Department of Food Science, 116 Borland Building, University Park, PA 16802-7501, (814)863-2965.

May

•**13-16, Better Process Control School.** For more information contact D.L. Downing, Ph.D., Cornell University-NYSAES, Department of Food Science and Technology, Geneva, NY 14456, (315)787-2273.

•**Purdue Aseptic Processing and Packaging Workshop,** sponsored by the Food Science Department at Purdue University. For more information contact James V. Chambers, Purdue University, (317)494-8279.

•**13-17, Better Process Control School.** For more information contact Aurora S. Hodgson, Ph.D., University of Hawaii at Manoa, Department of Food Science & Human Nutrition, 1920 Edmondson Road, Honolulu, HI 96822, (808)948-6564.

June

•**17-20, Better Process Control School.** For more information contact Robert M. Grodner, Ph.D., Louisiana State University, Food Science Building, Baton Rouge, LA 70803-4280, (504)388-5206.

October

•**26-30, Food & Dairy Expo 91,** sponsored by Dairy & Food Supply Association, to be held at the McCormick Place, Chicago. For more information contact DFISA, 6245 Executive Boulevard, Rockville, MD 20852-3938 (301)984-1444.

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On My Mind . . .



By
Steven K. Halstead
IAMFES
Executive Manager

. . . is the 77th Annual Meeting

It is history, but the final chapters are not yet written. The Executive Board has met (four times in less than a week); all standing committees and ad hoc committees met and reported their activities; 126 speakers, spoke; delegates from 26 of our 32 affiliates met for over three hours to discuss items of concern to them; 67 exhibitors presented their products and services and educated us about them; 3 resolutions were presented and adopted by the assembly; 291 people tasted Chicago; awards were made to 10 people before 219 colleagues; officers were installed; and a total of 810 people registered for the meeting. Specific details are found on other pages of this issue and I encourage you to seek them out and read them.

The unwritten chapters involve the financial and evaluative aspects of the meeting. Our initial bill at the hotel was something over \$18,000 and generated considerable discussion. The diligence and negotiative abilities of the local arrangements committee particularly Terry Mitchell, Charlie Price and Ken Anderson, not only resulted in favorable pricing but also provided a clear documentation of what we received from the hotel. A complete accounting of the meeting will be made at the October Board meeting and reported later.

We are developing a survey/evaluation which will be going out shortly to those who attended. Since the past meeting is history and there is little that can be done to change it, the survey will concentrate on what we can do for next year. I ask that when you receive your survey, that you fill it out and return it immediately. What you have to say will have a great impact on our planning for next year's meeting.

. . . Is eggs

Saturday's paper informed me that the FDA has declared that eggs are now "potentially hazardous foods." You are all aware of the technical aspects and ramifications of this declaration.

As a consumer I have two concerns. 1) How long will it take for restaurants to comply with this? and 2) What should be my response to a restaurant that is not complying?

As to the first, what kind of a role does IAMFES have in this situation? Or should have? Clearly, the USDA has a mechanism of communicating its rules, but how long does that take. Can IAMFES play a role in it? Does it want to? To whom do we try to communicate? the public? our members??

The second concern is much more real. I love Caesar salads, hollandaise sauces and my breakfast eggs sunny-side up or soft boiled. Simply changing my life style to eliminate these really isn't the answer. I can "go looking for trouble" by ordering these items, and then making a fuss when they are served, but that's not very constructive.

Ever since I learned that eggs could be pasteurized, I have had great fun asking my food server if the restaurant serves pasteurized eggs. Generally, the question is met with a blank stare. No server has yet known off the top of the head. All have had to ask somebody. Few cooks have known. Since I have not found a restaurant serving pasteurized eggs, it is clear that voluntary compliance has not been overwhelming.

Which makes me wonder how long it will take to fully implement mandatory compliance. Will it ever happen?

. . . is a big upcoming job

At the Chicago Meeting, Bennett Armstrong's Food Service Committee distributed a draft copy of a brochure dealing with temporary food service.

The publication is written at a "laymen's" level. I immediately thought about our local Lion's Club pancake dinner, the church fish fry; the Junior classes spaghetti dinner; and the fireman's barbecue. All these, and they are just the tip of the iceberg, could use the information contained in the brochure. But how do we get it to them?

The committee intends that we think in terms of distributing camera ready slicks instead of a finished product. By sending the slicks to state and local health departments, they can print in their address as a contact source and then print them in quantity and distribute them. Not only will this save us money, it will also improve the chances of distribution.

The project represents a new direction for IAMFES. As far as I know, this is the first time that IAMFES has gone to the public with this kind of information. The potential for good that this project represents is tremendous. I find that exciting.

... Is Integrated Pest Management

I hope you noticed that a resolution dealing with Integrated Pest Management (IPM) was adopted at our annual meeting. Please turn to page 684 for details.

I have been aware of IPM for years in terms of its agricultural uses. Most of the IPM information on our Public Radio Station involves letting the farmer know the optimum times to apply herbicides and pesticides. It only makes sense that if one must use chemical controls, using them when they will do the most good means that smaller quantities will be needed. Smaller quantities mean that much less going into the environment. That isn't to say that all farmers use this information, but the better, more successful ones are. And it works! For the farmer and for the environment.

As the Resolution states, we endorse the concept and applaud the Institute of Food Technologists in their efforts to promote IPM.

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