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Sanitation

A PUBLICATION OF THE INTERNATIONAL ASSOCIATION OF MILK, FOOD AND ENVIRONMENTAL SANITARIANS, INC. OCTOBER 1996

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- **Ivan Parkin Lecture—Dr. Joseph Schwarcz**
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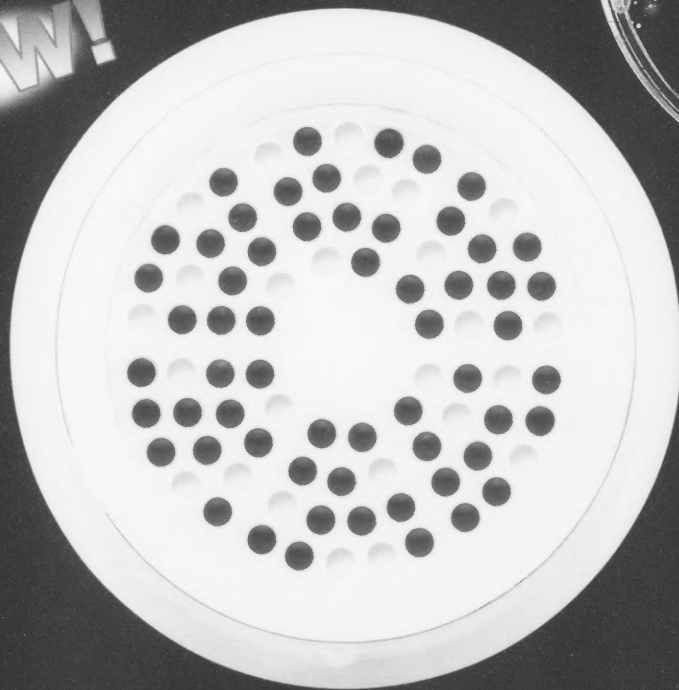


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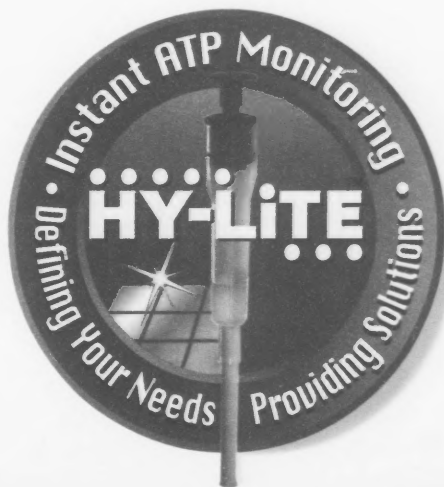
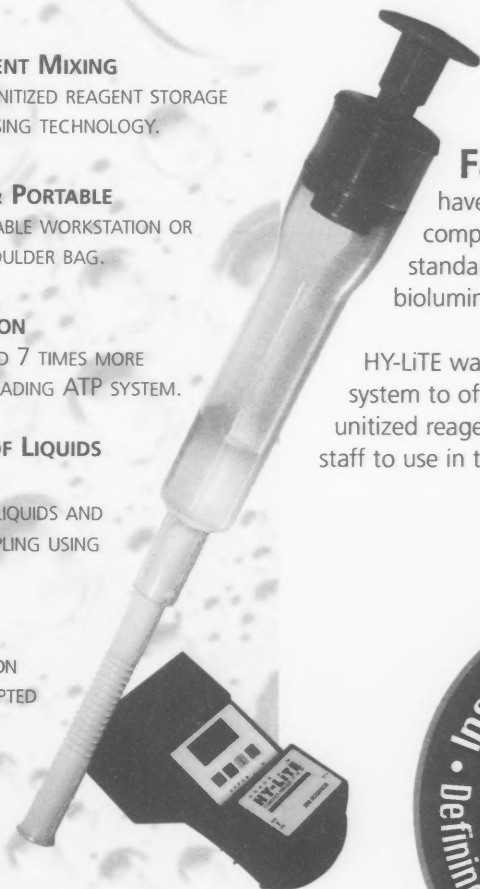
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Photo courtesy of IAMFES member, James R. Hartman. A season of care shows off a colorful onion harvest.

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OFF THE TOP

FROM THE PRESIDENT



By MICHAEL H. BRODSKY,
IAMFES President

“Reflections on the IAMFES 1996 Annual Meeting”

The 83rd Annual Meeting of IAMFES is becoming a fast fading, pleasant memory. As I reflect on our meeting in Seattle, there are images which will always remain vivid in my mind. My perspective of the meeting may have some similarities to your thoughts; but, as a member of the Executive Board, I was so involved in IAMFES business (board meetings, committee meetings, etc.) that being able to attend any symposia or technical presentation was a bonus. Certainly receiving the Presidential gavel from outgoing President Ann

Draughon will remain with me as a highlight of my professional career. Ann set such high performance standards for herself and the Board that it will be a difficult act to follow; but, with your support, I will try to live up to your expectations.

My thoughts of the '96 meeting focus initially on a last minute round table on *Cyclospora* that I chaired. This round table was initiated by Gale Prince and occurred on the afternoon of Sunday, June 30. Despite very little fanfare and almost no time for advertising, but with the support of Carol Mouchka in the IAMFES office, we were able to attract more than 150 food professionals to discuss this timely issue. *Cyclospora* was not the only late-breaking issue to be allocated time at the Annual Meeting. The symposia on *BSE* and *Tempests in a Teapot* were also put together on short notice. We should all take pride in the ability of our organization to be at the leading edge of current and emerging concerns in food safety and to be able to respond so rapidly in pulling together experts on such short notice.

One of the limitations that we face as a professional, non-profit organization, is our ability to ensure that top notch speakers can participate in our symposia and technical sessions. Certainly the involvement of International Life Sciences Institute (ILSI), since 1993, has enhanced the scientific and technical content of the meeting; but we still face problems in providing financial support for speakers. Many of us are finding it more and more difficult to secure travel funds for professional meetings, even when we are actively involved. Unfortunately, IAMFES has only limited funds available to provide support for speakers' expenses through the Foundation

Fund. We have, therefore, formed a task force, under the leadership of Ann Draughon, to investigate sources of outside funding that we could tap into to support/sponsor participants for symposia, poster or technical sessions. If you have any suggestions or would like to help this task force, please contact, by Internet e-mail, Ann Draughon (draughon@utk.edu) or myself (brodskm@gov.on.ca) or by telephone.

I have always viewed seeing old friends, meeting and renewing acquaintances with international colleagues, as an ongoing benefit of attending the IAMFES Annual Meeting. I appreciate being able to connect a face with a voice. Certainly this year was no exception. Registration almost reached 1,000; but was still “intimate” enough to allow everyone the opportunity to interact. Seattle is a beautiful city, with many outstanding sights and activities within easy walking distance from our hotel. I can honestly say that I did not have one bad food experience with any of the meals that I ate in various restaurants.

We are already looking forward to the 1997 IAMFES Annual Meeting at the Hyatt Regency Grand Cypress Resort in Orlando, Florida. As a result of all of the symposia topics you submitted during the '96 meeting, the Program Advisory Committee, under the leadership of John Cerveny, is in the process of developing a dynamite program for '97. Be There!

Your Board of Directors made a commitment to only consider holding the Annual Meeting in locations where there is affiliate support and interest. Although we're booked through 1999, there are opportunities for affiliates to host the annual meeting in the year 2000 and beyond. Our strength is our membership. Please help us to help you.

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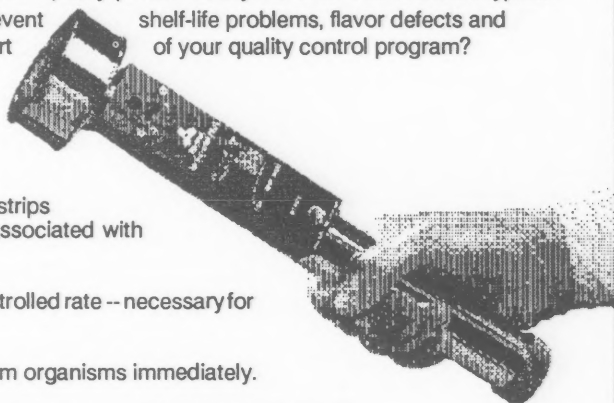
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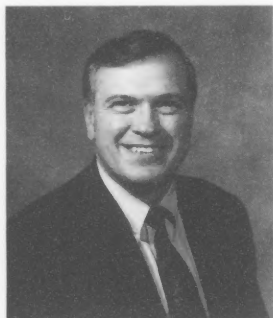
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Reader Service No. 173

PERSPECTIVES...

From the Executive Director



By DAVID M. MERRIFIELD,
IAMFES Executive Director

“They were wrong!”

They were wrong! They said that the 83rd IAMFES Annual Meeting wouldn't be well attended because it was being held in the northwest corner of the U.S. just before the U.S. Fourth of July holiday. They said because it overlapped with another related association's annual meeting, those who normally register for both would have to choose which conference to attend and that would reduce registrations even further. But they were wrong!

Of course, I don't have any idea who “they” were, but “they” were wrong. The Annual Meeting was very well attended. In fact, there were more registrations than ever before—966 to be exact. We

didn't quite reach the magical 1,000 mark, but we may next year.

The next question is, why were “they” wrong? I don't know for sure, but it probably has a lot to do with IAMFES as an organization in general and the Annual Meeting program in particular. I heard it said that many attendees prefer the IAMFES Annual Meeting because it's small enough to be personable, yet large enough to have a strong program. This may or may not be the case, but the program this year was filled with cutting edge issues and offered something for everyone. It was also well run. The Washington Milk and Food Sanitarians Association, the Local Arrangements Committee and the IAMFES staff did a “yeoman's job” of hosting the meeting. In the words of one attendee, it was a “seamless event,” top to bottom, from the workshops to the Ivan Parkin Lecture to the technical sessions to the symposia to the Awards Banquet.

This issue of *DFES* is our Annual Meeting highlight and is filled with descriptions and pictures so I hope you read it cover to cover. If you attended the meeting, it should bring back fond memories. If you didn't attend, I hope it will whet your appetite for next year's meeting.

We are already deep into planning the 1997 Annual Meeting in Orlando and have begun our “calls” in both *DFES* and *JFP*. The Nominating Committee began the IAMFES new Secretary nomination process at the Seattle meeting and the call for nominations went out in August. Nominations are now being accepted and they will narrow the number of candidates to two by January.

This month you will find a call for entrants in the Developing Scientist Awards Competitions, which are supported by our Sustaining Members. These awards, in both oral and poster categories, are given to foster professionalism and to encourage students and recent graduates to present their original research. This is a major source of our future leaders in the profession so if you know a student or recent graduate in your profession, encourage him or her to enter the competitions.

September also begins our call for abstracts for the 1997 program. Like the Nominating Committee, the Program Advisory Committee began their work in Seattle by selecting several proposed symposia for further development. In January, they will review the symposia submissions and select abstracts for technical sessions from those submitted for inclusion in the 1997 program. Like last year, we expect over 250 presentations in the technical and educational sessions and symposia. You can be assured that time will be allotted for late-breaking issues as there was this year for BSE and *Cyclospora*.

We've already had several requests for award nomination materials and I'm confident that our slate of nominees will be as excellent as they were in 1996. Another call for nominations will run in November.

So you see, “they” were wrong. Attendance at the IAMFES Annual Meeting is not as dependent on location or timing as it is on what's offered. I hope after you read this “Annual Meeting Highlights” issue, you will start planning now to join us in Orlando for the 1997 meeting.

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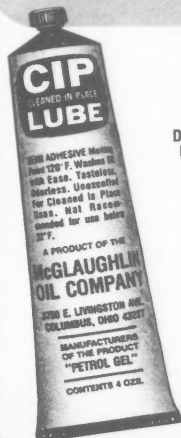


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Reader Service No. 170

The Codex Alimentarius: Its Expanded Role in Food Safety

H. Michael Wehr
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Washington, D.C. 20007, USA

SUMMARY

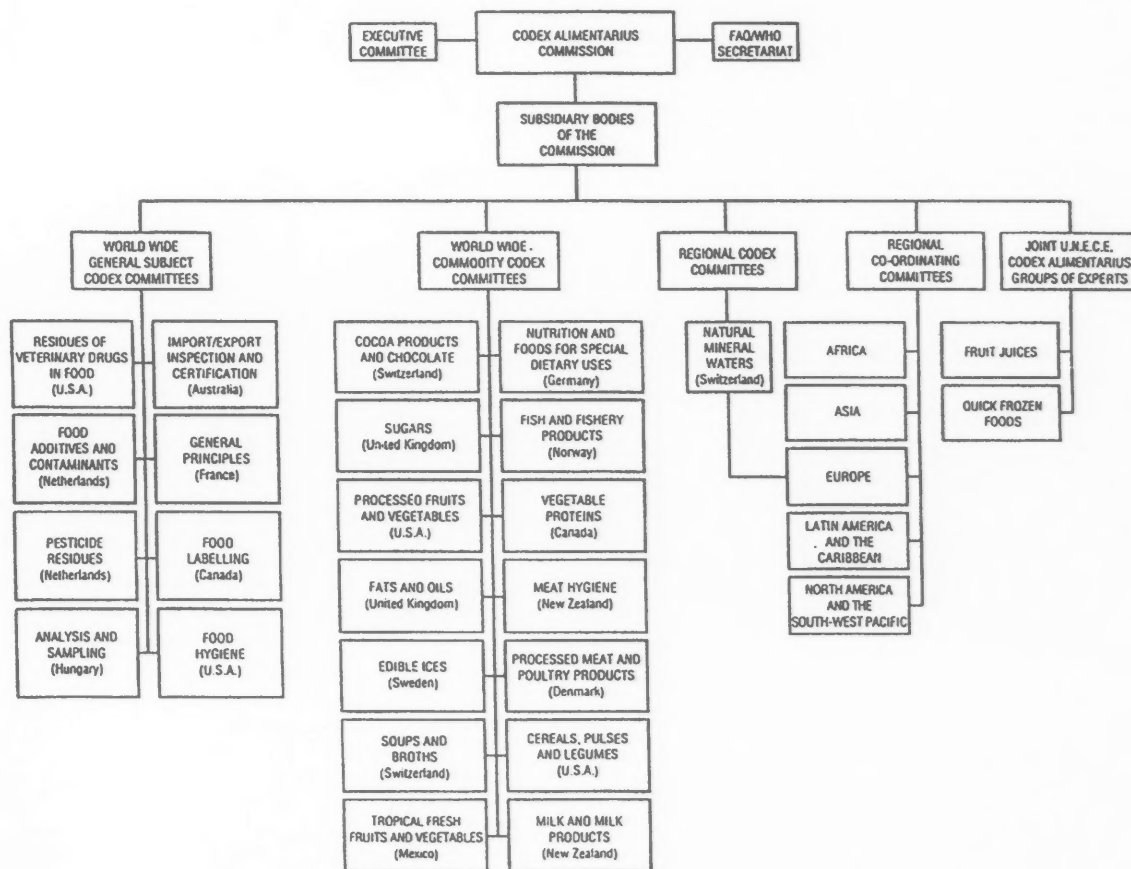
The Codex Alimentarius is an international intergovernmental body that develops food-safety and commodity-composition standards. New importance has been given to Codex by its inclusion in the Sanitary and Phytosanitary (SPS) agreement which is linked to the General Agreement on Tariffs and Trade (GATT). The SPS specifies Codex as the primary document for food safety and requires countries, by treaty, to utilize Codex standards unless they can scientifically justify a higher level of protection. Codex food-safety standards (e.g., for maximum pesticide residue limits, food-additive permitted usages, hazard analysis and critical control point [HACCP] practices) and commodity standards (e.g., for fresh fruits and vegetables, fish and fishery products, fats and oils) are developed by general subject and commodity committees, with adoption by 154 member countries through their participation in the Codex Alimentarius Commission. New Codex policies involving sound scientific principles and risk assessment have been established to strengthen future decision making and to confirm the relationship between Codex, the SPS agreement and the GATT. The United States Department of Agriculture (USDA), Food and Drug Administration (FDA), and Environmental Protection Agency (EPA) have developed and are implementing a strategic plan for Codex in order to include greater acceptance of Codex standards by the United States. Codex has become an important factor in international and domestic food-safety regulation and in the competitive positions of countries and their food industries.

INTRODUCTION

Codex Alimentarius is an organization that historically has been closely linked with world food trade. Codex develops food-safety and product-specification standards and codes of practice for voluntary adoption by member countries. While use of the Codex standards has been limited to date, this situation is expected to change. Recent decisions occurring in the Uruguay Round of international trade negotiation have moved Codex to the forefront of international food-safety considerations. The Uruguay Round resulted in the 1994 General Agreement on Tariffs and Trade (GATT) and two companion agreements, the Sanitary and Phytosanitary (S.P.S.) Agreement dealing with Food Safety, and the Technical Barriers to Trade (TBT) Agreement dealing with non-safety items (labeling, packaging, commodity standards). The SPS has made Codex its food-safety reference organization. In the United States, federal food-safety agencies have completed and have begun to implement a U.S. Strategic Plan for Codex that includes greater U.S. consideration and acceptance of Codex standards.

FIGURE 1

Subsidiary Bodies of the Codex Alimentarius Commission



As a result, Codex is an important factor in the competitive positions of both countries and their food industries.

What is Codex?

Codex Alimentarius (meaning *food code*) is an international inter-governmental body that develops food-safety and commodity standards to promote consumer protection and facilitate world trade (7). The Codex is a subsidiary body of two United Nations organizations, the Food and

Agriculture Organization (FAO) and the World Health Organization (WHO). Currently, 154 countries are members of Codex. Funding for Codex is provided by the FAO and WHO through contributions to the UN from member countries. Since its establishment in 1962, Codex has adopted over 3,000 maximum residue limits (MRLs) for pesticide residues, evaluated over 750 food additives, and adopted over 240 commodity standards and 40 hygienic and technological codes of practice.

The new importance of Codex

While Codex has been recognized by international scientific and regulatory bodies concerned with food since its inception, only limited adoption of Codex standards has occurred. This situation is changing. The Sanitary and Phytosanitary (SPS) Agreement (1) specifies Codex as the reference organization for food safety. SPS requires countries, by treaty, to use Codex standards unless they can scientifically justify a higher level of protection. More specifically,

Figure 2. Stepwise Procedure for Approval of Codex Standards

- Steps 1 - 4: Codex Commission approves proposal for new proposed standard and assigns to Committee. Secretariat arranges for draft of proposed standard. Draft of proposed standard sent to countries for comments. Draft of proposed standard and country comments reviewed by assigned Codex Committee.
- Steps 5-7: Initial review of draft of proposed standard by Commission. Draft of standard forwarded to member countries and Codex Committees for review and comment.
- Step 8: Final Review of draft of proposed standard by Commission. Acceptance as standard or modified standard, or rejected.
- Post Track: Draft of proposed standard approved as standard at Step 5 when no objection exists.

the SPS incorporates several key provisions that establish the regulatory framework for the setting of food standards.

- **Regulations based on science:** "Members shall ensure that any sanitary or phytosanitary measure... is based on scientific principles and is not maintained without sufficient scientific evidence..."
- **Use of risk assessment:** "Members shall ensure that their sanitary and phytosanitary measures are based on an assessment... of the risk to human... health."
- **Use of international standards:** "To harmonize sanitary and phytosanitary measures... members shall base their... measures on international standards, guidelines or recommendations where they exist..." (Note: An important exception is provided in the SPS paragraph 11, which indicates that member countries can scientifically justify a higher level of protection).
- **Specific reference to Codex:** "For food safety, the standards, guidelines and recommendations established by the Codex Alimentarius Commission relating to food additives, pesticide residues, veterinary drugs, contaminants, methods of

analysis and sampling, and codes and guidelines of hygienic practice" are the relevant standards.

- **Participation in international organizations:** "Members shall play a full part within the limit of their resources in the relevant international organizations and their subsidiary bodies, in particular the Codex Alimentarius Commission..."

Codex also is important to the TBT Agreement (2). The TBT Agreement requires signatories to use international standards and to participate in international standards-setting bodies. While Codex is not specifically referenced in the TBT Agreement, a Memorandum of Agreement exists between the CAC and the World Trade Organization (the GATT implementing body) to utilize Codex commodity standards where applicable in the implementation of the TBT.

Codex thus becomes a true international focal point for food safety and quality, with major impact on international trade and domestic food regulations.

Codex organization and operation

Figure 1 shows the organization of Codex (3). The Codex, comprising representatives of each member country, establishes policy and work priorities, and adopts standards based on the recommendations of the

Commission's subsidiary bodies. The Commission currently meets once every two years; an executive committee acts on its behalf in the interim.

Two sets of committees carry out the extensive work of Codex, the worldwide general-subject committees (e.g., those for pesticide residues, food additives and contaminants, and food hygiene) and the worldwide commodity committees (e.g., concerning fresh fruits and vegetables, and fish and fishery products). The general-subject committees establish food-safety standards or codes of conduct in their named areas of operation, while the commodity committees establish product compositional and quality specifications. Additionally, Codex regional committees define problems specific to the region they represent, recommend worldwide or regional standards for products of interest to the region, and serve as a forum for discussion of regional or international matters of interest.

Two additional sets of organizations deserve mention. The FAO and WHO maintain two expert technical committees, the Joint Expert Committee on Food Additives (JECFA) and the Joint Meeting on Pesticide Residues (JMPR). While not specifically a part of Codex, these committees provide in-depth scientific expertise to evaluate the safety of pesticides, food additives, contaminants (e.g., heavy metals) and veterinary drugs; their recommendations are provided to the general-subject and commodity committees for use in establishing Codex standards. Codex also provides for observer organizations, bodies which can have input into the development of Codex standards but which do not have a vote at Committee or Commission meetings. Observer organizations include the World Trade Organization, the International Organization for Standardization and Consumers International.

Codex decision making is, by design, a deliberative process to ensure worldwide consensus. An eight-step procedure is used to establish

Figure 3. Codex Sound Science Principles

- Food standards, guidelines and other recommendations of Codex Alimentarius shall be based on the principle of sound scientific analysis and evidence, involving a thorough review of all relevant information, to ensure the quality and safety of the food supply.
- When elaborating and deciding upon food standards Codex Alimentarius will have regard, where appropriate, to other legitimate factors relevant for the health protection of consumers and for the promotion of fair practices in food trade.
- In this regard, it is noted that food labeling plays an important role in furthering both of these objectives.
- When the situation arises that members of Codex agree on the necessary level of public-health protection but hold differing views about other considerations, members may abstain from acceptance of the relevant standard without necessarily preventing the decision by Codex.

Codex standards, guidelines, and codes of practice (Figure 2). Subsidiary bodies, the Commission, or the Executive Committee can propose standards for consideration; approval for standards development must be given by the Commission or the Executive Committee. Substantial opportunity is provided for input into standards by governments, observer organizations, and nongovernmental organizations, including industry and consumers. For standards with early general agreement, a fast-track approach exists, with adoption possible at Step 5 of the process.

To assist in the development and assessment of new technologically complex areas, Codex may use a consultation process, employing consultations with internationally recognized experts representing governmental and nongovernmental organizations. This process has been and is being used for the HACCP and Risk Assessment areas.

Member countries normally maintain a Codex contact point that serves as a liaison between the Codex Secretariat (located in Rome), and governments and interested organizations. In the United States, the Codex contact point is the U.S. Department of Agriculture, Food Safety and Inspection Service, 1255 22nd St., NW, Washington, D.C. 20250-3700; Tel: 202-254-2517; Fax: 202-254-2530.

Individual countries participate in those Codex Committees of interest to them. Country delegates and spokespersons to Codex must be government representatives, although industry and consumer representatives can serve as advisors. Within the United States, Codex documents are normally provided to the government representatives serving as the lead delegates, who in turn provide the information to interested individuals and organizations.

Important new policy developments within Codex

Two recent policy thrusts within Codex establish the direction for future decision making and confirm the relationship between Codex, the GATT, and the SPS.

Sound science as the basis for decision making. Figure 3 presents the four principles established by the 1995 meeting of the CAC as the basis for its decision making (4). These principles are critical to Codex and state unequivocally that Codex standards will be based on scientific factors rather than on social philosophies, cultural traits, economics, or trade policy. They establish the firm commitment of Codex to meet the scientific rationale for standard setting specified in the GATT SPS Agreement.

Enhanced risk assessment. Recognizing the GATT provision mandating the use of risk assessment in standard setting, the FAO and WHO, in conjunction with Codex, have initiated a technical consultation: *The Application of Risk Analysis to Food Standards Issues (5)*. The consultation is designed to strengthen the scientific basis for establishing both chemical and biological standards, to improve the transparency of the standard-setting process and to improve procedures by which countries manage food-related risks. Although just beginning, this process will have a significant impact on Codex standard setting and on the acceptance of Codex standards by GATT signatory countries.

U.S. strategic plan for Codex

Recognizing the treaty obligations related to Codex arising from the GATT, the United States, using a working group comprising USDA, FDA, and EPA representatives, developed a strategic plan for Codex (6). Five key issues were identified:

- Greater U.S. acceptance of Codex standards
- Sound science as the basis for Codex decision making
- Improved management of the U.S. Codex office
- Improved management of the Rome Codex Secretariat
- Enhanced participation of nongovernmental organizations in the Codex process

Development of a more detailed implementation plan has begun. Implementation will involve working groups for each issue comprising both U.S. Government and nongovernment representatives.

Likely to have the greatest impact, including an impact on domestic food regulations, will be recommendations on U.S. acceptance of Codex standards. It will be very important for all segments of the food industry, including legal and food-safety advisors, to monitor the progress of the implementation of this plan.

Impact on competitiveness

While regulatory changes arising from Codex will be important, their impact on the competitiveness of food and allied industries may be more important. Examples of how Codex standards can affect competitiveness include:

- Codex commodity standards may hinder or enhance available markets for a product by specifying compositional requirements that a product may or may not meet.
- Changes in pesticide MRLs may increase (or decrease) the ability of competition (especially that from other countries) to meet new residue requirements.
- Acceptance or rejection of food additive permitted usages may restrict (or enhance) a product.
- Codex hazard analysis and critical control point (HACCP) requirements may affect production costs for a product.
- Codex import and export inspection and/or certification procedures have the potential to affect basic access to the international marketplace.

The influence Codex has on both international and domestic food regulation will increase and, thus, its impact on food production and trade will be significant. The full extent of the impact is difficult to estimate, since the GATT/Codex relationship is new and developing. For these reasons, it is important to know about and understand Codex and its relationship to the GATT, the SPS and TBT agreements, and the GATT implementing body, the World Trade Organization. It is also important to monitor the activities of Codex, the work of the SPS and TBT committees of the World Trade Organization that are affected by Codex, and to follow the implementation of the U.S. Codex Strategic Plan and its impact on U.S. domestic food regulation. Public input, including technical advice, is vital to the process, and U.S. interests, organizations, and individuals should become involved with Codex.

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Presented at the IAMFES Annual Meeting Opening Session—The Ivan Parkin Lecture

Sifting Sense from Nonsense with Science

Joseph Schwarcz
Vanier College, Saint-Laurent,
Quebec H4L 3X9, Canada

ABSTRACT: **Problems and solutions**

It is the best of times, it is the worst of times. It is an age of reason, it is an age of nonsense. It is an age of options. It is an age requiring scientific decisions. It is an age that begs for science education.

Most of us are living the good life. There is no doubt that we are living longer and in greater comfort than ever before, but at a price. We fly through the air with ease, but that air is becoming polluted. We have more leisure time to spend in the sun, but that sun is beating down stronger through an ozone-depleted atmosphere. We have conveniently packaged consumer goods, but we are beginning to drown in garbage. We protect our food supply with pesticides, we devise new materials, we clothe ourselves in novel fibers, we synthesize new medications, but we generate toxic wastes in the process. Indeed, we do have a few problems. But we also have the scientific ingenuity to come up with solutions.

These solutions, however, will not come easily. They are dependant upon scientific expertise on the part of some and scientific literacy on the part of all. These requirements can only be met through formal scientific education, beginning early in life. Unfortunately, in North America, this is not taking place to the extent that our future well-being requires. By and large, we have a population not well versed in scientific principles or in

critical thinking. The result is that when controversial issues arise, people are left to flounder in a sea of media accounts, buffeted back and forth between reassurances of safety and prophecies of doom.

We need good, reliable information, but in our newspapers articles about advances in science and medicine vie for space with astrology columns and accounts of flying saucer sightings. Our bookstores devote far more shelf space to "New Age" and paranormal publications than to science books. In the health section, scientific nutrition books are squeezed out by the latest miracle diets, which in turn try to outdo each other with outlandish promises of disease prevention or cure. The result is massive confusion about facts, about issues, and about whom to trust. This situation is ripe for capitalization by those who offer the allure of simple solutions to complex problems.

Scientific literacy essential for citizens

How dangerous is scientific illiteracy? Widespread but wrong beliefs about cavemen and dinosaurs coexisting, bending spoons with the "power of the mind," astronauts becoming weightless because of the absence of gravity or the moon being larger when it is near the horizon are probably harmless. But beliefs about diagnosing disease by looking into the iris of the eye, or avoiding cooked food because it has been robbed of its en-

zymes, or curing cancer with coffee enemas are not. It is also sobering to realize that according to surveys 90% of the population cannot explain what is meant by the term "molecule."

Science is a rigorous discipline based upon experimental proof

For example, all that is needed to prove that the size of the moon does not change with its position in the sky is an aspirin tablet. When the tablet is held at arms length, it exactly covers the moon no matter where it is. The apparently larger moon on the horizon is just an illusion.

A little more scientific sophistication is required to prove that enzymes in food are not required by the human body. Enzymes are biological catalysts without which the chemical reactions that constitute life could not proceed. On a molecular level, enzymes are proteins, or giant molecules composed of amino acids. The human body is capable of synthesizing all the enzymes it requires from amino acids in the diet. In fact, enzymes in food cannot be absorbed. Like any protein, they are decomposed in the digestive tract into their component amino acids. But people unaware of these facts can easily be persuaded that enzymes are some kind of magical ingredient in food, perhaps something akin to the human soul. "Destroy the enzymes and rob the food of its nutritional value," goes the blatantly absurd claim. Those

with even a modicum of scientific background are not fooled.

A different approach is required to investigate *iridology*, a *pseudoscience which claims to be able to diagnose a variety of diseases* by examining the colored part of the eye. Iridologists say that they can determine nutritional needs and the state of health of body organs by gazing into the iris. The problems they discover, such as "subacute liver intoxication" or "*chronic gallbladder*," can of course be treated with a variety of nutritional supplements which iridologists conveniently sell. However, unlike for the moon illusion, or for the breakdown of enzymes in the digestive tract, there is no simple experiment to prove that iridology is nonsensical. But *the burden is not on science to prove that iridology makes no sense, it is up to the iridologists to prove that they can actually diagnose disease.*

Such proof should be simple to come by, as is readily apparent to anyone versed in the scientific method. Just let a group of iridologists examine a number of subjects, some of whom have gallbladder disease, a condition said to be easily diagnosed through iridology. The identification of people with the disease would constitute proof that iridology works. This very experiment in fact has been carried out with five leading iridologists. The results? The same as one would expect by random guessing. Science is therefore justified in casting a wary eye on iridology.

Similarly, in the treatment of cancer, the burden of proof for the efficacy of coffee enemas, macrobiotic diets, nicotinic acid or camphor injections, laetrile tablets, raw juices, megavitamins and urine infusions lies with the claimant. Such proof has so far not been provided. It seems that purveyors of these therapies are much more interested in hyping anecdotal evidence and in knocking the "scientific establishment" for being closed-minded, than in taking part in scientific studies. Requiring scientific proof before accepting the validity of a treatment is not being closed-minded. Indeed, it is the only mechanism we have to identify quacks and charlatans who prey upon desperate people.

Familiarity with science allows us to look at the world in a different light. It allows us to be logical in our convictions, rational in our fears, realistic in our hopes and reasonable in our decisions. The following vignettes serve to illustrate how the application of scientific principles helps us sift sense from nonsense.

SCIENCE AND SENSE

"There are ground-up earthworms in my baloney!"

A letter from a concerned mother appeared in a health-food journal: "I've just visited my folks in Ohio and everybody up there is upset about learning that ground-up earthworms are being used as fillers in many meat products like wieners and bologna. *The name on the package is sodium erythorbate.* I've checked packages at stores here and have found only one brand without this ingredient. My little boy loves hot dogs and I hate to think how many I've fed him over the past several years with earthworms in them."

A classic expression of chemophobia, or the fear of chemicals. Sodium erythorbate is just a form of Vitamin C which is used as a preservative. It is a perfectly safe substance and has absolutely nothing to do with earthworms. It makes a lot more sense to minimize hot dog and baloney consumption because of their high fat and salt content than because they contain sodium erythorbate. There is more baloney in the sodium erythorbate story than sodium erythorbate in the baloney.

The death of little Mikey

General Foods used a little boy called Mikey to promote Life cereal on television. After the ad disappeared from the airwaves, a story started circulating that Mikey had died. And he departed in no ordinary fashion! The poor kid had eaten a handful of Pop Rocks™, a type of candy which releases carbon dioxide gas when dissolved in the saliva and therefore crackles in the mouth in an intriguing fashion. Unfortunately, Mikey had

washed these down with soda pop, whereupon his stomach exploded from an overdose of carbon dioxide! An interesting little anecdote, but of course total nonsense. A quick scientific calculation reveals that the amount of carbon dioxide generated by a handful of Pop Rocks™ is about as much as found in half a glass of a soft drink. Yet this nonsense forced General Foods to write 50,000 letters to concerned school principals and to take out ads in major newspapers across the continent to explain that the worst side effect of Pop Rocks™ was a good old fashioned burp! Or at worst, a toot in the other direction.

No cholesterol

These words on a food label guarantee increased sales. Today, most people are concerned with their cholesterol levels. This is justifiable, because enough scientific information has now been accumulated to show that high blood-cholesterol levels are associated with an increased risk of heart disease, and that lowering the level can reduce risk. High cholesterol of course is not the only risk factor for heart disease: about half the people who have heart attacks have normal cholesterol levels.

The "no cholesterol" on a food label implies health benefits. This is not necessarily correct. The saturated fat content, rather than the cholesterol content of a food is the main determinant of blood-cholesterol levels. Since cholesterol is found only in products of animal origin, *a food containing large quantities of saturated coconut or palm oils could be correctly labelled "no cholesterol."*

Perhaps the little girl on the T.V. commercial for frozen french fries who is comforted by her dad when she asks him if they contain "cresterol" will grow up and take a science course and learn that the question she should have asked was what kind of fat had been used to fry the fries.

"Poisons in your water"

A water-filter salesman asks if you are interested in seeing the poisons you are consuming in your tap water.

Sounds like an offer that can't be refused. He quickly takes a glass of tap water and inserts a pair of electrodes, while explaining that the electric current he will apply will allow for visualization of the dissolved toxic chemicals. Indeed, when current is applied across the iron and aluminum electrodes, a yellowish scum immediately forms to the consternation of the horrified onlooker. The experiment is then repeated using filtered water without any sign of the ugly yellowish residue. Sale completed! Such sales, however, are based on scientific ignorance.

The "scum" is actually iron hydroxide, formed by the reaction of the water with the iron electrode. *The reason that the reaction does not take place in the filtered water is that the ions responsible for allowing electrical conductivity in water have been removed.* These ions, basically calcium and magnesium, are in no way harmful. *The salesman can be brought back to earth just by sprinkling a trace of salt into the filtered water.* The water again conducts electricity and the deposit quickly forms! The filters these salespeople are promoting may actually be quite good, but the salespitch is reprehensible. Would someone who had studied chemistry be taken in?

Removing ear wax

A newspaper article described a novel painless technique for removing ear wax. The suggestion was that burning a hollow wax candle in the ear creates a vacuum that sucks out the wax. Sounded strange but the scientific method, however, dictates that one should not wax eloquent about a subject until one has the facts. So I quickly went out, and for an outrageous price, purchased a pair of "ear candles."

My daughter, in the spirit of science, volunteered for the first experiment. An autopsy of the burned candle did indeed reveal a glob of "earwax" inside. It looked impressive. But then came the control experiment. We ignited another candle, this time without any ear attached. When cut open, this candle also was seen to contain "earwax!"

The wax of course came not from inside the ear, but from the candle

itself. Chemical analysis showed the "earwax" was actually beeswax.

Further experiments revealed that the burning candle does not create any sort of vacuum. It is not even capable of sucking up a tiny piece of tissue paper, never mind dislodging earwax. In fact, the candle actually expels hot air from both ends. Oh, how one simple scientific experiment can destroy a cunningly crafted theory!

