

January, 1981  
Vol. 1, No. 1  
Pages 1-48  
ISSN:0273-2866  
Box 701  
Ames, Iowa 50010

Non-Profit Org.  
U.S. POSTAGE  
PAID  
Ames, Iowa 50010  
Permit No. 1

---

---

# *Dairy and Food Sanitation*

---

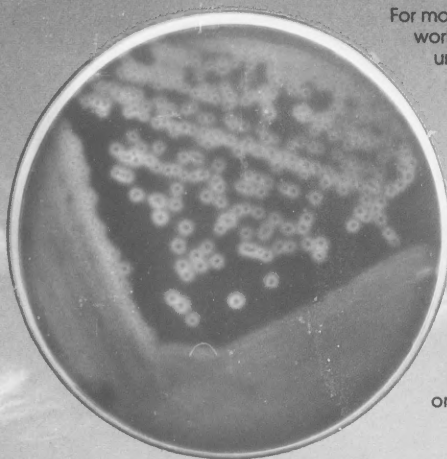
*A Publication for Sanitarians and Fieldmen*

- Openly Confronting Public Anxieties Over Food Safety
- Innovations in a Cultured Products Plant
- Techniques for Inservice Education of Food Service Employees
- Correcting Coliform Problems of Pasteurized Milk
- A Common Sense Psychology of Inspection



*A Publication of the International  
Association of Milk, Food and  
Environmental Sanitarians, Inc.*

Few things are as consistent as  
the reproducible performance of Bacto®  
dehydrated culture media from Difco.



For more than 80 years, Difco Laboratories has served the world with products universally recognized as being unsurpassed for quality.

The Difco concept of quality is exemplified by Bacto dehydrated culture media. These media exhibit consistent, performance-standardized reproducibility and a rigidly controlled level of biological activity, assuring accurate interpretation of test results.

The quality of every batch of Bacto dehydrated culture media is protected by the stringent quality control techniques you expect from a leader. This, plus on-going collaboration between Difco and leading international microbiologists in developing and improving culture media, are definitive factors in helping you maintain your laboratory's reputation for integrity of test results.

**DIFCO**

LABORATORIES  
DETROIT, MICHIGAN 48232 USA



## The American Economic System. Your chances are better when you know the rules.

You  
are the  
American Economic  
System



**DOLLARS  
AND SENSE**

SEE HOW  
WHAT IS IN WHAT YOU  
CAN GET THE RIGHT

### Send for **free** booklets.

Here are the answers to even the toughest questions about our country's economic system in two clear and concise booklets: "You are the American Economic System" and "Dollars and Sense," your inflation guide.

They could be the most rewarding booklets you've read recently—and a copy of each is **free** for the asking.

Bulk orders are ideal for distribution in companies or schools. Write now—right now!

A public service message of the U.S. Departments of Agriculture, Commerce, Labor and Treasury, The Advertising Council and this magazine.



**The Advertising Council, Inc.**  
825 Third Avenue  
New York, N.Y. 10022

Please send me my **free** copies of your booklets about the American Economic System—and information regarding bulk quantities.

Name \_\_\_\_\_

Title/Department \_\_\_\_\_

Company \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

AMERICAN ECONOMIC SYSTEM/ANTI-INFLATION CAMPAIGN  
BUSINESS PRESS AD NO. AES-1173-80—7" x 10" (110 Screen)  
Volunteer Agency: Compton Advertising, Inc.

BP-SPEC  
11/80

---

## IAMFES Sustaining Members

**Alpha Chemical Services, Inc.**  
P.O. Box 431  
Stoughton, MA 02072

**Associated Milk Producers, Inc.**  
8550 West Bryn Mawr  
Chicago, IL 60631

**Babson Bros. Co.**  
2100 S. York Road  
Oak Brook, Illinois 60101

**Bio-Lab**  
P.O. Box 1489  
Decatur, GA 30031

**Blue-White Industries and Mullarkey  
Assoc.**  
14931 Chestnut St.  
Westminster, CA 92683

**Borden, Inc.**  
Dairy & Services Div.  
16855 Northchase  
Houston, TX 77060

**Dairymen, Inc.**  
10140 Linn Station Road  
Louisville, KY 40223

**Darigold**  
635 Elliott Ave. W.  
Seattle, WA 98109

**Dean Foods**  
1126 Kilburn Ave.  
Rockford, IL 61101

**De Laval Separator Co.**  
350 Dutchess Turnpike  
Poughkeepsie, NY 12602

**Difco Laboratories**  
P.O. Box 1058-A  
Detroit, MI 48232

**Eastern Crown, Inc.**  
P.O. Box 216  
Vernon, N.Y. 13476

**G. B. Fermentation, Inc.**  
One North Broadway  
Des Plaines, IL 60016

**H. B. Fuller Co.**  
Monarch Chemicals Div.  
390 Jackson St. NE  
Minneapolis, MN 55421

**Kendall Co.**  
One Federal St.  
Boston, Massachusetts 02101

**Klenzade Division**  
Economics Laboratory, Inc.  
Osborn Building  
St. Paul, MN 55102

**The Kroger Co.**  
1212 State Avenue  
Cincinnati, OH 45204

**Maddelena's Inc.**  
139 Lakeville St.  
Petaluma, California 94952

**Maryland & Virginia Milk Producers  
Assn., Inc.**  
P.O. Box 9154 Rosslyn Station  
Arlington, Virginia 22209

**Michigan Milk Producers Assoc.**  
24270 W. Seven Mile Road  
Detroit, MI 48219

**Nasco International**  
901 Janesville Ave.  
Fort Atkinson, Wisconsin 53538

**National Mastitis Council**  
30 F Street NW  
Washington, DC 20001

**Norton Co.**  
P.O. Box 350  
Akron, Ohio 44309

**Reitman Manufacturing Co.**  
10319 Pearmain St.  
Oakland, CA 94603

**Seiberling Associates, Inc.**  
441 Clark St.  
So. Beloit, Illinois 61080

**Single Service Institute**  
1025 Connecticut Ave., NW  
Suite 1015  
Washington, DC 20036

**West Agro-Chemical, Inc.**  
P.O. Box 864  
Amherst, NH 03031

**Zero Manufacturing Co.**  
811 Duncan Ave.  
Washington, MO 63090

---

**Dairy and Food Sanitation** is issued monthly and published by the International Association of Milk, Food and Environmental Sanitarians, Inc, executive offices at 413 Kellogg, PO Box 701, Ames, IA 50010. Printed by Heuss Printing and Signs, Inc, 911 Second St, Ames, IA 50010. 2nd Class postage paid at Ames, IA 50010.

**Manuscripts:** Correspondence regarding manuscripts and other reading material should be addressed to Jan Richards, PO Box 701, Ames, IA 50010, 515-232-6689. "Instructions to Contributors" can be obtained from the editor.

**Orders for Reprints:** All orders should be sent to

IAMFES, Inc., PO Box 701, Ames, IA 50010. Note: Single copies of reprints are not available from this address; address reprint requests to principal author.

**Business Matters:** Correspondence regarding business matters should be addressed to Earl O. Wright, IAMFES, PO Box 701, Ames, IA 50010.

**Subscription Rates:** \$50.00 per volume, one volume per year, January through December. Single copies \$4.50 each.

**Membership Dues:** Membership in the Association is available to individuals only. Direct dues are \$25.00 per year and include a subscription to either **Dairy and**

**Food Sanitation** or the **Journal of Food Protection**. Direct dues and both journals are \$40.00. Affiliate membership are \$22.00 per year, plus state dues, and include a subscription, also. Affiliate dues and both journals are \$37.00, plus state dues. Student membership is \$7.50 per year, with verification of student status, and includes one journal.