I should add that the promotion of this device has a more insidious side. When I purchased my candles I was told that after use I would find a white powder inside which is actually "candida yeast" extracted from the ear. Also, because all the passages in the head are interconnected, my entire system would be "osmotically drained through the membrane of the ear."

Unable to resist the proposed wonders of such an osmotic draining, I agreed to be "candled" myself. I was assured I would feel better afterwards. The only thing I felt was relief that the silly procedure was over.

There was, however, a residual effect. I can still hear the nonsensical claims of the salesperson ringing in my ear! Maybe it needs another candling.

"Psychic dentistry"

Psychic dentist William Fuller of Florida claims to be able to insert dental fillings without drilling, to turn silver fillings into gold and to straighten crooked teeth just by calling on God's help. "Sometimes you watch a cavity fill right up in front of your eyes. It's amazing." I bet it is. He does produce testimonials but no before and after X-rays. Fuller was actually taken to court in Australia for making unsubstantiated claims. He promised that he would bring angels into the courtroom to help in his defense. They may have been there, but unfortunately no one saw them. In any case they weren't very effective lawyers because Fuller had to pay a fine. The justification for his claims? "Everything in the Universe, including our bodies, is made of atoms. The atoms can be manipulated, and when you get into the right relationship with God, you have a great

source of power at your disposal." In the meantime "Dr." Fuller has six missing teeth; the rest are stained and contain very ordinary silver fillings. How many of his patients have taken a single science course?

"There's a cleaning agent in my macaroni!"

A worried mother noted that the macaroni she had been feeding her child contained an ingredient, sodium phosphate, which was also present in her household cleaning solution. Furthermore, the cleaner was full of warnings about keeping the product away from children. She wanted to know why she was feeding such a dangerous substance to her child. Had the manufacturer developed some secret process designed to clean the kid from the inside out?

As anyone exposed to the study of toxicology knows, only the dose makes the poison. The concentrated cleaner contains a lot of sodium phosphate which generates a strongly basic solution that is ideal for cleaning. The macaroni contains a small amount in order to make the product alkaline and reduce cooking time. The truth of the matter is that we consume far more phosphate as a natural component of foods than as an additive. The human body requires phosphorus which we ingest in the form of naturally occurring phosphates in meat, eggs, cheese, and legumes. A consumer acquainted with science would be more concerned about the fat content of a food than about the "cleaning agent" it contains.

"Proteins and starches cannot be efficiently digested in the stomach at the same time"

This little gem of wisdom comes from Harvey and Marilyn Diamond, authors of the popular Fit for Life™ diet. They elaborate: "Proteins demand acidic digestive juices and starches alkaline. Anyone with the most elementary knowledge of chemistry will tell you that an acid and an alkali in combination will neutralize each other. When you eat meat and potatoes together and they enter the stomach together, acid is secreted to break down the starch and alkali for

the potatoes. They cancel each other and there are no working digestive juices available to do the job."

The fact is that cells in the stomach secrete only hydrochloric acid. There is never any alkali present in the stomach. When the partially digested food passes to the intestine, digestion continues under alkaline conditions provided by the bile from the liver. All foods, no matter what their composition, are first subjected to acidic conditions, followed by alkaline conditions in this fashion.

The Diamonds also claim that digestion demands more energy than running, swimming or bike riding and that if we force our body into improper digestion by daring to consume proteins and carbohydrates at the same time, we will be robbing ourselves of energy. A quick reference to an exercise physiology book will prove that this is ridiculous. The aforementioned activities all require much more energy than digestion. Furthermore, all foods with the exception of pure sugar and salt are mixtures of fats, proteins and carbohydrates.

No matter what kind of diet we follow, we are always digesting mixtures

According to the Diamonds there is only one body function that rivals the energy use of digestion and that is sexual activity. Overindulging in sex will bring on a "toxic state." They do, however, rationalize that if their philosophy of "natural hygiene" is followed, then less frequent sex is acceptable because it is more pleasurable. "Nerve impulses don't have to travel through a lot of muck and sludge to get to where they can register a pleasurable reaction if you are clean inside." Would someone who has studied the nervous system in biology make such a statement? Not likely. In fact, the popularity of Fit for Life is a testimonial to the failure of scientific education in North America. This is not to say that the diet has no redeeming features. Adherence to it leads to a significant cut in fat intake and an increase in complex carbohydrates, both of which are desirable. This, however, can be achieved equally

well without following irrational and restrictive principles of food combining.

Oat bran lowers cholesterol

In 1992 North America went crazy over oat bran. Stores couldn't keep it on the shelves, distributors couldn't find suppliers. Rumors of a new shipment sent anxious shoppers rushing to the supermarket only to have their hopes dashed when they found that the booty has already been snapped up. Why was there such a feverish interest in a product which has traditionally been fed mostly to animals? The answer lies in the selective reporting of research results coupled with our basic fear of illness and our dread of death.

Well over a million North Americans suffer a heart attack each year, with a large percentage of these due to high levels of blood cholesterol. Understandably, then, the public was already primed for the oat-bran mania when some tantalizing research showed that eating the unappetizing little flakes could actually reduce blood cholesterol. Suddenly, oat bran was elevated to the status of a miraculous weapon in the fight against heart disease. Dietary sins could be absolved just by adding oat bran to the diet, or so people thought. Unfortunately, as the technical jargon of the scientific journals was translated into the everyday language of magazines and newspapers, the facts got a little distorted.

Oat bran can indeed reduce blood cholesterol levels. Actually, it is a specific component of the bran, called soluble fiber, which has this effect. Fiber is the structural part of plants, fruits and vegetables which cannot be broken down by enzymes in our digestive tract and therefore cannot provide nutrition. In other words, most of what you eat turns into you, but fiber just goes through. Fiber can be further subdivided into soluble and insoluble categories.

Cellulose is the classic insoluble fiber, whereas the pectin found in fruits and certain "gums" extracted from seeds are examples of soluble fiber. It is this latter species which is believed to reduce blood cholesterol

by tying up some of the bile acids used in digestion. Since these compounds are made in the body from cholesterol, their removal from the digestive tract forces more to be synthesized from cholesterol, resulting in a depletion of blood cholesterol. But just how much soluble fiber do we have to eat to reduce our cholesterol levels significantly? The answer is, a great deal. More than most people can cope with on a daily basis.

Research has shown that eating 100 grams of oat bran a day can reduce cholesterol by as much as 20%. Sounds good. However, it is the uncritical appraisal of this information which triggered the mad dash to supermarkets and health food stores. A hundred grams is a lot of oat bran, about three normal-sized servings of the cereal a day. There is, however, a further concern. While the oat bran reduces the type of cholesterol (LDL) which has been most closely linked with heart disease, it also reduces the type of cholesterol (HDL) which is believed to have a protective effect.

A more reasonable consumption of 40 grams a day does not reduce HDL, but also has a much less significant effect (a reduction of about 3%) on total cholesterol. Since this kind of reduction is within the range of experimental error for cholesterol measurements, the bottom line is that people who incorporate a bowl of oat bran and an oat bran muffin into their daily diet are unlikely to see a measurable effect. The studies have also shown that in this range of consumption, oatmeal is as effective as oat bran. And there is plenty of oatmeal on the shelves!

Although the benefits of oat bran have been exaggerated, it can play an important role in health, especially if it is used as a substitute for other less desirable foods. Certainly, replacement of a Danish and bacon and eggs breakfast with oat bran is a step in the right direction. So is using the substance as "breeding" on chicken, or as an extender in meat loaf. Oat bran muffins can have a lot of soluble fiber, but some commercial varieties may also be very high in fat.

The hype has also led to oat bran pasta, oat bran chips, oat bran cookies and oatmeal bread. Of course, *the*

labels don't mention that we would have to eat ninety cookies or fifteen slices of bread in order to ingest a significant amount of bran. Apples, on the other hand, are a good source of soluble fiber and grating an apple into a bowl of oat bran improves not only its nutritional value, but also its taste. Seeds of the psyllium plant, used in the laxative Metamucil, also contain soluble fiber, as do certain gums used as thickening agents in processed foods. Experiments are already under way to fortify chicken soup with guar gum! Beans, peas, and prunes are excellent sources of soluble fiber, in fact better than oat bran. Unfortunately, though, these can produce a certain degree of "social discomfort."

Although even a little reduction in blood cholesterol helps, there is no doubt that the potential benefits of oat bran have been overblown. The most effective way to reduce blood cholesterol is still to eat less saturated fat. This means cutting down on butter, fatty cheeses, red meat, and prepared foods containing palm oil and coconut oil. But just imagine the lineups in the store if someone were to come up with a low-fat muffin made with prunes, beans, and oat bran, fortified with Metamucil, and thickened with guar gum!

The French paradox

Something weird is going on in France. The French smoke, they cook with butter and eggs, eat foie gras, gorge on fatty cheese, down cream-filled desserts and...have the lowest incidence of the heart disease in the Western world. American men have a coronary death rate of 197 per 100,000, the French only 78 per 100,000. The average blood cholesterol in French men is 230 mg/dl, compared to 210 mg/dl in Americans. What is going on?

It's not exactly that the French are free of heart disease. Cardiovascular disease is still the leading killer in France, and blood-cholesterol levels do correlate with heart-attack risk. But paradoxically, heart disease accounts only for 30% of deaths, compared to 40% in North America. At any blood-cholesterol level, the

French have a lower risk of heart disease than we do.

Several explanations have been offered for this paradox, ranging from when and what the French eat, to what is eating them. In France most of the daily calories are consumed before 2 p.m., whereas in North America people tend to eat their largest meal of the day in the evening. This may influence the way fats are metabolized and perhaps even affect the stickiness of the platelets which are responsible for blood-clot formation.

Can calcium in the vast amounts of cheese the French eat have an effect? This potential link to calcium was examined by researchers at the Texas Southwestern Medical Center in Dallas in 1993. Calcium supplements in the form of pills and fortified orange juice were indeed shown to have a favorable effect on cholesterol levels. Sugar consumption in North America is 18 times greater than in France and this may affect the levels of fats in the blood.

It is, however, the red wine connection that has generated the greatest attention and publicity. Alcohol raises HDL, the good cholesterol, and makes platelets less sticky, but research has shown that red wine may contain compounds with specific protective properties. The current thinking is that cholesterol damages arteries when it reacts with oxygen, in other words when it is oxidized. Resveratrol, epicatechin and quercetin are naturally occurring antifungal compounds in red grapes with decided antioxidant properties. Laboratory studies have shown that cholesterol extracted from human volunteers is less easily oxidized in the presence of these compounds. Similar substances are also present in apples, onions and tea. It is then noteworthy that a Dutch study revealed in 1993 that men consuming the greatest amounts of these compounds, collectively called flavonoids, had the lowest risk of heart disease.

Within France, there is a further paradox. In the Gascony region, the home of foie gras, more saturated fat is consumed than anywhere else in the western world. Yet the incidence of heart disease is half that in the rest of France. Could there be some pro-

ductive factor in duck and goose fat? This would appear to be unlikely. The answer probably lies in some other aspect of Gasconian lifestyle. Perhaps people handle the pitfalls of life with a more carefree attitude, not letting stress eat away at them from the inside. Stress, after all, is known to increase the risk of heart disease.

A more likely explanation is that the consumption of fresh, minimally cooked fruits and vegetables is very high in Gascony, implying a high intake of antioxidants such as vitamins C and E along with beta carotene. In fact, this aspect of French life may be the answer to the whole French Paradox. Then again, it may be garlic, or baguettes, or croissants, or the wearing of berets, or showing an unusual passion towards old Jerry Lewis movies. In any case, somehow the French have found the right chemistry.

"It's in the stars"

Astrology has been practiced since the time of the ancient Egyptians. This, however, does not make it valid. Is there any reason to believe that astrology works? Any physics student can calculate that the gravitational effect of the heavenly bodies on human bodies is insignificant. In fact, as far as a baby is concerned, the gravitational effect of the obstetrician at the moment of birth is far greater than the effect of the stars. Is our destiny then shaped by the bodyweight of the doctor who brings us into the world?

There is, however, no need to use physics to refute astrology. Its validity can be readily tested. Just ask a number of people to write autobiographical character sketches. Give these to astrologers together with the birth dates of the subjects. Ask the astrologers to match the character sketches with the birth dates. They can't. It is also interesting to note that when birth dates of scientists or politicians or actors or psychics are compiled, they are remarkably random. Shouldn't unemotional, skeptical, profit-oriented scientists have different birth signs than sensitive, altruistic, generous psychics? But I guess I'm being too cynical. It must be because I'm a Leo and everyone knows that Leos are much too sensible to believe in such nonsense!

NewMembers

CANADA

Michael Bourque
Fisheries and Oceans Canada
Shediac, N.B.

Brian Graten
Caravelle Foods, Spruce Grove AB

Larry Kropf
Maple Lane Dairy
Kitchener, Ontario

Bill Groot-Nibbelink
Ontario Ministry of Agriculture
Food and Rural Affairs
Komoka, Ontario

Pierre Plemondon
Christie Brown, Montreal, Quebec

FINLAND

Hannu Korkeala
Dept. of Food and Environmental
Hygiene, University of Helsinki

JAPAN

Shigeki Yamamoto
National Institute of Public Health
Tokyo

KOREA

Woo Jung-Kwang
Gongjusi, Chungnam South

UNITED STATES

CALIFORNIA

W. Adeline Cheong
Anresco, San Francisco

William P. George
State of California Dept. Health
Services, Sacramento

DISTRICT OF COLUMBIA

Parmesh K. Saini
USDA, FSIS, Washington

FLORIDA

Carl Austin
Astech Inc. Ltd., Miami

ILLINOIS

Kristen T. Hilger-Forrestal
Darden Restaurants, Sugar Grove

Laurie Murphy
Sara Lee Bakery, Arlington Heights

Dean Reed
Net Lab Inc., Chicago

MASSACHUSETTS

Russell G. Heap
Taunton Board of Health, Taunton

Marie Walsh
Town of Bedford Board of Health
Bedford

MICHIGAN

Terry B. Abel
Chadalee Farms Inc., Lowell

Cindy M. Seehase
Amway Corporation, Ada

Tamara L. S. Weaver
Gerber Prod. Co., Fremont

MINNESOTA

Ying Xin-Chu
University of Minnesota, St. Paul

Alison J. Larsson
University of Minnesota, St. Paul

M. S. Jorge Ulate-Rodriguez
St. Paul

MISSOURI

Tipanate Ariyapitipun
University of Missouri-Columbia
Columbia

Lester D. Schroeder
Ruskas Dairy, St. Louis

NEW YORK

Barbara Rowan
Nassau County Dept. of Health
Elmont

NORTH CAROLINA

Julie Funk
North Carolina State University
Raleigh

PENNSYLVANIA

Dave Zemlock
Fleur-de-Lait Foods, New Holland

TENNESSEE

R. D. Smiley
University of Tennessee-Knoxville
Knoxville

TEXAS

Robert Cogger
U.S. Army, Ft. Hood

Kara Farmer
Dynamic Foods, Lubbock

Debbie Rosson
Unicorn Intl., Inc., Kaufman

VERMONT

Daniel Nemeth
Ben and Jerry's Homemade
St. Albans

WISCONSIN

Fun Sun Chu
University of WI Food Research
Institute, Madison

The 83rd Annual Meeting Highlights

The Washington Milk and Food Sanitarians Association proved to be magnanimous hosts for the 83rd IAMFES Annual Meeting. Under the direction of Bill Brewer and Dick White the Local Arrangements Committee provided many volunteer hours to help the meeting run well and make attendees feel welcome in the Emerald City of Seattle, Washington. IAMFES commends the Local Arrangements for their efforts.

The 1996 meeting once again showed how IAMFES is continuing to grow and expand. This year we had over 200 professionals provide 250 presentations which included such hot topics as BSE, Iced Tea contamination and *Cyclospora*. As usual, these were combined with pre-meeting workshops, committee, professional development groups and task forces meetings, and 77 educational exhibits.

Pre-meeting Workshops

To provide additional educational opportunity for attendees, IAMFES again conducted pre-meeting workshops. This year's workshops provided the opportunity to learn about detecting old and new pathogens and procedures for risk communications.

Charles Kaspar, Ph.D. from the Food Research Institute with the University of Wisconsin, instructed the pathogen workshop *New Methods to Study Old and New Pathogens*. Douglas Powell, Ph.D. from Guelph University, Guelph, Canada conducted the risk communications workshop; *Eat, Drink, and be Wary*.

Social Events

There were numerous opportunities for members to gather in social settings and relax. The Monday evening gala was an Evening at the Museum of Flight. A large buffet and relaxing atmosphere among the many machines of flight made for an enjoyable evening. Baseball enthusiasts were treated to a Mariners game Tuesday night and spouses and companions were kept busy with a variety of tours that highlighted the unique beauty of the Northwest.

Annual Meeting Program: A Review

The Annual Meeting began early Sunday, June 30 with the Affiliate Council meeting. The other Committees, Professional Development Groups, and Task Forces also met throughout the day. Annual reports from these groups begin on page 640. A round table discussion on *Cyclospora* was also squeezed into the hectic schedule.

Our customary Ivan Parkin Lectureship highlighted the opening session. This year's lecture was presented

by Dr. Joseph A. Schwarcz, Vanier College, Saint-Laurent, Quebec Canada. Dr. Schwarcz's lecture *Sense, Nonsense, and Science* provided a somewhat humorous exploration of the public's perceptions of science and ways for the scientific community to deal with these notions. If you are interested in knowing more about Dr. Schwarcz's lecture please turn to page 627 where it has been printed in its entirety.

Technical Sessions and Symposia

The program included outstanding technical reports from around the world. This year there were 45 technical papers presented with topics ranging from meat and poultry safety to general food microbiology. A new section was added for submitted papers that formed a general food safety education session.

The program was filled with top quality scientific and informational symposia. One hundred twenty-one presentations were made during the three days. Speakers arrived from around the world including such countries as Canada, The Netherlands, United States, Mexico, Switzerland, Australia, and Germany. Thus bringing together internationally recognized food safety professionals to present and exchange their knowledge.

IAMFES is continually grateful for the support other organizations have provided for our program. We wish to thank International Life Sciences Institute - N.A., IAMFES Foundation, and Lever Industrial for their support of the Annual Meeting programming.

The General Session provided an exciting perspective *Ensuring a Safe Global Food Supply*. This session was sponsored by ILSI-N.A. and included Servé Notermans, National Institute of Public Health and Environmental Protection, The Netherlands; Michiel Van Schothorst, NESTEC, Ltd., Vevey, Switzerland; I. Kaye Waschmuth, U.S. Food and Drug Administration, Washington, D.C., and E. Spencer Garrett, National Marine Fishery Service, Pascagoula, MS.

On Tuesday, July 2, following the General Session, IAMFES held its Annual Business Meeting. The meeting covered reports from the President, Executive Director, *Journal of Food Protection* Management Committee, *Dairy, Food and Environmental* Management Committee and the Foundation Fund Advisory Committee. For more details regarding the business meeting see page 638.

A compliment to the overall program is the ever growing scientific poster presentations. Two days of poster sessions provided over 90 presentations and opportunities for the presenters to discuss their information with attendees.

Scenes from the 1996 Annual Meeting



Local Arrangements Co-chair Bill Brewer welcomes attendees.

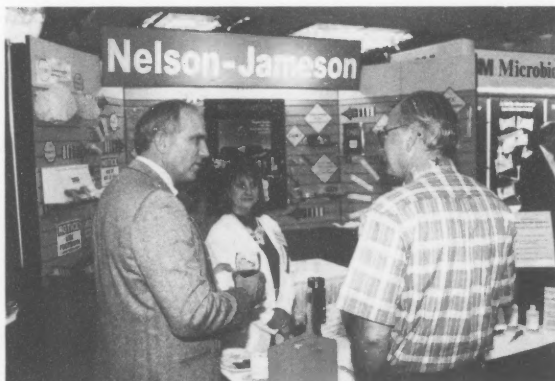


President Ann Draughon shares some closing thoughts with banquet attendees.

President-Elect Michael Brodsky shares insights and hopes for the coming year.



Cameron Hackney comes forward to claim his door prize.



Attendees learn about the latest industry, products and services in the Exhibit Hall.

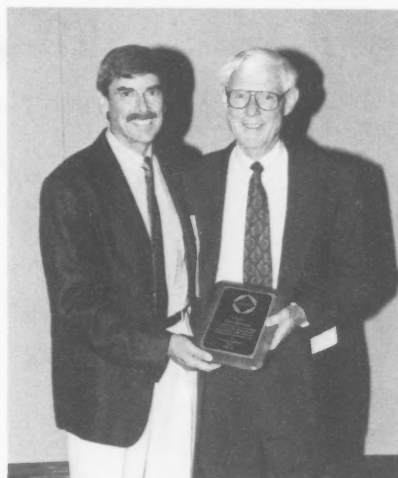
Several decades of commitment to IAMFES come together as Past Presidents meet.





◀ A beautiful salmon ice sculpture was provided by the Packaged Ice Association.

▶ John Cerveny, 1996 Program Advisory Chair is honored by Incoming President, Michael Brodsky.



▶ President Ann Draughon turns over the gavel to Incoming President, Michael Brodsky.



▶ Joseph Schwarcz, Vanier College, presents the Ivan Parkin Lecture at Sunday evening's opening session.



▶ Attendees take time to observe the educational displays in the exhibit hall.



A Message From the Past President



By F. ANN DRAUGHON,
IAMFES Past President

"Actions taken by the Execu- tive Board"

This will be the first in a series of quarterly Past Presidents' columns in *DFES*. Upon the recommendation of the Past Presidents' Advisory Group during the Annual Meeting and discussion with the *DFES* Management Committee, Bill LaGrange, *DFES* Scientific Editor, and Carol Mouchka, IAMFES Managing Editor, the Executive Board approved a quarterly Past Presidents' column.

I have struggled with how to best approach this column and how best to serve our membership with the column. I see my role as immediate Past President of IAMFES to be one of continuity, communication and support of IAMFES.

In this column, I would like to focus on communication of actions

taken by the Executive Board during meetings held June 26-July 4, 1996 in Seattle, Washington. At the conclusion of the Annual Meeting Awards Banquet, Michael Brodsky rotated into the Presidency of IAMFES for 1996-97. Jack Guzewish was welcomed as the new IAMFES Secretary and appreciation was expressed to Dee Clingman for his outstanding effort and achievements during his five-year term on the IAMFES Executive Board. Also, at the Awards Banquet, it was announced that the name of the IAMFES Citation Award would be changed to the Harry Haverland Citation Award in honor of Harry Haverland, Chair of the Foundation Fund and a long-standing member of IAMFES. Harry has made many contributions over the years in support and development of the IAMFES Lending Library, the Developing Scientist Awards, our overseas journal donations through FAO in Rome, the Ivan Parkin Lectureship, and the speaker funding program. Harry's capable management and development of the Foundation Fund which is primarily supported by sustaining members will continue to provide a legacy of information and service for protection food throughout the world.

IAMFES has established a policy on the co-sponsorship of other conferences. Inquiries should be sent to our Executive Director, Dave Merrifield.

Over 30 proposed symposia were presented to the PAC (Program Advisory Committee) during the Annual Meeting for presentation in Orlando in 1997.

The Food Sanitation PDG, chaired by Gloria Swick, has completed the pamphlet "Disaster Manual for Food Safety in the Home." The IAMFES office received over 550 requests for their previous manual "Food Safety at Temporary Events."

The Board unanimously supported the recommendation by the Past Presidents' Advisory Group that IAMFES remove the requirement that

a person nominating a member for an award must also be an IAMFES member.

Our professional development groups (PDG's) are growing. Two new groups met at the annual meeting: "Microbial Risk Assessment" and "Viral Foodborne Disease." Isabel Walls is proposing a new PDG on "Beverages," if anyone is interested please contact Dave Merrifield.

The Committee on Communicable Diseases Affecting Man, chaired by Frank Bryan, is currently updating their booklet "Procedures to Investigate Foodborne Illness."

The IAMFES office is revising addresses of all members to meet new postal regulations. U.S. addresses must be complete and include zip plus 4-digit code. When renewing your membership be sure to add your e-mail address. The IAMFES general e-mail address is iamfes@dw.com, individual staff addresses are also in place, contact the IAMFES office if you are in need of a particular address.

The 83rd Annual Meeting in Seattle broke all attendance records in spite of the time conflict with NEHA and the July 4th U.S. holiday. The 84th Annual Meeting in Orlando is scheduled July 6-9, 1997. Upon recommendation of the Florida Affiliate (FAMFES), the Executive Board has decided that the official dress code for the Orlando meeting will be business casual. A contract has been signed with Nashville for 1998.

The fall meeting of the IAMFES Executive Board was scheduled for October, the winter Board meeting for early January, and the spring Board meeting for April. If you or your committee, PDG or Task Force has agenda items, they should be sent to Dave Merrifield at least one month prior to the next meeting. If you have suggestions or ideas for the quarterly Past Presidents' column, please give me a call (423-974-7425) or e-mail to draughon@utk.edu.

Highlights of the Executive Board Meeting

The Executive Board met five times during the 1996 Annual Meeting. One session was an Executive Board Session.

The following is an unofficial summary of the Executive Board meetings during the IAMFES Annual Meeting:

1. The Executive Board approved the change in the name for the IAMFES Citation Award. The award will now be known as the Harry Haverland Citation Award in honor of Harry Haverland.
2. IAMFES President Michael Brodsky reported on his attendance at the ASEPT conference in Laval, France. This meeting was co-sponsored by IAMFES. He also reported that he has been discussing the possibility of forming a French Affiliate with some local representatives. Robert Brackett, IAMFES Vice President, reported that he has spoken with representatives in Mexico and Korea about establishing Affiliates in those countries.
3. The hotel for the 1998 Annual Meeting was approved and will be the Renaissance Nashville Hotel in Nashville, Tennessee. Meeting dates are August 16-19, 1998.
4. The Board directed the IAMFES office to investigate hotel availability for a 1999 meeting in Michigan.
5. The Board approved John Cerveny to serve as Program Advisory Chair again for the 1997 Annual Meeting. This was due to a personal conflict for the 1996 vice-chair.
6. The Board requested that a draft policy for the Annual Meeting volunteers be presented to the Affiliate Council for input. John Bruhn, Affiliate Council Chair, will provide information to the Affiliates and request comments.
7. The Executive Board approved the Foundation Fund Advisory Committee recommendation to charge members who do not return a Lending Library tape by the due date. Members failing to return tapes will be invoiced for \$25 or the cost of the tape (whichever is greater) and \$10 for processing. The Board added that no additional material will be lent to the requester until the fee is paid or the original material is returned. The Board also approved expanding the lending of materials to all international members.
8. It was reported that the Food Packaging Institute will no longer be supporting the annual Samuel J. Crumbine Award. At the recommendation of the Foundation Fund Advisory Committee, the Executive Board has agreed to provide \$1,000 from the Foundation Fund to support the award provided the committee reconsiders the geographical eligibility requirement and open the award to health departments outside the United States.
9. The Executive Board approved the Dairy, Food and Environmental Sanitation Management Committee's recommendations to develop a 3-A column for the journal and an invited column "In My Opinion" which would provide non-political scientific-based views of members and food safety leaders.
10. The Executive Board approved the recommendations from the Past Presidents' Advisory Committee to develop a column for Past Presidents for *DFES* and to drop the requirement for award nominators to be IAMFES members. Recipients must be members but the nominators do not necessarily have to be members.
11. The Executive Board approved the formation of a Microbial Risk Assessment Professional Development Group (PDG) to be chaired by Alan Hogue, USDA, and Vice-Chair, Lee-Ann Jaykus, North Carolina State University.
12. The Executive Board approved a recommendation by the Program Advisory Committee to eliminate hosting workshops prior to the 1997 IAMFES Annual Meeting. This recommendation was made because the '97 Annual Meeting begins immediately after the U.S. Fourth of July holiday.
13. The Executive Board received a report regarding the civil rights complaint of a former IAMFES employee. The case is currently in an unemployment claims appeals hearing.
14. The Executive Board approved the Food Sanitation PDG's recommendation to provide free reproducible artwork for an IAMFES "Disaster Manual for Food Safety in the Home" brochure which the committee had produced. The camera-ready copy will be distributed through the IAMFES office as was done with the PDG's "Food Safety at Temporary Events" brochure last year.
15. Past President, Ann Draughon, reported on an informal work group she chaired to identify possible funding sources, and people to work on the acquisition of conference grants to help fund speakers' travel and other expenses for the IAMFES Annual Meeting.
16. Robert Tiffin was approved as Chairperson for the 1996/97 Nominating Committee.
17. It was announced that Lawrence Roth was elected as Affiliate Council Secretary.
18. October 27-29, 1996 was selected as the date for the next Executive Board meeting, to be held in Des Moines, IA.

Minutes of the IAMFES 83rd Annual Business Meeting

Welcome and Introduction: President-Elect Michael Brodsky welcomed those assembled and introduced IAMFES President F. Ann Draughon.

Presidential Address: Dr. Draughon proceeded to deliver the 1996 Presidential Address.

Business Meeting:

I. Call to Order: Following her address, President Draughon called the 83rd Annual Meeting of the International Association of Milk, Food and Environmental Sanitarians, Inc. to order at 4:26 p.m. on Tuesday, July 2, 1996, at the Sheraton Seattle Hotel and Towers in Seattle, Washington. A quorum, as defined by the IAMFES Constitution, was determined to be present.

II. Moment of Silence: President Draughon asked those present to rise and to observe a moment of silence in memory of departed colleagues.

III. Minutes of the Last Meeting: Secretary Gale Prince reminded those present that the Minutes of the 82nd Annual Meeting had been printed in the November 1995 issue of *Dairy, Food and Environmental Sanitation*.

MOTION To dispense with the reading of the Minutes of the 82nd Annual Meeting and to approve them as printed in the November 1995 issue of Dairy, Food and Environmental Sanitation.
Prince
Sanders
PASSED

IV. Reports: The following reports were presented:

A. Teller: Bob Sanders

MOTION To approve the election of Jack Guzewich as IAMFES Secretary.
Prince
Sanders
PASSED

MOTION To destroy the election ballots.
Sanders
Prince
PASSED

B. Executive Director: Dave Merrifield

C. *Journal of Food Protection Management* Committee: Joe Frank

D. *Dairy, Food and Environmental Sanitation Management* Committee: John Bruhn

E. Foundation: Harry Haverland

F. Affiliate Council: Joe Disch

President Draughon thanked all who had served on various committees, professional development groups and task forces, and called attention to the fact that reports of the meetings held on June 30, 1996 were posted outside the ballroom.

Appreciation was extended to Joe Disch for his outstanding leadership of the Affiliate Council and his services on the Executive Board.

V. Old Business: President Draughon called for any old business to be discussed. There was no old business to come before the Association.

VI. New Business: President Draughon introduced Charles Price, a member of the Constitution and Bylaws Committee, to present amendments to the IAMFES Bylaws.

Mr. Price reported that ten proposed amendments had been sent to the voting membership May 17, 1996 and that the IAMFES Constitution and Bylaws Task Force voted to offer a proposed substitute amendment to proposed amendment number 1 and proposed amendments to the proposed amendments numbered 3, 8, and 9.

President Draughon reminded all present that committee motions do not require a second in accordance with Roberts Rules of Order. Mr. Price offered the following Constitution and Bylaws Task Force motions:

Substitute Amendment Number 1:

MOTION To amend the Bylaws by deleting all of the current wording under Article II Section 2A. "The President-Elect shall be Chairperson of the Program Committee which will be responsible for planning the program for the Annual Meeting." and adding the new wording. "The President-Elect shall coordinate the planning of the Annual Meeting."
Price
PASSED

Proposed Amendment Number 2:

MOTION To amend the Bylaws by deleting Article II, Section 3A. "The Vice President shall serve on the Program Committee." and re-letter Article II, Section 3B to Article II, Section 3A.
Price
PASSED

Proposed Amendment to Proposed Amendment Number 3:

MOTION To amend the Bylaws by adding new Article II, Section 5D. "To plan the Annual Meeting in cooperation with the Affiliate
Price
PASSED

Local Arrangements Committee and the Program Advisory Committee.” and re-letter Article II, Section 5, D through K to Article II, Section 5, E through I.

Proposed Amendment Number 4:

MOTION To amend the Bylaws by deleting the
Price word “legislative” from Article II,
PASSED Section 5D. The section will then read,
“To act for and in behalf of IAMFES in any
administrative, financial, educational, or
other capacity as IAMFES may direct, or to
act on its own initiative between meet-
ings and report such action at the next
Annual Meeting.”

Proposed Amendment Number 5:

MOTION To amend the Bylaws by deleting all of
Price the current wording under Article II,
PASSED Section 5G. “To employ personnel, as the
situation demands, and fix their compen-
sation and duties.” and adding the new
wording, “To employ an Executive
Director for the association and fix his or
her compensation and duties.”

Proposed Amendment Number 6:

MOTION To amend the Bylaws by deleting the
Price words “as soon as possible after the
PASSED Annual Meeting” from Article III, Section
1B, and adding after the word “publica-
tion,” the words, “in a timely manner
after receipt from authors.” The section
will then read, “Assemble and transmit to
the editors of the publications of IAMFES,
all papers, addresses, and other matter
worthy of publication in a timely manner
after receipt from authors.”

Proposed Amendment Number 7:

MOTION To amend the Bylaws by adding new
Price Article III, Section 11, “With the approval
PASSED of the Executive Board, employ all staff
and fix their compensation in accordance
with the approved budget, and define
their specific duties.” and re-letter Article
III, Section 11 to Article III, Section 11.

Proposed Amendment to Proposed Amendment
Number 8:

MOTION To amend the Bylaws adding the word
Price “Advisory” following the word “Program”
PASSED in Article V, Section 1. The section will
then read, “Standing committees of
IAMFES shall consist of the following:
Program Advisory Committee, *Journal of*
Food Protection Management Committee,
Journal of Dairy, Food and Environmen-

tal Sanitation Management Committee and Past
Presidents’ Advisory Committee.”

Proposed Amendment to Proposed Amendment
Number 9:

MOTION To amend the Bylaws by deleting all of
Price the current wording under Article V,
PASSED Section 1A. “The Program Committee
shall include the officers of IAMFES,
Chairperson of the Program Advisory
Committee, the Executive Director and
the Chairperson of the Local Arrange-
ments Committee” and adding the new
wording, “The Program Advisory Com-
mittee shall consist of a chair, vice-chair
and other individuals appointed by the
Executive Board. These appointments
shall be for 3-year terms on a rotating
basis with balanced representation from
education, government and industry.
1. The Committee shall assist the Execu-
tive Board in developing the scientific and
technical content of the Annual Meeting.
2. The Committee shall meet at each
Annual Meeting and such other times as
deemed necessary.”

Proposed Amendment Number 10:

MOTION To amend the Bylaws by deleting the
Price word “three” and the words “and
PASSED the Executive Director, who shall serve
as” from Article V, Section 1B, and adding
a comma and the word “and” after the
word “terms.” The section will then read,
“The journal management committees
shall consist of chairpersons, appointed
by the President, the editors of the
IAMFES publications, members appointed
for 3-year terms, and the Managing Editor
of the publications, unless otherwise
designated by the Executive Board.”

VII. Resolutions: Immediate Past President C. Dee
Clingman stated that there were no resolutions pre-
sented for consideration.

VIII. Adjournment: There being no further business to
come before the meeting, the President called for a
motion to adjourn.

MOTION To adjourn.

Price
Brodsky
PASSED

President Draughon declared the meeting adjourned at
5:27 p.m.

Respectfully submitted,
Robert Brackett, Secretary

Minutes

STANDING COMMITTEES

Dairy, Food and Environmental Sanitation Management

Date: June 30, 1996

1. The meeting was called to order at 1:30 p.m. by J. C. Bruhn, chair. Introductions were made. Committee members and others present: ex-officio, Joe F. Frank, Bill LaGrange (scientific editor), Carol Mouchka (staff), F. Ann Draughon; Guests: Donna Bahun (staff), Dave Merrifield (staff), Robert Brackett, Gale Prince; Members: William B. Coleman, Tom Gilmore, Chris Newcomer, Robert Gravani, Linda Harris, P. C. Vasavada, Christine Bruhn, Bob Sanders, O. D. (Pete) Cook. A quorum was determined.
 2. T. Gilmore was appointed recording secretary.
 3. Agenda was approved as distributed.
 4. Minutes distributed were uncorrected with respect to "foodborne." "Foodborne" is one word without hyphenation. Minutes as corrected were approved.
 5. D. Merrifield provided headquarters report and staff responsibilities summarized as follows:
 - C. Mouchka is Managing Editor of *DFES* and *JFP* and Director of Communications.
 - R. McAtee is Director of Member Services and Marketing.
 - D. Bahun is the Publication Specialist (*DFES*).
 - Presented Bylaw amendments pertaining to *DFES*.
 - Dues increases for *DFES* from \$70 to \$75 and for *DFES* and *JFP* from \$110 to \$120 per year.
 - Journal subscription rates were increased: *DFES* from \$130 to \$140; *JFP* from \$165 to \$175; and both *DFES/JFP* from \$225 to \$245.
 - The journals may no longer be mailed in plastic bags. White front and back covers may be used. Reason—postage savings.
 6. B. LaGrange's (Scientific Editor's) report is attached.
 7. C. Mouchka's (Managing Editor's) report:
 - New cover design.
 - Abstract is in larger print.
 - Statistical data (attached).
 - Add the year of publication to column.
 - Invitation to writers to provide opened type articles was discussed. The committee made these recommendations:
 - a. Title column "In My Opinion."
 - b. Scientific editor to invite papers.
 - c. Publish quarterly.
- There was some concern with this type of column thus it will be done on a trial basis for one year and reviewed by this committee next year.
- Staff to provide committee with the timeline on when article was received, reviewed, accepted, and published.
 - There was discussion on new product (commercial) articles. Committee recommended status quo for now.
 - New prices for 3-A and E-3-A standards sets are: Complete set of 3-A Sanitary Standards - \$75.00 member, \$150.00 nonmember. Complete set of 3-A Sanitary Standards - \$60.00 member, \$120.00 nonmember. Complete set of E-3-A Sanitary Standards \$25.00 member, \$50.00 nonmember.
 - The 3-A Secretary recommended that since there are only two E-3-A standards, only combined 3-A and E-3-A sets be offered for one price. The Committee will make this recommendation to IAMFES BOD.
 - The 3-A Secretary requested a quarterly 3-A Column in the journal. The committee will make this recommendation to IAMFES BOD.
 - DFISA and IAMFES staff to jointly plan a strategy for placing information about the 3-A program and 3-A Sanitary Standards on the Internet.
8. The flow diagram for manuscript review was approved.
 9. Instructions to authors are being reviewed by staff. Revision to be reviewed by J. C. Bruhn.
 - Mail revised "Instructions" after approval.
 - Develop a major item checklist to be included in "Instructions."
 - Adopt *JFP* and *JFS* abbreviation list.
 10. *DFES* Committee members were encouraged to attend the PAC meeting on June 30 to provide suggestions on symposium.
 11. Summary of *DFES* Management Committee recommendations to IAMFES BOD:
 - Publish a quarterly 3-A Column to be authored by Tom Gilmore and others.
 - Provide the 3-A and E-3-A standards as a combined set of standards. Note—individual copies of both would still be available.
 - Develop a quarterly "In My Opinion" column.
 - Committee members R. Gravani, J. C. Bruhn, and P. C. Vasavada be re-appointed.

12. Final Committee comments: Thanked chair J. C. Bruhn for outstanding leadership and for increasing the standards, stature, and quality of *DFES* to that of other peer-reviewed journals in food science.
13. Final comments from the chair: J. C. Bruhn thanked the committee for their support and hard work. He especially thanked Carol Mouchka for her initiatives in making *DFES* a first class journal. Mouchka recognized Donna Bahun and Michelle Sproul for providing assistance.
14. Chair J. C. Bruhn turned the gavel to O. D. (Pete) Cook, *DFES* Committee chair 1996-1999. Tom Gilmore is the vice chair for the same period. IAMFES staff liaisons are Carol Mouchka and Donna Bahun.
15. The meeting was adjourned at 2:59 p.m. The next meeting will be Sunday, July 6, 1997 at the Hyatt Regency Grand Cypress in Orlando, Florida.

Journal of Food Protection Management

Date: June 30, 1996

Chair: Joe Frank

Attendance: Anna Lammerding, Ewen Todd, Donald Schaffner, Maribeth Cousin, Susan Sumner, Donald Conner, Larry Beuchat, John Sofos, John Bruhn, Dave Merrifield, Carol Mouchka, Michelle Sproul, Michael Brodsky, Harold Bengsch, and Tom McMeekin.

The Journal of Food Protection continues to grow. The 1994 issue consisted of 1,139 pages and 193 papers. The 1995 issue consisted of 1,440 pages and 226 papers. The journal currently has a 6 month backlog of accepted papers. IAMFES staff is working towards reducing this backlog to 3 months.

The Committee discussed the role of *JFP* in the publication of symposia not sponsored by IAMFES. We recommend that IAMFES consider publication of symposia proceedings as books rather than as part of *JFP*. This should be accomplished only when IAMFES staff can handle additional publication workload.

Anna Lammerding has agreed to serve as the next committee chairperson.

EDITORS' REPORT: *Journal of Food Protection* – 1995-1996

Volume 58 (1995)—Publication of the December, 1995, issue completed Volume 58 of the *Journal of Food Protection*. This volume contained 1,440 pages and 239 papers, which consisted of 225 research papers, and 14 review (general interest) papers (Table 1). Volume 58 contained 26.5% more than Volume 57 published in 1994. The change to perfect binding in 1995 enabled an increase in the number of pages published in Volume 58.

Volume 58 contained 302 more pages, 49 more research articles and 4 less review articles than Volume 57. Ninety-three (41%) of the articles were authored by researchers from countries other than the U.S. The quality of both research and review articles continued to be high in 1995. The Editors continue to encourage the submission of review articles, which are published as promptly as possible.

Volume 59 (1996)—Six issues of Volume 59 of the *Journal* were published during the first 6 months of 1996. These issues contained 674 pages compared to 712 pages in the first 6 issues of Volume 58. The first 6 issues of Volume 59 contained 108 research articles and 7 review articles. This compares to 112 research articles and 8 review articles published in the first 6 issues of Volume 58.

Also published in 1996 was a Supplement issue containing 13 papers from 3 symposia organized and sponsored by the International Life Sciences Institute and held in conjunction with the IAMFES 1994 Annual Meeting. This supplement contained 88 pages. Thus, the first 6 regular issues of Volume 59 of the *Journal* and a supplement published in 1996 contained a total of 762 pages, 50 more than issued to subscribers of the first 6 issues of Volume 58.

Change of Editors and Editorial Board—On September 1, 1995 Dr. John N. Sofos, Professor in the Department of Animal Sciences at Colorado State University, was appointed to a 4-year term as Co-Editor of the *Journal*. Dr. Lloyd Bullerman, Professor in the Department of Food Science and Technology at the University of Nebraska, retired as Co-Editor on December 31, 1995.

Currently, the Editorial Board of the *Journal* consists of 92 members from the U.S., Canada, Mexico, and Australia. Members continue to serve 3-year appointments, and many accept second and third term reappointments. Anyone interested in reviewing manuscripts and serving on the Editorial Board should make this interest known in a letter to one of the Editors, being sure to describe their area of interest or expertise. Selection of new members will be made based on expertise needed to balance the Board.

The Editors thank all who reviewed papers in 1995-96.

Submitted by: Larry R. Beuchat and John N. Sofos, Editors.

TABLE 1. Summary of contents of *Journal of Food Protection*, 1991-1995

Item	Volume 54 (1991)	Volume 55 (1992)	Volume 56 (1993)	Volume 57 (1994)	Volume 58 (1995)
1. Total Pages	992	1,028	1,100	1,138	1,440
2. Total papers published	174	178	193	194	239
a. Research papers					
i. Number	163	162	175	176	225
ii. Pages	733	744	779	859	1,163
iii. Percent of total pages	73.9	72.1	70.8	75.5	80.8
b. General interest papers					
i. Number	11	16	18	18	14
ii. Pages	100	122	141	147	120
iii. Percent of total pages	10.1	11.9	12.8	12.9	8.3
3. Association affairs					
a. Pages	77	96	106	69	87
b. Percent of total pages	7.8	9.3	9.6	6.1	6.0
4. Other (contents, index, ads, etc.)					
a. Pages	82	69	74	63	70
b. Percent of total pages	8.2	6.7	6.8	5.5	4.9

Past Presidents' Advisory

Past Presidents' Dinner

A number of Past Presidents have requested that the Past Presidents' Dinner on Tuesday evening be evaluated to determine if it is still appropriate since numerous other events compete for the same time slot in recent years. Perhaps a breakfast or luncheon would be more appropriate. After discussion, it was the feeling of those present that we continue with the dinner on Tuesday night since many Past Presidents and their spouses look forward to exchanging ideas and social events with one another.

IAMFES Update

Dave Merrifield was introduced and spoke briefly on his career prior to joining IAMFES. The status of the civil right's complaint from a former employee was discussed.

Awards Nominations

The Past Presidents were asked to provide suggestions to encourage more IAMFES Award Nominations. The following were some suggestions:

1. Affiliates need to be contacted in the fall of each year and reminded and encouraged to submit nominations. This should be done by formal letter from Des Moines or the Affiliate Council Chair.
2. Procedures should be changed to allow a non-IAMFES member to submit a nomination. This would allow for supervisors and co-workers to submit IAMFES members for awards where the supervisor or co-worker may not be a member.
3. The Awards Nomination Committee should use the Annual IAMFES Meeting to select possible award candidates for the next year. Usually, IAMFES' leaders deserving of awards attend the Annual Meeting.

Financial Grants

In recent years, more and more professional meetings are receiving financial support from grants through government agencies and business/trade organizations. IAMFES needs to pursue this concept for the future. While the committee did not have any immediate solutions, they did recommend that former Past President, Mike Doyle, be contacted on providing guidance in this area. It was also suggested that we solicit official Continuing Education Units (CEU) from other professional organizations, i.e., Dietetic Associations, NEHA, APHA, etc. to encourage grant requests as well as build annual meeting attendance.

Financial Growth

The group was also asked to provide ideas on enhancing financial growth to IAMFES. The following are some suggestions:

1. We need to pursue more advertising income from non-traditional food safety arenas, i.e., companies that provide products or services to a secondary

market. For example investigate those companies that provide goods and services to our Sustaining Members. Use advertising as a way for others to reach our Sustaining Members and Exhibitors.

2. Poultry and Seafood are two major product areas of growth and development in recent years. Investigate these areas and promote income generation targeted at these areas. Annual Meeting workshops, advertising, exhibits, etc. can be focused upon for financial growth.
3. Encourage more interaction and communication with peripheral food safety organizations.

Communications

The Past Presidents suggested more communications to them on a routine basis. In addition, they would be willing to write a Past Presidents' column in *DFES* on a monthly or bi-monthly basis. Dee Clingman agreed to set-up a schedule for columns by contacting all Past Presidents if the Executive Board and Managing Editor of *DFES* felt this was a worthwhile activity.

Those in attendance:

Past Presidents

Bob Sanders (1991)
Robert Marshall (1983)
Bill Arledge (1981)
Henry Atherton (1977)
Dave Fry (1978)
Dee Clingman (1995)

IAMFES Staff & Board

Dave Merrifield
Ann Draughon
Bob Brackett
Gale Prince

SPECIAL COMMITTEES

Communicable Diseases Affecting Man

Members present:

Frank L. Bryan, Chair
C. A. (Bert) Bartleson
O. D. (Pete) Cook
J. J. (Jack) Guzewich
Daniel J. Maxson
Lee-Ann Jaykus
R. C. (Dick) Swanson
Ewen C. D. Todd
Leslie Wisniewski
Four observers present

Activities since last meeting:

The second edition of the manual, "Procedures to Investigate Waterborne Illness," has been published. This manual was thoroughly updated and describes practical epidemiologic and field procedures to use during waterborne investigations.

A history of the Committee has been prepared and submitted for publication in *Dairy, Food and Environmental Sanitation*. This is a detailed history that states with the formation of the Committee in 1914 and cites accomplishments and publications done throughout the years to the present. Listed in the paper are 16 Committee reports published in the Association's Proceedings prior to publication of the journals; 16 papers pub-

lished or submitted to and to be published in the journals; 11 manuals and their revisions; and 9 translations of the manuals. These professional contributions have been accomplished by the coordinated efforts of at least 137 Committee members with assistance of consultants, reviewers and IAMFES executives and staff.

A subcommittee prepared a four-part series, "Surveillance of Foodborne Diseases" to be published in the *Journal of Food Protection*. This series gives reasons for surveillance, describes surveillance systems, cites limitations and values of surveillance summary data, recommends new approaches for summary data, and states uses of surveillance data. The objectives are to standardize presentation of foodborne disease surveillance for local, regional, national and international agencies.

The Committee worked on development of the fifth edition of the manual, "Procedures to Investigate Foodborne Illness."

Activities at this meeting:

The Committee worked on revision of a draft of the 5th edition of the foodborne investigation manual. Plans are to circulate the next draft to international subject experts for peer review and later in the year a Subcommittee will revise and edit the draft and submit it to the Association for copy editing and printing.

Upon completion of the foodborne investigation manual, plans are to begin the task of revising the manual, "Procedures to Implement the Hazard Analysis Critical Control Point System."

Program Advisory

Date: July 1, 1996

Seventeen proposed symposia were submitted to PAC for the 1997 Annual Meeting in Orlando, Florida. Five additional symposia are in the development stage and will be delivered to PAC by Tuesday afternoon.

On Wednesday morning, PAC will review all of the proposed symposia and then select those for the 1997 program. For each symposia selected, the name of the speakers, the title of their talks, and the name of two convenors should be submitted to PAC by November 15. A brief abstract will also be required from the speaker.

On Wednesday, PAC will also discuss the potential workshops that were suggested for the 1996 Annual Meeting.

PAC has decided to leave a slot open in the 1997 program for any late-breaking concerns that may surface next spring.

PAC would appreciate any additional suggestions for either a symposium or workshop. If you have any ideas, please contact any member of PAC or Carol Mouchka, Director of Communications for IAMFES. We will need this information by no later than Tuesday afternoon.

Submitted by: John Cerveny, PAC Chairperson

PROFESSIONAL DEVELOPMENT GROUPS

Applied Laboratory Methods

Date: June 30, 1996

Members Present: Twelve members were present representing regulatory, industry and academia. Claire Lee, Musa Dahdal, Lee Jensen, Donna Christensen, Doug McDougal, Mary Ann Barrow, Lee Ann Jaykus, Lawrence Roth, Linda Polgin, Elizabeth Johnson, Bob Marshall, and Mary Robart.

Presiding: The meeting was called to order by Elizabeth Johnson, Committee Chairperson.

Summary of Activities and Actions Taken:

1. Elected Mary Robart as Vice Chair for 1996 and 1997.
2. Approved minutes of 1995 annual committee meeting.
3. **Old Business:** A statistical verification of upper counting limits for selective media is in progress (M. Brodsky). The study is ongoing but not finished due to other commitments.
4. **New Business:**
 - (a) A discussion was held (R. Marshall) concerning an upcoming revision of the 16th edition of the Standard Methods for the Examination of Dairy Products. Contributors will be solicited within the coming two years.
 - (b) The role and direction of the Applied Laboratory Methods Committee was discussed. The value for promotion of laboratory interaction, a source of technical expertise and the potential need to serve as a forum for international laboratory methods were mentioned.
 - (c) There was an open discussion about a symposium/program on the Effects of International Trade on Laboratory Methods. The content would cover accreditation systems, certification processes and political issues. Several potential convenors were identified.
5. The meeting was adjourned at 3:15 p.m.

Submitted by: Mary Robart

Meat Safety & Quality

Date: June 30, 1996

In attendance: Stan Bailey, Dane Bernard, John Cerveny, Jim Dickson, Warren Charminski, Jerry Erdmann, Thippareddi Harshavardhan, Joe Huseman, Ivan Linjacki, Mike May, Tom McMeekin, Larry Mendes, Art Miller, Jenny Scott, Susan Sumner, Robert Tiffin, Isabel Walls, Ron Weiss, and Connie Zagrosh-Miller.

Chair: Anna Lammerding

Recorder: Kathleen Glass

Agenda Items:

1. Introduction of incoming Chair, Mr. Robert Tiffin, J. M. Schneider, Inc., Kitchener, Ontario.
2. Selection of Vice-Chair, Dr. Ivan Linjacki, MGI Packers, Cambridge, Ontario.
3. Symposium suggestions to be developed and presented to the Program Advisory Committee.

Topics and Organizers

- (i) Micro and the Mega-Reg: Update on USDA rule
Jim Dickson
Jenny Scott
 - (ii) Food Plant Sanitation Program
Joe Huseman
Larry Mendes
Bob Tiffin
 - (iii) *E. coli* Update
Art Miller
Susan Sumner
Thippareddi Harshavardhan
 - (iv) Methodology for HACCP (together with Poultry Safety PDG)
Stan Bailey
4. Suggestions for other topics, not developed at this time.
 - (i) Antibiotic-resistance of microorganisms.
 - (ii) Rating systems for HACCP programs.
 - (iii) Residue testing.

Poultry Safety and Quality

Date: June 30, 1996

Introductions: (9 members attending)

Attendees to the Poultry Safety and Quality

Professional Development Group: Eric Line, USDA, ARS; Chris Newcomer, New-Tech Consulting; Brian Sheldon, N.C. State University; Chuck Papa, Continental Grain Co.; Nelson Cox, USDA, ARS; Don Conner, Auburn University; Neal Apple, Tyson Foods; Hillary Fagar, Tyson Foods; and Stan Bailey, USDA, ARS.

Extensive discussion was held on the impending "Mega Reg" now expected to be published in mid July. It is the group's understanding that changes in the document will include having industry conduct *E. coli* testing while FSIS will conduct *Salmonella* testing. The *Salmonella* testing will be by batches rather than 1 sample per day.

Discussions on various pathogen intervention procedures were then held. These topics included chlorine dioxide, TSP, new evisceration systems, *Saccharomyces* yeast treatment to control *Salmonella*, competitive exclusion, Anitox feed additives, and the Alcide acidified sodium chlorite product.

Industry representatives expressed a concern that as of July 15, FSIS will no longer have a Recognized Labora-

tory Program. It was recognized by the group that this program was not currently being run in a manner that would assure the continuous validity of each laboratory, but the need for a laboratory certification program still exists. A new laboratory program that deals with Russian trade is being implemented by AMS. It was the unanimous feeling of the group that some type of effective laboratory certification program needs to be established. Either by FSIS or AMS. The PDG would like the IAMFES Executive Board to consider whether IAMFES should consider helping to establish such a certification program.

Two symposia were recommended. The first, "An Update on the Mega Reg" was suggested to be combined with the Meat Safety PDG. The second "Trends in Microbiological Methods" has been submitted to the Program Advisory Committee.

Dr. Brian Sheldon will be the incoming Chair and Dr. Don Conner has agreed to be the Vice-Chair.

Submitted by: Stan Bailey, Chair

Audio-Visual Library

Date: June 30, 1996

1. The meeting was called to order by the chair at 9:35 a.m. The following committee members and guests were in attendance: Sid Barnard (vice chair), Charles Felix, Tom Gilmore (chair), Alice Haverland, Harry Haverland, Bob Sanders, David Tharp (ex-officio), and guests Michael Brodsky and Gail Prince. Regrets were received from Debbie Cherney, Robert Darrah, David McSwane, and Marsha Robbins. The following people confirmed continued interest: Ron Schmidt, P.C. Vasavada, and John Christy. Gloria Swick and Roy Carawan have requested that they be dropped from the AV-PDG. A quorum was determined.
2. The Agenda for the 1996 AV-PDG was approved as distributed.
3. T. Gilmore will act as recording secretary.
4. The 1995 AV-PDG minutes were approved as distributed.
5. D. Tharp provided the staff report.
 - a. Current holdings were distributed and contain purchase or product date if known (see attached).
 - b. Usage summary from July 1995 through May 1996 was distributed (see attached). There was considerable discussion on requests made to those filled. Although there is still some back log in filling requests, improvements have been made and staff will continue to correct this problem. The bigger problem is failure of borrowers to return materials in a timely manner and in some cases not returning materials. The

AV-PDG recommended the following policy to the BOD.

- 1) Invoice the borrower for overdue materials, allowing 4 weeks turnaround time.
- 2) Staff to invoice at fair market value of AV materials based on replacement costs or, if donated, a minimum of \$25.00.
- 3) A \$10.00 administrative fee will also be added to replacement costs.
 - c. D. Tharp distributed Library budget for FY ending August 31, 1997 (attached). There is an expected excess for FY '96. The proposed FY '97 budget of \$8,000, which is a \$1,500 increase, was recommended to the BOD. Reasons for this increase are increased postage and handling costs, overseas mailing costs (see item 8), and a recommendation to fund up to \$4,000 in salary for an IAMFES employee to staff the library. The AV-PDG approved the above proposals.
 - d. New materials will receive priority and will be reviewed as they are submitted.
6. There has been considerably more staff time devoted to the AV Library. Tanya Smith devotes all her time to the AV Library and Karla Jordan has increased her time allocation to it. Staff expects to have all requests filled and have other administrative matters completed by year's end. The PDG endorses Ms. Smith's continued services to the Library and gives a hearty "thank you" to her, K. Jordan, and D. Tharp for their continued service.
7. The AV-PDG membership was reviewed and updated. R. Sanders was recommended for membership in the dairy subgroup and Alice Haverland was recommended for membership in the Food Safety subgroup. G. Swick asked to be removed. All others indicated continuing interest. The PDG list is corrected.
8. The following policy on non-North American usage was made:
 - a. All IAMFES members shall have access to AV materials.
 - b. AV materials will only be made available in format and language of the original production.
 - c. Airmail costs will be paid for by IAMFES on outgoing materials and by borrowers on return materials (est. \$10-15 per mailing).
 - d. To allow some flexibility (>4 weeks) to return materials.
9. The PDG will begin to re-evaluate the AV holdings with the following protocols:
 - a. In FY '97, evaluate AV materials ≥ 10 years since purchase or production.
 - b. In FY '98, evaluate AV materials ≥ 5 years since purchase or production.
 - c. In the future, have a continuous re-evaluation program for all AV materials >5 years after purchase, production, or previous review.
 - d. Staff to complete top of form and mail to 2 AV-PDG members of appropriate subgroup for evaluation. If any evaluation is not conclusive, submit AV material to a third PDG member.
10. AV-PDG recommendations to the IAMFES BOD:
 - a. FY '97 budget of \$8,000.
 - b. Use up to one half of the expense budget (\$4,000) for a specific staff person with their time allocated exclusively to the Lending Library.
 - c. Institute policy of charging borrowers replacement value for AV materials not returned.
11. Meeting was adjourned at 11:00 a.m. Next AV-PDG meeting Sunday, 6 July 1996 at the Hyatt Regency Grand Cypress in Orlando, Florida. Please mark your calendars.

Food Sanitation

New Chair: Alice Haverland

Members present: Gloria Swick, Charles Felix, Tom Schwarz, and Harry Haverland

The Disaster Manual for Food Safety in the Home has been completed, needs to be approved by the Board, and will be available from the IAMFES office soon.

The future direction of this group will include the emphasis of proper handwashing procedures for food service employees and suggestions for food transportation vehicles.

Dairy Quality and Safety

Date: June 30, 1996

Mission Statement:

"This IAMFES committee works to improve quality and safety in production, processing and distribution of dairy products from farm to consumer."

Key Activities:

- Identify the needs of the dairy industry.
- Develop procedures and recommendations which address these needs.
- Disseminate information to appropriate dairy industry groups.

Presiding: Steven Sims, Chair, Dairy Quality and Safety acting for John A. Scheffel.—Farm Section 10:00 a.m. to 11:30 a.m.—Plant Section 11:30 a.m.—12:30 p.m. Both sections met concurrently with, and under joint leadership of Donald R. Kimball for Wally Jackson—Educational Development Section.

Members and Attendees Present: Sidney E. Barnard, Marlena Bordsen, Randall Daggs, Eugene Frey, Joseph A. Huseman, Donald R. Kimball, Terry B. Musson, Chris B. Newcomer, Charles D. Price, Allen R. Saylor, Steven Sims, Gaylord B. Smith, Duane R. Spomer, Harold Wainess, and Ron Weiss.

Summary of Activities and Actions Taken:

1. Symposia were presented on 4 subjects:
 - Opening doors to new markets
 - Technical considerations of entering new International markets
 - Finding a niche market-organic milk
 - Insuring acceptable dairy equipment design
 - Panel discussion of current dairy topics
 - Dairy farm design
2. A joint project with the Dairy Practices Council (DPC) "Guidelines for Controlling the Quality and Use of Dairy Product Rework" was completed and published as DPC Guideline #63.
3. Progress reports and ongoing work:
 - Mr. Charles Price will provide a draft outline of "A Dairy Fieldpersons Pocket Guide" for committee review and comment.
 - Plant Section Chair, Gaylord Smith is coordinating a cooperative effort with DPC to produce a document explaining how to conform with developing NCIMS and USDA/FDA regulations and existing 3-A requirements for milk tank trucks.
4. A special task group consisting of John Scheffel, Wally Jackson, Gaylord Smith, Steven Sims, Don Kimball and Chris Newcomer will bring recommendations for committee term limits and transition procedures to the 1997 IAMFES Dairy Quality and Safety Committee Meeting.

Submitted by: Steven Sims.

Microbial Risk Assessment

Date: June 30, 1996

In attendance: Kathy Christiansen, Musa Dahdal, Trish Desmarchelier, Bob Hartog, Lee-Ann Jaykus, Arthur Miller, Tom McMeekin, Lisa Nesbett, Chris Newcomer, Servé Notermans, Pekka Pakkala, Nina Parkinson, Morris Potter, Tom Ross, Don Schaffner, Jenny Scott, Ewen Todd, David Vose, and Richard Whiting.

The participants represented Australia, Canada, Finland, Jordan, The Netherlands, U.K. and U.S.

Acting Chair: Anna Lammerding

Scribes: Lisa Nesbett/Don Schaffner

Agenda Items

1. **Selection of Chair:** Allan Hogue, USDA
Selection of Vice Chair: Lee-Ann Jaykus, NC State

2. **Goals & Objectives**

Discussion revolved around the focus and direction this group should take to provide a service of value for IAMFES members. The following Mission Statement and goals for the group are tentatively proposed, which will be refined through further discussions among the PDG members; however, these reflect the general consensus of the group.

Mission

The mission of the Microbial Risk Assessment PDG is to facilitate the development and application of risk assessment of foodborne hazards to human health.

Goals

It is proposed that the goals of the Microbial Risk Assessment PDG are to: provide a forum for food safety specialists to discuss issues related to microbial risk assessment, within the general context of the risk analysis process (i.e., risk assessment, risk management and risk communication); to encourage collaboration between investigators, to communicate the principles and application of risk assessment to the IAMFES membership; and to facilitate provision of training opportunities and guidance in the use of risk assessment techniques.

Activities related to these goals were proposed, and included:

- (i) organize symposia for the IAMFES Annual Meeting
- (ii) organize workshops
- (iii) establish and maintain a database of risk assessment literature
- (iv) compile and distribute a contact list of individuals involved in microbial risk assessment
- (v) act as an independent focal point to facilitate harmonization between groups developing risk assessment methodology
- (vi) serve as an intermediate advisory body on microbial risk assessment applications by e.g., developing and publishing white papers
- (vii) evaluate risk assessment models
- (viii) encourage risk managers and risk communicators to consider the risk assessment process in risk reduction activities.

Further discussions among the PDG members will be pursued to examine each of the proposed activities and further define and focus these activities.

The group has still to resolve *precisely* whom we are targeting through the PDG activities.

3. **Issues Relevant to Microbial Risk Assessment**

A number of topics were identified that reflect the interests and concerns of the PDG members.

These issues are summarized as follows:

1. Defining the scope of microbial risk assessments:
Why do it?
When do it?
What applications are appropriate?
2. Animal health and how it affects food safety
3. Mathematical aptitude—how to develop models that are correct
4. Qualitative RA for retail food establishments
5. Dose-response modeling
6. Temperature effects modeling
7. Growth models
8. Distribution of organisms in foods—prevalence and population numbers
9. Surveys techniques for useful RA
10. Use of RA in food safety inspection
11. Quantitation of pathogens
12. Statistical treatment of presence/absence testing results
13. Differences between chemical and micro RA
14. Differences between producer and consumer RA
15. Collaboration with industry and use of industry data
16. Use of RA for setting food standards/criteria
17. Do our regulations make sense? Retrospective RA
18. RA of situations where control is lost
19. Managing the RA process
20. How should risk estimates be used

4. Proposed Activities for 1997 IAMFES Annual Meeting

Symposium Topic – Start-to-finish overview of risk assessment process

Organizers: Lee-Ann Jaykus and Richard Whiting
Workshop – Risk Assessment Modelling

Organizers: Don Schaffner, Anna Lammerding, and David Vose

Focus Group – One day session to discuss risk assessment process

5. Summary

There is much enthusiasm and interest in establishing this Professional Development Group. Several of the members will continue to develop the focus and future activities of the group during the next few months.

Viral Foodborne Disease

Attendees: Lee-Ann Jaykus, Dean Cliver, Jack Guzewish, Mark Sobsey, Musa Dahdal, Daniel Maxson, Ivan Linjacki, and Bert Bartleson.

Chair: Lee-Ann Jaykus, Dept. of Food Science, North Carolina State University, Raleigh, NC 27695-7624

Vice-Chair: Daniel Maxson, Clark County Health District, 625 Shadow Lane, Las Vegas, NV 89106

1. Discussion of Mission of the Group:

The Viral Foodborne Disease group will focus its efforts on issues including the epidemiology of foodborne viral disease, traditional and emerging detection methodologies, and methods to control viral contamination of foods. The group has identified 3 primary goals:

- a) Promote *collaboration* among public health, regulatory, and academic professionals in the area of viral foodborne disease investigation and control. Specific areas for collaborative efforts include detection (clinical and food), epidemiology (investigation and surveillance), and risk assessment (analytical strategies, sources of information, and determination of future data needs).
- b) Promote *communication* among public health, regulatory, and academic professionals in the area of viral foodborne disease investigation and control.
- c) Provide *education* to IAMFES members and affiliates in the area of viral foodborne disease investigation and control.

2. Specific Activities for 1996-1997

- a) Develop membership/directory of members/interested parties.
- b) Submitted symposium application to IAMFES PAC for 1997 meeting. Specific proposed topics listed:

New Patterns, New Methods

Topics:

- 1) Prevalence of Viral Foodborne Disease
- 2) New Transmission Patterns
- 3) Update on SRSV (Norwalk-like) Viruses and Detection Methods
- 4) Update on Hepatitis A Virus (HAV) Epidemiology and Detection Methods
- 5) Detection of Human Enteric Viruses in Foods
- 6) Inactivation Strategies for HAV
- c) Development of written materials specifically targeting Investigation of Viral Foodborne Disease.

One of the following formats suggested:

- 1) Technical bulletin, focusing on detection methodologies
- 2) Collaboration with the Communicable Diseases Affecting Man publication, "Investigation of Foodborne Outbreaks"
- d) Workshop on detection methodologies to be discussed at a later date.

Seafood Safety and Quality

Date: June 30, 1996

Chairman: Yao-wen Huang

Attendance: Ngoc-Lan Dang (FDA, Seattle, WA); Custy F. Fernandes (Virginia Tech, Blacksburg, VA); Bob J. Hartog (Netherlands Organization for Applied Scientific Research, Zeist, The Netherlands)

The committee discussed hot issues in Seafood Technology and Industry in a global aspects. Members came up two possible symposia proposals for 1997 Annual Meeting. The first symposium title is *HACCP Implementation in Seafood Industry: Are You Prepared?*; suggested topics include an introduction – benefit and pitfall for industry; experience in implementation of HACCP in large seafood manufacture; experience in implementation of HACCP in small seafood manufacturer; experience in implementation of HACCP in Foodservice industry; FDA's expectation for seafood industry's compliance; and *European community experience*.

The second symposium entitled *Emerging Hazards in Seafood* include the following suggested topics: *Vibrio*; biogenic amines; antibiotics; food additives; pesticide residues and risk assessment of these hazards.

Since HACCP in Seafood will be enforced in December 1997, Committee members believe these two symposia will draw more attention from our members and seafood industry in S.E. United States especially in Florida. A list of HACCP related publications will be compiled.

Food Safety Network

Date: June 30, 1996

Members Present: Linda Harris, University of California - Davis; Doug Powell, University of Guelph; Lynn McMullen, University of Alberta; Gisèle LaPoint, Université Laval. Regrets: Peter Muriana, Purdue University.

1. Call to order (Linda Harris)
2. Appointment of a Recording Secretary (Linda Harris)
3. Development of Mission Statement:
"To Provide IAMFES Members with Information on Computer-Based Tools Useful for Protecting the Food Supply"
4. Development of Food Safety Network Committee Objectives

The objectives of the committee are:

- a) To make recommendations to IAMFES Executive Board regarding computer-based tools useful for protecting the food supply.

- b) To provide IAMFES Members with informational resources regarding computer based tools.
 - c) To sponsor symposia on computer-based tools at Annual Meetings (biannual).
5. Specific Objectives for 1996/97
- a) Increase committee membership/identify a chair for 1998/00 Canvas for new committee members at current meeting.
 - b) Recommendations to IAMFES Executive Board
 - Identification of e-mail addresses on membership application and in membership directory
 - Establish an e-mail address for IAMFES headquarters.
 - Establish a home page on the WWW that should include the following:
 - General information about IAMFES
 - Membership information
 - Instructions for Authors for *JFP* and *DFES*
 - Information on Annual Meeting
 - Contacts for affiliates
 - Affiliate events
 - Hot-links to food safety sites
 - c) Article for *DFES* - "Fast Food on the Information Highway" submission deadline September 15, 1996.
6. Specific Objectives for 1996/97 (cont.)
- d) Organization of 1997 Symposium
 - Application to Program Committee - Submitted June 30, 1996
 - Title: Computer-based Tools for Food Safety Management
 - Suggested topics:
 - Computer-based education tools (used to enhance the learning process)
 - On-line publications related to food safety (e.g., CDC "Emerging Infection") pros and cons
 - Evaluation of the food safety net as a risk analysis tool
 - Computer-based laboratory management tools
 - Computer-based HACCP tools
 - Disease surveillance using computer-based tools
 - Fast food on the information highway - how to find the information you need - sites specifically designed for food safety

TASK FORCES

Education

The Education Task Force Committee was established by President Ann Draughon in 1995 with Bruce Langlois as chair.

Mission of the Task Force

1. To identify the role of IAMFES in the transition of educational material from the producer to the user.
2. To identify areas where IAMFES can provide new education material for grades K-12.

The first meeting of the Committee was April 19-21, 1996 in Chicago, IL. IAMFES members present were Bruce Langlois (chair), Joseph Andrade, Joe O'Leary, Jennifer Quinlan, Margy Woodburn and Peter Snyder. This meeting was devoted to determining how to achieve the mission of the Committee and in discussing the availability and sources of existing food safety educational materials and what materials should be developed by the Committee.

The second meeting of the Committee was held June 30, 1996 in Seattle, WA at the Annual Meeting. IAMFES members present were Bruce Langlois (chair), Marilyn Lee, Joe O'Leary, Jennifer Quinlan, Marge Woodburn, Dorothy Wrigley, and Peter Snyder. This meeting was devoted to refining the mission of the Committee and establishing priorities. The Committee decided that they would concentrate on materials for grades K-12.

Priorities for the Coming Year

1. Define and publish performance criteria related to food safety for different age groups within grades K-12.
2. Begin the development of relevant food safety educational materials.
3. Establish a procedure to promote and make teachers aware of food science education materials available through IAMFES.
4. Establish a procedure to develop a pool of IAMFES members in each state who could serve as resources for teachers.

The Committee would like to increase its membership and is requesting any interested members to contact the chair.

Submitted by: Bruce E. Langlois, Chair

Recommendations to the Board:

1. Approve funding for a meeting of the Education Task Force Committee to be held in January, 1997. Estimate and cost is \$5,000.00 or less. (To reduce cost, this meeting could be held at the same time and place as the PAC January meeting.)
2. Establish a communication office or person who will be responsible for priorities 3 and 4.

3. Establish a procedure to supplement and enhance CDC's effort of tracking and reporting foodborne outbreaks. This information would be used to publish current updates on foodborne outbreaks and to identify possible failure modes responsible for the outbreak.
4. Establish a web site to promote material and resources developed by the Educational Task Force.

SUPPORT GROUPS

Affiliate Council

Date: June 30, 1996

Chair Joe Disch called the meeting to order at 7:18 a.m. Roll call of the delegates by Affiliate Council Secretary **John Bruhn** was made.