**Claims:** Notice of failure to receive copies must be reported within 30 days domestic, 90 days foreign. All correspondence regarding changes of address and dues must be sent to IAMFES, Inc., P.O. Box 701, Ames, IA 50010, 515-232-6689.



---

IAMFES  
OFFICERS AND EXECUTIVE BOARD

---

**President,** WILLIAM ARLEDGE, Dairy-  
men, Inc., 10140 Linn Station Rd.,  
Louisville, KY 40223

**President-Elect,** HARRY HAVERLAND,  
FDA Training Facility, Room 8002  
Federal Office Building, 550 Main St.,  
Cincinnati, OH 45202

**First Vice-President,** ROBERT MAR-  
SHALL, 203 Eckles Hall, Univ. of  
Missouri, Columbia, MO 65201

**Second Vice-President,** A. RICHARD  
BRAZIS, Consultant, 1006 Martin Ave.  
West, Bellevue, NE 68005

**Secretary-Treasurer,** ARCHIE C. HOLLI-  
DAY, 216 Ravenscroft Dr., Richmond  
35, VA 23235

**Jr. Past President,** WILLIAM KEMPA,  
Ryerson Polytechnic Institute, 50 Gould  
St., Toronto, Ont., Canada

**Sr. Past President,** HOWARD E. HUT-  
CHINGS, South Dakota State Health  
Dept., Pierre, SD 57501

**Affiliate Council Chrmn.** LEON TOWN-  
SEND, Milk Control Branch, Bureau for  
Health Services, 275 East Main St.,  
Frankfort, KY 40601

---

EDITORS

---

JAN GAUGER RICHARDS, *Editor*, Box  
701, Ames, Iowa 50010

EARL O. WRIGHT, *Executive Secretary  
and Managing Editor*, Box 701, Ames,  
Iowa 50010

---

EDITORIAL BOARD

---

H. V. ATHERTON	Burlington, VT
K. J. BAKER	Rockville, MD
D. K. BANDLER	Ithaca, NY
S. BARNARD	University Park, PA
H. BENGSCHE	Springfield, MO
F. BODYFELT	Corvallis, OR
J. BRUHN	Davis, CA
J. BURKETT	Sioux City, IA
J. CARROLL	Arlington, TX
J. CHAMBERS	West Lafayette, IN
C. D. CLINGMAN	Orlando, FL
R. DICKIE	Madison, WI
R. FUQUA	Mt. Juliet, TN
E. GADD	Jefferson City, MO
J. GERBERICH	Eau Claire, WI
P. HARTMAN	Ames, IA
C. HINZ	Alexander, NY
C. JELLINGS	Clinton, IA
J. JEZESKI	Gainesville, FL
W. LAGRANGE	Ames, IA
C. LIVAK	Lancaster, PA
P. MARTIN	Chicago, IL
D. MILLER	Orlando, FL
L. PARHAM	Oklahoma City, OK
C. PRICE	Lombard, IL
D. RACE	Camillus, NY
J. REEDER	Arlington, VA
D. ROLLINGS	Springfield, MO
R. SANDERS	Washington, DC
G. SMITH	Schenectady, NY
C. WEBSTER	LeClaire, IA
E. ZOTTOLA	St. Paul, IA

# Dairy and Food Sanitation

---

January, 1981

---

- **Innovations in a Cultured Products Plant** 4  
*Dave Fry*
  - **Techniques for Inservice Education of Foodservice Employees** 6  
*Harry Haverland*
  - **3A Sanitary Standards---Their History and Development** 8  
*Henry Atherton*
  - **Openly Confronting Public Anxieties Over Food Safety** 12  
*Channing Lushbough*
  - **Correcting Coliform Problems of Pasteurized Milk** 16  
*Sid Barnard*
  - **Food Product Safety---The Basics** 18  
*Frank Raffaele*
  - **'Consumerism' and the American Food Industry** 20  
*Margaret Sheridan and Elizabeth Whelan*
  - **A Common Sense Psychology of Inspection** 24  
*Guy Brupbacher*
- 
- New Product News** 26
  - Calendar** 29
  - News and Events** 32
  - Committee Reports** 38
  - Book Reviews** 44
  - JFP Abstracts** 45

---

# INNOVATIONS IN A CULTURED PRODUCTS PLANT

DAVIDD. FRY

Operations Manager, Lifestyle, T. G. Lee Foods, Orange City, FL

---

The manufacture of cottage cheese and related cultured products in Florida presents opportunities not available in other areas. Such products must be manufactured from Grade A dairy products, which is not unusual, except for the fact that last year Florida imported almost 10% of the Grade A fluid milk used in the state, over 170 million pounds. There was a surplus of only two and a half million pounds, representing less than 1% of the total volume used. This surplus is available only in parts of May, June & December.

Every effort is made to utilize this surplus, but it is difficult to justify large investments in separators, receiving and storage facilities for this relatively small share of surplus milk each year. The inconvenience of odd receiving days and hours, the short life of fresh whole or skim milk and the inconsistency of cheese which results from changes in the sources of solids, further detract from the advantages of utilizing surpluses.

All of the afore-mentioned considerations were part of a decision to start a cultured products plant which would operate on condensed skim milk and/or skim milk powder in Orange City, Florida. A fluid milk plant on the site was completely renovated for this purpose.

The condensed milk is obtained on a back haul, using tankers which transport concentrated orange juice into the mid-west and northeastern states. A number of individual tankers have been approved by the State Dairy Division of the Florida Department of Agriculture for transporting the fluid dairy products. Condensed milk is ordered with a 33 to 34% solids content and local cream at 40% fat. Incoming out-of-state shipments are inspected at the Florida state line laboratory in the northern part of the state. By the time the tanker reaches its destination, antibiotic and other tests are complete and the results known.

The LifeStyle operation has its own wells and sewage disposal system which makes conservation of water a necessity and a

challenge. One of the largest energy and water savings is in reuse of chilled water to wash cottage cheese. Large amounts of curd are washed and cooled with small volumes of water. The system employs washer-cooler towers and an ethylene-glycol-cooled plate cooler.

After expelling the whey with approximately 300 gallons of tempered water, which goes off with the whey, the chilled water is introduced and recirculated until the desired curd temperature is reached. The chilled water transports the curd to the drainer and is recovered, containing whatever cheese fines may be present, for reuse in cooling the next vat of cheese. No attempt has been made, nor, has it been felt necessary to adjust the ph of the reused water to date. The ph is initially adjusted and chlorinated. Needless to say, every precaution is taken to prevent contamination of the water.

The glycol system also serves the cooling section of the HTST high temperature-short time unit. The HTST unit has a maximum capacity of slightly over 3,000 gallons per hour, running homogenized skim milk for cottage cheese. The skim comes off the press at 50° F in preparation for the direct acid set. This unit also produces, at lower speeds, cheese dressing at 40°, sour cream at 76° and yogurt at 110°. The short-time unit has an extended holding tube 200 feet long, located on the roof of the building to give an extended hold time of 2½ minutes for dressings, yogurt, sour cream and sour dressings.