Affiliates Present:

John Bruhn, CA
Lawrence Roth, Alberta
Peter Hibbard, FL
Beth Johnson, Carolina's
Helene Uhlman, IN
Dave Fry, GA
Charles Price, IL
Don Bechtel, KS
Keith Brock, KY
Chuck Lichon, MI
Paul Nierman, MN
Fred Weber, Metropolitan
Diane West, NE
Diane Pasley, MO
Gloria Swick, OH
Terry Musson, NY
Eugene Fry, PA
Sue Fraser, Ontario
Lloyd O. Luedecke, WA
Ruth Fuqua, TN
Joseph J. Disch, WI
Janie Park, TX

Guests:

Les Wood
Randy Daggs

IAMFES Board:

Ann Draughon, Michael Brodsky, C. Dee Clingman, Gale Prince, Bob Brackett, and Jack Guzewish

IAMFES Staff:

Dave Merrifield, Carol Mouchka, and Michelle Sproul

Minutes:

Chair Disch called for a presentation of the minutes from the 1995 Affiliate Council Meeting in Pittsburgh. It was moved by **Terry Musson**, seconded by **Charlie Price** that the minutes be approved as published in the November issue of *Dairy, Food and Environmental Sanitation*. Motion passed.

Election of Affiliate Council Secretary:

Chair Disch explained that the Nominating Committee was appointed according to the *Operation Guidelines* of the Council. Two candidates were presented to the Council by the Nomination Committee: **Beth Johnson**, Carolinas Affiliate and **Lawrence Roth**, Alberta Affiliate. Chair Disch asked for additional nominations from the floor. There being none, it was moved by **Terry Musson**, seconded by **C. Price** that the nominations be closed. Passed. The two candidates then spoke briefly regarding their IAMFES activities.

Voting was by written ballot. **Lawrence Roth** was elected. **Joe Disch** thanked the two candidates for allowing their names to come forward. He especially thanked **Beth Johnson** for her candidacy and urged her to continue her excellent contribution to IAMFES. Congratulations were extended to **Lawrence Roth**.

President Ann Draughon's Remarks:

Chair Disch asked Ann to comment.

She indicated it was an exceptionally busy year for IAMFES and the Board. Some activities included a) recruitment of an Executive Director, Dave Merrifield b) improvement of the publication processes for *Dairy, Food and Environmental Sanitation* and *Journal of Food Protection*, c) development of policies for co-sponsoring other scientific conferences and workshops, d) initiating review of the *Policy and Procedures Manual*, e) developing a business plan and other IAMFES business activities.

The Board continues to address a civil rights complaint by a former, part-time employee. They have revised the voting procedures so that ballots will remain anonymous until counted by the Teller's Committee.

Other action by the Board includes the appointment of **Michelle Sproul** as Affiliate Liaison.

Seattle Meeting:

There are 253 contributed and invited papers at this year's meeting, compared to 194 in Pittsburgh. There are 35 papers submitted for the *Developing Scientist Award*, a record.

Report by Dave Merrifield, Executive Director

Dave introduced himself and described his activities before coming to IAMFES in December 1995. He indicated that he has done some slight reorganization of the administration of the office.

He wants to focus attention on membership development and membership services. He sees Affiliates as key to the Association and to the development of membership.

Dave also encouraged the Affiliates to consider hosting an annual meeting and that any interested affiliate should contact him at the 800 number or contact any officer.

He also mentioned that there is interest in forming an Affiliate in several countries including France, Mexico and Korea.

Report of Affiliates:

Alberta:

They have about 36 members, fund a scholarship, publish a newsletter and have at least 3 dinner meetings annually.

California:

They have about 130 members, hold two statewide meetings annually, provide support for the purchase of books by FS&T departmental libraries, have 45 sponsors and are composed mostly of dairy industry and regulatory personnel.

Carolinas:

Have 75 members and an annual meeting in March.

Connecticut:

The Connecticut Association maintains a membership of about 140 members, funds 2 college scholarships, publishes a newsletter throughout the year and hosts 3 meetings annually.

Florida:

Celebrated their 50th anniversary, gave the C. Bronson Lane Award to Dave Fry, are proud to host the 1997 Annual Meeting (where all the meetings will be "business casual dress"), and worked at the state science fair.

Georgia:

They hold two meetings, in February and September and the focus was on food preparation for the Olympics.

Illinois:

They hold two statewide meetings, had seminars on HACCP using the MacDonal Corporation University for a meeting site. They had two workshops on sanitation, farm sanitation, and NLEA. An HTST program is planned. They also did a membership survey that is helping them direct their educational programs. They have 2 newsletters per year.

Indiana:

Have located the original IAMFES Affiliate Charter. Had a successful local membership campaign, signing up 25, and some for IAMFES. Have educational trust of \$10,000 to support their scholarship program. They hold a spring and fall Conference.

Kansas:

They hold two conferences, including on HACCP, provide four \$500 scholarships, elect a Sanitarian of the Year Award, and have 250.

Kentucky:

They have over 400+ members. Their February 2-3 day conference usually attracts 200-250 attendees. Newsletter is now more like a journal and is supported through advertisements. They are looking at providing two, \$1,000 scholarships rather than the one.

Metro:

They have 81 members, 5 sustaining and 4 meetings annually. The transition from the Metro Dairy Section to the Metro IAMFES Affiliate section has been challenging. They recently received \$7,000 from an inheritance. Money to be used for scholarship.

Michigan:

Want to host the 1999 meeting at either Detroit, Dearborn, or Grand Rapids. They have 650+ members, hold a 2 1/2 day program and have two other educational events. They publish a quarterly newsletter.

Minnesota:

Their mostly dairy membership is around 325, about 120 are IAMFES members. Have 2 spring meetings and an annual meeting in September. Are trying to get members from neighboring states. Have 5 awards/recognitions at the Annual Meeting and support scholarship at the U. of MN.

Missouri:

Have 300 members, hold annual meeting in April, work with other associations for a fall meeting. Support 4 scholarships.

Nebraska:

The Nebraska Affiliate has about 70 active members who meet annually in the spring for an all day conference. This year an awards program was initiated to recognize outstanding affiliate members in government, education, and industry.

New York:

Have newsletter and a paid secretary. Evolving from a dairy group to a food group as dairy food plants close. Donates to scholarships, hard to persuade local members to become members of IAMFES. Local regional sections hold 7 meeting in their regions annually.

Ohio:

Have 100+ members, 60 to 70 active. Have annual meeting. If you find yourself in Ohio in April or Oct., let Gloria know so she can invite you to give a talk or two at one of their meetings.

Ontario:

Have over 135 at their annual meeting. Provide 6 scholarships, have a life membership and provide other awards. Have sustaining members at \$100 each. Currently have 54, trying for 75 in 1996. They use this sustaining member money to support students to present research papers at the Annual Meeting of IAMFES.

Pennsylvania:

Have over 400 members and hold a two-day annual meeting and have four regional meetings. They now have exhibitors at their meeting and this is an advantage. They also realize the need to include more "outside" speakers for their meeting to gain a broader perspective of issues.

Tennessee:

Has stable 55-60 members and two meetings annually. Looking forward to hosting the 1998 meeting in Nashville. Ann Draughon and Ruth Fuqua are co-chairs.

Texas:

Their annual meeting attracts about 175. They have 19 sustaining members and 10 exhibitors. Dues are \$5 and they provide two, \$2,500 scholarships.

Washington:

BUSY year. They have 75-100 members with an annual meeting in September. They provide a \$1,500 scholarship and they help student travel to the IAMFES Annual Meeting. Enjoyed hosting this year's meeting!!

Wisconsin:

Over 350 members, two scholarships at \$1,000 each and a memorial scholarship of \$750. Annual meeting is in the fall in cooperation with other associations. They publish a newsletter 3 times a year. Also give a Sanitarian of the Year Award.

*End of Affiliate Reports***Affiliate Newsletter:**

Chair Disch discussed the need for a newsletter. After some discussion by the Council it was agreed that the Affiliate Council Chair should continue to keep the Affiliates informed by a letter, as had been done by **Joe Disch**. The *Guidelines* also require this of the Affiliate Council Chair.

Distribution of "Profit" to Hosting Affiliate during the Annual Meeting:

Chair Disch handed out the DRAFT of the IAMFES Profit policy. It was explained and discussed. It was pointed out that the Exhibitors at the Annual Meeting are solicited by IAMFES and an affiliate rarely has anything to do with it. There was some concern regarding the proposed profit-sharing policy, but the concerns were adequately addressed by IAMFES staff and Board to the satisfaction of the Council. The Council was urged to review the DRAFT carefully and raise any additional questions for IAMFES.

Role of Affiliate Volunteer during the Annual Meeting:

Joe handed out the DRAFT of this policy and asked the Delegates to provide comments to the IAMFES Board and staff.

Affiliate Awards:

Chair Joe Disch announced the Affiliate Awards. Membership Achievement Award, California
Best Education Conference, Georgia
Best Communication Materials Award, Wisconsin
Best Annual Meeting, Florida
C. B. Shogren Award, Wisconsin

Other Business:

Joe asked for additional business. There was none.

Adjournment:

It was moved by **C. Price**, seconded by **Dave Fry** to adjourn. Motion passed.

Submitted by: John C. Bruhn

Foundation Fund

Date: June 30, 1996

Members: F. Ann Draughon, Michael H. Brodsky, Gale Prince, C. Dee Clingman, Robert Marshall

Other Participants: Dave Merrifield, David Tharp, Carol Mouchka and Alice Haverland

Presiding: Harry Haverland

Summary of Activities and Actions Taken:

The chairperson welcomed the participants and provided some remarks about the Foundation Fund and the supported activities. There were no comments regarding the 1995 minutes. The initial topic was a review of the distribution of surplus journals (25 sets-12 months) to developing countries through FAOUN, Rome, Italy. In response to a question regarding any comments from the receiving countries the chairperson read some excerpts from feedback to the IAMFES office. Considerable time was devoted to the discussion of finance including the budget for 1997. During the 1996 budget year \$5,297.13 was transferred to the Foundation Fund from the IAMFES Restricted Funds for the exclusive purpose of funding speakers. A thousand dollars will be added to this budget item for the next six years. Under the topic of funding, a discussion was opened on a preliminary proposal involving an association interest in providing funding of \$50,000.00 over the next 5 years for exclusive use for the Lending Library. The Executive Director will work with the subject association in developing a compatible agreement.

1997 Budget:

Expenses:

Postage/Shipping	\$1,000.00
Speaker Travel	3,000.00 (Increase \$1,000.00)
Ivan Parkin Lecture	1,800.00
Lending Library	8,000.00
Awards	<u>2,500.00</u>
Total Expense	\$16,300.00

Income

Interest	4,000.00
Sustaining Members	10,500.00
Other-including contributions	<u>1,000.00</u>
Total Revenue	\$15,500.00*

*Does not include the transfer of monies from the IAMFES Restricted Funds.

To clarify the geographical scope of the lending library the group believes that the Executive Board should

reaffirm that any member, regardless of location throughout the world shall have access to the Lending Library as long as the rules are followed.

The Group discussed the possible change of name for the Ivan Parkin lectureship. This was stimulated by concerns of some that many members were not familiar with Ivan Parkin. To resolve this issue the consensus was to add an explanatory note concerning the contributions made by Ivan Parkin to IAMFES.

Filling the position of Vice Chair of the Foundation Fund Group:

Mr. Clingman nominated Dr. Robert Marshall. Motion seconded. It was a unanimous choice.

Conclusions and Recommendations:

1. The Foundation Fund wishes to thank the Sustaining Members for their continued support through renewal of their memberships.
2. The Foundation Fund appreciates the transfer of \$5,297.13 from the Restricted IAMFES Funds to the Foundation Fund for the exclusive purpose of supporting speakers.
3. Recommend the Executive Board approve the 1997 budget of \$16,300.00. The major increases are for the Lending Library and travel for speakers.
4. Recommend that the Executive Board reaffirm the geographic lending scope of the library. Any member of IAMFES can borrow materials from the library regardless of their location—from the tropics to the tundra. The only prerequisites are that the borrower pay for the return shipment and it be returned promptly.
5. Recommend that the Executive Board provide guidance to the Executive Director in developing a compatible working relationship with an Association that has expressed interest in donating \$50,000.00 to the Foundation Fund, over the next 5 years, for the exclusive use by the Lending Library.
6. Recommend that the Executive Board confirm the selection of Dr. Robert Marshall as Vice Chairperson of the Foundation Fund Advisory Group.
7. Recommend that the Executive Board approve the addition of an explanatory note to the Ivan Parkin Lectureship defining the notable contributions made by Ivan to IAMFES. The format may be in print or verbally presented at the introduction of the speaker.
8. The Foundation Fund Advisory Group wishes to express their appreciation to the Executive Director and the IAMFES office staff for their continued good work on behalf of the Foundation Fund.

Submitted by: Harry Haverland

IAMFES 1996 Awards



Vice President Gole Prince honors Richard Swanson with the Honorary Life Membership Award.

Honorary Life Membership— Richard C. Swanson

Mr. Richard Swanson has been a member of IAMFES since 1959. In the 1960s, he supported IAMFES' local Michigan Affiliate by helping the Michigan Department of Agriculture to successfully prepare over 40 candidates to become Registered Sanitarians. His primary contribution to IAMFES is through the Committee on Communicable Diseases Affecting Man. He joined the committee in the early 1970s and through the years taught epidemiology to over 50,000 Sanitarians utilizing the IAMFES procedure manuals. He has participated in writing the 3rd, 4th, and 5th editions of *Procedures to Investigate Foodborne Illness*, *Procedures to Investigate Arthropod-Borne and Rodent-Borne Illness*, *Procedures to Implement the Hazard Analysis Critical Control Point System* and the 1st and 2nd editions of *Procedures to Investigate Waterborne Illness*.

With one or two exceptions he has attended all the IAMFES Annual Meetings since 1970. His entire 40 year career has been wrapped around IAMFES principles and goals.

Citation Award—Joseph Disch

*Bureau of Food Safety, Wisconsin Department of Agriculture,
Trade and Consumer Protection*

Mr. Disch grew up on a family dairy farm that had been handed down from generation to generation. He served in the U.S. Army from 1953-56, including tours as a combat engineer in both Korea and Hawaii. In 1963, Joe earned his Bachelor of Science degree from University of Wisconsin-Platteville with a major in Agricultural Education and a minor in Biological Science.

His professional career began as a dairy plant field representative with Sealtest Foods in Milwaukee. In 1972, Joe began his career with the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) as a food inspector. He became a Registered Sanitarian in 1973 and in 1977 he was promoted to agriculture supervisor and in 1982 he was named food safety supervisor. In 1993, he was honored by DATCP with an Exceptional Performance Award.

Joe has been a member of the Wisconsin Association of Milk and Food Sanitarians and IAMFES since 1977. He has served on the WAMFS Executive Board and was President in 1992 and is currently the WAMFS newsletter coordinator. Joe has been a WAMFS affiliate delegate since 1990. In 1994, he became secretary of the Affiliate Council and in 1995 he served as Affiliate council chair and representative on the IAMFES Executive Board. He also served on the Local Arrangements Committee for the 1972 and 1990 IAMFES Annual Meetings.

Joe is highly regarded by his peers and has been dedicated to the profession of the Sanitarian and IAMFES for many years.

Incoming President Michael Brodsky and Harry Hoverland present Joseph Disch with the newly renamed Harry Haverland Citation Award.





Dane Bernard accepts the Harold Barnum Industry Award from Gale Prince, Vice President.

Harold Barnum Industry Award— Dane T. Bernard

National Food Processors Association

Dane Bernard began his career with the National Food Processors Association in 1973, he became head of the microbiology section in 1977, Director of Microbiology, Packaging and Processing Division in 1984, and Vice President of Food Safety and Strategic Programs in 1994. Throughout his distinguished career Dane has specialized in improving the microbiological quality and safety of food processing systems, and in reducing the risk of foodborne illness. He has done extensive testing of food processing systems, supervised research in many areas of food safety, and written as well as spoken about these important topics to organizations around the world. In addition he is a national proponent of the Hazard Analysis Critical Control

Points (HACCP) concept, and has been lead instructor on the numerous HACCP courses, workshops, and seminars conducted throughout the world.

Early in his career Dane came to the forefront of the food safety industry as a dedicated scientist who is knowledgeable and has a keen ability to analyze situations quickly and accurately and then translate the scientific facts into practical information for the food industry. He has been involved in investigating several tough microbiological problems, including several highly publicized foodborne outbreaks that the food industry has faced over the years. Dane has published over 35 scientific papers, technical reports, position papers, and book chapters. His publications include such journals as the *Journal of Food Protection*, *Dairy, Food and Environmental Sanitation*, *Journal of Food Safety* and *Journal of Food Science*.

Dane has been a member of IAMFES since 1974 and has shared his expertise in presentations at numerous IAMFES Annual Meetings as well.

Educator Award— Cameron Hackney

Virginia Polytechnic Institute and State University

Dr. Cameron Hackney is Professor, Extension Project Leader, and Head of the Food Science Department at Virginia Polytechnic Institute and State University. He received his BS in Animal Science in 1973, his MS in Plant Pathology in 1975, and his Ph.D. in Food Science in 1980.

Dr. Hackney's research and extension work has been very interrelated. He has organized or helped organize thirty different workshops and has given a total of seventy-nine talks in these workshops. He has also been called upon to give numerous presentations for other extension programs. He has authored extension publications and given several presentations for agent training workshops. Cameron has been instrumental in the securing of grant monies which has supported numerous publications and presentations including: 61 refereed journal and proceedings articles, 14 book or report chapters, 12 extension reports or manuals, 13 research reports, and many other projects.

He is also active in other organizations through committee appointments which has influenced national policy for food safety. As well he has been an active member of IAMFES through his involvement with the Annual Meeting, committees, and submitting articles for the *Journal of Food Protection*.

Cameron Hackney accepts the Educator Award from Henry Atherton of IBA.





Jim Watkins of Ecolab, Food and Beverage Division honors Lee Jensen with the Sanitarian Award.

Sanitarian Award— Leon (Lee) H. Jensen

*California Department of Food and Agriculture,
Milk and Dairy Foods Control Branch*

Mr. Jensen began his career as a quality control supervisor for Safeway, Oakland, California and later at the California Cooperative Creamery, Petaluma, California. After 13 years in the dairy foods processing industry, Lee joined the California Department of Food and Agriculture as Dairy Foods Specialist serving the industry in northern California. Later Lee was appointed to a position in Sacramento of coordinating the various statewide regulatory programs of the Milk and Dairy Foods Control Branch of the California Department of Food and Agriculture.

He was a 1961 graduate with highest honors from University of California-Davis and he has taken extensive additional training in regulatory work to better serve the needs of the dairy production and processing industry.

In the last several years Lee has been at the front of the national leadership efforts on the implementation of Appendix N of the Pasteurized Milk Ordinance. He has been faithful in this work and saw that the original intent of the IMS Conference program to prevent the contamination of milk with drugs was followed. Lee has also been exceptional in his support of educational activities for the industry and regulatory community. He has been extensively involved in all the annual and regional dairy conferences of the California Association of Dairy and Milk Sanitarians, the IAMFES affiliate encouraging and supporting attendance by many industry and regulatory people. As well he has been a member of IAMFES since 1987; has attended several annual meetings; is a member of the Applied Laboratories Methods Committee; and served on the Local Arrangements Committee for the 1971 and 1987 Annual Meetings.

C. B. Shogren Award— Wisconsin Association of Milk and Food Sanitarians

For the second consecutive year, the IAMFES C. B. Shogren Award was presented to the Wisconsin Association of Milk and Food Sanitarians. This award is presented annually to the IAMFES Affiliate providing outstanding service to its members throughout the previous year. The award itself consists of an engraved plaque and \$100. Outgoing Affiliate Council Chair Joe Disch, who accepted the award last year on behalf of Wisconsin, presented this year's plaque to Randall Daggs, accepting the 1996 C. B. Shogren Award for the Wisconsin Association of Milk and Food Sanitarians. Congratulations WAMFS, keep up the great work!

*Randy Daggs accepts the
C. B. Shogren Award for
the Wisconsin Association
of Milk and Food Sanitarians
from Joseph Disch.*





Developing Scientist Competition winners left to right: Robert Williams, Rocelle Clavero, Rodney Warobo, David Golden; DSC Committee Chair, John Czajka, Abbey Nutsch, and Sherri Kochevar.

Developing Scientist Awards

Presentation of awards in two categories of the IAMFES Developing Scientist Competition were made by David Golden of the University of Kentucky, Developing Scientist Competition Committee Chair. The awards included an engraved plaque and \$500 for first place, an award certificate and \$300 for second place and an award certificate and \$100 for third place in each category.

Oral Presentation Award Winners:

First Place—Abbey Nutsch of Kansas State University, Manhattan, Kansas, USA with "Evaluation of a Steam Pasteurization Process in a Commercial Beef Processing Facility," co-authored by R. K. Phebus, D. E. Schafer, M. J. Riemann, R. C. Wilson and J. Leising, all of Kansas State University.

Second Place—M. Rocelle S. Clavero, University of Georgia, Griffin, Georgia, USA for "Influence of A_w and Temperature on Viability of Unheated and Heat-Stressed *Escherichia coli* O157:H7 in Salami."

Third Place—Robert Williams of the University of Tennessee, Knoxville, Tennessee, USA for "Survival of *Yersinia Enterocolitica* During Fermentation and Storage of Yogurt."

Poster Presentation Award Winners:

First Place—Rod Worobo, University of Alberta, Edmonton, Alberta, Canada with "Biopreservation of Vacuum-Packaged Coarse Ground Beef by *Leuconostoc Gelidum* UAL 187," co-authored by G. G. Greer, M. E. Stiles and L. M. McMullen of the University of Alberta.

Second Place—John Czajka of Cornell University, Ithaca, New York, USA for "Development of a PCR Assay for the Detection of *Bacillus Cereus*."

Third Place—Sherri Kochevar of Colorado State University, Fort Collins, Colorado, USA for "An Evaluation of the Efficacy of Two Beef Carcass Decontamination Methods."

IAMFES extends hearty congratulations to the winners of the 1996 IAMFES Developing Scientist Competition and wishes continued good luck to all participants.

Harry Haverland Citation Award

The name Harry Haverland has long been associated with IAMFES. This special bond has been a great benefit to IAMFES. To show appreciation, IAMFES made the name association official by changing the Citation Award to the Harry Haverland Citation Award. This annual award is presented to an IAMFES member in recognition of the individual's commitment to the ideals of IAMFES and the food safety profession.

Harry began his long standing affiliation with IAMFES in 1962. In his early years he was serving as a commissioned officer in the United States Public Health Services. While ascending to his retirement rank of Captain, Harry fulfilled many assignments including Director of State Training, Director, Division of Milk and Food Sanitation, and Chief, Interstate Travel to highlight a few. His services also included foreign duty in such places as Egypt, Malaysia, Nigeria, and Saudi Arabia. From 1985 to 1994 following his retirement Harry worked as a consultant to the Food and Agriculture Organization of the United Nations.

Harry's involvement with IAMFES has consisted of serving on various committees including being Chairman of the Foundation Fund Advisory Committee since its inception. He also served the association as President in 1982. An early recognition of his achievement occurred when he was honored with the Sanitarians Distinguished Service Award and later was named an Honorary Lifetime Member.

Harry Haverland received a round of applause following the announcement to rename the Citation Award in his honor.



The Black Pearl Award—Silliker Laboratories

Harold Bengsch presents
the Black Pearl Award
to Russ Flowers of Silliker
Laboratories.



The IAMFES Black Pearl Award is sponsored by Wilbur Feagan and the F&H Food Equipment Company and is given annually to a company exemplifying "outstanding commitment to and achievement in corporate excellence in food safety and quality." From the nominations received, the Selection Committee chose a company they felt best fulfilled the criteria for this award. This year's Black Pearl Award was presented to Silliker Laboratories, a world leader in all aspects of the criteria.

Silliker Laboratories President Russ Flowers accepted the award on behalf of the more than 500 employees of the company. He said the award was a tribute to the dedication and commitment of the entire organization to food safety.

Please join IAMFES in congratulating Silliker Laboratories on receiving this highly coveted honor.

Jorge Hernandez of the
Educational Foundation of
the National Restaurant
Association announces the
recipients of the Norbert F.
Sherman Award.

Norbert F. Sherman Award

The Norbert F. Sherman Award honors the late treasurer of the Educational Foundation of the National Restaurant Association, an advocate for improved industry food protection standards. The award is sponsored by the Educational Foundation of the National Restaurant Association and provides recognition for outstanding articles appearing in *Dairy, Food and Environmental Sanitation*. This year's Norbert F. Sherman Award was presented to: June P. Youatt, Sandra Andrews, Angela Fraser, Carol Sawyer, and Phil Kirkwood for "A Food Classification Scheme to Summarize Epidemiological Patterns of Foodborne Illness," *Dairy, Food and Environmental Sanitation*, May, 1995.



IAMFES 1996 Annual Meeting Exhibitors

3-A Sanitary Standards Symbol Administrative Council

310
3020 Bluff Road
Columbia, SC 29209
(803) 783-9258
Fax: (803) 783-9265

The 3-A Symbol Council authorizes the voluntary use of the 3-A Symbol for use on dairy equipment (1) assures processors that equipment meets sanitary standards, (2) provides accepted criteria to equipment manufacturers for sanitary design and (3) establishes guidelines for uniform evaluation and compliance by sanitarians.

Represented by: Joe W. Hall, Jr., Earl O. Wright, Robert L. Sanders

3M Microbiology Products

504
3M Center, Bldg. 275-5W-05
St. Paul, MN 55144-1000
(800) 228-3957
Fax: (612) 737-1994

3M Microbiology Products introduced 3M™ Petrifilm™ *Listeria* Count Plate for in-house environmental monitoring. 3M's expanding line of Petrifilm Plates include: aerobic, *E. coli*, coliform, high-sensitivity coliform, yeast & mold, *Enterobacteriaceae*, and Series 2000 rapid coliform count plates.

Represented by: Ginny Huber, Rich Caruso, Sonya Gambrel-Lenarz

Advanced Instruments, Inc.

302
Two Technology Way
Norwood, MA 02062
(800) 348-0202 (800) 225-4034
Fax: (617) 320-8181

Advanced Instruments displayed cryoscopes for detection of added

water in milk, and the Fluorophos® ALP Test, a three minute quantitative alkaline phosphatase assay that detects as little as 0.0006% raw milk contamination in finished dairy products.

Represented by: Kevin Gould, Fred Ferola, Ed Petit

American Type Culture Collection (ATCC)

105
12301 Parklawn Drive
Rockville, MD 20852
(301) 881-2600
Fax: (301) 816-4363

A global bioscience organization offering over 70,000 different biological cultures for use in research, medicine, industry, and education; culture related products including a PCR MYCOPLASMA DETECTION KIT, SERUM-FREE CELL LINE KITS, CULTURE-CHECK and DNA SIZE and CONCENTRATION STANDARDS; contract laboratory services; technical information services; and biological research/education. ATCC also provides proprietary culture and patent culture preservation, distribution, and storage services for a fee.

Represented by: Patrick Burke

Applied Research Institute

308
29 Platts Hill Road
Newtown, CT 06470
(888) DAIRY 00
Fax: (888) DAIRY 11

For 40 years, Applied Research Institute has supplied the dairy, food and environmental industries with innovative testing and laboratory products. On display were products from our new 48 page

catalog including the Rutgers Pasteurization Kit, Butterfat Test Bottles, Slide Drying and O-Phax Kits, Milk Smear Stains, and the ARI 0.1ml Syringe.

Represented by: Trevor R. Hopkins

Aquionics, Inc.

307
P.O. Box 18395
Erlanger, KY 41018
(606) 341-0710
(800) 925-0440
Fax: (606) 341-2302

Aquionics Advanced Ultraviolet Technology for the food processing industry full product line includes: High intensity units for water treatment; Air disinfection systems for storage tank headspace & clean room air; Surface disinfection systems for packaging applications. Ultraviolet is a non-chemical, non-heat exchange method for killing yeast, molds, bacteria and viruses commonly found in food processes.

Represented by: Jill Nesbitt, Karen Asher

Atkins Technical Inc.

604
3401 S.W. 40th Boulevard
Gainesville, FL 32608
(352) 378-5555
Fax: (352) 335-6736

Atkins Technical is a manufacturer of hand-held digital thermometers, recorders, and temperature probes for the food industry. The booth featured water-tight thermometers and Record-On-Demand thermometers, ideal for use in HACCP programs.

Represented by: Bob Atkins, Liddon Dell, Dale Morris

Becton Dickinson Microbiology Systems

602
250 Schilling Circle, P.O. Box 243
Cockeysville, MD 21030
(410) 771-0100
Fax: (410) 584-2806

Becton Dickinson Microbiology Systems will exhibit a comprehensive line of BBL® products for the cultivation and identification of pathogens and other microorganisms. Also exhibited was our complete offering of culture media, including BBL® pour bottles and disposable dilution bottles. In addition, BBL® Crystal™, an innovative identification system were presented.

Represented by: John Madden, Tom Isett, Reg Thomas

Bio-Tek® Instruments, Inc.
408

Highland Park, P. O. Box 998
Winooski, VT 05404
(802) 655-4040 (800) 451-5172
Fax: (802) 655-7941

Bio-Tek®, a world leader in ELISA based analysis, manufactures a full line of instruments from readers and washers to sophisticated automated workstations. Now Bio-Tek® distributes a wide range of assay kits for detection of vitamins, hormones, *Staphylococcus*, mycotoxins, antibiotics, gluten, milk speciation and more. Bio-Tek® is a full service company.

Represented by: Thom Grace

BioControl Systems, Inc.
101

19805 North Creek Parkway
Bothell, WA 98011
(206) 487-2055 (800) 245-0113
Fax: (206) 487-1476

BioControl introduced VIP™ for *Listeria* - the one-step test "built for speed" for food screening and HACCP applications. Other innovative rapid test kits are VIP™ for EHEC, the 1-2 Test® for *Salmonella*, Assurance® ELA's for *Salmonella*, *Listeria* and *E. coli* O157:H7,

ColiComplete® and ColiTrak tests for *E. coli* and coliforms detection.

Represented by: Robert Ashby,
Kevin Greenan, Charles Bale

Biolog Inc.
207

3938 Trust Way
Hayward, CA 94545
(510) 785-2591
Fax: (510) 782-4639

Biolog presented the MicroLog™ fully automated and manual line of bacteria and yeast identification systems. The Systems' database of microorganisms includes 1100 species and identifies virtually all important human, animal, plant pathogens, including environmental microbes. The MicroLog™ software allows operators to expand the database for specific applications. New for 1996 is our unique Rainbow™ O157, for the isolation and presumptive identification of verotoxin producing *E. coli*.

Represented by: Gary H. Larson,
Tim Mullane

bioMérieux Vitek
309

595 Anglum Drive
Hazelwood, MO 63042-2395
(314) 731-8500 (800) 638-4835
Fax: (314) 731-8678

bioMérieux Vitek features the fully automated mini VIDAS® for rapid pathogen screening of *Salmonella*, *Listeria*, *Listeria monocytogenes*, Staphylococcal enterotoxin, *Campylobacter*, and *E. coli* O157 using enzyme-linked fluorescent assays. Also displayed were fully automated VITEK® and Bactometer® instruments for detection, enumeration and identification of microorganisms. Shelf-life determination on food and dairy products may also be performed.

Represented by: Becky Brown,
Nancy Hoff, Bob Bokerman, Marcie VanWart, Christine Aleski, Jerry Anderson

Bioscience International, Inc.

506
11607 Magruder Lane
Rockville, MD 20852-4365
(301) 230-0072
Fax: (301) 230-1418

Bioscience featured innovative microbiology products which increase lab productivity: Autospiral™ DW and AP spiral platers, Protos automated colony counters, SAS Super 90 microbial air samplers, RABIT impedance systems, MACS gloveless anaerobic chambers, unique environmental and food sampling tools and the latest media preparation and filling equipment.

Represented by: Bill Richman,
Kevin Klink, Phil Coombs

Biosynth International, Inc.
605

1665 W. Quincy Avenue, Suite 155
Naperville, IL 60540
(708) 305-8400 (800) 270-2436
Fax: (800) 276-2436

Bioluminescent, fluorescent and chromogenic ENZYME SUBSTRATES suitable for ATP determinations, microbial ID, reporter gene assays, in-vitro diagnostics, ELISA and ELA (eg. BCIG, MUG, Luciferin, Luciferase, etc.). BCM™ O157:H7(+) is a new culture medium for selection and identification of *Escherichia coli* O157:H7. New catalog available.

Represented by: Thomas Jung,
Lawrence Restaino

Capitol Vial, Inc.
206

P.O. Box 446, 151 Riverside Drive
Fultonville, NY 12072
(518) 853-3377 (800) 772-8871
Fax: (518) 853-3409

Capitol Vial, Inc. is an ISO 9001 certified company. Vials are manufactured in FDA approved Class 10,000 clean rooms from FDA approved food grade polypropylene and meet or exceed NIDA standards. The patented flip top vial is tamper evident, sterile and provides an air tight positively leak proof seal.

Represented by: Robert Abrams,
Sheila Cranker, Roger Daggett

Celsis, Inc.
407
1801 Maple Street
Evanston, IL 60201
(847) 467-6600 (800) 222-8260
Fax: (847) 467-6602

How can you effectively manage risk while turning your microbiology lab into a profit center? The innovative line of rapid microbial test systems from Celsis will help you accomplish this and much more. The rapid bacterial results which our systems provide eliminates the microbial risks associated with improper cleaned product surfaces and dramatically reduces finished product time.

Represented by: Mark Carter, Judy Madden, Lori Gregory

Charles Felix Associates
409
P.O. Box 1581
Leesburg, VA 22075
(703) 777-7448
Fax: (703) 777-4453

Charles Felix Associates is a publishing firm specializing in food safety related newsletters. Samples of the monthly *Food Protection Report* and the quarterly *Food Talk* were available at the CFA exhibit booth; also materials relating to foodservice disposables and packaged ice.

Represented by: Charles Felix, Kathleen Felix, Phil Ventresca

Charm Sciences Inc.
107
36 Franklin Street
Malden, MA 02148
(617) 322-1523
Fax: (617) 322-3141

The PocketSwab™ offers a breakthrough single service design for ATP hygiene monitoring programs. It may be run on the portable Luminator™ or bench top Charm II™. Both units carry a versatile menu of HACCP friendly tools that include rapid tests for aflatoxin, antibiotics, alkaline phosphatase, acid phosphatase and somatic cells.

Represented by: Amir Fakharzadeh, Robert Salter

Copesan Services, Inc.
211
3490 N. 127th Street
Brookfield, WI 53005
(800) COPESAN (800) 267-3726
Fax: (414) 783-6267

Copesan Services provides nationwide pest management and sanitation inspections to regional and national accounts. We offer service and management personnel trained and certified specifically in food industry pest management, as well as over 100 degreed technical experts. Our extensive network of service locations will provide quick response to your needs.

Represented by: Greg Sacco, Jim Shkiele, Jon Bain

Decagon Devices, Inc.
103
950 N.E. Nelson Court, P.O. Box 835
Pullman, WA 99163
(509) 332-2756
Fax: (509) 332-5158

AquaLab from Decagon Devices measures water activity. Water activity is important in predicting shelf life, microbial growth, and food safety. AquaLab is accurate to ± 0.003 over a large range, 0.030 to 1.000_{a_w}. AquaLab is fast, making most readings in 5 minutes and requires no calibration.

Represented by: Tamsin Campbell

DFL Laboratories
510
3401 Crow Canyon Road, Suite 110
San Ramon, CA 94583
(510) 830-0350
Fax: (510) 830-0379

DFL Laboratories established in 1925, is a client driven, service laboratory offering the highest quality microbiological testing, chemical analyses and nutrition labeling services. DFL can assist you in your HACCP, quality control, and regulatory needs. Among the many services we provide are: shelf-life studies, consultation, environmental programs, and on-site HACCP and GMP training programs.

Represented by: Jena Over, Philip Blagoyevich, Gordon Brock

Difco Laboratories
405
P.O. Box 331058
Detroit, MI 48232-7058
(313) 462-8500 (313) 462-8505
Fax: (313) 462-8517

Difco Laboratories presents quality products for industrial microbiology. Products featured included ESP Microbial Testing System, EZ Coli rapid test system, 3-Step Gram Stain, DrySlide, food testing culture media, bottled prepared media, sterility bottles, triple bagged sterile contact plates and custom prepared media.

Represented by: Mark Eggen, Judith Burnham, Doug Danne

DQCI Services, Inc.
501
5205 Quincy Street
Mounds View, MN 55112
(612) 785-0484
Fax: (612) 785-0584

DQCI Services, Inc. provides standards for the calibration of electronic milk testing equipment. A wide range of standards are available for different milk/food products. Chemical and microbiological analyses are provided for proprietary products. HPLC analysis for carbohydrates and antibiotic residues in milk is now available.

Represented by: Mary Anderson, Mary Bulthaus, Paul Nierman

Dynal, Inc.
200
5 Delaware Drive
Lake Success, NY 11042
(800) 638-9416
Fax: (516) 326-3298

Dynabeads® Microbiology Products provide rapid results with culture confirmation. Dynabeads® ImmunoMagnetic Separation (IMS) technology utilizes magnetic microspheres to capture foodborne pathogens directly from pre-enrichment broth. The technique is simple, sensitive and cost effective. The use of Dynabeads® anti-*E. coli* O157 product is featured in the 8th edition BAM.

Represented by: Svein Erik Johnsen,
Heidi Israel, Gregory Blyskal

Ecolab, Inc.
704
370 Wabasha Street North
St. Paul, MN 55102
(612) 293-2233
Fax: (612) 293-2260

Ecolab Inc. provides sanitation products, systems and services including ATP bioluminescence testing systems and pest elimination services.

Represented by: Mark Updike,
Doug Schultz, Dawn Stead, Jim Brown, Steve Fisk, Terry Arnold

Elsevier Science
606
The Boulevard, Langford Lane,
Kidlington
Oxford, OX5 1GB
United Kingdom
+44(0)1865 843479
Fax: +44(0)1865 843952

Elsevier Science publishes leading food science publications including *International Dairy Journal*, *Food Control* and *Food Chemistry*. Most of the journals are available through our new Contents Direct Service, pre-publication e-mail service.

Represented by: Lyndon Driscoll

E M Science
609
480 S. Democrat Road
Gibbstown, NJ 08027
(800) 222-0342
Fax: (609) 423-6313

Our HY-LITE sanitation monitoring kit was exhibited.

Represented by: Stella Dybka, Axel Dellenbusch, Erika Singh

Food Processors Institute
304
1401 New York Avenue N.W.,
Suite 400
Washington, D.C. 20005
(202) 393-0890 (202) 639-5900
Fax: (202) 639-5932

FPI is the education provider for the National Food Processors Association (NFPA), its members and affiliates. FPI presents courses that support the food processing

industry, and develops publications, videos and other educational materials for the continuing education of food industry and related personnel. FPI also custom designs workshops for specific company training.

Represented by: Rita Fullem, Jenny Scott, Adrienne Shearer

Food Testing & Analysis Magazine
613
1907 W. Burbank Boulevard
Burbank, CA 91506
(818) 842-4777
Fax: (818) 842-0578

Food Testing & Analysis Magazine - The industry publication providing incisive coverage of the news, issues and technologies of interest to food testing and analytical professionals.

Represented by: Bobby Meeker

Foss Food Technology Corporation
210
10355 West 70th Street
Eden Prairie, MN 55344
(612) 941-8870
Fax: (612) 941-6533

Advanced Infrared & FTIR analyzers for milk and dairy product analysis. Aromascanner for automated detection of aroma. Automatic somatic cell counters.

Represented by: Charles Lowden,
Brendan Martin

Future Medical Technologies Inc.
109
5240 Snapfinger Park Drive,
Suite 140
Decatur, GA 30035
(770) 808-8888
Fax: (770) 808-4525

Future Medical Technologies designs, manufactures, markets and distributes worldwide, technologically advanced microbiological disposable products and ancillary equipment for the rapid detection of *Salmonella*, total count, *Listeria*, yeast and mold or bacteria in liquids for use in industrial and clinical laboratories.

Represented by: Jitu Patel, Ron Brown, Andy Swanson

GENE-TRAK Systems
610
94 South Street
Hopkinton, MA 01748
(508) 435-7400 (800) 338-8725
Fax: (508) 435-0025

GENE-TRAK Systems highlighted new *Salmonella* DLP (Direct Labeled Probe) Assay. The Assay features the same "Gold Standard" specificity you have come to expect and trust from our DNA probe technology. We also offer an extensive line of granulated dehydrated culture media, including Rambach® agar.

Represented by: Bob Colvin,
Larissa Canina

Gist-brocades
402
N93 W14560 Whittaker Way
Menomonee Falls, WI 53051
(800) 423-7906 (414) 255-7955
Fax: (414) 255-7732

Gist-brocades showed the new Delvotest P-5 Pack which is approved for PMO Section 6 testing requirements. Also demonstrated was printer equipment for the Delvo X-PRESS 8 minute test for the detection of antibiotics in bulk milk, as well as a display at the Delvotest P/SP standard diffusion tests for determining the presence of antibiotic residues in individual cow samples.

Represented by: John Forsee, Joep van Boxtel, John Grom

Glo Germ Company
306
P.O. Box 537, 1120 South Main
Moab, UT 84532
(800) 842-6622
Fax: (801) 259-5930

The Glo Germ Company has manufactured since 1968, a training program for food processors in infection control through proper handwashing and contamination prevention. Glo Germ™ is used to demonstrate and test for proper handwashing and to test for proper surface cleaning and/or contamination. The materials are designed to be used by managers and line personnel alike.

Represented by: Joe Kingsley,
Cindy Kingsley, Rush Kingsley

Great Western Chemical Company
708
1717 E. Fargo
Nampa, ID 83687
(800) 585-3341
Fax: (208) 466-8989

Great Western Chemical Company is the fastest growing cleaning and sanitation company in the West. From potato processing, meat processing to dairy plants, Great Western is the supplier of choice for great solutions and incredible results.

Represented by: Gabe LeChevallier,
Dennis Bogart, Bob Nelson

Hardy Diagnostics
111
1430 W. McCoy Lane
Santa Maria, CA 93455
(805) 346-2766
Fax: (805) 346-2760

Hardy Diagnostics is a full service culture media manufacturer. Custom media to your specifications is offered as well as a full line of stock products for the dairy, water, food, cosmetics and pharmaceutical industries. Our line includes products for sterility testing, surface monitoring, contact plates, dilution bottles, *Listeria* and *E. coli* kits, collection swabs and sponges, stomacher bags, sample bags, etc.

Represented by: Jay Hardy, Bill Hurst, Lloyd Christiansen

Idetek, Inc.
505
1245 Reamwood Avenue
Sunnyvale, CA 94089
(800) 433-8351
Fax: (408) 745-0243

Idetek develops, manufactures and sells rapid test kits used for food safety and food quality control. Idetek's range of test kits include the Parallax™ Antibiotic Detection System for milk, LacTek™ Drug Residue Detection System for dairy and meat, BIND™ 22 hour *Salmonella* Detection and Staph Enterotoxin Test Kit.

Represented by: Richard Lankow,
Jim Yeaman, Mark Platshon, John FitzPatrick, David Mendez, Evelyn Chiang

IDEXX Laboratories
201
One IDEXX Drive
Westbrook, ME 04092
(207) 856-0300
Fax: (207) 856-0630

IDEXX Laboratories offers the following rapid diagnostic test kits: Simplate™ is used in Total Plate Counts, coliforms, *E. coli*, yeast & mold; Lightning™, the most portable and easy to use cleaning validation system available; and SNAP™ is a simple and portable antibiotic residue test for milk.

Represented by: Jeff Rae, Gary Eaton, Kim Walker, Sharon Muhilly, Rick Rieger, Janine Shield

International BioProducts, Inc.
700
14780 N.E. 95th Street
Redmond, WA 98052
(206) 883-1349 (800) 729-7611
Fax: (206) 881-6880

International BioProducts, Inc. offers TECRA® products for *Salmonella*, *Listeria*, *E. coli* O157, and Staphylococcal Enterotoxin detection. In addition, we offer environmental sampling products for HACCP programs, BioPro® Premium Dehydrated Media, BioPro® Pre-poured and Contact Plates, and our new Time Saver™ Disposable Dilution Bottles specifically designed for the industrial microbiology lab.

Represented by: N. Robert Ward,
Mike Yeager, Jean Sadler

IUL USA, Inc.
607
1670 Dolwick Drive, Suite 8
Erlanger, KY 41018
(606) 282-6040
Fax: (606) 282-6024

IUL range makes easy microbiological testing at any step: Previous dilution based on time control with the CHRONODILUTOR®; homogenizing through bag + paddles with the MASTICATOR® (two models);

precise volumetric dilutions with the BIODILUTOR®; spiral inoculation on Petri dishes with the new EDDY JET®; counting colonies with the fully automatic system: COUNTERMAT®.

Represented by: Oscar Lleonart,
Meritxell Ripoll, Martin Tricarico

Malthus Diagnostics, Inc.
615
35888 Center Ridge Road
North Ridgeville, OH 44039
(216) 327-2585
Fax: (216) 327-7286

The Malthus System-V: an automated microbial growth analyzer based on conductance technology. This versatile system, widely used in the food industry, provides fast, accurate results for a wide range of applications including total counts, coliforms, an AOAC approved method for *Salmonella* and yeasts and molds.

Represented by: James LeRoy,
Corinne Tempelaars, Sarah Law

Medallion Laboratories
702
9000 Plymouth Avenue
Minneapolis, MN 55427
(612) 540-4453 (800) 245-5615
Fax: (612) 540-4010

Medallion Laboratories, the analytical service of General Mills, has provided the food industry with quality results for over twenty years. Services include full microbiological analysis, pesticides and mycotoxins, complete nutritional labeling, amino acids, food additives, and special projects. Medallion is USDA approved for *Salmonella* and *Listeria* analysis.

Represented by: Barbara Beckman,
Kurt Deibel

Medical Packaging Corporation
707
941 Avenida Acaso
Camarillo, CA 93012
(805) 388-2383
Fax: (805) 388-5531

Represented by: Frederic Nason,
Russ Milligan

Meritech, Inc.
603
8250 S. Akron Street, # 201
Englewood, CO 80112
(303) 790-4670 (800) 932-7707
Fax: (303) 790-4859

Meritech demonstrated the CleanTech automated hand, glove and boot sanitizing systems. CleanTech systems can increase the effectiveness of your HACCP program!

Represented by: Michele Colbert, Don Berns, Jerry Nigh

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Full service analytical laboratory specializing in food and environmental testing. We offer nutritional labeling programs, QA, QC programs, complete chemical and microbiological analysis. We are recognized by the FDA and certified by the USDA and the Japanese Ministry of Health and Welfare. We work closely with the dairy, produce, seafood, processed food and meat industries.

Represented by: Grant Michelson, Frank Wang

N S F International
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3475 Plymouth Road
Ann Arbor, MI 48105
(313) 769-8010 (800) 673-6275
Fax: (313) 769-0109

N S F International offers certification and registration services.

Represented by: Randy Dougherty

NASCO
411
4825 Stoddard Road
Modesto, CA 95356
(209) 545-1600
Fax: (209) 545-1669

NASCO exhibited Whirl-Pak sample bags. These Polyethylene sterile bags are the only ones to feature both "Puncture Proof Tabs" and sterility documentation. New bags

to see are: (1) Retain bag for long term sample retention; (2) Large size Speci-sponge® bag for Stomacher®* use, (3) Special Stomacher® bag with rounded corners, and (4) A new size write on bag. *Stomacher is a registered trademark of Seward Medical, Ltd.
Represented by: Tom Swafford

Nelson-Jameson, Inc.
502
2400 E. 5th Street, P.O. Box 647
Marshfield, WI 54449
(715) 387-1151 (800) 826-8302
Fax: (715) 387-8746

Nelson-Jameson offers a wide range of unique products to help food and dairy processors integrate QA/QC with plant operations. Over 8,000 products are featured in their 424-page Buyers Guide. It is free to qualified buyers. Expert technical support, competitive prices, same-day shipping policy, and toll free fax and phone ordering are provided. The new Nelson-Jameson M926 Chloride Analyzer was exhibited.

Represented by: Fritz Buss, Barbara Buss, Mitch Rice

New Horizons Diagnostics Corporation
703
9110 Red Branch Road
Columbia, MD 21045
(410) 992-9357
Fax: (410) 992-0328

New Horizons Diagnostics produces tests for the rapid detection of bacteria and toxins in human, environmental and food samples. The company has developed a USDA validated rapid luminescence system which detects low level bacteria, correlating with a total plate count. The system has been tested with food, water, and surface samples as well as FDA 510(K) issued for urine specimens. NHD also has rapid non-instrumented Dot-on-a-membrane tests for *V. cholerae*, Botulism Toxin, SEB, *E. coli*, and others.

Represented by: David Trudil, David Miller, Larry Loomis

Norback, Ley & Associates LLC
508
3022 Woodland Trail
Middleton, WI 53562
(608) 233-3814
Fax: (608) 233-3895

The doHACCP family of PC-based software assists in learning HACCP fundamentals, creating consistent HACCP plans and gathering HACCP data. doSOP, a new tool for documenting standard operating procedures was demonstrated.

Distributed in Canada by:

CIBUS Consulting Inc.
850 Boundary Road
Cornwall, ON K6H 5R5
Canada
(613) 936-2389
Fax: (613) 936-2716

CIBUS specializes in on-site HACCP consultations and the development of do-it-yourself HACCP tools to take the hassle out of HACCP. CIBUS also works with industry associations and food processors to develop customized HACCP audit and training programs. CIBUS is the Canadian distributor for the doHACCP family of software.

Represented by: Flip Flockton, Kathy Ley, Robin Flockton

Organon Teknika
601
100 Akzo Avenue
Durham, NC 27712
(919) 620-2000 (800) 682-2666
Fax: (919) 620-2107

Organon Teknika is pleased to offer rapid screening tests for food pathogens - *Salmonella*-Tek™, *Listeria*-Tek™ and EHEC-Tek™ (the only test *E. coli* O157:H7) Also available is BacT/Alert®, an automated microbial detection system for sterility testing of aseptically processed food and Tek-Time™, a fully automated sample and microplate processor.

Represented by: Lois Madden,
G. Ackerman, Kathy Bower-Hill

Perstorp Analytical
600
12101 Tech Road
Silver Spring, MD 20904
(301) 680-0001
Fax: (301) 989-1485

Perstorp Analytical displayed a complete line of instrumentation for the dairy, beverage, food and meat industry. Included are FT-IR for laboratory applications, NIR instruments for bench and in-line applications, ATP bioluminescence systems for hygiene/sterility testing of raw milk, UHT milk, raw meat and automated wet chemistry instruments for wet lab use.

Represented by: Lisa Tydrich, Tom Brown, Donna Stearns

Prism Pest Elimination
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Miami, FL 33166
(305) 592-6312 (800) 888-5777
Fax: (305) 594-9280

Gold Medal Program by PRISM is the only ISO 9002 registered pest elimination program. Gold Medal Programs are designed by PRISM's highly qualified technical experts and delivered by trained professionals in the industry. PRISM offers pest elimination service to a wide range of food processing, handling and serving establishments.

Represented by: Zia Siddiqi, Bill Melville, Glen Murphy

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and Henry Clay Road
Wilmington, DE 19880-0357
(302) 695-9400
Fax: (302) 695-9027

Qualicon™ provides microbiologists with genetics-based quality assurance products. The economical, easy-to-use BAX™ pathogen detection systems use DNA amplification (PCR) to yield rapid results of unprecedented accuracy and sensitivity. The automated RiboPrinter™ system generates reproducible DNA fingerprints to

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Represented by: Scott Fritschel,
Eileen Cole, Mark Matthews,
Debbie Deck, Harold Naylor, Krish Doraiswamy

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503
P.O. Box 116
Minneapolis, MN 55440-0116
(612) 481-2207 (800) 328-9687
Fax: (612) 486-0837

R-TECH Laboratories provides you with fast, accurate results for all your testing needs. We are a full service food testing and research laboratory providing analytical services, microbiology, food research, sensory services, pilot plants, packaging and nutrition labeling consultation. Try our cost effective approach to your testing and research needs and experience the R-TECH Laboratories difference.

Represented by: Bob Koeritzer,
Debbie McIntyre

Raven Biological Labs
209
5017 Leavenworth Street
Omaha, NE 68106
(402) 556-6690
Fax: (402) 556-4722

We manufacture biological indicators for testing the efficiency of sterilization procedures.

Represented by: Robert Dwyer, Jr.

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300
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Lenexa, KS 66215
(800) 255-6730 (913) 888-0939
Fax: (913) 888-5884

REMEL is a leading manufacturer of quality products for the microbiology laboratory. Our new disposable dilution bottle with an attached hinged cap to enhance aseptic handling and ease of use will be introduced. Featured products also include an extensive line of plated, tubed, bottled and dehydrated culture media for the detection and enumeration of a broad scope of potential bacterial pathogens. In

addition, REMEL offers a comprehensive line of stains, reagents, general microbiology supplies and identification kits.

Represented by: Mary Nichols, Sue Pinnick, Tricia Gosciowski

Silliker Laboratories Group
305
900 Maple Road
Homewood, IL 60430
(708) 957-7878
Fax: (708) 957-8449

Silliker Laboratories' exhibit highlighted the company's broad range of food testing, consulting, and educational services. No matter what type of product you make, Silliker scientists are familiar with the microbiological/chemical concerns you may encounter. The exhibit also showed our new sanitation training video and laboratory performance programs. Represented by: Melissa Trezza, Melissa Calicchia

Southern Testing & Research Laboratories, Inc.
208
3809 Airport Drive
Wilson, NC 27896
(919) 237-4175
Fax: (919) 237-9341

Southern Testing is an independent, full service laboratory offering microbiological and chemical analyses to the food, feed, pharmaceuticals, cosmetics and environmental industries. Food analyses include full nutritional labeling, proximates, amino acids, vitamins lipids, metals/minerals, and pesticides. Microbiological capabilities include assays for *Salmonella*, *Listeria*, coliforms, fungi, shelf-life studies, yeast, mold and others.

Represented by: Kenneth Boyer,
Daniel Grimm, Michael Lamm

Spiral Biotech, Inc.
202
7830 Old Georgetown Road
Bethesda, MD 20814
(301) 657-1620
Fax: (301) 652-5036

Spiral Biotech was proud to celebrate its 20th anniversary year at

the 1996 IAMFES meeting, where we featured instruments for microbiological testing, including the 1) Autoplate® 4000 spiral plater, which substantially reduces serial dilutions; 2) Casba™ 4 System for accurate counting of colonies on a wide variety of media; 3) Fully automated plating and counting instrumentation; 4) ASAP Gravimetric Diluter and sterile filter bags for solid and liquid sample dilution; and 5) new portable microbial air samplers for environmental monitoring.

Represented by: Susan Schalkowsky, Cheryl Christner, Samuel Schalkowsky

The Educational Foundation of the National Restaurant Association
706

250 S. Wacker Drive, Suite 1400
Chicago, IL 60606
(800) 765-2122
Fax: (312) 715-0807

The Educational Foundation of The National Restaurant Association is recognized as the nation's leader in providing food safety education and training for the food service industry. Over 500,000 food service managers have been certified through The Foundation's SERVSAFE program and another one million employees have received training using these materials.

Represented by: Beverly Sorkin, Jorge Hernandez, Jim Brown

The National Food Laboratory, Inc.
204
6363 Clark Avenue
Dublin, CA 94568
(510) 828-1440
Fax: (510) 833-8795

Food processors and ingredient suppliers can capitalize upon the

one-stop-shopping concept for contract and consulting services offered by The National Food Laboratory, Inc. They include Analytical Chemistry, Microbiology, Food Technology, Processing and Sensory Evaluation & Marketing Research.

Represented by: Lisa Nesbett, Nina Parkinson, Wilfredo Ocasio

TRI-DIM Filter Corporation

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999 Raymond Street
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Filtration products, antimicrobial filters, positive pressure room conversions

Represented by: Bob McDonald, Colleen Fegan

UNIPATH

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Unipath is an international supplier of prepared and dehydrated culture media. The company also supplies rapid food tests for *Listeria*, *Salmonella* and Enterotoxins, as well as a full line of diagnostic reagents for the identification of pathogenic bacteria.

Represented by: Jeff Roberts, Gerald Moore, Travis Harmon

Warren Analytical Laboratory

410
650 O Street, P.O. Box G
Greeley, CO 80631
(800) 945-6669 (970) 351-6344
Fax: (970) 351-6648

Warren Analytical is a full service facility specializing in four areas of

expertise. Microbiology (food safety, HACCP, bacteria identifications), residue chemistry (pesticides, hormones, antibiotics, heavy metals), nutrition labeling, and general food chemistry. We are anxious to demonstrate our unsurpassed dedication to customer service. Warren – Your Center for Analytical Needs.

Represented by: Tony Vagnino

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Discover the 462% advantage... The Weber DD™ pre-filled dilution bottle has an opening that is 462% wider than the competition's, making it dramatically easier to measure most samples into this larger mouth.

Weber Scientific also features a wide selection of other equipment and supplies for the analysis of dairy, food and water/wastewater.

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ZEP Manufacturing Company

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National manufacturer of specialty chemicals for all food industries for over forty-nine years. ZEP has approximately 1,400 sales/service full-time representatives working out of forty-eight branch office/distribution centers throughout North America. ZEP is a major supplier of handsoaps, drain maintenance, restroom disinfectants, insecticides, cleaners, foaming and C.I.P. acid sanitizers.

Represented by: Frank Pool, Dick Planer, Brian McDaniel

UpDates

American Dairy Science Association 1996 Award of Honor Presented to Robert T. Marshall

The 1996 Award of Honor of the American Dairy Science Association (ADSA) was presented to Robert T. Marshall, Arbuckle Professor in the Department of Food Science and Nutrition, University of Missouri, Columbia. The award was presented July 14 at the Opening Ceremony of the 91st Annual Meeting of ADSA, which was held on the campus of Oregon State University, Corvallis.

Marshall received this most prestigious ADSA award primarily for his distinguished service to the Association throughout his professional career. Marshall has served as Secretary and Chair of the Business and Industry Section and as Chair of the Dairy Foods Division. During this time, he also served on the Dairy Foods Division Bylaws Committee and as Chair of the Committee for Evaluation of Dairy Products. In 1973-1974, he chaired the Program Committee, which plans the ADSA annual meeting. He served on that committee again as a member in 1987 when the University of Missouri was host for the annual meeting.

Marshall was also a member and Chair (1980-1981) of the Dairy Foods Division Nominating Committee. He was appointed to the Research Committee in 1978 and was elected Chair of that committee in 1979. In 1977-1978, he chaired the Kraftco Teaching Award Committee. He was elected to the Board of Directors in 1979, Vice President in 1983, and President in 1984. From 1992-1995, Marshall served as ADSA Treasurer.

As a past president, Marshall has been a member of the selection committee for the Award of Honor and the Distinguished Service Award, serving as Chair in 1990. From 1992-1995, he served on the Business Development Committee, which later became the Strategic Planning Committee. From 1990-1992, he was a member of the ADSA Foundation Board of Trustees and, from 1992-1995, served as an ex officio member of the Foundation Board in his capacity as ADSA Treasurer.

Marshall received his B.S. degree in dairy manufacturing and his M.S. and Ph.D. degrees in dairy microbiology from the University of Missouri. He has served as a major professor for 45 M.S. candidates and 21 Ph.D. candidates. The University of Missouri recognized his outstanding teaching qualities by honoring him with the AMOCO Teaching Award. Marshall also received the outstanding Educator Award from the International Association of Milk, Food and Environmental Sanitarians (IAMFES) and the ADSA Milk Industry Foundation Teaching Award.

Marshall also co-authored a book with John Campbell, contributed chapters and served as Editor of *Standard Methods for the Examination of Dairy Products*, published 105 technical articles in scientific journals, and received three patents from his research and development activities. He has also served on the Board of Directors and as President of IAMFES.

Few professional members of ADSA have served the Association with more dedication and enthusiasm than Robert T. Marshall. He is certainly deserving of this high honor!

Flavorite Laboratories, Inc. Hires James Klein as Vice President of Research and Development

Flavorite Laboratories, Inc. announces the addition of James Klein as Vice President of Research and Development. Klein will be responsible for the management of Flavorite's technical services staff who are involved in the development of new products.

Klein has worked in the foodservice industry for over 27 years, and most recently held an 11 year tenure at Milwaukee Seasonings, Inc.

Phil Rogers, Flavorite's Vice President, Sales and Marketing adds, "Jim's extensive foodservice experience in R&D and QA will strengthen Flavorite's capabilities, and his business acumen will add extra dimensions to our R&D activities."

Klein received his B.S. degree in Chemistry at Northern Illinois University, a M.S. in Food Science from Rutgers University and a Masters in Business Administration from Marquette University.

Flavorite Laboratories is an international leading producer of custom formulated seasoning blends, sauces and gravy products for the foodservice, industrial and retail snack food markets.

Farquharson Named President of Industry Council on Food Safety

John Farquharson, FMP, executive vice president of Global Food and Support Services, ARAMARK Corporation, Philadelphia, has been named president of

the Industry Council on Food Safety, a coalition of foodservice operators, suppliers and associations committed to food safety education. The announcement was made by Daniel A. Gescheidle, FMP, president of The Educational Foundation of the National Restaurant Association, which formed the Industry Council in 1993.

Farquharson is the immediate past chairman of The Educational Foundation and a former president of the National Restaurant Association. A trained sanitarian, Farquharson is a strong advocate of food safety education for both the foodservice industry and the public.

"The Industry Council on Food Safety performs an important service for our industry, by spurring all segments to work together to enhance food safety and by getting the message out to our customers that we take this issue seriously," Farquharson commented. "It is our responsibility to serve our customers safe food, and I am personally committed to help lead the industry forward in this critical effort."

More than 13,000 restaurant operations and foodservice establishments are part of the Industry Council on Food Safety, including all corporate units of Old Country Buffet; Golden Corral Restaurants; Ryan's Family Steak Houses; Wawa Food Markets; Home Town Buffet; Marriot Management Services; Harman Management's Kentucky Fried Chicken franchises; and The Wood Company. Any restaurant or foodservice operation with at least one manager or professional certified in the SERVSAFE Serving Safe Food program is eligible to become part of the Industry Council.

In addition to encouraging industry-wide food safety training, the Industry Council on Food Safety is spearheading a national food safety awareness campaign to build

public understanding of the foodservice industry's food safety efforts. The Industry Council also sponsors the annual National Food Safety Education Month each September, created to focus attention on the importance of safe food preparation in professional foodservice kitchens as well as at home.

"John Farquharson's passion for food safety, as well as for the foodservice industry, make him a natural leader and spokesperson to help address this critical issue," said Gescheidle. "His leadership of the Industry Council will help bring together all stakeholders in food safety to create a unified, recognized voice to restore the public's confidence in our industry's commitment to serving safe food."

The Industry Council on Food Safety is supported by 18 suppliers and manufacturers: Alaska Seafood Marketing Institute; American Egg Board; Atkins Technical Inc.; Campbell Soup Company, Food Service Division; Cooper Instrument Corporation; DAYDOTS Label Company Inc.; Ecolab, Inc.; FoodHandler, A Division of Island Poly; Heinz U.S.A.; KatchAll Industries International, Inc.; Kimberly-Clark Inc.; Lipton Foodservice; Nabisco Foods Group; National Cattlemen's Beef Association; Reckitt & Colman; Rymer Foods Inc.; SYSCO Corporation; and Tyson Foods, Inc. For more information on the Industry Council on Food Safety, call the food safety information line at 1-800-765-2122.

Susan Ruland Joins IDFA Communications Staff

Susan Ruland has joined the staff of the organization of International Dairy Foods Association as Director of Communications

effective August 19th, IDFA President and CEO E. Linwood Tipton announced. Ruland comes to IDFA from Stagnito Publishing, where she has served as Editorial Director since 1995 and Editor of *Dairy Field* magazine since 1992. Ruland replaces Susannah Gaylord Stoll, who resigned the position in order to pursue an opportunity at an unrelated Washington, D.C.-based trade association.

In her position as Stagnito's Editorial Director, Ruland was responsible for supervising the editorial flow, quality and staffing of five monthly food processing industry magazines—*Beverage Industry*, *Snack Food*, *Refrigerated & Frozen Foods*, *The National Provisioner* and *Dairy Field*.

Prior to her work at Stagnito, Ruland served as an account executive in the St. Louis office of the national public relations firm Hill and Knowlton, where she counted the Monsanto Company and IBM among her clients.

"We are thrilled to have Susan aboard as our new Director of Communications. Her work at Stagnito Publishing, and at *Dairy Field* magazine in particular, is admired by many in the dairy industry," Tipton said. "Susan is a valuable player to have on the IDFA team. Her enthusiasm and strong background in communications and dairy industry issues will surely add to the associations' success."

In her new position, Ruland will oversee the associations' public relations activities, including media relations, the Cheese Category Public Relations program, promotion for next year's Worldwide Food Expo '97 and other special projects.

Ruland holds a B.A. in English and French from Brown University. She is relocating from the Chicago area to Washington, D.C. for this new position.

Meat Scientists Receive Awards at Annual Conference

Meat scientists were recognized for their professional meat industry contributions June 12 at the 49th Annual Reciprocal Meat Conference, held at Brigham Young University in Provo, Utah. The conference was sponsored by the American Meat Science Association (AMSA).

Max D. Judge, Ph.D., professor emeritus at Purdue University, was awarded the 1996 R.C. Pollock Award. The award recognizes an individual who has made extraordinary and lasting contributions to the meat industry through teaching, extension, research or service.

Donald M. Kinsman, Ph.D., a retired professor from the University of Connecticut, received the International Award. The award honors an individual for contributions to international meat science and technology. In receiving the award, Kinsman presented a lecture on "AMSA - Yesterday, Today and Tomorrow."

The AMSA Signal Service Award for devoted and lasting contributions to the meat industry and AMSA was given to three members: Curtis L. Kastner, Ph.D., professor of animal science at Kansas State University; Leon E. Orme, Ph.D., professor of animal science at Brigham Young University; and Tom R Carr, Ph.D., professor of animal science at the University of Illinois.

William C. Schwartz, Ph.D., vice president of technical services for Bil Mar Foods, a Division of Sara Lee Corporation, was honored with the 1996 Meat Processing Award. The award recognizes outstanding achievement in meat processing.

H. Glen Dolezal Jr., Ph.D., associate professor of meat science at Oklahoma State University, received the 1996 Distinguished Teaching Award. The award honors individuals who have excelled in teaching undergraduate and graduate meat science courses.



NEWS

Daniel S. Hale, Ph.D., extension meat specialist at Texas A&M University, was awarded the 1996 Distinguished Extension-Industry Service Award, which recognizes outstanding achievement in the field of meat science extension and/or industry service.

Donald H. Beermann, Ph.D., professor of animal science at Cornell University, received the 1996 Distinguished Research Award. The award recognizes outstanding research in the meat industry.

The AMSA is a non-profit professional association representing meat and livestock industry scientific interests. Its members include more than 1,000 educators, students, emeritus faculty, and meat industry professionals involved in teaching, research, extension and other industry endeavors. Sustaining members in related fields provide additional support for the organization.

Southeastern Poultry & Egg Association Gets New Name

The board of directors of Southeastern Poultry & Egg Association, the world's largest poultry trade association, has voted unanimously to change the name of the 49-year old organi-

zation to the U.S. Poultry & Egg Association (USPOULTRY), effective Aug. 5, 1996.

The U.S. Poultry & Egg Association is dedicated to the growth, progress, and welfare of the poultry industry and all of its individual and corporate interests. All segments of the industry are represented, from producers of eggs, turkeys, and broilers to the processors of these products and allied companies which serve the industry. Members can be found in 41 states and seven foreign countries. The association also teams with 20 affiliated state poultry associations to address mutual concerns.

Sentencing in Residue Case

On July 24, 1996, W.W. Bennett Hurt was sentenced to 6 months in jail followed by 12 months of supervised release (probation), a \$2500.00 fine, and the court's special assessment fee. Hurt was a livestock dealer from Blacksburg, Virginia, who offered at least 150 animals for slaughter for human consumption containing illegal levels of a variety of new animal drugs. Mr. Hurt often knew that the animals had been medicated, and used false names to avoid detection by state and federal officials. Many of these illegal residues were thousands of times higher than the permitted levels or they were residues of drugs that have not been approved for use in those animals.

FDA is concerned about the indiscriminate purchase and sale of animals for slaughter for human food that may contain illegal levels of animal drugs because of their potential for adverse effects on human health. New animal drugs are approved by FDA with strict use requirements, including a specified time period to withdraw an animal from treatment prior to marketing, to assure the drug has depleted from edible tissue to a level that will not present harm to the consuming public.

Hurt was warned repeatedly by the U.S. Department of Agriculture and the Virginia Department of Agriculture and Consumer Services about violative drug residue that had been found in cows he brought to slaughter. Despite those warnings, Hurt continued to sell the medicated animals.

Hurt's incarceration is expected to begin September 9, 1996. This case was the result of a cooperative effort between the Department of Justice, FDA, the U.S. Department of Agriculture, and the state of Virginia. This is the first prosecution of a livestock dealer for illegal residues, and should send a strong message to others in the livestock dealing industry to take seriously their responsibility to assure that they do not pass on adulterated food to the consumer.

Educational Foundation Conducts Food Safety Training for U.S. Marines Foodservice Managers

The Morale, Welfare and Recreation Support Activity, U.S. Marines Corps, recently hosted two food safety training sessions for its club managers using the SERVSAFE® Serving Safe Food certification course from The Educational Foundation of the National Restaurant Association. The Marine Corps invited all other branches of the service to attend the training, which was the first of its kind instituted by the military for foodservice managers.

During the first two days of each class, participants were trained, tested and certified in critical food safety practices and methods for preventing food contamination through the SERVSAFE Serving Safe Food course. Topics covered in the course include potentially hazardous foods and common food handling errors; the Hazard Analysis Critical Control Point (HACCP) system of food safety; proper receiving and storage practices; and

proper cleaning and sanitizing procedures.

The third day of each session, a "train-the-trainer," focused on teaching attendees to conduct their own effective food safety training for club employees.

Enhanced Lactic Acid Being Developed to Provide Consumers Safer Beef and Poultry Products

A new variety of lactic acid for use in meat processing to protect consumers from disease-causing bacteria like *E. coli* and *Salmonella* is being developed by a team of University of Missouri researchers.

The researchers are using a timed heat process to enhance the lactic acid, forming short chains of molecules. This gives the lactic acid a heavier molecular structure that resists breaking down in water.

Early research indicates lactic acid treated this way is more effective in killing the deadly bacteria and also lasts longer, giving beef and poultry a longer shelf life, said Gene Iannotti, associate professor in the MU College of Agriculture, Food and Natural Resources.

Solutions of the enhanced lactic acid can be sprayed with water on meat carcasses in processing plants, said Andrew Clarke, associate professor in food science. Carcass washing is now used in some processing plants but no single additive has been shown to be ideal in controlling bacteria or has a lasting effect, said Clarke.

A lasting safety effect is important, he said, because meat processed at a centrally located plant takes time to arrive in the grocery store.

The MU research project will compare carcass washing with ordinary water versus lactic acid solution. Microbial samples will be taken at different intervals up to 48 hours. Cuts will be vacuum packed,

held at 4 degrees centigrade and tested after seven days for bacteria, and then tested again eight weeks later.

Meat will be studied for color, aroma and flavor following treatment. An economic analysis will also be performed to determine the cost of using carcass washing in processing plants.

Data from the research will be used to seek approval by the federal government to use enhanced lactic acid as a way to improve meat safety.

Lactic acid is derived from corn. Both corn and livestock production are important to Missouri's economy, said Clarke. Funding for the research is being provided by Missouri Corn Merchandising Council and Missouri Beef Industry Council.

Update on Extra-Label Use of Fluoroquinolones

On August 18, 1995, the Food and Drug Administration (FDA) approved sarafloxacin hydrochloride for use in broiler chickens and growing turkeys for the control of mortality associated with *Escherichia coli* organisms susceptible to sarafloxacin. This approval raised concerns about the effect of these uses on the development of resistance to fluoroquinolones in humans. FDA addressed these concerns by asking veterinary practitioners to refrain from administering the fluoroquinolones for extra-label uses in major food-producing animals.

The FDA restriction on extra-label use of these drugs provides the Agency with an opportunity to assess changes in antimicrobial susceptibility from the labeled food-animal uses of fluoroquinolones and helps to ensure the continued effectiveness of this antibiotic. The Center for Veterinary Medicine (CVM) is committed to preserving the usefulness of the fluoroquinolones. Prudent and judicious use of these compounds, only for label-approved use, will be an important factor in retaining their effectiveness for veterinary use.