A well water storage tank in which all water is gas-chlorinated is used at the plant. Water is softened for the HTST-CIP, the boilers and the plant CIP system. Water used in product make-up or water that could contact food surfaces is passed through sand and charcoal filters, then an ultraviolet treatment chamber. Less than half of the ultraviolet units rated volume of water per minute is passed through the treatment chamber. After ultraviolet treatment, the water can be metered into batch tanks for product make-up or the tempered water tank. If not used in this manner, it goes, by demand, through a plate cooler into a chilled water - cold walled storage tank.

Chilled water is continuously circulated through an insulated loop in the processing areas of the plant. This loop has hose

drop stations strategically located to provide chilled, treated water to cheese vats, cooling towers, drainer-creamers and all filling room operations, thus reducing the possibility of waterborne contaminants. The treated water system, with the exception of the sand-charcoal filters, is in a CIP circuit and is cleaned, acid treated and sanitized weekly. Filters are on timers for regular back flushing and cleaning.

The manufacture of cottage cheese from condensed skim is certainly not new, although it is still not frequently done. The manufacture of cottage cheese from condensed milk using the

provides easy access to chemical drums and reduces the destruction of walls and tile floor surfaces which invariably occurs wherever strong chemicals are stored or used inside of the plant.

Mild winter temperatures also permitted exterior locations for two boilers, a water ultraviolet unit, water filtration equipment and ice builders. These units are protected from rain and sun by a large roofed-over area.

The ammonia system uses a number of compressors of various sizes, shapes and manufacture, all incorporated into a

direct acid method was unknown, however. To further complicate things, the condensed and treated chilled water are metered to the short-timer surge bowl separately and combined just prior to pasteurization. Some adjustment of metering pump speeds was necessary, at this point, to obtain the desired solids level in the resulting skim milk. This system works as well using a slurry made from skim milk powder which is metered according to its solids level. Similar metering and blending is done to make sour cream, yogurt and cheese dressing. Rapid and almost continuous solids determination becomes imperative in such an operation. Satisfactory results have been obtained with the use of micro-wave equipment in the laboratory.

Two air handling and filtering units are located on the roof, with ducts running over the roof which enter the building only at carefully selected distribution points. The system lends itself well to a Florida climate. Heating, air conditioning, dehumidification and ultra filtration create a clean air, positive pressure, environment in both the cheese vat and packaging rooms. The ability to closely control temperature makes it possible to use any part of the plant as an incubation area to cup or tub set products.

Because of mild winter temperatures, much use is made of exterior plumbing, not just in the movement of soft, chilled treated waters and condensate return waters, but in steam, refrigeration, electrical conduit, chemical feed lines, CIP lines and food product lines as well. With the exception of major steam and refrigeration lines, most of the other lines are run in stainless steel. Much used stainless steel tubing with fittings, collected from other dairy plants in our system, was assembled prior to the beginning of remodeling. Wherever possible, lines were run in stainless, utilizing hundreds of feet of otherwise useless 1 1/2" and other sizes of used tubing. Most fittings were shopped, threads or nuts were cut off, and welded into water lines, condensate return lines and electrical conduit. Major electrical wiring originates in the breaker and switching panels located remotely in the engine room and comes into the plant through 4, 6 and 8 inch stainless steel ducts that have an easily removable snap cover on one side. Conduit out of this to equipment, once again, utilizes the used stainless tubing which terminates in watertight stainless electrical boxes manufactured by a local supplier at a very reasonable cost. Since very few stainless steel electrical conduit fittings and other connectors existed, many of the items had to be manufactured on site.

All liquid chemicals necessary for the operation of the CIP units are located in a protected area on the plant's exterior. Chemical pumps are mounted at this location, also. This

**"All of the afore-mentioned considerations were part of a decision to start a cultured products plant which would operate on condensed skim milk and/or skim milk powder in Orange City, Florida. A former fluid milk plant on the site was completely renovated for this purpose."**

"stepping system" that brings them on line, as needed, in any present order loads them. Incorporated also is an ammonia liquid recovery unit that returned liquid ammonia directly into the system rather than returning it to the ammonia receiver. Super deheaters on the two evaporator-condensers, coupled with lower speed, large bladed fans, contribute to the energy savings.

Savings in both materials and labor were realized in using a corrugated box former and sealer. In some containers the need for two inserts or pads was eliminated by forming and sealing the boxes with the major or large flaps folded in first. Equipment had to be special ordered and manufactured to handle the complete line of boxes in this manner, but material and labor savings will soon offset the additional costs involved.

Perhaps another unique feature at LifeStyle is the total commitment to plastic filling machines. A bulk filler drops, fills and lids ten and thirty pound containers. A twin line filler and a rotary filler handle containers ranging from 4 oz. to 32 oz. in four different configurations at rapid filling speeds. The three machines will each handle cottage cheese, sour cream and yogurt.

The standardization of the cottage cheese manufacturing operation to one hour time intervals facilitates the smooth flow of product from pasteurizer to cheese vats, to vertical washer coolers, through a curd drainer and into a pair of load cell equipped creamers, where dressing is continuously metered onto the curd.

Innovations in a Cultured Products Plant or any similar operation is just another way of capitalizing on the knowledge as well as the mistakes of others. Most people will agree that it is much easier, less time consuming and often less expensive to build a new building than to remodel an existing one; however, remodeling does lend itself to challenges in innovation simply because it is often necessary to "make do" or "work around" existing physical obstructions and material shortcomings.

---

## TECHNIQUES

---

## FOR INSERVICE EDUCATION

---

## OF FOODSERVICE

---

## EMPLOYEES

---

### HARRY HAVERLAND

*Director, State Training Branch, Division of Federal-State Relations, EDRO, FDA, Cincinnati, OH*

*Attacks of foodborne illness in the United States are numerous each year. Improper food handling in foodservice operations is responsible for many cases of foodborne illness. The potential for disease to be transmitted through foodservice units is considerable if the unit is not safely operated.*

Public eating and institutional establishments employ nearly eight million people each year. According to the February, 1980 issue of the *FDA Consumer*, "Americans are eating out an average of better than once every day, spending more than \$90 billion a year . . ." It is projected that nearly 250,000 new employees are needed each year to fill jobs in the expanding foodservice industry.

The handling of food in the foodservice operation is a possible source of food contamination. Although many foodservice workers know and practice effective hygiene and follow principles of proper food protection, many do not understand these principles and the part they play in prevention of foodborne disease. Close observance of foodservice employees at work gives ample evidence of this. New employees, particularly, are likely to be unaware of the principles of food protection.

A major objective of a foodservice employee's training program should be the protection of the consumer's health. Such a training program must be designed to provide the employee both the proper practices and the reasons behind them. By understanding the reason why a food protection practice is important and required, employees are more willing to accept and apply the practice daily. Forced compliance, although necessary under certain circumstances, frequently brings only short term improvement.

A foodservice employee's training program should not be considered an addition to the restaurant sanitation program, but rather, an integral and very essential part of it, for it is only by continuous in-service training that adequate food safety can be accomplished.

Food protection training should be designed for all personnel

who prepare or serve food to the public. Although it is management's responsibility to train employees, it is the responsibility of the health agency to assist management in training foodservice workers to know and practice food protection principles. This assistance may take the form of planning and presenting courses presenting specific topics, or acting as a resource person.

There are many techniques which are effective in employee training. The following are examples of techniques which may assist in the design and execution of a successful training program.

---

#### PREPARE THE EMPLOYEE FOR INSTRUCTION

---

*Create a feeling of ease.* The employee may be worried about how you, as part of management or a regulatory agency, will handle the training, and whether his performance will meet your expectations. Prove by what you say and do that nothing is expected that cannot be learned through a reasonable effort, and that you are interested in one thing, to help make his work easier and more effective.