Expert scientific groups such as the Institute of Medicine and the American Society for Microbiology have expressed concern about the national and global increase in antimicrobial resistance and the complex issues surrounding this increase both in community and institutional settings. The rate of resistance development by human bacterial pathogens may be exceeding the rate of discovery and development of new antimicrobial drugs. The development of resistance in human pathogens results from direct use of antimicrobials in man and possibly the acquisition of resistance from animal and environmental bacteria.

The use of fluoroquinolones in animals, even when limited to therapeutic use, may facilitate the emergence of bacterial resistance. When this occurs in enteric pathogens, the potential for transfer to humans exists, especially through food. Cross-resistance occurs throughout this entire class of drugs; therefore, resistance to one fluoroquinolone will compromise the effectiveness of all fluoroquinolone drugs. Evidence from some European researchers indicates that quinolone-resistant bacteria, particularly *Campylobacter jejuni* and some strains of *Salmonella*, are emerging in treated animal populations. The use of fluoroquinolones in food animals is of particular concern to the human medical community because these drugs are used to treat a variety of serious infectious conditions. Food animal veterinarians, as part of the public health community, have a responsibility to avoid unnecessary or inappropriate treatment of animals with fluoroquinolones.

The FDA, CDC, and USDA have established a national surveillance program to monitor changes in antimicrobial susceptibilities of zoonotic pathogens from human and animal clinical specimens, from

healthy farm animals, and from carcasses of food-producing animals at slaughter plants. Veterinary testing is conducted at the USDA Agricultural Research Service National Animal Disease Center (NADC) in Ames, Iowa. *Salmonella* was selected as a sentinel organism to monitor. CDC's Foodborne Disease Laboratory in the National Center for Infectious Diseases will conduct the testing of human isolates, both *Salmonella* and *Escherichia coli* O157:H7, submitted by 14 State Public Health Laboratories.

The monitoring system will provide descriptive data on the extent and temporal trends of antimicrobial susceptibility in *Salmonella* from the human and animal populations. The goals of the monitoring program are to provide timely information to physicians and veterinarians in each arena; prolong the lifespan of approved drugs; facilitate the identification of resistance in either population as it arises; and identify areas for more detailed investigation. Early identification of emerging resistance will allow agencies to focus educational efforts in the human and veterinary medical communities on the appropriate use of antimicrobial agents.

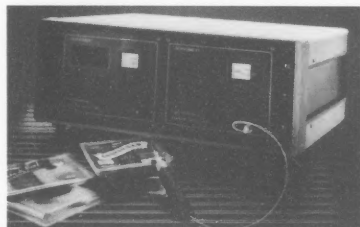
As part of the monitoring effort we intend to share our knowledge with practitioners. CVM is initiating an information and education campaign to assist practitioners in preserving the usefulness of fluoroquinolones and requesting their ideas and enlisting their aid in safeguarding the use of this class of drugs. Our policy to restrict extra-label use of these drugs was initiated to minimize the emergence of resistance in animal species for which fluoroquinolones are not yet approved and to prolong drug effectiveness of approved uses by promoting use according to labels which have met the scientific rigors of the approval process.

IDFA, GMA & NFPA Injunction Granted Against Vermont rBST Labeling Law

The U.S. Court of Appeals for the Second Circuit reversed the Vermont District Court's original denial for an injunction, ordering the District Court to grant the International Dairy Foods Association's request for an injunction against Vermont's mandatory rBST labeling law.

In the decision, the Court of Appeals found, "that the district court abused its discretion in failing to grant injunctive relief to the dairy manufacturers on First Amendment grounds." This establishes significant legal precedent regarding mandatory rBST labeling in all states. The injunction forestalls the state's ability to enforce the law, rendering it ineffective. The state of Vermont must now assess future steps in light of today's strong decision by the court.

The law, which went into effect last September, required in-store labeling of any dairy product that may contain milk from cows given supplemental rBST. Manufacturers were required to conduct a monthly retail inspection to ensure the labels were in place. IDFA and its co-litigants Grocery Manufacturers Association and the National Food Processors Association, filed a request for an injunction last summer to stop the law before it went into effect. The Court of Appeals recognized the proven safety of products made from milk produced by rBST supplemented cows, which is indistinguishable from the milk of cows not treated with rBST. Thus, any claim which sets the products apart could not be justified as properly providing consumers with meaningful information, which formed the basis for the appeal granted.



Servomex Company, Inc.

Simple, Fast, Accurate Food Pack Analyzers of O₂ and CO₂ In Gas Flushed Packaging

The Servomex 1450 Series offers simple, fast and accurate simultaneous analysis of oxygen and carbon dioxide levels in the head-space of soft and rigid containers.

Specifically designed for controlled and modified atmospheric packaging (CAP/MAP) applications, the Model 1450 measures oxygen with a maintenance-free paramagnetic cell and carbon dioxide with a single beam, dual wavelength infrared bench — both are purely physical methods requiring no consumable or routine maintenance.

Enclosed in a single 19 inch rack mountable or lab top case, the 1450 has a common sampling system giving fast, accurate results from sample volumes as small as 8 ml.

Servomex Company, Inc.,
Norwood, MA

Reader Service No. 383

Uni-Lite XCEL Expands Rapid Sanitation Testing Capabilities

Ecolab Inc., Food and Beverage Division, introduces the new and improved Uni-Lite® XCEL system. This portable, rapid sanitation verification system has advanced data management capabilities, yet still provides the speed and simplicity that customers have come to expect from the original Uni-Lite system. Uni-Lite XCEL was developed by Biotrace Ltd., the global leader in rapid sanitation testing, and is available exclusively from Ecolab in the North American dairy, beverage and food processing industries.

As with Uni-Lite, the world's first direct swab testing system, the XCEL system detects both microbes and food residues by measuring the entire swab sample. This unique direct swab sampling means no sample dilution, transfer losses or pipetting, which provides the greatest accuracy available in the industry. The Uni-Lite XCEL immediately and clearly indicates results, alerting the user if the swab has "failed" the sanitation test.

The Uni-Lite XCEL system utilizes the new XCEL Single-Shot swab. The total Uni-Lite system is a component of Ecolab's Klean Check Program, which includes customized, on-site service for program design, customer training and program audits.

The Klean Check Program incorporates unique sampling plans for every line or test point within a processing plant and programs

them into the XCEL system—more than 50 sampling plans can be stored. This allows the user to measure samples against customized pre-set levels.

The XCEL system automatically records all test results, with the ability to store up to 5,000 results. This test data can be uploaded to any PC, sorted, displayed and printed out. With its customized, Windows™ compatible software program, the system can analyze trends for each site by day, week, month or year. Operators or managers can use this information to refine and develop their cleaning procedures, identify fluctuations in standards and accurately pin-point trouble spots.

Ecolab Inc., Food and Beverage Division, St. Paul, MN

Reader Service No. 384

New Paramount™ Filtered Enclosure Removes Vapors and Fumes Without Ducting to the Outside

Labconco Corporation offers the New Paramount™ Filtered Enclosure, which is designed to remove small quantities of contaminants such as organic solvents, acid gases, formaldehyde and ammonia.

As an internal blower pulls air into the enclosure, contaminants released within the enclosure are diluted by the air, drawn through a rear baffle, and adsorbed onto, or treated by, two internal carbon filters. A front air foil directs air flow into the enclosure to minimize

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turbulence and maximize fume containment. Since the Paramount Filtered Enclosure requires no ducting, it is moveable, conserves energy and has lower installation costs than traditional fume hoods. Also, it may be used in "air-starved" laboratories.

The Paramount Filtered Enclosure incorporates Filter Cells engineered to the National Institute for Occupational Safety and Health (NIOSH) guidelines for respirators. Filters are color coded to respirator cartridge filter types.

The Paramount Filtered Enclosure is constructed of corrosion-resistant tempered safety glass sides and sash with an epoxy-coated aluminum frame. It is 3-feet wide, providing an ideal individual work station.

Labconco Corporation, Kansas City, MO

Reader Service No. 385

Reduces Time to Results and Provides Easier Quantification

IDEXX Laboratories, Inc. introduces a new total plate count test for enumerating bacteria in food. The new test, called SimPlate™, improves laboratory efficiency by reducing or eliminating the most time-consuming portions of the current colony-counting standard methods. The SimPlate test simplifies the task of counting, needs no media preparation, requires only 24 hours of incubation, and reduces necessary dilutions. SimPlate is expected to be available in August, 1996.

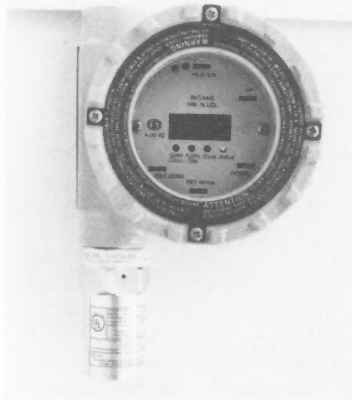
The test is performed by mixing dehydrated media powder with sterile water and the food sample, placing it in the sterile SimPlate device, and incubating it for 24 hours. Wells containing viable bacteria produce a blue fluorescence and are easy to count

without the aid of magnification or backlighting.

The SimPlate test is available in two counting ranges, greater than 700 CFU or greater than 1600 CFU. The smaller counting range device is similar in size to the standard pour plate. The larger plate, with a counting range greater than 1600 CFU, permits the user to skip a dilution which reduces preparation labor and use of test supplies. Both plates can be counted in less time than existing standard colony-counting methods.

IDEXX Laboratories, Inc., Westbrook, ME

Reader Service No. 386



International Sensor Technology

Intelligent Gas Transmitter

International Sensor Technology's new Model 4-201Q is an intelligent sensor transmitter which can be equipped with Solid State, Electrochemical, or Catalytic Bead Sensors for detection of over 150 hazardous gases including Hydrogen Sulfide, Ammonia, Carbon Monoxide, and Combustibles. The microprocessor based unit operates on 14-24 VDC and provides a linear 4-20 mA analog output. Housed in an explosion-proof enclosure which is CSA and UL Classified, its features include a local digital display of gas concentration, automated calibration, and a magnetic wand opera-

tion which allows non-intrusive calibration, meaning there is no need to declassify hazardous areas.

International Sensor Technology, Irvine, CA

Reader Service No. 387

Perform Safe *Listeria* Testing In-House with New 3M Petrifilm Plates

A new 3M Petrifilm Plate product shatters the notion about the safety of in-house microbiology testing for *Listeria* bacteria. 3M Petrifilm Listeria Count Plate now allows food processing plants to safely test for *Listeria* pathogens using the same effective and fast process they are accustomed to using with other Petrifilm plate products.

Many plants historically have avoided *Listeria* testing believing that it was unsafe to perform this type of testing in a plant environment. But now, the new Petrifilm Listeria Count Plate simply reveals what has been present all along when on-site tests are run for aerobic bacteria. The *Listeria* was there, but the capability to actually see existing *Listeria* results was the missing link.

With 3M's new Petrifilm Listeria plate, there is no enrichment step. It is as safe as performing current aerobic count tests using Petrifilm plates. Simply swab a surface, plate, incubate and read. Results are available in 28 hours. With this timely information, plants have more control and can take meaningful action. Any other *Listeria* test performed in a commercial laboratory takes at least twice as long and costs more than twice as much to deliver results.

The Petrifilm Listeria Count plate is the same as a 3M Petrifilm Aerobic Count plate with some media changes so that all non-*Listeria* grow slower than on the aerobic count plate. This allows any *Listeria* colonies to be visible

sooner than other bacteria, unlike the aerobic plate where all bacteria can be seen at the same time.

3M Microbiology, St. Paul, MN

Reader Service No. 388

Ozone Controls Odors for Sewage Treatment Plant

A waste water sewage treatment facility in the city of Al Ain, United Arab Emirates is successfully using ozone to control odors. The OREC™ ozonation system, provided by Osmonics, operates from the main pumping station which collects sewage from 15 lift stations within Al Ain and transfers it to the city's waste water treatment plant.

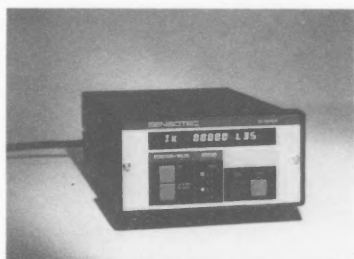
To meet the wide fluctuations in hydrogen sulfide (H₂S) gas levels at the treatment plant, Osmonics provided six SP3-AR variable output ozone generators, each with the capability to produce 2 1/2 lbs per day (48 gm/hr) of ozone. The ozonators are controlled from a central PLC (Programmable Logic Controller) designed to sequence unit operation based on demand. During periods of dramatic, rapid increases in H₂S concentrations, MSA hydrogen sulfide monitors override the residual ozone ramp control and immediately initiate operation of all six ozonators to meet demand.

Ozone is injected at the ventilation fan in the lift station wet well and passed through a tall contact chamber. An OREC low-concentration ozone monitor continuously measures the ozone residual in the contact tower off-gas stream. An Osmonics supplied duplex air compressor system with receiver, refrigerated air dryers and desiccant dryers provides continuous -80°F (-62°C) dewpoint, oil-free feed gas to the ozone generators. Chillers are used to recirculate and conserve cooling water, allowing optimal production efficiency and

ozone output in this demanding, arid environment.

Osmonics, Minnetonka, MN

Reader Service No. 389



Sensotec, Inc.

New Amplifier Cards Expand Capabilities of Model SC Digital Instruments

The Sensotec Model SC Series is a family of multi-channel, microprocessor-based signal conditioners for use with strain gage transducers and other sensors. The Model SC features a modular design to accommodate up to four transducer amplifier cards, a menu driven setup interface via front panel controls, and a full feature RS-232/485 interface. With Sensotec's unique *Signature Calibration* option, the Model SC automatically calibrates itself to the proper span, decimal point, and engineering units when connected to a *Signature Calibrated* transducer.

Sensotec has released *two new amplifier cards* which extend the capabilities of the SC Series even further. The LVDT Amplifier Card provides 5000 Hz excitation to and takes input directly from AC-AC linear variable displacement transducers (LVDTs). It features a digital demodulation algorithm for 0.05% accuracy, far superior to traditional analog demodulation techniques. The amplifier card features automatic digital gain selection for maximum resolution regardless of gain range and interactive mechanical null and

phase adjustment through the front panel.

The Frequency Input Card accepts pulses from a variety of sources such as magnetic pickups, contact closures, analog outputs, TTL level outputs, and open-collector outputs. Pulses can range from 40 millivolts to 15 volts peak-to-peak and from 5 to 15,000 Hz. The frequency inputs can be combined with other transducer inputs using the Model SC's built-in mathematics capabilities to generate calculated signals such as horsepower or flow.

Sensotec, Inc., Columbus, OH

Reader Service No. 390

Introducing the TripMentor Plus – Digital Temperature Recorder with Probe

Ryan Instruments introduces its TripMentor Plus, intransit, temperature recorder with remote probe. This digital recorder makes it easy to track and record temperature data on how your product was handled, all the way from product harvesting, processing to its final destination. The TripMentor Plus accurately records the temperature changes for up to 84 days. Use the probe to take internal product temperatures or for ambient temperatures. The recorder is easy to use, you just turn it on, leave it with your shipment and download your temperature history at the end of the trip. The TripMentor Plus can record temperatures from -40°F to 110°F with an accuracy of ±1°F. The TripMentor Plus is small, portable and easy-to-use. The probe is stainless steel, food grade, metal piercing and has a cable length of either two (2) or four (4) feet. The data is easily retrieved using the TripWriter printer or return the instrument to Ryan Instruments for complete report services.

Ryan Instruments, Redmond, WA

Reader Service No. 391



Micromation Inc.

CounterMat® Automatic Colony Counter Reduces Time and Improves Accuracy

The COUNTERMAT automates the counting of colonies in petri dishes with a high degree of accuracy. Patented optical illumination technology combined with advanced software separates overlapping colonies and provides adjustments for media color, colony size, shape, and contrast enabling a variety of samples to be counted. The sample's image is displayed on a VGA monitor with counted colonies marked by a flag. Resulting data can be displayed, exported, saved, or printed.

The optional AUTOMATIC SAMPLE CHANGER, CAROUSEL and PETRIRACKS® individually feed petri dishes into the COUNTERMAT. The unit consists of up to six PETRIRACKS® with each rack holding ten petri dishes for a capacity of 60 dishes. Depending on the program selected, the SAMPLE CHANGER and COUNTERMAT can automatically analyze 6 to 10 samples per minute.

Micromation Inc., Monmouth Junction, NJ

Reader Service No. 392

Nine Tri-Clover CL Pumps Launched

Availability of a new line of centrifugal pumps for a broad range of processing applications has been announced by Tri-Clover Inc.

Designated the CL Series, these new Tri-Flo® pumps feature casing diameters from 8.5" to 15.75". They are engineered for inlet pressures to 145 psi. Featuring 316L stainless steel construction, all models are built to 3-A standards criteria for sanitary design. The line of pumps gives Tri-Clover the broadest line of centrifugal pumps for process applications. Two additional models will be added to the CL Series in late 1996 and 1997.

Common design features of the new CL Series pumps include full Clean-In-Place capability, a cast heavy-duty front cover and casing for dependable, quiet operation. Precisely engineered tolerances between the impeller and front cover help contribute to operating efficiencies in the 70 percent range. An advanced impeller design reduces air entrapment and air-lock for reduced cavitation and lower NPSH.

The broad new line enables processors to match pump capacities to the job at hand and gives users the opportunities for increased operating efficiency, output and profitability.

Pump design for the CL Series enables the changing of seals to be completed in less than 15 minutes. Nine models in the CL Series line share common seal parts for reduced inventory levels.

Availability of the CL Series broadens Tri-Clover's lines of pumps for process industries. In addition to the Tri-Flo® CL Series, the company also provides a variety

of close coupled and base mounted centrifugal pumps, as well as lines of T-Series positive rotary and air-operated diaphragm pumps.

Tri-Clover Inc., Kenosha, WI

Reader Service No. 393

Neogen Markets a New PNPP Substrate

Neogen Corporation has announced that it has begun marketing K-Gold Substrate™ -PNPP, a one-bottle stabilized chromogenic substrate for use with alkaline phosphatase based ELISA tests.

K-Gold utilizes the substrate p-nitrophenylphosphate (PNPP), which is reacted upon by alkaline phosphatase to produce the chromophore p-nitrophenol. This substrate is supplied in a convenient, ready-to-use stabilizing buffer.

"This substrate is a welcomed addition to Neogen's existing K-Blue Substrate®-TMB," said Emilie Wilson, sales and marketing manager for the pharmacologic unit. "Just like K-Blue, K-Gold is in a stabilized one-bottle format. Substrate users will benefit from the product's easy-to-use format, enhanced sensitivity and competitive price."

K-Gold Substrate is stabilized with proprietary reagents and can be stored at 4°C for one year with no loss of reactivity. Although there are tablet and powder forms of PNPP substrates, K-Gold's formulation is easier and more convenient to use than these methods. In addition, K-Gold eliminates the need for additional buffers and steps prior to the enzyme assay.

This substrate is ideal for automated and manual immunoassay systems, and is also an excellent reagent for inclusion in diagnostic test kits. K-Gold was also found to outperform other commercially available substrates.

Neogen Corporation, Lansing, MI

Reader Service No. 394

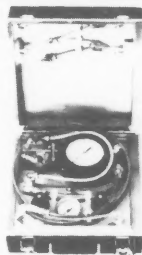
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Services/Products

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Minneapolis, MN 55405
612-724-0121

Reader Service No. 153



Model III ss x

*U.S Pat. No. 4,380,166

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Reader Service No. 124



Michelson Laboratories, Inc.

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Reader Service No. 163

ANNOUNCING!

In-Line Business Exchange Advertisements are now available in the Business Exchange Section of *Dairy, Food and Environmental Sanitation*.

85¢ per word

Bold and capitalized words are charged as two words. Area code and phone number count as one word.
All in-line business exchange ads must be paid in advance. \$20.00 per ad minimum charge.

For more information on how your organization may utilize these ads, call Rick McAtee, IAMFES Advertising/Exhibits Manager at (800) 369-6337 or (515) 276-3344.

QUALITY ASSURANCE MANAGER

Quality for Darden Restaurants is both a hallmark and a commitment. As one of the nation's leading restaurant companies, and the name behind such successes as Red Lobster and The Olive Garden, we are positioned to offer you unparalleled professional growth and development.

As a Quality Assurance Manager, you will ensure the highest standards of food safety and sanitation in the restaurants within your territory. This will involve conducting QA restaurant inspection/training, developing food safety programs and serving as a regulatory liaison. The position that we have available is located in the Atlanta, GA area, and involves approximately 60-80% overnight travel in Georgia, Alabama, Tennessee, North Carolina, South Carolina and Northern Florida.

The ideal candidate for this position will have 3+ years in Environmental Health, preferably in the retail food inspection area, and a B.S. degree in Environmental Health or science discipline. You must also be an R.S. (Registered Sanitarian), R.E.H.S. (Registered Environmental Health Specialist), or eligible for registration.

This unique opportunity, which enables you to work out of your home, offers a highly competitive salary and a superior benefits package that includes a company car.

Put quality to work for you. Fax or send your resume for immediate consideration to: **Quality Assurance Department, Darden Restaurants, Inc., P.O. Box 593330, Orlando, FL 32859-3330. FAX: (800) 258-6858 or (407) 245-5173.** We firmly support a culturally diverse work force and promote safety through pre-employment drug screening.

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- Bachelor's degree in sanitation, industrial hygiene, occupational health or a related field required.
- 5+ years' inspection/training experience in food safety or related field.
- Current or eligible for registration as a Registered Sanitarian or Environmental Health Specialist.
- Excellent oral/written communication skills.

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Amendment 1 to 3-A Sanitary Standards for Equipment for Packaging Dry Milk and Dry Milk Products, Number 27-02

Formulated By
International Association of Milk, Food and Environmental Sanitarians
United States Public Health Service
The Dairy Industry Committee

It is the purpose of the IAMFES, USPHS, and DIC in connection with the development of the 3-A Sanitary Standards Program to allow and encourage full freedom for inventive genius or new developments. Dry milk and dry milk packaging product specifications heretofore or hereafter developed which so differ in design, materials, and fabrication or otherwise as not to conform to the following standards but which, in the fabricator's opinion, are equivalent or better, may be submitted for the joint consideration of the IAMFES, USPHS, and DIC at any time.

NOTE: Use current revisions or editions of all referenced documents cited herein.

The 3-A Sanitary Standards for Equipment for Packaging Dry Milk and Dry Milk Products, Number 27-02 are hereby amended as indicated for the following sections:

- C1.5 Plastic materials may be used for container holding, opening, forming, dispensing, and closing parts, filling nozzles, flexible connectors, plungers, bonded or removable gaskets, diaphragms, shields or guards, filling valve members, covers, seals, diverting aprons, screening and perforated media, screen frame assemblies, and parts used in similar applications.
- C1.11 Cotton, linen, or synthetic materials may be used for single service filter media. These materials shall be nontoxic, nonshedding, relatively insoluble, and shall not impart a flavor to the product.
- D1 Product contact surfaces, except those for screens and perforated media, shall be at least as smooth as a No. 4 ground finish on stainless steel sheets and be free of imperfections such as pits, folds, and crevices. (See Appendix, Section F.) The use of selected stainless steel sheets with a No. 2B finish free of imperfections such as pits, folds, and crevices in the fabricated form for product contact surfaces is limited to dry product contact surfaces.
- D17 Perforated stainless steel materials, woven stainless steel wire, or woven materials provided

for in Section C1.5 may be used for screening media. Cotton, linen, or synthetic materials provided for in Section C1.11 may be used for single-service filter media on vacuum packaging machines.

H SCREEN AND PERFORATED MEDIA

H1 Recommended screen opening sizes are shown in the following table. Similar opening sizes are recommended for perforated media. Other opening sizes might be used depending upon the powder being filled.

DESCRIPTION	MAXIMUM SIEVE OPENINGS
Primary Screen or Perforated Media	.0026 in. (0.065 mm)
Support Screen or Perforated Media	.0341 in. (0.865 mm)

Screen opening dimensions may be obtained by any desired combination of wire thickness and number of wires per inch. For instance, if the screening surface is made of stainless steel woven wire, a .028 in. opening might be obtained by using 24 × 24 mesh market grade screen cloth made of wire .014 in. thick (about 45% open area), by using 30 × 30 bolting cloth

screen made of wire .0065 in. thick (about 65% open area), or by using many other mesh-wire thickness combinations. Also, multiple screens of various open areas might be used in combination. These combinations allow a wide choice to obtain desired balance between screen strength and open area. If materials other than stainless steel are used to construct the screening surface, similar combinations may be employed to achieve desired opening configuration.

- H2 Screens and perforated media should be kept dry at all times. When the media cannot be adequately cleaned by dry cleaning techniques, they should be discarded. The media should not be wet cleaned and reused.

These amendments to 3-A Sanitary Standards for Equipment for Packaging Dry Milk and Dry Milk Products, Number 27-02 are effective November 24, 1996.

Amendment 1 to 3-A Sanitary Standards for Mechanical Conveyors for Dry Milk and Dry Milk Products, Number 41-00

Formulated By
International Association of Milk, Food and Environmental Sanitarians
United States Public Health Service
The Dairy Industry Committee

It is the purpose of the IAMFES, USPHS, and DIC in connection with the development of the 3-A Sanitary Standards Program to allow and encourage full freedom for inventive genius or new developments. Mechanical dry milk conveyor specifications heretofore or hereafter developed which so differ in design, materials, and fabrication or otherwise as not to conform to the following standards but which, in the fabricator's opinion, are equivalent or better, may be submitted for the joint consideration of the IAMFES, USPHS, and DIC at any time. **NOTE:** Use current revisions or editions of all referenced documents cited herein.

The 3-A Sanitary Standards for Mechanical Conveyors for Dry Milk and Dry Milk Products, Number 41-00 are hereby amended as indicated for the following sections:

- C1.3 Plastic materials may be used in sight and/or light openings and for gaskets, flexible connectors, scrapers, belts, belts with integrally molded

cleats, rollers, bearings, coverings for belts and rollers, and flexible tubular conveyor casings.

These amended 3-A Sanitary Standards for Mechanical Conveyors for Dry Milk and Dry Milk Products, Number 41-00 are effective November 22, 1996.

3-A Sanitary Standards for Homogenizers and Reciprocating Pumps

Number 04-04

Formulated By
International Association of Milk, Food and Environmental Sanitarians
United States Public Health Service
The Dairy Industry Committee

It is the purpose of the IAMFES, USPHS, and DIC in connection with the development of the 3-A Sanitary Standards Program to allow and encourage full freedom for inventive genius or new developments. Homogenizers and reciprocating pump specifications heretofore or hereafter developed which so differ in design, materials, and fabrication or otherwise as not to conform to the following standards but which, in the fabricator's opinion, are equivalent or better, may be submitted for the joint consideration of the IAMFES, USPHS, and DIC at any time. NOTE: Use current revisions or editions of all referenced documents cited herein.

A SCOPE

- A1 These standards cover the sanitary aspects of homogenizers and reciprocating pumps for milk and milk products. These 3-A Sanitary Standards do not include drum pumps.
- A2 In order to conform with these 3-A Sanitary Standards, homogenizers and reciprocating pumps shall comply with the following design, material, and fabrication criteria.

B DEFINITIONS

- B1 *Product*: Shall mean milk and milk products.
- B2 *Reciprocating Pump*: Shall mean a positive displacement pump that moves the product by the reciprocating motion of a plunger(s) or a piston(s) operating in a cylinder(s).
- B3 *Homogenizer*: Shall mean a reciprocating pump which employs a specially designed homogenizing valve or valves for the purpose of blending the product ingredients and/or producing homogeneity of the product. The homogenizing valve or valves may be installed at the homogenizer and/or at a downstream location.

B4 Surfaces

- B4.1 *Product Contact Surfaces*: Shall mean all surfaces which are exposed to the product and surfaces from which liquids may drain, drop, diffuse, or be drawn into the product.
- B4.2 *Nonproduct Contact Surfaces*: Shall mean all other exposed surfaces.

B5 Surface Modification'

- B5.1 *Surface Treatments*: Shall mean a process whereby chemical compositions or mechanical properties of the existing surface are altered. There is no appreciable, typically less than 1 μm , build-up of new material or removal of existing material.
- B5.1.1 Surface treatments include:
1. Mechanical (shot peening² glass beading, polishing)
 2. Thermal (surface hardening laser, electron beam)
 3. Diffusion (carburizing, nitriding)
 4. Chemical (etching, oxidation)
 5. Ion Implantation
 6. Electropolishing
- B5.2 *Coatings*: Shall mean the results of a process where a different material is deposited to create a new surface. There is appreciable, typically more than 1 μm , build-up of new material.
- B5.2.1 Coating processes include:
1. Chemical (conversion coatings)
 2. Electrodeposition³
 3. Spraying (pneumatic, flame, plasma, arc spray)
 4. Physical Vapor Deposition
 5. Chemical Vapor Deposition

C MATERIALS

C1 Metals

- C1.1 Product contact surfaces shall be of stainless steel of the American Iron and Steel Institute (AISI) 300 Series⁴ or corresponding Alloy Cast

Institute⁵ (ACI) types (See Appendix, Section E.), or metal which under conditions of intended use is at least as corrosion resistant as stainless steel of the foregoing types, and is nontoxic and nonabsorbent, except that:

- C1.1.1 Homogenizing valves, plungers, pistons, cylinders, valves, guides, seats, and their associated components made of the materials provided for in C1.1 may have their product contact surfaces modified by surface treatment or coating(s).
- C1.1.2 Homogenizing valves, plunger, pistons, cylinders, valves, guides, seats, and their associated components may also be made of other nontoxic structurally suitable metal(s) that have their product contact surfaces modified by surface treatment or coating(s), provided that the resulting surfaces are as corrosion resistant as the materials provided for in Section C1.1.
- C1.1.3 Homogenizing valves, plungers, pistons, cylinders, valves, guides, seats, and their associated components may also be made of stainless steel of the AISI 400 Series⁴ that is made as corrosion resistant as AISI 300 Series by surface treatment or coating(s), or made of nontoxic, nonabsorbent metal that is as corrosion resistant, under the conditions of intended use, as stainless steel of the AISI 300 Series.
- C1.2 Solder, when used, shall be silver bearing solder and shall be corrosion resistant, free of cadmium, lead, and antimony, nonabsorbent, and shall not impart any toxic substance to the product when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment or sterilization.
- C2 Nonmetals**
- C2.1 Rubber and rubber-like materials may be used for gaskets, seals, O-rings and parts having the same functional purposes.
 - C2.1.1 Rubber and rubber-like materials when used for the above specified application(s) shall conform with the applicable provisions of the 3-A Sanitary Standards for Multiple-Use Rubber and Rubber-Like Materials Used as Product Contact Surfaces in Dairy Equipment, Number 18.
- C2.2 Plastic materials may be used for gaskets, seals, O-rings, bushings, guides, coatings, and parts having the same functional purposes.
 - C2.2.1 Plastic materials when used for the above specified application(s) shall conform with the applicable provisions of the 3-A Sanitary Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment, Number 20.
- C2.3 Rubber and rubber-like materials and plastic materials having product contact surfaces shall be of such composition as to retain their surface

and conformational characteristics when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment or sterilization.

- C2.4 The final bond and residual adhesive, if used, on bonded rubber and rubber-like materials and bonded plastic materials shall be nontoxic.⁶
- C2.5 Where materials having certain inherent functional purposes are required for specific applications, such as plungers, pistons, pump valve parts, homogenizing valves, cylinders and their associated parts, carbon surface treatments or coatings, tungsten carbide, and/or ceramic materials may be used. These materials shall be inert, nonporous, nontoxic, nonabsorbent, insoluble, resistant to scratching, scoring, and distortion when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment or sterilization.

C3 Sterilization

- C3.1 In a processing system to be sterilized by heat and operated at a temperature of 250°F (121°C) or higher, all materials having product contact surface(s) used in the construction of homogenizers and reciprocating pumps and nonmetallic component parts shall be such that they can be (1) sterilized by saturated steam or water under pressure (at least 15.3 psig or 106 kPa) at a temperature of at least 250°F (121°C) and (2) operated at the temperature required for processing.

C4 Nonproduct Contact Surfaces

- C4.1 All nonproduct contact surfaces shall be of corrosion-resistant material or material that is rendered corrosion resistant. If coated, the coating used shall adhere. All nonproduct contact surfaces shall be relatively nonabsorbent, durable, and cleanable. Parts removable for cleaning having both product contact and nonproduct contact surfaces shall not be painted.

D FABRICATION

D1 Surface Texture

- D1.1 All product contact surfaces shall have a finish at least as smooth as a No. 4 ground finish on stainless steel sheets and be free of imperfections such as pits, folds and crevices in the final fabricated form. (See Appendix, Section F.)

D2 Permanent Joints

- D2.1 All permanent joints in metallic product contact surfaces shall be continuously welded, except that:
 - D2.1.1 Where welding is impractical for replacement type valve seats, soldering, press-fitting or shrink-fitting may be employed, and may have a recessed chamfer.

D2.1.2 Welding, press-fitting, shrink-fitting or soldering shall be finished to produce product contact surfaces which are at least as smooth as a No. 4 ground finish on stainless steel sheets and which are free of imperfections such as pits, folds and crevices. (See Appendix, Section G.)

D3 Coatings

D3.1 Coatings, if used, shall be free from surface delamination, pitting, flaking, spalling, blistering and distortion when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment or sterilization.

D3.2 The minimum thickness of electrodeposited coatings shall not be less than 0.0002 in. (0.005 mm) for all product contact surfaces when used on stainless steel. When these surfaces are other than stainless steel, the minimum thickness of electrodeposited coatings shall not be less than 0.002 in. (0.05 mm).

D3.3 Ceramic materials used as coatings shall be at least 0.003 in. (0.08 mm) thick.

D3.4 Plastic materials, when used as a coating, shall be at least 0.005 in. (0.125 mm) thick.

D4 Cleaning and Inspectibility

D4.1 All product contact surfaces shall be easily accessible for cleaning and inspection either when in an assembled position or when removed. Removable parts shall be readily demountable. There shall be no dead-end passages in parts or assemblies except that:

D4.1.1 Ports for instrumentation and pressure relief devices on high pressure pumps and homogenizers designed to operate at over 250 psig (1724 kPa) may have dead end passages of 10 port diameters or less but not to exceed 5 in. (127 mm) when assembled provided the passages are readily accessible for manual cleaning and inspection when disassembled.

D5 Draining

D5.1 When disassembled, all product contact surfaces shall be self draining except for normal clingage.

D6 Gaskets

D6.1 Gaskets having a product contact surface shall be removable or bonded.

D6.2 Bonded rubber and rubber-like gaskets and bonded plastic gaskets shall be bonded in a manner that the bond is continuous and mechanically sound so that when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment or sterilization the rubber and rubber-like material or the plastic material does not separate from the base material to which it is bonded.

D6.3 Grooves in gaskets shall be no deeper than their width except for those provided in D9. The

groove and radius shall be readily accessible for cleaning and inspection and the gasket shall be readily removable for cleaning.

D7 Radii

D7.1 All internal angles of less than 135° on product contact surfaces, shall have a minimum radius of 1/4 in. (6 mm) except those provided for in D9 and:

D7.1.1 Smaller radii may be used when they are required for essential functional reasons, such as those in valves, valve seats, seals, and pistons. The surface of this internal angle must be readily accessible for cleaning and inspection.

D7.1.2 Radii in standard O-ring grooves shall be as specified in Appendix, Section H.

D7.1.3 Radii in nonstandard O-ring grooves shall be that radius closest to a standard O-ring as specified in Appendix, Section H.

D8 Threads

D8.1 There shall be no threads on product contact surfaces.

D9 Fittings and Connections

D9.1 Sanitary fittings and connections shall conform with 3-A Sanitary Standards for Sanitary Fittings for Milk and Milk Products, Number 63.

D10 Gauges

D10.1 Recording or indicating gauges furnished with a homogenizer or a reciprocating pump shall be of the sanitary diaphragm or pressure bulb type. They shall comply with applicable criteria of applicable 3-A Sanitary Standards.

D10.2 All instrument connections having product contact surfaces shall conform with the applicable provisions of the 3-A Sanitary Standards for Sensors and Sensor Fittings and Connections Used on Fluid Milk and Milk Products Equipment, Number 74.

D11 Metal Tubing

D11.1 All metal tubing shall conform with the applicable provisions of the 3-A Sanitary Standards for Polished Metal Tubing for Dairy Products, Number 33.

D12 Springs

D12.1 Coil springs which have product contact surfaces shall have an opening of at least 3/32 in. (2 mm) between all coils including ends when the spring is in a free position. All coil springs shall be readily accessible for cleaning and inspection.

D13 Sterilization

D13.1 Homogenizers and reciprocating pumps designed to be used in a processing system to be sterilized by heat and operated at a temperature

- of 250°F (121°C) or higher shall comply with the following:
- D13.1.1 The construction shall be such that all product contact surfaces can be (1) sterilized by saturated steam or water under pressure (at least 15.3 psig or 106 kPa) at a temperature of at least 250°F (121°C) and (2) operated at the temperature required for processing.
- D13.1.2 If chamber(s) for steam or other sterilizing medium are provided for the area(s) surrounding the plungers or inlet and outlet connections, they shall have connection(s) for the steam or other sterilizing medium that can be securely fastened. The line(s) shall be connected in a manner that they may be disconnected to allow the sterilizing chamber(s) to be inspected and cleaned if necessary.
- D14 **Homogenizing Valves**
- D14.1 The product contact surfaces of homogenizing valves shall meet the requirements of these standards except for those single service valves which are intended to be discarded after each use.
- D15 **Nonproduct Contact Surfaces**
- D15.1 Nonproduct contact surfaces shall be smooth, free of pockets and crevices, and be readily cleanable and those to be coated shall be effectively prepared for coating.
- D16 **Methods of Installation**
- D16.1 The means of supporting homogenizers and reciprocating pumps shall be one of the following:
- D16.2 With legs, the legs shall be smooth with rounded ends, have no exposed threads and shall be of sufficient length to provide a clearance between the lowest part of the base and the floor of no less than 4 in. (10 cm). Legs made of hollow stock shall be sealed.
- D16.3 When a homogenizer or reciprocating pump is designed to be installed with product contact surfaces in the process area and other nonproduct contact surfaces are to be located outside the process area, they shall be separated by an alcove.
- D16.3.1 The alcove shall be constructed of corrosion-resistant stainless steel, designed so that:
1. It can be sealed to the process area wall.
 2. All interior alcove surfaces are free draining to the process area.
- D16.3.2 The alcove shall be located so that any leakage from the product contact surfaces shall be detectable from the processing area.
- D17 **Accessibility**
- D17.1 The space between the cylinder(s) and the drive shall be readily accessible for cleaning, self-draining and protected so that liquids will

not enter the drive. This space shall be provided with a cover or shield. The cover may be designed to permit observation without removing it from the homogenizer or reciprocating pump.

- D17.2 Homogenizers or reciprocating pumps to be used as the timing device in a pasteurizing system shall be provided with an easily accessible or externally visible means of sealing to prevent the operation of the homogenizer or reciprocating pump at a greater flow rate than that which gives legal holding time without breaking the seal.
- D17.3 When a homogenizer or reciprocating pump is provided with an attached or free-standing sound suppression enclosure, the enclosure shall be designed and constructed so that there is easy access for cleaning and inspection of all product contact parts of the homogenizer or reciprocating pump and to any part which may require sealing by a control authority. All external surfaces of such an enclosure shall be smooth, free of pockets and crevices, and be readily cleanable and those to be coated shall be effectively prepared for coating. Sound suppressing materials, if used, shall be nonabsorbent, smooth and crack or crevice-free or shall be encapsulated in metal or smooth plastic jackets which are totally enclosed and are moisture and vermin proof.

APPENDIX

E STAINLESS STEEL MATERIALS

Stainless steel conforming to the applicable composition ranges established by AISI for wrought products, or by ACI for cast products, should be considered in compliance with the requirements of Section C1 herein. Where welding is involved, the carbon content of the stainless steel should not exceed 0.08%. The first reference cited in C1 sets forth the chemical ranges and limits of acceptable stainless steel of the 300 Series. Cast grades of stainless steel corresponding to types 303, 304, and 316 are designated CF-16F, CF-8, and CF-8M, respectively. The chemical compositions of these cast grades are covered by ASTM specifications⁷ A351/A351M, A743/A743M and A744/A744M.

F PRODUCT CONTACT SURFACE FINISH

Surface finish equivalent to 150 grit or better as obtained with silicon carbide, properly applied on stainless steel sheets, is considered in compliance with the requirements of Section D1 herein. A maximum Ra of 32 µin. (0.80 µm), when measured according to the recommendations in American National Standards Institute (ANSI) and American Society of Mechanical Engineers (ASME) B46.1 - Surface Texture, is considered to be equivalent to a No. 4 finish.

G PRESS-FITS AND SHRINK-FITS

Press-fits or shrink-fits may be used to produce crevice-free, permanent joints in metallic product contact surfaces when neither welding nor soldering is practical. Joints of these types may only be used to assemble parts having circular cross sections and are free of shoulders. For example: they may be used to assemble round pins or round bushings into round holes.

In both types of fits, the outside diameter of the part being inserted is greater than the inside diameter of the hole. In the case of the press-fit, the parts are forced together by applying pressure. The pressure required is primarily dependent upon the diameter of the parts, the amount

of interference and the distance the inner member is forced in.

In shrink-fits, the diameter of the inner member is reduced by chilling it to a low temperature. Dry ice is commonly used to shrink the inner member. Heat may also be applied to the outer member of the shrink-fit. Less assembly force is required for this type of fit.

The design of these fits depends on a variety of factors. The designer should follow recommended practices to assure that a crevice-free joint is produced. A recognized authoritative reference is *Machinery's Handbook* published by Industrial Press Inc., 200 Madison Avenue, New York, NY 10157.

H O-RING GROOVE RADII

Table 1. Groove Radii Dimensions for Standard O-Rings

O-Ring Cross Section, Nominal (AS 568 ¹)	O-Ring Cross Section, Actual (AS 568)	O-Ring Cross Section, Actual (ISO 3601-1 ¹⁰)	Minimum Groove Radius
1/16 in.	0.070 in.	1.80 mm	0.016 in. (0.406 mm)
3/32 in.	0.103 in.	2.65 mm	0.031 in. (0.787 mm)
1/8 in.	0.139 in.	3.55 mm	0.031 in. (0.787 mm)
3/16 in.	0.210 in.	5.30 mm	0.062 in. (1.575 mm)
1/4 in.	0.275 in.	7.00 mm	0.094 in. (2.388 mm)

¹Additional information on surface modification is contained in *Advanced Materials and Processes, Volume 137(1), January 1990*; "Coatings and Coating Practices" by H. Herman, p. 59; "Surface Modification" by F. A. Smidt, p. 61. ASM International, Materials Park, OH 44073 (216-338-5151).

²MIL-S-13165C (1), November 1991, Military Specification: Shot Peening of Metal Parts. Available from Standardization, Document Order Desk (Department of Navy), 700 Robbins Avenue, Building 4, Section D, Philadelphia, PA 19111-5094 (215-697-2179).

³Federal Specification #QQ-C-320B for Chromium Plating (Electrodeposited), June 1954 with Amendment 4 on April 10, 1987. Federal Specification #QQ-N-290A for Nickel Plating (Electrodeposited), November 12, 1971. Available from the General Services Administration, Federal Supply Services Bureau, Specification Section, 470 East L'Enfant Plaza, Suite 8100, Washington, D.C. 20407 (202-755-0325).

⁴The data for this series are contained in *AISI Steel Products Manual, Stainless & Heat Resisting Steels, November 1990, Table 2-1, pp. 17-20*. Available from the American Iron and Steel Society, 410 Commonwealth Drive, Warrendale, PA 15086 (412-776-1535).

⁵Steel Founders Society of America, Cast Metal Federation Building, 455 State Street, Des Plaines, IL 60016 (708-299-9160).

⁶Adhesives shall comply with 21 CFR 175 - Indirect Food Additives: Adhesives and Components of Coatings. Document for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (202-783-3238).

⁷Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 (610-832-9500).

⁸Available from the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017-2392 (212-705-7722).

⁹The document establishing these standard dimensions is Aerospace Standard (AS) 568, published by SAE, 400 Commonwealth Drive, Warrendale, PA 15086 (412-776-4970).

¹⁰The document establishing these standard dimensions is ISO 3601-1: 1988 (E), published by the International Organization for Standardization (ISO), 1 Rue de Varembe, Case Postale 58, CH 1 1211, Geneva, Switzerland (41-22-734-1240).

These revised 3-A Sanitary Standards are effective November 24, 1996, at which time the 3-A Sanitary Standards for Homogenizers and Pumps of the Plunger Type, Number 04-03 are rescinded and become null and void.

3-A Sanitary Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment, Number 20-18

Formulated By
International Association of Milk, Food and Environmental Sanitarians
United States Public Health Service
The Dairy Industry Committee

It is the purpose of the IAMFES, USPHS, and DIC in connection with the development of the 3-A Sanitary Standards Program to allow and encourage full freedom for inventive genius or new developments. Multiple-use plastic materials used as product contact surfaces for dairy equipment heretofore or hereafter developed which so differ in design, materials, and fabrication or otherwise as not to conform to the following standards but which, in the fabricator's opinion, are equivalent or better, may be submitted for the joint consideration of the IAMFES, USPHS, and DIC at any time. **NOTE:** Use current revisions or editions of all referenced documents cited herein.

A SCOPE

A1 These sanitary standards cover the material requirements of plastics for multiple-use as product contact and/or cleaning solution contact surfaces in equipment for production, processing, and handling of milk and milk product(s). Test criteria are provided for plastics as a means of determining their acceptance as to their ability to be cleaned and to receive effective bactericidal treatment and to maintain their essential functional properties and surface finish in accelerated use-simulating tests.¹ These standards do not apply to plastics for single service application nor plastics which are of rubber or rubber-like origin resulting from chemical or thermal vulcanization or curing. These standards are also not meant to cover design and fabrication criteria for individual plastic components, because such criteria are provided for in other 3-A Sanitary Standards and 3-A Accepted Practices. In order to conform with these 3-A Sanitary Standards, multiple-use plastics shall comply with the following material, fabrication of test specimens as described in Section D3 herein, and cleanability standards.

B DEFINITIONS

B1 *Product:* Shall mean milk and milk products.

B2 *Product Contact Surfaces:* Shall mean all surfaces that are exposed to the product, and surfaces from which liquids may drain, drop or be drawn into the product or into the container, and surfaces that touch product contact surfaces of the container.

B3 *Cleaning Solution Contact Surfaces:* Shall mean the interior surfaces which are used exclusively for supply and recirculation of cleaning and/or sanitizing solutions, except those surfaces used to supply concentrated cleaning and/or sanitizing materials to the point of use.

B4 *Nonproduct Contact Surfaces:* Shall mean all other exposed surfaces.

B5 *Plastic:* Shall mean materials as defined in Sections B5, B6, and B7 herein, except those materials included under the 3-A Sanitary Standards for Multiple-Use Rubber and Rubber-Like Materials Used as Product Contact Surfaces on Dairy Equipment, Number 18. The following in Sections B5.1 to B5.9 are from ASTM D 883-91L, Standard Definitions of Terms Relating to Plastics:²

B5.1 *Plastic(s), n:* A material that contains as an essential ingredient one or more organic polymeric substances of large molecular weight, is solid in its finished state, and, at some stage in its

manufacture or processing into finished articles, can be shaped by flow.

- B5.2 *Polymer, n*: A substance consisting of molecules characterized by the repetition (neglecting ends, branch junctions, and other minor irregularities) of one or more types of monomeric units.
- B5.3 *Thermoplastic, n*: A plastic that repeatedly can be softened by heating and hardened by cooling through a temperature range characteristic of the plastic, and that in the softened state can be shaped by flow into articles by molding or extrusion.
- B5.4 *Thermoplastic, adj.*: Capable of being repeatedly softened by heating and hardened by cooling through a temperature range characteristic of the plastic, and that in the softened state can be shaped by flow into articles by molding or extrusion for example. Note: Thermoplastic applies to those materials whose change upon heating is substantially physical.
- B5.5 *Thermoset, n*: A plastic that, after having been cured by heat or other means, is substantially infusible and insoluble.
- B5.6 *Thermoset, adj.*: Pertaining to the state of a plastic in which it is substantially infusible.
- B5.7 *Thermosetting, adj.*: Capable of being changed into a substantially infusible or insoluble product when cured by heat or other means.
- B5.8 *Plasticizer, n*: A substance incorporated in a material to increase its workability, flexibility, or distensibility.
- B5.9 *Elastomer, n*: A macromolecular material that at room temperature returns rapidly to approximately its initial dimensions and shape after substantial deformation by a weak stress and release of the stress.
- B6 *Plastic Additive, n*: Any material that is added to a plastic or polymer to enhance or modify the original physical and/or chemical properties.
- B7 *Plastic, adj.*: The adjective "plastic" indicates that the noun is made of, consists of or pertains to plastic.
- B8 **Definitions of Terms Relating to Testing**
- B8.1 *Standard Laboratory Atmosphere (SLA)*: A relative humidity of $50 \pm 5\%$ at a temperature of $23 \pm 1^\circ\text{C}$ or $73.4 \pm 1.8^\circ\text{F}$ as defined in ASTM E 41-86 - Definitions of Terms Relating to Conditioning.
- B8.2 *Hot Water*: From $100\text{-}115^\circ\text{F}$ ($38\text{-}46^\circ\text{C}$).
- B8.3 *Cold Water*: From $45\text{-}65^\circ\text{F}$ ($7\text{-}18^\circ\text{C}$).
- B8.4 *Rinse*: Shall mean to totally immerse in 2 L of water to remove all residue of cleaning and/or test solution. The water temperature shall be determined by referring to D8.2 for hot water or

D8.3 for cold water. Immersion time shall be determined by the instructions for carrying out the applicable procedure, or if no time is given, rinse by six repeated 1 min immersions. All water used shall be deionized or distilled.

- B8.5 *Dry or Dried*: Shall mean to allow the samples to reach an equilibrium moisture content in a SLA, utilizing the times specified in the procedure to be followed. Specimens should be suspended or placed on edge on a screen to facilitate draining and drying.

C MATERIALS

Plastic materials used as product contact and/or cleaning solution contact surfaces shall be nontoxic, shall comply with FDA regulations of the Food, Drug and Cosmetic Act and shall comply with Section H- Standards for Acceptability. Plastic materials complying with Section H shall be considered to be relatively unaffected when subjected to normal cleaning and bactericidal treatment. Only virgin, unadulterated or clean in-process and/or properly stored re-grind plastic materials shall be used. Plasticizers, and plastic additives, if used, shall be used at the minimum levels required for the desired functionality and also be used in accordance with the conditions prescribed by current federal regulations or the FD&C Act as amended.

D PREPARATION FOR CLEANABILITY RESPONSE, PRODUCT TREATMENT AND CLEANABILITY COMPARISONS PROCEDURES

D1 Apparatus

Appropriate glassware, oven, hot plate, analytical balance, wide field microscope or magnifying lens of 7 to 10 power, sample of AISI 300 Series³ stainless having a surface finish equivalent to 150 grit or better finish as obtained with silicon carbide properly applied on stainless steel sheets. (Also see Section G2.)

- D2 **Test Solutions (Simulated Reagents)**: (See Appendix, Section L for suggested material/chemical supplier list.)

D2.1 Test Solution A (Acid Cleaner):

Acid Solution: 2% Orthophosphoric Acid (20.18 g Acid/L solution) 28.1 mL of 85% orthophosphoric acid volumetrically diluted to 2 L with distilled water.

D2.2 Test Solution B (Alkaline Cleaner equivalent to 63% sodium oxide):

Sodium tripolyphosphate, 3.85 g
Sodium hydroxide, 20.51 g
Trisodium phosphate, 0.77 g
Synthetic detergent, anionic type (Aerosol[®] O.T.), 0.51 g
Dilute volumetrically to 1 L with distilled water to produce a 25% solution by weight.

- D2.3 Test Solution C (Alkaline Chlorine Sanitizer)
Hypochlorite solution:
10.00 mL of a 4-6% sodium hypochlorite solution is made up to 1 L with distilled water in a volumetric flask to yield 400 ppm available chlorine in water, adjusted to pH 8.0 ± 0.5 with sodium bicarbonate.
- D2.4 Test Solution D (Acid Chlorine Sanitizer):
Dichloroisocyanurate, sodium salt (ACL 60 Monsanto), 15.00 g
Monosodium phosphate, anhydrous, 29.00 g
Sodium sulfate, anhydrous, 25.00 g
Dissolve in distilled water up to 1 L in a volumetric flask.
Dilute 44.74 mL of above solution with distilled water to 1 L in a volumetric flask to give a test solution containing 400 ppm of available chlorine.
- D2.5 Test Solution E (Quaternary Ammonium Sanitizer):
Alkyl dimethylbenzyl ammonium chloride, 400 ppm in water (0.40 g/L).
- D2.6 Test Solution F (Iodophor Sanitizer):
Nonylphenol ethylene oxide condensate, 9.5-10 mol
Ethylene oxide, 15.00 g
Iodine to provide 1.75% available iodine, 2.45 g
Orthophosphoric acid-100% basis, 17.60 g (12.26 mL of 85% acid)
Water, 64.95 g
Dilute 2.86 g of above solution with distilled water up to 1 L in a volumetric flask to give a test solution of 50 ppm of available iodine.
- D2.7 Test Solution G (Acid Anionic Sanitizer):
Orthophosphoric acid - 100% basis, 24.70 g (17.20 mL of 85% acid)
Dodecylbenzene sulfonic acid, sodium salt, 2.75 g
Nonionic wetting agent, 1.00 g
Water, 71.55 g
Dilute 14.80 g of above solution with distilled water up to 1 L in a volumetric flask to give a test solution of 400 ppm of active anionic.
- D2.8 Test Solution H (Simulated Dairy-Soil Solution):
Cream (36% milkfat), 583.30 g
Nonfat dry milk, 140.00 g
Sucrose, 210.00 g
Water, 466.70 g
To give a composition of:
15.0% Fat
12.0% Milk-solids-not-fat
15.0% Sucrose
58.0% Water
- D2.9 Test Solution I (Dairy Product, High Fat Medium): Pasteurized heavy cream, minimum 36.0% milkfat.
- D2.10 Test Solution J (Dairy Product, Acid Medium):
Lactic acid, 3.0% in aqueous solution (70.60 g or 59.00 mL of 85% lactic acid or 60.00 g of anhydrous lactic acid) diluted with distilled water to 2 L in a volumetric flask.
- D3 Test Specimens
- D3.1 Test specimens, when prepared for testing shall have a surface at least as smooth as a sample of AISI 300 Series stainless steel having a surface finish equivalent to 150 grit or better as obtained with silicon carbide, properly applied on stainless steel sheets and shall have a total exposed surface area of 7.00 ± 0.10 in.² (45.20 ± 0.65 cm²) for each test specimen. Test specimens shall have one of the following configurations.
- D3.1.1 Molded test specimens shall be in the form of a disk 2.00 in. (50.80 mm) in diameter and 1/8 in. (3.20 mm) in thickness. Permissible variations in thickness are ± 0.0070 in. (0.18 mm) for hot molded and ± 0.012 in. (0.30 mm) for cold molded or cast materials. The disk mold prescribed in Section 3 of ASTM D 647-88a - Recommended Practice for Design of Molds for Test Specimens of Plastic Molding Materials - is suitable for molding disk specimens of thermosetting materials, and Section 5 of ASTM D 647-88a is suitable for injection of molding of thermoplastic materials.
- D3.1.2 Sheet test specimens shall be in the form of a bar 3.00 in. (76.20 mm) in length and 1.00 in. (25.40 mm) in width, which for comparison, shall be $1/8 \pm 0.008$ in. (3.18 ± 0.20 mm) thick (Surface area, 7.00 ± 0.10 in.² or 45.20 ± 0.65 cm²).
- D3.1.3 Rod test specimens shall be of normal diameter as received, and cut to proper length to produce the required surface area of 7.00 ± 0.10 in.² (45.2 ± 0.65 cm²). The diameter of the specimen shall be the diameter of the rod.
- D3.1.4 Tube test specimens of less than 3.00 in. (76.20 mm) in diameter shall be the full section of the tube cut to proper length to produce the required surface area of 7.00 ± 0.10 in.² (45.20 ± 6.5 mm²) including as the exposed surface area the outside, inside, and ends of the tube. For a tube having an inside diameter of 3.00 in. (76.20 mm) or more, a rectangular specimen shall be cut 3.00 in. (76.20 mm) in length laterally to the tube or cut to proper length and width to produce the required surface area of 7.00 ± 0.10 in.² (45.20 ± 6.5 mm²) including as the exposed area the outside, inside, and ends of the cut section.
- D3.2 Test specimens from sheets, rods and tubes shall be machined, punched, sawed or sheared from the sample and so treated on such surfaces as to have edges free from cracks, rough surfaces and

loose material. All test specimens shall be free of grease, dirt or other extraneous material.

D3.3 Additional guidelines for the handling of specimens, suspension of specimens in reagents, stirring of reagents, etc. can be found in ASTM Test Methods D 543-87 and D 471-79 (Re-approved 1991).

D4 Conditioning of Test Specimens

All test specimens pre-conditioned to equilibrium for water content in a Standard Laboratory Atmosphere (see B8.1), shall be cleaned using Test Solution B (Alkaline Solution) at 165-170°F (74-77°C), with six repeated 1 min immersions in 2 L of cold distilled or deionized water to thoroughly rinse and then dry at Standard Laboratory Atmosphere for 24 h.

D5 Number of Test Specimens

Two sets (Set M and Set M¹) of eight specimens each and two sets (Set L and Set L¹) of eight specimens each shall be identified and treated as:

Set M and M ¹	Set L and L ¹	For Tests in:
M:0 M ¹ :0	L:0 L ¹ :0	Controls, distilled water
M:1 M ¹ :1	L:1 L ¹ :1	Solutions A-B
M:2 M ¹ :2	L:2 L ¹ :2	Solutions A-B-H-A-B
M:3 M ¹ :3	L:3 L ¹ :3	Solutions A-B-C-H-A-B-C
M:4 M ¹ :4	L:4 L ¹ :4	Solutions A-B-D-H-A-B-D
M:5 M ¹ :5	L:5 L ¹ :5	Solutions A-B-E-H-A-B-E
M:6 M ¹ :6	L:6 L ¹ :6	Solutions A-B-F-H-A-B-F
M:7 M ¹ :7	L:7 L ¹ :7	Solutions A-B-G-H-A-B-G

An extra molded test specimen or a piece of the sheet, rod or tube shall be available for the comparisons required in E10.2.1 and F3.2.1.

E PROCEDURE - CLEANABILITY RESPONSE

E1 After conditioning the test specimens according to Section D4 above, all samples are to be weighed (W₁) on an analytical balance to 0.0001 g. Specimens shall be handled with clean tongs or forceps and latex gloves worn when required. After W₁ has been determined treat specimens as follows:

E2 Specimens M-0, M¹-0 and L-0, L¹-0:

- (a) Immerse in distilled water, 165-170°F (74-77°C), 60 min.
- (b) Rinse, hot water.
- (c) Dry, SLA, 20 h.
- (d) Re-weigh (W₂).

E3 Specimens M-1, M¹-1 and L-1, L¹-1:

- (a) Immerse in Solution A, 165-170°F (74-77°C), 30 min.
- (b) Rinse, hot water.

- (c) Immerse in Solution B, 165-170°F (74-77°C), 30 min.
- (d) Rinse, hot water.
- (e) Dry, SLA, 20 h.
- (f) Re-weigh (W₂).

E4 Specimens M-2, M¹-2 and L-2, L¹-2:

- (a) Immerse in Solution A, 165-170°F (74-77°C), 15 min.
- (b) Rinse, hot water.
- (c) Immerse in Solution B, 165-170°F (74-77°C), 15 min.
- (d) Rinse, hot water.
- (e) Immerse in Solution H, SLA, 20 h.
- (f) Rinse, hot water.
- (g) Immerse in Solution A, 165-170°F (74-77°C), 15 min.
- (h) Rinse, hot water.
- (i) Immerse in Solution B, 165-170°F (74-77°C), 15 min.
- (j) Rinse, hot water.
- (k) Dry, SLA, 20 h.
- (l) Re-weigh (W₂).

E5 Specimens M-3, M¹-3 and L-3, L¹-3:

- (a) Immerse in Solution A, 165-170°F (74-77°C), 15 min.
- (b) Rinse, hot water.
- (c) Immerse in Solution B, 165-170°F (74-77°C), 15 min.
- (d) Rinse, cold water.
- (e) Immerse in Solution C, SLA, 60 min.
- (f) Rinse, hot water.
- (g) Immerse in Solution H, SLA, 20 h.
- (h) Rinse, cold water.
- (i) Immerse in Solution A, 165-170°F (74-77°C), 15 min.
- (j) Rinse, hot water.
- (k) Immerse in Solution B, 165-170°F (74-77°C), 15 min.
- (l) Rinse, cold water.
- (m) Immerse in Solution C, SLA, 60 min.
- (n) Rinse, hot water.
- (o) Dry, SLA, 20 h.
- (p) Re-weigh (W₂).

E6 Specimens M-4, M¹-4 and L-4, L¹-4:

Identical to regimen stated in Section E5 for M-3, M¹-3 and L-3, L¹-3 except: Use Solution D in place of Solution C.

E7 Specimens M-5, M¹-5 and L-5, L¹-5:

Identical to regimen stated in Section E5 for M-3, M¹-3 and L-3, L¹-3 except: Use Solution E in place of Solution C.

E8 Specimens M-6, M¹-6 and L-6, L¹-6:

Identical to regimen stated in Section E5 for M-3, M¹-3 and L-3, L¹-3 except: Use Solution F in place of Solution C.

- E9 Specimens M-7, M¹-7 and L-7, L¹-7:
Identical to regimen stated in Section E5 for M-3, M¹-3 and L-3, L¹-3 except: Use Solution G in place of Solution C.
- E10 Report the following for each specimen tested (For Report Form, see Appendix, Section M):
- E10.1 Calculated % weight loss or gain:

$$\% \text{ Loss} = (W_1 - W_2)/W_1 \times 100$$

$$\% \text{ Gain} = (W_2 - W_1)/W_1 \times 100$$
- Note: Averages of specimens are not permitted. A weight gain is not to be used to offset a weight loss.
- E10.2 Surface comparisons made visually with the aid of magnification:
- E10.2.1 The test specimen is compared with the original as to change in surface smoothness as: NO CHANGE, SLIGHT CHANGE, or MARKED CHANGE.
- E10.2.2 The rating as to the smoothness of the test specimen compared to a surface finish equivalent to a 150 grit or better finish as obtained with silicon carbide, properly applied on stainless steel sheets: SMOOTHER, EQUAL, or ROUGHER.
- E10.2.3 Report under the "Remarks" column other observable (temporary or permanent) changes to the specimen's surface and appearance, such as surface tack, exudation, surface cracks, color, transparency, surface wettability, delamination, shape distortion, or any other appearance changes.
- F **PROCEDURE - PRODUCT TREATMENT**
The test specimens which were treated in Section E, "Cleanability Response," are to be further tested as follows:
- F1 Immerse Set M and M¹ (Specimens M-0 to M-7 and M¹-0 to M¹-7 inclusive) in Test Solution I at room temperature for a total time of 168 h, renewing the Test Solution I every 24 h. Test specimens shall be rinsed with cold distilled or deionized water to remove old solution prior to re-immersing in renewed solution. At the conclusion of the 168 h immersion, the specimens shall be removed and cleaned, using Test Solution B at 165-170°F (74-77°C), with six repeated 1 min immersions, followed by a thorough hot water rinse, dry at SLA, for 20 h. Re-weigh (W₃).
- F2 Immerse Set L and L¹ (Specimens L-0 to L-7 and L¹-0 to L¹-7 inclusive) in Test Solution J at 155-160°F (68-71°C) for a total time of 168 h, renewing the Test Solution J every 24 h. Test specimens shall be rinsed with cold distilled or deionized water to remove old solution prior to re-immersing in renewed solution. At the conclusion of the 168 h immersion, the specimens shall be removed and cleaned, using Test Solution B at 165-170°F (74-77°C), with six repeated 1 min immersions, followed by a thorough hot water rinse, dry at SLA, for 20 h. Re-weigh (W₃).
- F3 Report the following for each specimen tested (For Report Form, see Appendix, Section N):
- F3.1 Calculated % weight loss or gain:

$$\% \text{ Loss} = (W_2 - W_3)/W_2 \times 100$$

$$\% \text{ Gain} = (W_3 - W_2)/W_2 \times 100$$
- Note: Averages of specimens are not permitted. A weight gain is not to be used to offset a weight loss.
- F3.2 Surface comparisons made visually with the aid of magnification:
- F3.2.1 The test specimen is compared with the original as to change in surface smoothness as: NO CHANGE, SLIGHT CHANGE, or MARKED CHANGE.
- F3.2.2 The rating as to the smoothness of the test specimen compared to a surface finish equivalent to a 150 grit or better finish as obtained with silicon carbide, properly applied on stainless steel sheets: SMOOTHER, EQUAL, or ROUGHER.
- F3.2.3 Report under the "Remarks" column other observable (temporary or permanent) changes to the specimen's surface and appearance, such as surface tack, exudation, surface cracks, color, transparency, surface wettability, delamination, shape distortion, or any other appearance changes.
- G **PROCEDURE - CLEANABILITY COMPARISON**
- G1 All of the test specimens after exposure to the regimens set forth in Sections E and F are to be immersed in Test Solution H at SLA for 20 h, cleaned using Test Solution B at 165-170°F (74-77°C), with six repeated 1 min immersions, followed by a thorough hot water rinsing and drying at SLA for 20 h.
- G2 The sample of AISI 300 Series stainless steel having a surface finish equivalent to 150 grit or better as obtained with silicon carbide, properly applied on stainless steel sheets, or a piece of it approximately 3.00 in. (76.20 mm) in length and 1.00 in. (25.40 mm) in width, is to be cleaned as set forth in D4. This sample of stainless steel is then to be exposed to the regimen set forth in G1.
- G3 With the aid of magnification, visually judge the cleanability of the test specimens by comparing them with the sample of AISI 300 Series stain-

less steel sheet after exposure to the regimen set forth in G1. Rate the cleanability of the test specimens as: BETTER, EQUAL, or POORER. (For Report Form, see Appendix O.)

H STANDARDS FOR ACCEPTABILITY

Acceptable plastic materials shall comply with the following:

- H1 Test specimens, after exposure to the regimens set forth in Sections E and F, shall not have a loss in weight greater than 0.05% except as provided in Section H6 concerning data analysis.
- H2 Test specimens, after exposure to the regimens set forth in Sections E and F, shall not have a gain in weight greater than that given for the generic class shown in Table 1 except as provided in Section H6 concerning data analysis.
- H3 When compared to the original all of the test specimens, after exposure to the regimen set forth in Sections E and F, shall have NO CHANGE in surface smoothness and relatively little change in color, transparency, translucency, shape, flexibility, dimension or other similar functional properties affecting the appearance or surface characteristics of the sample.
- H4 All of the test specimens, after exposure to the regimens set forth in Sections E, F and G, shall be at least as smooth and cleanable as a sample of AISI 300 Series stainless steel having a surface finish equivalent to 150 grit or better as obtained with silicon carbide properly applied to stainless steel sheets. To conform with this, all of the test specimens shall be judged to be SMOOTHER or EQUAL in the comparisons made in accordance to E10.2.2 and F3.2.2 and BETTER or EQUAL in the comparisons made in accordance to G3.
- H5 Certification of each formulation for compliance with FDA regulations and/or FD&C Act requirements and compliance with the criteria herein are to be maintained by the manufacturer and supplier. Test results and a statement of compliance by the testing laboratory shall be kept by the manufacturer and supplier. This information shall be made available to distributors, users, and regulatory agencies upon request. (See Appendix, Section P for the information required on a certification form.)

APPENDIX

I Fabrication

Components and devices manufactured from plastic materials should be designed and fabricated as provided in the appropriate 3-A Sanitary Standards. Good manufacturing practices shall be used in the manufacture of plastic components to assure the utmost in quality and cleanliness.

J Selected References

- J1 E.6, Definitions of Terms Relating to Methods of Mechanical Testing, *Annual Book of ASTM Standards, Vols. 03.01 and 08.03* (latest edition).
- J2 *Dictionary of Scientific and Technical Terms*. McGraw-Hill, Inc., New York, NY, 1975.
- J3 *SPI Plastic Engineering Handbook, 4th ed.* Society of Plastic Industry Inc., Book Division, New York, NY 1960.
- J4 Whittington, L.R. *Whittington's Dictionary of Plastics, 2nd Ed.* Technomic Publishing Co., Westport, CT, 1978.
- J5 *Handbook of Chemistry and Physics*. The Chemical Rubber Publishing Co., Cleveland, OH.
- J6 *The Condensed Chemical Dictionary*. Reinhold Publishing Co., New York, NY.
- J7 *Modern Plastics Encyclopedia*. McGraw-Hill, Inc. New York, NY. (Published annually in October.)
- J8 "Terms Relating to Plastics," ASTM D-883-91. ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.
- J9 *Code of Federal Regulations*, Title 21, Parts 170-199.
- J10 E 178 "Dealing with Outlying Observations," *Annual Book of ASTM Standards, Vol. 14.02*. ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

K Re-testing of Plastic Materials

- K1 Re-testing (re-qualification) of plastic materials will be mandatory when the formulation of the product has been changed by any one, or any combination of, the following means:
- K1.1 A significant change was made to the polymer;
- K1.2 Plastic additives or plasticizers were deleted or added;
- K1.3 Two or more listed plastics are alloyed or blended together. Furthermore, a change such as this would necessitate the generation of a new generic class of plastics for which new maximum % weight gain values would have to be assigned to the Cleanability Response and Product Treatment Values found in Table 1 herein. (See Appendix, Section P for Certification Form.)
- K1.3.1 **Alloys and Blends of Polymers**
- K1.3.1.1 The combining of two or more polymers in a formulation is known as an alloy or blend of polymers. Many of these new types of plastics comply with appropriate FDA regulations for milk and milk product contact surfaces.

K1.3.1.2 These standards should be amended to include these types of new plastics. A new generic class should be created for each type of specific alloy with appropriate maximum weight gain percentage values. This is necessary because the alloy may respond differently to product, cleaning, and bactericidal treatments than do the individual polymers.

K2 Certification of Plastic Materials with Multiple Trade Names or Product Names

K2.1 Plastic materials which already meet 3-A criteria may be certified by suppliers under other trade names and/or product designations. A company manufacturing the final plastic product from a plastic material already meeting 3-A criteria may certify its trade name and its type or grade meets the 3-A Sanitary

Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment, Number 20- without re-qualification provided:

- K2.2 The plastic material was tested according to procedures in and meets or exceeds the Standards for Acceptability in the 3-A Sanitary Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment, Number 20-and meets FD&C Act requirements and;
- K2.3 The formulation of the final fabricated plastic material was not changed by the addition of additives (See Section K1 herein) and;
- K2.4 The manufacturer of the final fabricated plastic material certifies, in writing, K2.2 to K2.3 to the 3-A Secretary. (See Appendix, Section P for the information required on a certification form.)