*Explain the Job and Its Importance.* When an employee sees his particular job in relation to the entire foodservice operation, he becomes much more interested in learning to do his job correctly.

*Create Interest.* Don't take for granted that an employee is interested in being trained. You can be sure of his interest only when you show the employee that it will be to his advantage to learn to do well the things you teach him. Help him understand the training will improve his ability to do the job, and thus to keep it, to make a living. The greater the trainee's interest, the easier is your job of training.

---

#### TELL, SHOW THE EMPLOYEE

---

*Explain and Demonstrate One Step at a Time.* Don't throw the entire book at the employee. Take the training one step at a time. Tell him only what he can absorb at one time, and stick to the facts.

*Stress Key Points.* The employee must be told what the job consists of, how it is to be done, and why it must be done as described. Don't waste time on unimportant details. A person's capacity to absorb and retain is limited. Unessential information just clutters his mind and makes it harder for him to retain the important things.

*Use Simple Language.* Big or unusual words and technical terms may make some people think you are smart, but they will not help get your ideas across.

*Do Not Do All the Talking.* People learn more from a discussion than from a straight lecture. Make the employee think, help him learn, by presenting problems for him to solve and questions for him to answer.

*Give Reasons.* The more an employee understands why a thing is done, the more quickly he will learn to do it. Things that have meaning are remembered longer.

Once again, don't try to teach the trainee everything at once. It just can't be done and it will frustrate both of you.

---

#### TRYOUT PERFORMANCE

*Have Employee Do the Job.* People learn not from listening and watching, but from doing. It is very important to have the trainee actually perform the job or practice the job in training in order for him to understand it thoroughly.

*Have the Employee Tell You the "Why" and the "How" of the Job.* Make sure the employee clearly understands how the job is to be done and the reason for doing it the way he is trained.

*Correct Errors as the Employee Makes Them.* Avoid criticism. Nobody likes to be criticized. Avoid criticism in the sense of "bawling out" an employee for having done something wrong. Demonstrate how the employee could have done it better so that the correction becomes instruction. A correction then becomes a friendly, helpful act, rather than a belittling experience.

*Compliment Before You Correct.* Find something on which to compliment a trainee before you correct him. Make sure that the compliment is sincere.

*Let the Employee Correct Himself.* This is the best of all correction techniques. By proper handling, the unpleasantness of a correction can almost be eliminated. Ask the employee if he can think of any way he might have improved his job performance. If the employee cannot think of anything, make suggestions.

*Do Not Overdo Correcting.* Correction is like seasoning. A little goes a long way. Too much spoils the dish. It is easy to overdo correcting, so watch yourself.

*Do Not Criticize the Employee in Front of Others.* This becomes embarrassing, demoralizing experience.

*Do Not Be Too Quick to Blame the Employee.* If something is not done right, the fault may lie in your method of teaching. Bear in mind the axiom, "If the employee has not learned, the instructor has not taught."

*Encourage the Employee.* Compliments are an essential part of teaching. They encourage learning. A sincere compliment gives the learner the experience of success. Compliment freely, but do not overdo it. A person does not have to do a perfect job to deserve a compliment. Any level of improvement or progress is a basis for a sincere compliment. Be prompt with your compliments or corrections.

---

#### FOLLOW THROUGH

*Put the Employee on His Own to Do the Job.*

*Encourage Questions From the Employee.* Be receptive to all questions. Make clear to the employee that it is not a sign of weakness to ask for help. No matter how simple the question may appear to you, treat it seriously and with respect.

*Check Frequently.* Check the employee's performance as often as it seems necessary, but gradually taper off.

*Let the Employee Know How He is Doing.* If the employee is doing the job the way you want it done, let him know it. If he gets "off the beam," tell him. The time to correct an error is when it is made. Don't make the mistake of assuming that after the employee has more experience, the error will correct itself. It is your responsibility to let the employee know when he is doing the job correctly and inform him on what phases he needs improvement.

#### REFERENCES

1. Carson, R. B. Techniques for Inservice Education of Food Service Workers. Training Manual "Current Concepts in Food Protection" Food and Drug Administration PHS, DHEW, April, 1971.
2. Miller, Roger W. For Your Dining Pleasure - A Model Ordinance. "FDA Consumer" DHEW, Vol. 14; No. 1, pages 17-20 February, 1980.



# 3A Sanitary Standards

## Their History and Development

HENRY V. ATHERTON

*Dept. of Animal Science, The University of Vermont, Burlington, VT 05405*

**"The 3A Sanitary Standards are developed out of the richest and most practical experiences of the enforcement people, dairy processors and equipment manufacturers."**

*3-A Sanitary Standards set criteria for: a) materials used in construction b) fabrication and design c) construction of dairy processing equipment. The 3-A Standards were developed by three groups a) the International Association of Milk, Food and Environmental Sanitarians, Inc. b) USPHS/FDA c) The Dairy Industry Committee. The development of the standards are discussed. 3-A Sanitary Standards for dairy equipment protect everyone who consumes milk in any form. The 3-A Sanitary Standards help guide sanitarians toward a universal code.*

Many have asked the question, "What are 3-A Sanitary Standards for dairy equipment?" We might say that a 3-A Sanitary Standard sets forth the criteria for (a) the material used in the construction of a piece of dairy equipment, (b) the fabrication and design of such material, and (c) its construction, including such things as the finish of the material, which are considered essential from a sanitary standpoint in the use, performance and maintenance of such equipment.

Such a standard is developed through the joint collaboration of (1)

manufacturers of the equipment, (2) users of the equipment, (3) the International Association of Milk, Food, and Environmental Sanitarians' (IAMFES) Committee on Sanitary Procedure, and (4) representatives of the Dairy and Lipid Products Branch of the USPHS/FDA.

A second question which might well come to mind is, "To what items of dairy equipment do 3-A Sanitary Standards apply today?" A partial list of the standards that have been approved and published appears on the next page.

When was the program organized and what is the membership, say, of the 3-A Sanitary Standards Committees? The International Association of Dairy and Milk Inspectors in the late 1920's established a committee on Dairy and Milk Plant Equipment. The committee's 1933 report asserted that much dairy equipment failed at that time to meet health and sanitary standards. The report continued, "much could be gained if some organized group of control officials, preferably a committee of this organization, could confer with manufacturers, and gradually devel-

op standards which would generally be accepted." This statement of nearly 50 years ago urged extension of effort which was already under way. The then International Association of Milk Dealers (now the Milk Industry Foundation) and the then Dairy and Ice Cream Machinery Supply Association (now the Dairy and Food Industries Supply Association (DFISA) had already in the 1920's worked with numbers of city, state and Federal enforcement people in developing understandings which became forerunners of the present 3-A Sanitary Standards for Dairy Equipment.