TABLE 1 - Plastics Included in These Standards

Generic Classes (Code of Federal Regulations Citation ⁴)	Maximum % Weight Gain		
	Section E - Cleanability Response	Section F - Product Treatment (Solution I)	Section F - Product Treatment (Solution J)
Acrylics (21 CFR 177.1010)	0.20	0.50	1.50
Acrylonitrile butadiene styrene (21 CFR 177.1020)	0.30	0.45	0.90
Chlorinated polyether (21 CFR 177.2430)	0.05	0.05	0.05
Cross-linked polyester resins (vinyl ester-styrene copolymer) (21 CFR 177.2420)	0.20	0.02	0.20
Epoxy resin as coating (21 CFR 175.300)			
(a) Isopropylidenediphenol Hardener-TETA Triethylenetetramine	0.10	0.15	0.25
(b) Phenol-Formaldehyde Polymer, glycidyl ether (silica filled) Hardener - DETA Adduct	0.15	0.15	2.0
Ethylene-vinyl acetate copolymers (21 CFR 177.1350)	0.25	0.55	0.10
Fluorocarbons (21 CFR 170.39, 177.1380, 177.1550, 177.2510)			
(a) CTFE, PTFE, FEP, PFA, and ETFE types	0.05	0.05	0.05
(b) Vinylidene fluoride types	0.05	0.05	0.15
Nylon (21 CFR 177.1500)			
(a) Nylon Type 66	2.00	3.00	8.00
(b) Nylon Type 610	1.00	2.00	4.00
(c) Nylon Type 6	2.00	3.00	8.00
Plasticized polyvinyl chloride (21 CFR 175.300)			
(a) For contact with high-water, low-fat products (≤8% milk fat)	0.25	0.55	0.90
(b) For contact with high-fat products (>8% milk fat)	0.10	0.20	0.55
Polyarylsulfone resin (21 CFR 177.1560)	0.40	0.80	1.50
Polycarbonates (21 CFR 177.1580)	0.10	0.15	0.25
Polyetherimide (21 CFR 177.1595)	0.20	0.25	0.75
Polyethylene (21 CFR 177.1520)			
(a) ASTM Type I	0.20	0.50	0.20
(b) ASTM Type II	0.20	0.20	0.20
(c) ASTM Type III	0.20	0.20	0.20
Polyethylene phthalate polymers (21 CFR 177.1630)	0.10	0.15	0.65
Polymethylpentene (21 CFR 177.1520)	0.10	0.20	0.20
Polyoxymethylene copolymer (21 CFR 177.2470)	0.25	0.60	1.00
Polyphenylene oxide (21 CFR 177.2460)	0.10	0.15	0.25
Polyphenylene sulfide (21 CFR 177.2490)	0.06	0.08	0.08
Polyphenylene sulfide-PTFE (alloy) (21 CFR 177.2490, 177.1380)	0.06	0.08	0.30
Polypropylene - (unmodified and modified for impact resistance) (21 CFR 177.1520)	0.10	0.20	0.20
Polystyrene - Normal (unmodified) Type 3 of ASTM D703-78 (21 CFR 177.1640)	0.10	0.10	0.10
Polystyrene - Modified (impact), Type III, Grade 6, of ASTM D1892-78 (21 CFR 177.1640)	0.10	0.10	0.10
Polysulfone resin (21 CFR 177.1655)	0.05	0.1	0.1
Polysulfone-PTFE (alloy) (21 CFR 177.1655, 177.1380)	0.30	0.45	0.45
Polytetramethylene terephthalate (21 CFR 177.1660)	0.10	0.15	0.65
Polyurethane (21 CFR 177.1680)	1.22	1.59	1.29
Propoxylated bisphenol-A fumarate polyester-styrene copolymer (21 CFR 177.2420)	0.20	0.20	0.20
Reinforced epoxy, molded, natural (no color added), and black (21 CFR 175.300)	0.20	0.25	0.35
Styrene-acrylonitrile (21 CFR 177.1040)	0.20	0.50	0.50
Thermoplastic polyether-ester (21 CFR 177.2600)	0.35	1.1	0.50

APPENDIX L: MATERIAL/CHEMICAL LIST FOR TEST SOLUTIONS (SIMULATED REAGENTS)

MATERIAL OR CHEMICAL	CHEMICAL FORMULA	CONCENTRATION OR GRADE	SUGGESTED SUPPLIER
Acetic acid, glacial	CH ₃ COOH	ACS or reagent	Laboratory supply companies
ACL-60 (dichlorisocyanurate, sodium salt)	-----	62% available Cl ₂	Monsanto Chemical Co., St. Louis, MO 1-800-325-4330 Ext. 346
Aerosol® O.T. (Dioctyl sodium sulfosuccinate) (anionic detergent)	-----	100% dry solid	Sigma Chemical
Benzalkonium chloride (alkyl dimethyl benzyl ammonium chloride)	-----	NF	ICM Biochemicals Co., Cleveland, OH 1-800-321-6842
Iodine, crystals	I ₂	ACS or reagent	Laboratory supply companies
Lactic acid	CH ₃ CHOHCOOH	85%, ACS or reagent	Laboratory supply companies
Nacconol 40g (granular) or 40f (flake) (sodium dodecylbenzene sulfonate)	-----	40%	Stepan Co., Northfield, IL 60093 1-800-457-7673
Non-fat dry milk	-----	-----	Dairy products store/Food store
Orthophosphoric acid, concentrated	H ₃ PO ₄	ACS or reagent	Laboratory supply companies
Sodium hydroxide, pellets	NaOH	ACS or reagent	Laboratory supply companies
Sodium hypochlorite	NaOCl	4-6% available Cl ₂ , purified	Laboratory supply companies
Sodium phosphate, monobasic anhydrous	NaH ₂ PO ₄	ACS or reagent	Laboratory supply companies
Sodium phosphate, tripoly	Na ₃ P ₃ O ₁₀	Purified	Laboratory supply companies
Sodium sulfate, anhydrous	Na ₂ SO ₄	ACS or reagent	Laboratory supply companies
Sterox N.J. (Nonyl phenol ethylene oxide condensate) (nonionic wetting agent)	-----	9.5-10 mol ethylene oxide	Monsanto Chemical Co., St. Louis, MO 1-800-325-4330 Ext. 346
Sugar (sucrose)	C ₁₂ H ₂₂ O ₁₁	Common table sugar	Food store
Trisodium phosphate (Sodium phosphate, tribasic)	Na ₃ PO ₄ ·12H ₂ O	ACS or reagent	Laboratory supply companies
Heavy whipping cream	-----	36% milkfat	Dairy products store/Food store

APPENDIX M: CLEANABILITY RESPONSE

SAMPLE NUMBER	WEIGHT		SURFACE COMPARISON TO ORIGINAL SAMPLE (SECTION E10.2.1): No Change, Slight Change, or Marked Change	SURFACE COMPARISON TO STAINLESS WITH 150 GRIT FINISH (SECTION E10.2.2): Smoother, Equal, or Rougher	REMARKS ⁵
	% Loss	% Gain			
M-0					
M ¹ -0					
M-1					
M ¹ -1					
M-2					
M ¹ -2					
M-3					
M ¹ -3					
M-4					
M ¹ -4					
M-5					
M ¹ -5					
M-6					
M ¹ -6					
M-7					
M ¹ -7					
L-0					
L ¹ -0					
L-1					
L ¹ -1					
L-2					
L ¹ -2					
L-3					
L ¹ -3					
L-4					
L ¹ -4					
L-5					
L ¹ -5					
L-6					
L ¹ -6					
L-7					
L ¹ -7					

APPENDIX N: PRODUCT TREATMENT

SAMPLE NUMBER	WEIGHT		SURFACE COMPARISON TO ORIGINAL SAMPLE (SECTION F3.2.1): No Change, Slight Change, or Marked Change	SURFACE COMPARISON TO STAINLESS WITH 150 GRIT FINISH (SECTION F3.2.2): Smoother, Equal, or Rougher	REMARKS ⁵
	% Loss	% Gain			
M-0					
M'-0					
M-1					
M'-1					
M-2					
M'-2					
M-3					
M'-3					
M-4					
M'-4					
M-5					
M'-5					
M-6					
M'-6					
M-7					
M'-7					
L-0					
L'-0					
L-1					
L'-1					
L-2					
L'-2					
L-3					
L'-3					
L-4					
L'-4					
L-5					
L'-5					
L-6					
L'-6					
L-7					
L'-7					

APPENDIX O: CLEANABILITY COMPARISON

SAMPLE NUMBER	CLEANABILITY COMPARISON (SECTION G3): Better, Equal, Poorer	REMARKS ⁵
M-0		
M ¹ -0		
M-1		
M ¹ -1		
M-2		
M ¹ -2		
M-3		
M ¹ -3		
M-4		
M ¹ -4		
M-5		
M ¹ -5		
M-6		
M ¹ -6		
M-7		
M ¹ -7		
L-0		
L ¹ -0		
L-1		
L ¹ -1		
L-2		
L ¹ -2		
L-3		
L ¹ -3		
L-4		
L ¹ -4		
L-5		
L ¹ -5		
L-6		
L ¹ -6		
L-7		
L ¹ -7		

APPENDIX P: CERTIFICATION FORM EXAMPLE

PART 1: To be completed by all suppliers. Please type all information except signature.

I certify that _____ (name of plastic, including generic class as listed in Table 1) has been evaluated under the terms of the test regimen contained in 3-A Sanitary Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment, Number 20- as amended, and complies with the limitations set forth under Section H of those standards as well as the other criteria in the standards. This plastic complies with Part _____ of Title 21, Code of Federal Regulations. Samples of the material were/were not (choose one) submitted to testing by the company listed below.

Name _____
 Company Name _____
 Address _____

 Signature _____
 Date _____

PART 2: To be completed as provided in K2 if the plastic material being certified was not submitted for testing by the company listed above.

The name of the plastic material originally tested, and currently certified is _____ (name of plastic, including generic class as listed in Table 1). I certify that this plastic is the same formulation as that originally tested and is not alloyed or blended with another polymer. Attached is a copy of the Certification Form and a statement of compliance by the testing laboratory used for the initial certification of this material.

Signature _____
 Date _____

PART 3: To be completed by all suppliers.

	% WEIGHT CHANGE ALLOWED ⁶	% WEIGHT CHANGE OBSERVED ⁷
Section E - Cleanability Response		
Section F - Product Treatment (Solution I)		
Section F - Product Treatment (Solution J)		
Average Weight Loss	0.05%	

PART 4: To be completed by all suppliers.

The surface comparison of the test samples when compared to the original sample and to stainless steel with 150 grit finish when subjected to the cleanability responses and product treatment test regimens showed no change and was at least as smooth as 150 grit stainless steel. (yes/ no).

These 3-A Sanitary Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment, Number 20-18 are effective August 23, 1996.

¹Procedures in Sections F and G are not normal cleaning and bactericidal treatment tests but are accelerated use-simulating tests.

²Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. Phone (610) 832-9500.

³The data for this series are contained in *AISI Steel Products Manual, Stainless & Heat Resisting Steels, November 1990, Table 2-1, pp. 17-20. Available from the American Iron and Steel Society, 410 Commonwealth Drive, Warrendale, PA 15086 (412-776-1535).*

⁴Citations are by title, part, and section number, thus 21 CFR 177.1010 refers to Title 21, Part 177, Section 1010. CFR references include the basic polymers, optional adjuvants, specifications, and limitations and conditions of use.

⁵The purpose of the "Remarks" in this section is to provide a means to record unusual changes in physical properties of the test specimens after exposure to test regimens in Section E & F. These recorded observations are not to be used as part of the standards for acceptability. It is beyond the scope of these Standards to set limits of acceptable changes in physical properties except surface smoothness. However, plastic materials should retain or return to their original physical properties such as color, transparency, translucency, flexibility, form or shape after test regimens E & F. Users should consider these observations when judging whether a plastic material will maintain essential properties in the intended application.

⁶See Table 1.

⁷Averages.

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3-A Sanitary Standards for Mechanical Conveyors for Dry Milk and Dry Milk Products, Number 41-01

Formulated By
International Association of Milk, Food and Environmental Sanitarians
United States Public Health Service
The Dairy Industry Committee

It is the purpose of the IAMFES, USPHS, and DIC in connection with the development of the 3-A Sanitary Standards Program to allow and encourage full freedom for inventive genius or new developments. Mechanical dry milk conveyor specifications heretofore or hereafter developed which so differ in design, materials, and fabrication or otherwise as not to conform to the following standards but which, in the fabricator's opinion, are equivalent or better, may be submitted for the joint consideration of the IAMFES, USPHS, and DIC at any time. **NOTE:** Use current revisions or editions of all referenced documents cited herein.

A SCOPE

A1 These standards cover the sanitary aspects of mechanical equipment used solely for conveying dry milk and dry milk products except bucket types and are not an integral part of the dryer, commencing with the point at which the product enters the conveyor and ending at the point the product is discharged from the conveyor.

A2 In order to conform with these 3-A Sanitary Standards, mechanical dry milk conveyors shall comply with the following design, material, and fabrication criteria.

B DEFINITIONS

B1 *Product:* Shall mean the dry milk or dry milk product which is mechanically conveyed in this equipment.

B2 *Dry Milk Conveyors (Referred to hereinafter as "conveyors"):* Shall mean equipment in which product is mechanically conveyed.

B3 *Product Contact Surfaces:* Shall mean all surfaces that are exposed to the product and surfaces from which liquids and/or solids may drain, drop, or be drawn into the product.

B4 *Nonproduct Contact Surfaces:* Shall mean all other exposed surfaces, including support surfaces within 6 in. of the conveyor housing.

B5 *Mechanical Cleaning or Mechanically Cleaning:* Shall denote cleaning, solely by circulation and/or flowing chemical detergent solutions and water rinses onto and over the surfaces to be cleaned, by mechanical means.

C MATERIALS

- C1 Product contact surfaces shall be of stainless steel of the American Iron and Steel Institute (AISI) 300 Series¹ or corresponding Alloy Cast Institute (ACI) types² (See Appendix, Section E), or metal which under conditions of intended use is at least as corrosion resistant as stainless steel of the foregoing types, and is nontoxic and nonabsorbent, except that:
- C1.1 Rubber and rubber-like materials may be used for gaskets, flexible connectors, edge sealing strip, belts, belts with integrally molded cleats, and coverings for belts and rollers.
- C1.2 Rubber and rubber-like materials, when used for the above specified applications, shall comply with the applicable provisions of the 3-A Sanitary Standards for Multiple-Use Rubber and Rubber-Like Materials Used as Product Contact Surfaces in Dairy Equipment, Number 18.
- C1.3 Plastic materials may be used in sight and/or light openings and for gaskets, flexible connectors, scrapers, belts, belts with integrally molded cleats, rollers, bearings, coverings for belts and rollers, and flexible tubular conveyor casings.
- C1.4 Plastic materials, when used for the above specified applications, shall comply with the applicable provisions of the 3-A Sanitary Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment, Number 20.
- C1.5 Rubber and rubber-like materials and plastic materials having a product contact surface(s) shall be of such composition as to retain their surface and conformational characteristics when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment.
- C1.6 Cotton, linen, silk, or synthetic material may be used for flexible connectors. These materials shall be nonshedding, nontoxic, relatively insoluble, easily cleanable, and shall not impart a flavor to the product.
- C1.7 Aluminum alloys conforming to the Aluminum Association³ designates 5052, 6061, and 6063 may be used as a dry product contact surface for dust covers, shields, and parts having the same functional purpose. These shall be removed prior to mechanical cleaning.
- C1.8 Glass may be used in sight and/or light openings and shall be of a clear heat-resistant type.
- C1.9 The final bond and residual adhesive, if used, of bonded rubber and rubber-like materials and bonded plastic materials shall be nontoxic.
- C2 Nonproduct contact surfaces shall be of corrosion-resistant materials or material that is rendered corrosion resistant. If coated, the coating

used shall adhere. Nonproduct contact surfaces shall be relatively nonabsorbent, durable, and cleanable. Parts removable for cleaning having both product contact and nonproduct contact surfaces shall not be painted.

D FABRICATION

- D1 All product contact surfaces shall have a finish at least as smooth as a No. 4 ground finish on stainless steel sheets and be free of imperfections such as pits, folds, and crevices in the final fabricated form. (See Appendix, Section F.)
- D2 All permanent joints in metallic product contact surfaces shall be continuously welded. Welded areas on product contact surfaces shall be at least as smooth as a No. 4 ground finish on stainless steel sheets free of imperfections such as pits, folds, and crevices.
- D2.1 Intricate fabricated and/or machined parts shall be at least as smooth as a finish obtained with 80 grit silicon carbide.
- D3 Bonded gaskets and rubber or rubber-like materials and plastic materials that are a coating or covering shall be bonded in a manner that the bond is continuous and mechanically sound, and when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment, the rubber or rubber-like material or the plastic material does not separate from the base material.
- D4 Conveyors that are to be mechanically cleaned shall be designed so that all product contact surfaces and all appurtenances not removed during cleaning can be cleaned mechanically and inspected. Parts that must be removed for cleaning shall be readily removable and easily dismantled.
- D5 Product contact surfaces of conveyors not designed to be mechanically cleaned shall be easily accessible for cleaning and inspection either when in an assembled position or when removed. Parts to be removed for cleaning shall be readily removable and easily dismantled.
- D5.1 Means shall be provided to enable access for dry cleaning. To facilitate dry cleaning, the construction shall be such that guides, guards, and covers can be removed and belt tension can be easily released, if necessary, to permit cleaning of the underside of the belt and/or conveyor.
- D6 Product contact surfaces intended for regular wet cleaning shall be self-draining except for normal clingage.
- D7 Belts
- D7.1 Metal belts having a product contact surface(s) shall be endless.

- D7.2 Nonmetal belts having a product contact surface shall be made of or covered with a food grade rubber or rubber-like or plastic material. Belts made of an absorbent core material shall have edges sealed with the same material that is used for product contact surfaces.
- D7.2.1 Nonmetal belts shall be endless.
- D7.3 To facilitate cleaning, the construction shall be such that belts, guides, guards, rollers, and all other parts be easily removable for cleaning and inspection.
- D8 Gaskets having a product contact surface shall be removable or bonded.
- D9 Gasket retaining grooves in product contact surfaces shall be no deeper than their width.
- D10 **Radii**
- D10.1 Internal angles of 135° or less on product contact surfaces shall have radii of not less than 1/4 in., except that:
- D10.1.1 The radii in gasket retaining grooves, except for those for standard 1/4 in. and smaller O-rings, shall be not less than 1/8 in.
- D10.1.2 The radii in grooves for standard 1/4 in. O-rings shall be not less than 3/32 in. and for standard 1/8 in. O-rings shall be not less than 1/32 in.
- D11 There shall be no exposed threads on product contact surfaces.
- D12 Coil springs having product contact surfaces shall have at least 3/32 in. openings between coils, including the ends, when the spring is in a free position.
- D13 Sight and light openings, when provided, shall be of such design and construction that the inner surfaces drain inwardly. If the conveyor is designed for mechanical cleaning, the inner surface of the glass or plastic shall be relatively flush with the inner surface of the conveyor. The exterior flare shall be pitched so that liquids cannot accumulate. The glass or plastic shall be readily removable. The inside diameter of the opening shall be at least 3 3/4 in.
- D14 Bearings having a product contact surface shall be of nonlubricated type. Lubricated bearings, including the permanent sealed type, shall be located outside the product contact surface with at least 1 in. clearance between the bearing and any product contact surface. When a shaft passes through a product contact surface, the portion of the opening surrounding the shaft shall be protected to prevent the entrance of contaminants.
- D15 The design and construction shall be such that extraneous materials cannot enter the conveyor. Covers, either removable or hinged, shall be provided for all openings into the conveyor except the inlet and outlet openings. Covers shall (1) make close contact with the openings, (2) have downward flanges of at least 3/8 in., and (3) be pitched to an outside edge(s).
- D16 Hinges shall not have any surface(s) in contact with the product and shall be readily cleanable. They shall not be of a continuous (piano) type.
- D17 The edges of all openings into the conveyor shall extend upward or outward at least 1/2 in. An exception to this requirement is made for a shaft opening. (See Section D14.)
- D18 Flexible connectors having product contact surfaces shall have straight sides without corrugations and shall be readily cleanable.
- D19 **Supports**
- D19.1 The means of supporting shall provide a clearance between all the parts of the conveyor and supporting member, with the exception of legs, of at least 6 in. An exception is made to this minimum clearance for conveyors that convey product from equipment supported directly on a floor. Such conveyors shall be capable of being moved. Legs, if provided, shall be smooth, have no exposed threads, and shall have rounded ends or be designed to permit sealing to the floor or other mounting surface. Legs made of hollow stock shall be sealed. Conveyors that are portable may be equipped with casters. Casters shall be easily cleanable, durable, and of a size that will permit easy movement of the conveyor.
- D20 Guards required by a safety standard that will not permit accessibility for cleaning and inspection when in place shall be designed so that they can be removed without the use of tools.
- D21 Nonproduct contact surfaces shall have a finish that can be readily cleaned and shall be relatively free of cracks and crevices. Surfaces to be coated shall be effectively prepared.

APPENDIX

E STAINLESS STEEL MATERIALS

Stainless steel conforming to the applicable composition ranges established by AISI for wrought products, or by ACI for cast products, should be considered in compliance with the requirements of Section C1 herein. Where welding is involved, the carbon content of the stainless steel should not exceed 0.08%. The first reference cited in C1 sets forth the chemical ranges and limits of acceptable stainless steel of the 300 Series. Cast grades of stainless steel corresponding to types 303, 304, and 316 are designated CF-16F, CF-8, and CF-8M, respec-

tively. The chemical compositions of these cast grades are covered by ASTM specifications⁴ A351/A351M, A743/A743M and A744/A744M.

F PRODUCT CONTACT SURFACE FINISH

Surface finish equivalent to 150 grit or better as obtained with silicon carbide, properly applied on stainless steel sheets, is considered in compliance with the requirements of Section D1 herein.

G Supporting members and braces are considered parts of the building structure, i.e. walls, floors, ceiling.

H RECOMMENDATIONS FOR CLEANING MECHANICAL CONVEYORS

H1 Dry Cleaning Program

- H1.1 Dismantle and, where necessary, thoroughly vacuum or dry brush clean all product contact surfaces of the conveyor. Reassemble as soon as finished and keep all parts dry.
- H1.2 Flexible connectors at the inlet and outlets of the conveyor should be thoroughly cleaned, following procedures recommended for the conveyor. Connectors should be closely examined for holes, cracks, or other damage. (To facilitate removal for cleaning, use of easily removable fastening devices is recommended.)
- H1.3 Thoroughly vacuum or dry brush clean all external parts of the conveyor, including the conveyor support frame and drive mechanism.

H2 Wet Cleaning Program

- H2.1 Completely dismantle, remove all loose dry product, then rinse all parts with clear water and follow with a thorough hand brushing of all parts using a general purpose cleanser. Rinse thoroughly to remove all cleaning solution or soil. It is recommended that hot water (170°F [77°C] or above) be used for rinsing to promote drying. Allow all parts to air dry completely prior to reassembly. After cleaning, drying, and reassembly, all openings should be protected against recontamination. Wet washing should be done only when necessary.

H3 General

- H3.1 Vacuum cleaning is preferred to brush cleaning or cleaning with air under pressure as it decreases dust drift to other areas of the plant.
- H3.2 Brushes or vacuum cleaner fittings used for cleaning product contact surfaces should not be used for cleaning nonproduct contact surfaces or for other uses which might result in contamination. Such tools should be made of materials that can be cleaned and sanitized and should not have wooden parts nor be of mild steel or other iron products that will rust. Such brushes and special fittings should be stored in a separate enclosed cabinet when not in use. For protection and housekeeping considerations, such cabinets should be of non-wood construction and should have open mesh metal or plastic shelving.

¹The data for this series are contained in *AISI Steel Products Manual, Stainless & Heat Resisting Steels, November 1990, Table 2-1, pp. 17-20. Available from the American Iron and Steel Society, 410 Commonwealth Drive, Warrendale, PA 15086 (412) 776-1535.*

²*Steel Founders Society of America, Cast Metal Federation Building, 455 State Street, Des Plaines, IL 60016 (708) 299-9160.*

³*The Aluminum Association, 420 Lexington Avenue, New York, NY 10017.*

⁴*Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. Phone (610) 832-9500.*

These amended standards are effective November 22, 1996, at which time the 3-A Sanitary Standards for Mechanical Conveyors for Dry Milk and Dry Products, Number 41-00 are rescinded and become null and void.



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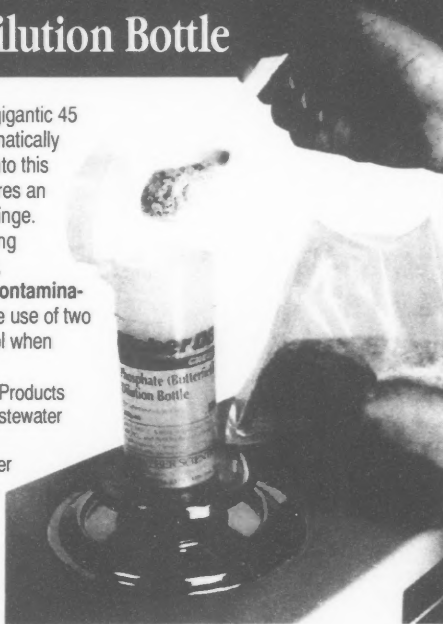
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Coming Events

NOVEMBER

• **7, Tennessee Association of Milk, Water and Food Protection 1996 Fall Meeting**, at the Ellington Agricultural Center Auditorium in Nashville. For further information, contact Dennis Lampley at (613) 360-0157.

• **7-10, ISA '96 International Society for Measurement and Control**, in Chicago, IL. For further information, contact Dusseldorf Trade Shows, 150 N. Michigan Ave., Suite 2920, Chicago, IL 60601; phone (312) 781-5180; fax (312) 781-5188.

• **12, Understanding ISO 14001 for an Effective Environmental Management System**, in Phoenix, AZ. This course is designed to provide the attendee with an understanding of ISO 14001 and worldwide business issues that could affect your organization from a national and international perspective. This seminar will incorporate CEEM's video, *ISO 14000 in Focus: A Business Perspective for Sound Environmental Management*. For further information, contact CEEM Inc., 10521 Braddock Road, Fairfax, VA 22032-2236; phone (800) 745-5565; (703) 250-5900; fax (703) 250-5313.

• **13-14, The 16th Annual Northwest Food Sanitation Workshop**, at the Columbia River-Red Lion Hotel in Portland, OR. Experts from industry, government and academia will present timely information on food sanitation topics. For further information, contact Reitha McCabe, Food Science and Technology, 100 Wiegand Hall, Oregon State University, Corvallis, OR 97331-6602 or call (541) 737-3463; fax (541) 737-6525.

• **13-14, "Stepping into the Future: Expanding Dairy Profitability Through Strategic Growth"** is the title for a four-state dairy extension conference planned for two lo-

cations in November. November 13-14 in St. Paul, MN at the Ramada Hotel and November 14-15 at the Holiday Inn Dubuque Five Flags. Sponsors are the extension services of Iowa State University, the University of Illinois, the University of Minnesota and the University of Wisconsin. Fee for the conference is \$125 for registrations postmarked by October 25; \$150 after that date. The fee for additional persons from the same farm is \$95. For a registration brochure or additional registration information, call Leon Meger at (800) 367-5363 or (612) 625-2722. For more information about the conference program, call Joe Conlin at (612) 624-7497.

• **14-15, International Workshop "Women Meet Women in Meat,"** in Utrecht (The Netherlands). The two-day workshop will be jointly organized by ECCEAMST, VVDO and the Dutch Network for Women in the Meat Sector. The central theme of the workshop is the position and experiences of women in the meat sector and quality assurance in the various companies, organizations and countries. For further information, contact VVDO & Network for Women in the Meat Sector: Mrs. S. A. Burt; phone +31 30 2535350/67 or ECCEAMST: M.J.B.M. Weijtens; phone +31 30 2534402.

• **14-15, "Stepping into the Future: Expanding Dairy Profitability Through Strategic Growth"** is the title for a four-state dairy extension conference planned for two locations in November.

• **17-18, Second Conference on Quality Management in Clinical Laboratories**, Antwerp, Belgium. For further information, contact Congress Makers, fax +31-172-443680; e-mail: hoonhout@pi.net.

• **17-21, The American Public Health Association's 124th Annual Meeting & Exposition**, at the New

York Coliseum in New York City. For further information call (202) 789-5646.

• **20-22, 2nd Annual Strategic Environmental Research and Development Program (SERDP) Symposium** in Vienna, VA. The Symposium provides a forum for the three federal SERDP partners - Department of Defense, the Department of Energy, and the Environmental Protection Agency - to share the results of SERDP supported research and development projects. For more information, contact Erin Cannelli, Registrar, Labat-Anderson Inc., 8000 Westpark Dr., Suite 400, McLean, VA 22102 or phone (703) 506-1400, ext. 512; fax (703) 506-0946; e-mail: Erin_Cannelli@laib.labat.com.

• **27-29, 1997 International Whey Conference**, at The Westin Hotel O'Hare, in Rosemont, IL. Co-sponsored by American Dairy Products Institute, U.S. National Committee of IDF, and International Dairy Federation. This conference will bring together manufacturers of whey products, firms manufacturing equipment used in whey processing, industry business leaders, and university, government and industry researchers throughout the world to discuss current topics of interest relating to research, production, marketing and utilization of whey and whey products. For further information, contact Dr. Warren S. Clark, Jr., American Dairy Products Institute, 130 N. Franklin St., Chicago, IL 60606; phone (312) 782-4888; fax (312) 782-5299.

DECEMBER

• **3-5, A Basic Concept for Food Protection: Learning the Seven HACCP Principles and Developing a HACCP Plan Workshop**, in Ithaca, NY. This course is designed to meet the educational requirements

cited in both the FDA regulation requiring HACCP for seafoods (21CFR123) and the USDA rule on Pathogen Reduction and HACCP (9CFR304 et al). For further information, contact Dr. Robert B. Gravani, Department of Food Science, Cornell University, 11 Stocking Hall, Ithaca, NY 14853; phone (607) 255-1428 or (607) 255-3262; fax (607) 254-4868.

• **11-13, Pflug's Microbiology and Engineering of Sterilization Processes**, given in Minneapolis, MN. It is sponsored by the University of Minnesota's Department of Food Science and Nutrition. For further information, contact Ms. Ann Rath, 585 Shepherd Labs, 100 Union St. SE, University of Minnesota, Minneapolis, MN 55455; phone (612) 624-9840; fax (612) 624-0099.

JANUARY 1997

• **14-15, Food Industry Conference**, in Costa Mesa, CA. Sponsored by Southern California Chapter of the Institute of Food Technologists. The

subject will be Emerging Issues in Food Science, Nutrition, and Technology. The registration fee is \$125 for 2 days and \$75 for 1 day. For conference registration and information, call Jill Golden at 714-432-5702.

FEBRUARY

• **16-19, National Mastitis Council 36th Annual Meeting**, at the Hyatt Regency in Albuquerque, NM. The seminar is being jointly sponsored with the International Dairy Federation (IDF) A2 Group of Mastitis Experts. The objective of the meeting is to disseminate technical and applied information on udder health, mastitis management, milk quality and milk safety. For further information, contact Dr. Keith Sterner, Program Committee Chair, 2650 Ernest Rd., Ionia, MI 48846; phone (616) 527-3320; fax (616) 527-0277.

• **16-21, XV International Symposium of the World Association of Microbiologists, Immunologists and Specialists in Infectious**

Diseases (W.A.V.M.I.), will be held in Cyprus. The theme will be Salmonellosis - Brucellosis as World Health Problems for Humans and Animals. For additional information, contact K. Polydorou V.P.H. Institute, P.O. Box 284, Nicosia, Cyprus; Fax/Tel. (357-2) 453121.

MAY

• **5-6, Symposium on Texture of Fermented Milk Products and Dairy Desserts**, in Vicenza, Italy. The objective of the seminar is the presentation and discussion of new information about the different factors affecting the texture of fermented milk and dairy desserts. Besides the key factors influencing the texture of products, an up-to-date will be given on the instrumental and sensory evaluation of texture. For further information, contact Symposium Secretariat, Istituto Sperimentale Lattiero-Caseario, Dr. Roberto Giangiacomo, Via A. Lombardo, 11, 20075 LODI-ITALY; phone ±39-371-430990; fax ±39-371-35579.

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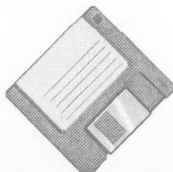
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IAMFES has agreed with the Dairy Practice Council to distribute their "Guidelines for the Dairy Industry." DPC is a non-profit organization of education, industry and regulatory personnel concerned with milk quality and sanitation throughout the United States. In addition, its membership and subscriber rosters list individuals and organizations throughout the United States, Canada and other parts of the world.

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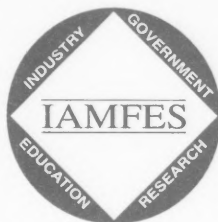
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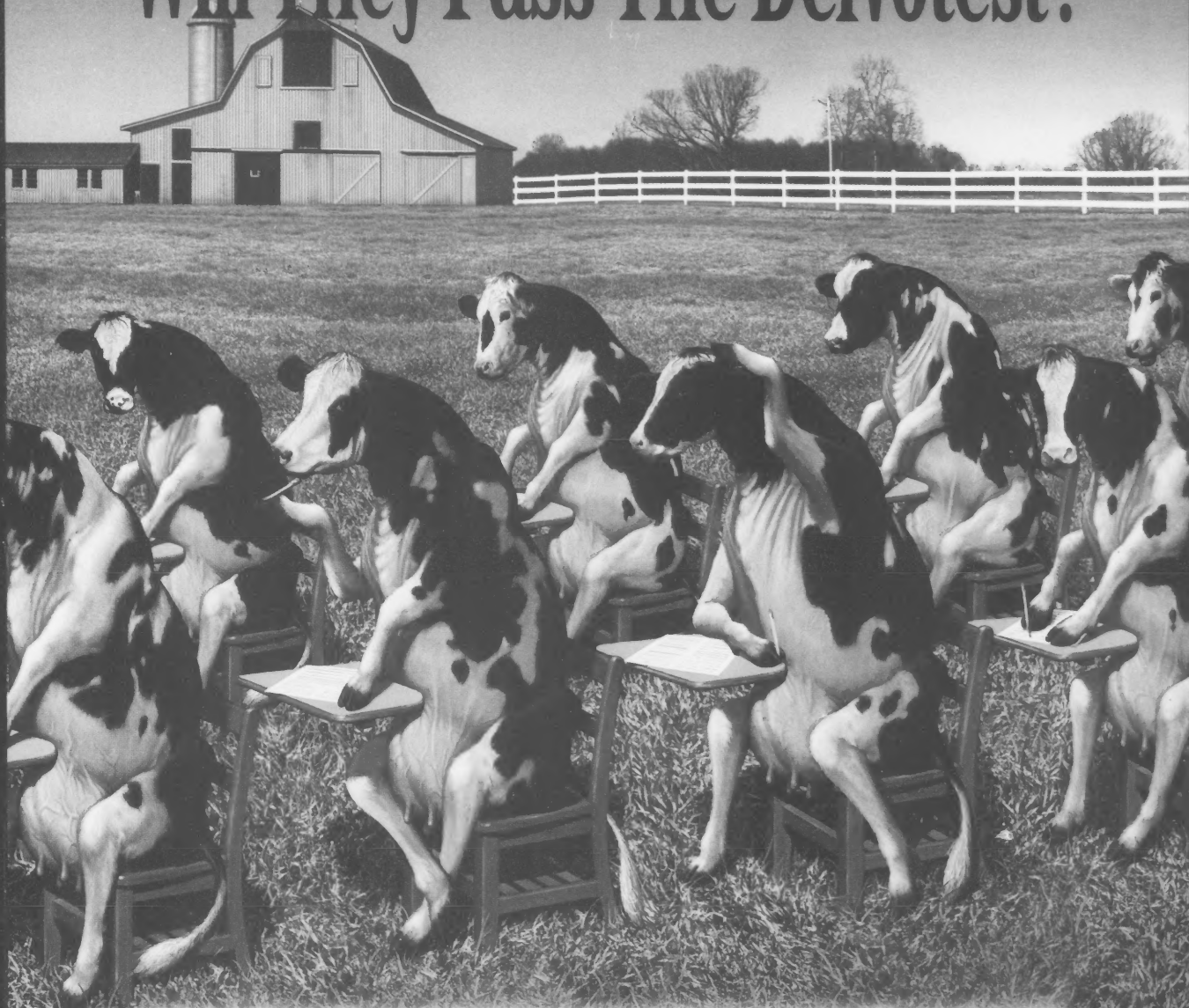
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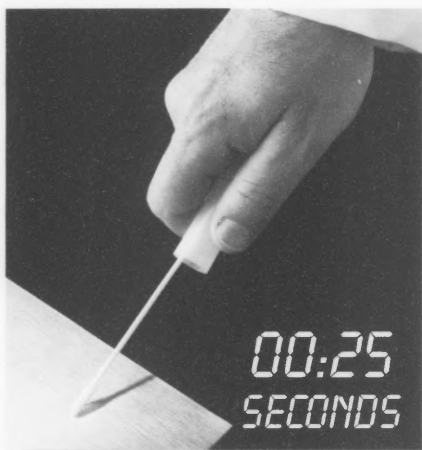
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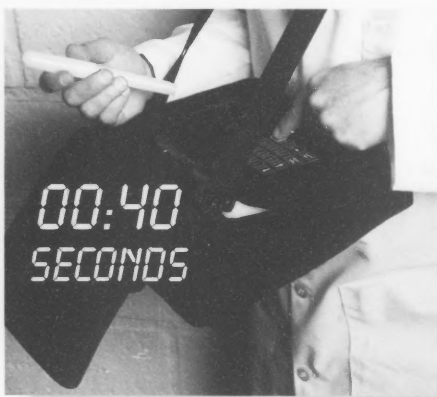
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