It was suggested at some time in the 1930's that the standards being developed by the three organizations should be known as 3-A Sanitary Standards, due to their three-party nature. This title has been retained over the years, although it now refers to three different groups, namely: (1) the International Association of Milk, Food, and Environmental Sanitarians, (2) USPHS/FDA, and (3) The Dairy Industry Committee (DIC). The first two groups are well known to all sanitarians. The Dairy

---

### Published 3A Sanitary Standards Include:

Fittings Used on Milk Products  
Equipment

Storage Tanks  
Homogenizers

Automotive Milk Transportation  
Tanks for Bulk Delivery and/or  
Farm Pick-Up Service

Filters Using Disposable Filter Media

Plate Type Heat Exchangers  
Tubular Heat Exchangers  
Farm Milk Cooling and Holding Tanks  
Evaporators and Vacuum Pans

Fillers and Sealers of Single Service  
Containers for Fluid Milk Products

Multiple-use Rubber Materials Used  
as Product Contact Surfaces

Multiple-use Plastic Materials Used  
as Product Contact Surfaces  
Non-Coil Type Batch Pasteurizers  
Non-Coil Type Batch Processors  
Flow Meters  
Scraped Surface Heat Exchangers  
Polished Metal Tubing  
Pressure and Level Sensing Devices  
Cottage Cheese Vats

---

Industry Committee is a group of eight trade associations, representing the country's dairy processors. It has a Sanitary Standards Sub-Committee which works to formulate standards with similar committees of the other two groups. The eight associations which make up the Dairy Industry Committee are:

American Butter Institute  
American Dry Milk Institute  
Dairy and Food Industries Supply  
Association  
Evaporated Milk Association  
International Association of Ice Cream  
Manufacturers  
Milk Industry Foundation  
National Cheese Institute  
Whey Products Institute

DFISA, representing equipment and supplies manufacturers, is listed among these industry associations; all the rest are dairy processor associations in the Dairy Industry Committee. DFISA, however, in some procedures in the formulation of a sanitary standard, alone becomes one side of the three-sided arrangement. The other two sides are the user spokesmen, a seven-part

group within the Dairy Industry Committee, and the sanitarian-public health spokesmen, a two-part group. Although names of organizations change, and additional organizations, in new alignments, take part in the formulation, the standards are still the product, as in the beginning, of the equipment makers, equipment users and enforcement officers.

The first rough equivalent of a 3-A Sanitary Standard, although not referred to then by that name, was developed in 1929 and applied to sanitary fittings used in milk plants. It appeared in the form of dimensional drawings and there was no reference to the type, composition or finish of the metal of the fittings. The standards work slowly broadened throughout the 1930's. After World War II, the sanitarians and users and manufacturers of equipment began to formulate and publish the standards in the manner which is now followed.

The next question that may come to mind is, "How, then, is a 3-A Sanitary Standard developed to-

day?" The procedure by which a 3-A Sanitary Standard is developed is, briefly: (1) A request that a standard be developed for a certain type of equipment is presented to the Steering Committee of the 3-A Sanitary Standards Committees by a sanitarian, USPHS/FDA representative, representatives of the users, or by a representative of the manufacturers. This Steering Committee considers the request, in terms of the need for such a standard or the timeliness of action to meet the need. If the Committee approves the request, it asks DFISA to name a task committee, on which membership is open to a representative of each DFISA company of record which manufactures the equipment in question. All other manufacturers of record, also, are urged by DFISA to participate in discussions of the task committee. The task committee proceeds to develop a tentative standard for the equipment.

Usually after several meetings and usually, too, after unanimous agreement as to content, the tentative standard is submitted by the DFISA



Task Committee to the Sanitary Standards Sub-Committee of the DIC, that is, the representatives of the users. Following a study by this Sub-Committee, the DFISA Task Committee reviews the comments. The Task Committee, having had the benefit of an expression of the users' views, revises the tentative standard and it is again submitted to the Sanitary Standards Sub-Committee of the DIC.

When a tentative standard is fully approved by the DIC Sanitary Standards Sub-Committee, it goes to the IAMFES Committee on Sanitary Procedure and the Dairy and Lipid Products staff of the USPHS/FDA, for study from that side of the co-operative triangle. After at least six weeks has been allowed for such study, the tentative standard is considered at a semi-annual meeting of the DIC Sanitary Standards Sub-Committee, the IAMFES Committee on Sanitary Procedure and the representatives of the Dairy and Lipid Products Branch of the USPHS/FDA. DFISA, too, is represented at this joint session.

Usually, afterward, the DFISA Task Committee again revises the tentative standards as new suggestions and attitudes are brought to light by the all-parties discussion.

The various stages in development of a standard may be repeated, in the same sequence several times more before a tentative standard wins approval of all parties. When it has won approval it is signed by the Chairman of the IAMFES Commit-

tee on Sanitary Procedure, the USPHS/FDA Dairy and Lipid Products Branch, the Chairman of the DIC Sanitary Standards Sub-Committee, and by the Chairman of the DFISA Technical Committee. It is then published in the next issue of the *Journal of Food Protection* as a completed 3-A Sanitary Standard.

Equipment makers who desire from the first to abide by the standard are, as a practical manufacturing matter, allowed one year from the date of the signing to bring their equipment into conformity with the standard. But there is no compulsion upon anyone, whether equipment company, user company, or enforcement officer, to accept a 3-A Sanitary Standard.

Reprints of the standard, as soon as it has been published, become available on request to all members of dairy trade associations, enforcement officers, and of course, to other persons with a legitimate interest in the standard.

Certain points should be re-emphasized. 3-A Sanitary Standards are developed out of the richest and most practical experiences of the enforcement people, dairy processors and equipment manufacturers. No one "puts across" a sanitary standard. When a standard is signed, it has already traveled the straight and narrow, the super-critical road of all parties' examination.

The other point is that this very process of three-sided standards formulation becomes a democratic process. An equipment manufacturer doesn't have to belong to any

trade association to suggest the need for a standard, or to sit with a Task Committee developing successive tentative drafts. *Any* dairy processor can make himself heard as a standard is developed. *Any* enforcement officer can find one or more ready channels through which to be heard.

And, again, no one is compelled to adopt or abide by a standard. Plain and simple, wholesome self-interest and professional devotion to the public welfare are the real reasons for a sanitarian's or a processor's or an equipment manufacturer's acceptance of a 3-A Sanitary Standard.

Someone might well raise the questions, "But why *have* 3-A Sanitary Standards for Dairy Equipment?", "Is there a need for them?"

Many do not realize that there is a standard for virtually everything we purchase. There are standard grades of milk and dairy products, for example. There are standard grades of paper, packages, foods, feeds, fertilizers, pharmaceuticals and cosmetics, building materials, the material from which dairy equipment is fabricated, and hundreds of other products. Sanitary standards for dairy equipment protect everyone who consumes milk in any form.

We have in the U.S. many local milk ordinances. Each one includes certain enforceable criteria regarding equipment sanitation in the milk plants. A generation ago, it was the practice of many sanitarians to apply highly individual sanitation standards to equipment in the plants

---

**“The various stages in development of a standard may be repeated several times before a tentative standard wins approval of all parties.”**

---

they supervised. Because of this there were many differences among local standards, many of which approached the nature of equipment specifications. Under such circumstances many misunderstandings and disagreements among sanitarians, manufacturers, and users developed, with the user usually caught in the middle. Much of this misunderstanding and disagreement was due to lack of language common to the three groups. This resulted in many pieces of equipment having to be custom made, not for basic technological or economic reasons, but due to the different requirements peculiar to one or a few health jurisdictions. Many times it was necessary for the manufacturer to send mechanics into the field to make structural changes in equipment after it had been delivered to a user, although such equipment might everywhere else have been approved without change. All of this resulted in substantial increases in costs to the user, manufacturer, and in enforcement costs. These accumulated costs raised the cost to the final consumer of milk and dairy products.

Sometimes sanitarians take almost opposite positions on simple matters—which naturally leads one to ask, “What *is* the correct health and sanitary view?” This indicates a need for universally acceptable sanitary standards for dairy equipment.

We in the industry do not consider the terms of the printed standards a full measurement of the accomplishments of the 3-A Sanitary Standards

movement. We ask, “What are the effects of the standards, now that they exist and that their number is increasing?” This is how Dr. E. H. Parfitt, former Chairman of the 3-A Sanitary Standards Committees and an equipment users’ spokesman answered the question of the standards’ effects before the annual meeting of the Association of Food Industry Sanitarians in 1952:

“For the industry: increased usable life of dairy equipment. Interchangeability of equipment within the industry. Creation of a nationally accepted standard. Reduction in operating costs. Standard for self inspection.”

“For the Fabricator: Knowledge of acceptable design. Knowledge of acceptable materials. Application of acceptable sanitary design principles to other equipment for which 3-A Standards have not been developed. Reduction in dies, tools, patterns, etc. Stimulation of inventive design and construction.”

“For the Sanitarian: Minimizes confusion as to what constitutes sanitary design and construction. Establishes a base from which to work in considering what constitutes sanitary design and construction for other food handling equipment in general. Increased prestige as a result of collaborative work with industry.”

Another question might be, “Are 3-A Sanitary Standards, which have been approved by all parties, kept up-to-date?” It is the practice of the DFISA Task Committees to review

each standard at least once every five years. Each standard that may be developed can, of course, be amended and many have been. Several other standards are now being amended. All amendments are developed in exactly the same way as the original standards are, by the careful, slow and democratic procedures previously discussed.

“How may a 3-A Sanitary Standard for an item of dairy equipment assist the state or local sanitarian in his daily work?” A 3-A Sanitary Standard for a piece of dairy equipment gives a sound and firm base on which a sanitarian can act in approving equipment in a processing plant that comes under his jurisdiction. If a 3-A Sanitary Standard has been developed for a type of equipment and a piece of equipment of that type being inspected meets that Standard, then one is assured that the experience and knowledge of the many members of the IAMFES Committee on Sanitary Procedures is supporting the equipment. The sanitarian will know that he is in line with an industry-wide voluntary movement which rests upon a blend of industrial science and public health science, and is capable of bringing orderliness and a justifiable degree of economy into operations which affect the health and well-being of every citizen and enterprise that he serves. The sanitarian will know that he is an active participant in one of the soundest and most beneficial activities underway in the world of food safety today.

---

## Openly Confronting Public Anxieties Over Food Safety

---

CHANNING H. LUSHBOUGH

*Vice President, Quality Assurance  
Kraft, Inc.*

*Food forms a major part of our complex social economy. The American food supply is safer, more nutritious, more wholesome, and more abundant than it has ever been. But we live in a period of heightened anxiety, with general feelings of apprehensiveness and fearfulness about everybody and everything. Everyone involved with the food industry, beginning with the farmer and going throughout the chain, needs to keep the public informed about what is being done to protect the food supply.*

Forty years ago, as the public battle over the pasteurization of milk drew to a close, there was truly little else that mattered to John Q. Public, so far as the safety of his food supply was concerned. Yet milk pasteurization itself took 40 years to grow out from our largest cities to the villages and small towns of America. In the 8 decades of this century, great social and economic changes have substantially increased the distance — a distance both literal and psychological — between producers and consumers of food.

As the 20th century began, 80% of our population — 4 of every 5 families — lived on farms. Today, that proportion is down to 4% — only 1 of over 25 families now lives and works on a farm. And few enough of the rest of us even bother with a small vegetable garden, so that direct, personal knowledge of how food plants and food-producing animals are grown and harvested belongs today to a small,

*Keynote address to Annual Conference, New York State Association of Milk and Food Sanitarians, Binghamton, September 19, 1979*

ever-decreasing minority of the people.

But this is not necessarily bad. Without the continuing ability of the farmer to produce ever-more food, our material standard of living could never have risen as high as it is today. It is the release of men and women from producing raw agricultural commodities on farms which makes them available to seek highly specialized jobs in a sophisticated economy, based on exceptionally complex divisions and subdivisions of labor. This work in turn, produces the broad variety and high quality of both goods and services which together form our industrial economy.

Food forms a major part of this complex social economy. Yet because farmers, food processors, distributors and retailers consistently strive to improve their efficiency, raise productivity, and reduce costs, in the United States today, food expenditures comprise less than 13% of consumers' income, the lowest fraction in the world. Why, then, is there public anxiety over the safety of our food supplies?

The first reason was mentioned earlier. Hardly anyone actually produces even a small portion of the food personally consumed each day. The distance from farm to table is no longer a long walk, an hour's ride on horseback, or a brief drive by tractor. It may be hundreds or thousands of miles: witness California citrus fruits and produce in East Coast groceries year round.

When the consumer is no longer the producer, any suggestion that food may not be safe will surely stimulate an inkling of suspicion, an iota of anxiety, whether that suggestion is founded in fact or not. This audience needs no reminder how in years past, a rumor that

Dairy X sold milk from cows with tuberculosis might wipe it out of business.

Distance from the farm creates a second cause for potential public anxiety. Foods are no longer stored and sold as produced. Just as consumers may distrust farm producers because they've never truly seen a farm, they may also develop some sense of concern or anxiety over what happens in food processing plants, of which they may be equally or even more ignorant.

Indeed, let me share a real-life vignette: a lady in her mid-70's who has owned Kraft stock over 25 years recently asked what we put in Sealtest milk to make it stay sweet so long. Surely this epitomizes consumer distance, both from farm and processing plant. This sympathetic shareholder found it very hard to believe that with the advent of the refrigerated bulk tank and direct piping systems on the farm; with insulated tanker pickup; and with prompt, effective high temperature-short time pasteurization at our plants, we routinely produce milk with a shelf life of at least 14 days.

Consider the irony: working closely together, the farmer, the processor and the distributor have so improved the quality of pasteurized milk as to make some consumers wonder if we are adding some sort of preservative, as did this woman.

Stepping back from milk to take a broader view of the whole food industry, it is surely true that few consumers can visit food processing plants. Nor do they have other first-hand knowledge or experience of what occurs in the transition from raw agricultural commodities to processed, packaged foods. This



consumer ignorance is no cause for processor bliss.

A third anxiety stimulant is strictly economic. Because people must have food, and must buy food more frequently than anything else; and because food takes 18% of the average household budget — almost 1 dollar in 5 — most people are quick to resent food price increases, recently caused by rapid inflation throughout the entire economy. If our citizens feel they have the slightest reason to suspect the safety of the foods they eat, higher prices tend to redouble those doubts. Few are aware of, and surely fewer understand that, to protect our agricultural economy from wild price gyrations, and to help assure farmers a continuing fair return on their investments and for their labor, we have an extensive system of minimum price guarantees for a variety of raw agricultural commodities, such as milk.

The fourth funder of public anxieties over the safety of our food supplies I will mention today is the consumer activist. Criticism of the food supply rallies many, because food is a deeply emotional issue. From birth through old age, food plays a central role in everyone's life:

It nourishes;

It tastes and feels good;

It creates family ties, and close friendships;

It represents and symbolizes love.

The consumer activists have not missed this point. Consumers Research began the modern consumer movement over 50 years ago, with the publication of *100,000,000 Guinea Pigs* and the monthly *Consumer Bulletin*. Consumers Union and its *Consumer Reports* followed a decade later. Both were repeatedly critical of commercially processed food products.

In their early years, a major focus of these consumer organizations was economic: "Home Economics" in the most basic sense of this term. They tried to extend consumer education beyond the high school and college classroom where young women comprised the vast majority of Home Economics students. Both consumer product testing organizations hoped to achieve broad acceptance by adults, especially young, relatively inexperienced homemakers who confronted major purchases on limited incomes. With regard to commercially processed foods, *Consumer Reports* and *Consumer Bulletin* have repeatedly suggested more basic, less expensively packaged and

promoted foods as more economic, more flavorful, and/or more nutritious alternatives:

Raw potatoes rather than frozen French fries;

Rolled oats in place of sugar-coated corn flakes;

Home-made mayonnaise instead of Kraft mayonnaise.

While the desired flavor and consistency of foods will always remain a matter of personal tastes and individual preferences, these consumer product testing organizations have usually been correct in their economic evaluations of commercial vs. home-prepared foods. They confront basic problems in evaluating "convenience," however; with almost half of all adult women now members of the U.S. work force, actual sales of processed foods suggest that many homemakers are quite prepared to pay more in the supermarket for food products which save preparation time in their kitchens.

Thus, the basic economies in home-plus-workplace are much more complex, and the living standards of two-income families are much higher. "Home Economics," as developed by Consumers Research and Consumers Union for working, consuming adults is less straightforward than earlier, and the public's acceptance of their work has been at a plateau during the past 6 or 7 years.

In 1966, Ralph Nader burst upon the scene, *Unsafe At Any Speed*. The flowering of Nader organizations in Washington has consistently included at least one focused on food.

Although consumerists have not strayed nearly so far from the best scientific knowledge of food safety and nutrition as, for example, the food faddists and "health food" enthusiasts, during the past decade, consumer activists have honed their swords to attack such alleged public enemies as "junk foods," sugar, artificial food colors, and the three artificial sweeteners, saccharin, cyclamate, and aspartame. In generating these attacks on highly specific targets, they have simultaneously succeeded in creating a more general anxiety over food safety among the larger body of lay consumers.

Finally, I would mention a fifth cause of anxiety among our citizens with regard to food safety: this is the rather common, but erroneous belief that science can protect everyone absolutely from all harm, coupled with the cynical presumption that food processors would

knowingly expose their customers to significant health risks in hopes of higher profits. Consider first, this broad and widespread public expectation of absolute protection from harm: with regard to cancer it was originally embodied in the Delaney Clause, which modified the Food Additives Amendment of 1958.

As you know, the Delaney Clause prohibits the use of food additives which have been shown by appropriate scientific or clinical tests to cause cancer in man or animal. In spite of the public brouhahas on cyclamates and saccharin as presumed carcinogens, the basic rule of the Delaney Clause is sound. No responsible food manufacturer would knowingly choose to use an ingredient which causes cancer, unless . . .

But what an "unless" that is: *unless* the alternative is equal to or worse than cancer. Without going into detail, let me say that the current, informal view of our Food and Drug Administration is that the benefits of using nitrites in cured meat products to prevent the outgrowth and reproduction of *Clostridium botulinum* organisms, and the formation of deadly botulinum toxin just counterbalance the risks of cancer due to nitrosamine formation.

This underscores the complexity of real world situations; and suggests that statutory oversimplifications such as the Delaney Clause may lead to consumer expectations which cannot simply and always be fulfilled.

Turn for the moment to the second element: a presumption that in pursuit of financial gain, food processors would knowingly subject consumers to significant health risks. On its face, this is an unreal likelihood. Enlightened self-interest requires manufacturers to stimulate repeat purchases throughout the longest possible lives of as large a number of consumers as possible. To harm any knowingly would be business suicide.

Combining these elements, we see it is essential to create and enhance broad public understanding that there is no absolute safety; and that, if consumed in excess, every food is potentially harmful.

Reviewing quickly, I have mentioned five sources or causes of anxiety over the safety of our food supply among significant numbers of our citizens:

1. Few are directly involved in farming — only 1 in 25 workers.
2. Distance from and ignorance of both farm and food processor.
3. General, rapid inflation, which causes food price increases.
4. Criticisms by consumerists.

# Dairy and Food Sanitation

The new IAMFES magazine, *Dairy and Food Sanitation* addresses many of the same concerns as does the *Journal of Food Protection*. *Dairy and Food Sanitation*, however, provides articles of immediate interest and application to the work of the practicing sanitarian, fieldman, and quality control person.

As such, it complements the scientific *Journal of Food Protection*, which continues to offer the latest research in milk and food sanitation and technology.

In addition to articles, *Dairy and Food Sanitation* contains departments formerly included in the *Journal*, but they're expanded in the new magazine to offer readers more complete information about news, events, and others in the field. Among the expanded departments are news about IAMFES affiliate members, meetings, and events; Association events; new product news; excerpts from such publications as the Center for Disease Control's "Morbidity and Mortality Weekly Report," and the Federal Register. New 3A and E-3A Sanitary Standards and amendments to existing standards are also included in *Dairy and Food Sanitation*.

Regular publication of *Dairy and Food Sanitation* begins with the January, 1981 issue. Give the portion below to a colleague who might like to receive *Dairy and Food Sanitation*, or to request additional information about IAMFES and the *Journal of Food Protection*.

	choice of one publication	with both publications
Affiliate	\$22.00, plus affiliate dues	\$37.00, plus affiliate dues
Direct Member	25.00	40.00
Students	7.50	15.00

Yes, I want *Dairy and Food Sanitation*

Name \_\_\_\_\_

Address \_\_\_\_\_

Journal Choice  *Journal of Food Protection*  
 *Dairy and Food Sanitation*

Zip Code \_\_\_\_\_

Return to: IAMFES, Inc.  
 P.O. Box 701  
 Ames, IA 50010  
 515-232-6699

5. Citizen expectations of absolute safety.

It is essential to emphasize that whether public anxieties are soundly based on reliable facts or not, for each individual who *is* anxious, the anxiety itself is real. When that anxiety pertains to food, it may be very deep.

Anxiety is a general apprehensiveness, based upon ignorance, that tends to dissipate when confronted by facts. How then should we confront such public anxieties about the safety of our food supply?

As food sanitarians, farmers, government officials, professors and food processors, we surely have a professional responsibility to come forward with the scientific facts as we know them; and to emphasize that while truth is not static, idle speculation on non-demonstrable but alleged potential and substantial risks in our foods may verge on crying "FIRE!" in a dark and crowded theater.

For a citizenry so far from farms and food-processing plants, we must teach the fundamentals of safe food handling and preparation, and of good nutrition.

Consumers need an awareness that safety and risk are always quantitative: either too little or too much water in the diet is lethal, one need not seek exotic foods nor allegedly threatening food additives to establish this point. Conversely, there is a non-toxic dose of every lethal "poison."

Candor is called for. For several years, the Institute of Food Technologists has sponsored a public information program, to publish basic evaluations of particular food safety studies. Grocery Manufacturers of America has held press backgrounders with distinguished food scientists and food economists since 1972, reaching literally hundreds of local reporters where they work, and putting them in direct touch with nearby experts to whom they can turn for reliable information.

Renewed emphasis on the exceptionally high level of microbiological safety of our foods is certainly needed; and, to repeat myself, we must put parallel emphasis on the fact that, in this regard, just a few hours' mishandling of food in the consumer's home may undo everything done by the farmer, processor, retailer and cook.

In short, we are beginning to understand that, in every segment of the food industry, simply *doing* a good job isn't enough.

In addition, we must keep the public *informed* about what we are doing.

Equally important, if not more so, we must keep open lines of communication in order that we can know those areas in which our industry operations are misperceived, and act accordingly.

Failing such communication, we face the threat to liberty that arises whenever people are left in ignorance regarding affairs that touch their daily lives.

These consequences generally follow a predictable pattern. Industry's failure to communicate gives rise first to public attack by social critics. This, in turn, leads to government efforts to control industry by means of increased regulation.

---

*The issue is credibility. And the credibility of the entire food industry, beginning with the farmer, and continuing through the food processor and the retailer, can only be built on a foundation of providing information the consumer wants and needs to know, presented in a manner he and she can understand.*

---

The prevailing mood in America, as most of us well know, is one of distrust and suspicion. In a figurative sense, institutions and organizations across the land have drawn their wagons into a circle and are living under siege. The food processing industry is just one of many targets in this broad scale attack. Triggered by rising prices at the beginning of this decade, criticism has spread to a general inquiry into everything the industry does.

Such criticism of the food processing industry is likely to continue for years. Meanwhile, we must deal with public questioning openly, honestly, and constructively, and not simply by reacting to each new food scare as it comes along.

The truth is that our food supply is safer, more nutritious, more wholesome, and more abundant now than it has ever been. This is a story which must be told.

This communication problem facing the food industry, I believe, boils down to this: although much public anxiety about the wholesomeness of our food supply is not supported by the available evidence, the anxiety itself is real. We live in a period of heightened anxiety, by which I mean general feelings of apprehensiveness and fearfulness about everybody and everything. Anxiety can be a negative, disruptive element in our lives,

for the very reason that is vague and nonspecific. However, once the facts about a particular issue are put on the table for all to see, anxiety tends to lose its destructive force. Our most effective weapons then, are facts, openly shared and widely distributed.

We need not be afraid to share information with the public, because, in the majority of cases the facts reflect favorably on industry. The other side of the coin must be our willingness to accept and make changes in situations where changes appear to be needed. This kind of conversation or consultation with our critics, and with the public requires

special communication efforts.

In the field of food safety and quality, the American food processing industry has succeeded to an extent undreamed of in past eras. We have developed a system which, if not perfect, is nevertheless a model for the world. And through continued research and surveillance we intend to keep improving on that record of achievement.

We know we have a story to tell. That story must be told unless our critics are to succeed in creating public panic based on public ignorance of the facts.

To summarize, as leaders and professionals in the food field, we help individual consumers confront their anxieties over food safety best by teaching, by sharing what we know, in an open, forthright, candid atmosphere. Although every educational campaign is a long struggle, with your firm commitment to spreading the truth, and allaying the effects of ignorance and distortions, I am confident the number and proportion of consumers with baseless anxieties will decrease. Meanwhile, those with well-founded concerns for microbiological safety will learn and practice safe food handling techniques for the vigorous good health and of themselves and their families.

---

## Correcting Coliform Problems of Pasteurized Milk

---

S. E. BARNARD

*Department of Food Service, The Pennsylvania State University, University Park, PA 16802*

*Some plants have few coliform problems in their milk, even after sample storage of 10 days at 45° F. These plants generally use hot water sterilization of all processing, pasteurized storage, and filling equipment. All milk contact surfaces must be flooded with water hotter than 170°F, which is circulated for more than five minutes. Experience has shown common sources of coliform problems. A list of these trouble spots is included.*

*Heat treatment of milk by vat or high temperature-short time methods usually destroys coliforms. But when coliforms are present in pasteurized milk, this generally indicates post-pasteurization contamination. Coliforms are usually accompanied by psychrotrophs, which cause spoilage.*

Many fluid milk processing plants have no coliform problem in fresh milk samples. Records of daily testing throughout the year reveal that nearly 100% of these samples have less than one coliform per ml.

In Pennsylvania about 80% of the 275 dealer and jugger processing operations do not have coliform problems. The remaining 20% frequently have some coliforms in fresh samples. They may satisfy regulatory requirements, but levels usually exceed 10 coliforms per ml., prior to the expiration of the nine day open day.

Coliforms in pasteurized milk do not indicate a public health problem at least at low levels. However, the presence of coliforms nearly always indicates sanitation problems in the processing plant. The result is shorter shelf life, product spoilage and consumer complaints.

For maximum shelf life, pasteurized milk should be free of coliforms. Heat treatment of milk by either vat or high temperature-short time pasteurization methods (HTST) usually destroys coliforms. Results of tests on fresh samples or those held for 7 or 10 days at 45°F should be less than one coliform per ml.

The presence of coliforms in pasteurized milk generally indicates contamination after pasteurization. When coliforms are present, they usually are accompanied by psychrotrophs, which cause spoilage.

The cause of coliform problems and spoilage of pasteurized milk usually is not in the raw supply. Rather, it is a

processing plant problem, caused by failure to thoroughly clean and sanitize all milk contact surfaces. A single fitting, valve or pump may be the source of the problem.

Many plants without coliform problems regularly use hot water sterilization of all processing, pasteurized storage, and filling equipment. Although this procedure is more expensive and difficult than chemical sanitizing, there is no doubt that it increases product shelf life. All milk contact surfaces must be contacted by hot water at 170°F for five minutes for adequate cleaning.

The real cause in most cases is in the processing plant. The most common causes of coliforms are the following:

1. First, and most often, is failure to contact all milk equipment with hot water or a chemical sanitizer. To be effective, hot water must be at least 170°F as it is discharged from filler valves. It should circulate at least five minutes. Chlorine sanitizers should be at least 100 ppm, as discharged, and iodine sanitizers at least 12.5 ppm. This should be drained, but equipment should not yet be rinsed.
2. The most important factor in preventing coliform problems in milk is you. Even with automated

---

***“Coliforms in pasteurized milk do not indicate a public health problem at least at low levels. However, the presence of coliforms nearly always indicates sanitation problems in the processing plant”***

---

cleaning, check to be sure that all surfaces are clean, that cycles are completed and that temperatures are maintained, especially for hot water sterilization.

3. Lines, valves and pumps may not be thoroughly cleaned after processing day. All parts not satisfactorily cleaned by circulation must be disassembled and washed in a parts wash sink or by hand.
4. Pasteurized surge tanks, including agitators and measuring gauges, may not always be clean. Check all parts on at least a weekly basis to be sure that they are free of deposits.
5. Fillers are the most critical area. All milk contact surfaces must be manually brushed or circulation cleaned. Treat bowl covers, defoamers, and plastic hoses as milk contact surfaces. Include them in regular cleaning and sanitizing procedures.
6. Close all cases of empty paper or plastic containers to prevent entrance of dust or bacteria. Use partial cases within a few days. Although not a common cause of coliforms, such practices are part of good sanitary procedure.
7. Be sure that moisture condensation from pipes or ceilings cannot drop

into vats or filler bowls of pasteurized milk. Whenever possible, locate water, steam, and milk lines other than above vats and fillers. Keep all vat and filler openings covered at all times.

8. Common lines should never be used for both raw and pasteurized milk. Rinsing between uses will not eliminate all bacteria. If it is necessary to use a common line, pump, or plastic hose for both raw and pasteurized milk, it must be completely rinsed, washed and sanitized between each use.
9. A fitting may occasionally be leaky or a gasket broken. Whenever equipment surfaces and parts are touched or hands are put in pasteurized milk, start over. This means repasteurizing all product involved, and cleaning and sanitizing all milk contact surfaces.
10. The water supply may occasionally contain coliforms and spoilage bacteria. Therefore, never rinse fillers or any pasteurized milk equipment with plain water either from a well or municipal supply. Always use a sanitizer solution to rinse mandrels, filler valves, and covers on vats.

11. Check pumps, drums, and solution tanks to be sure that they contain cleaners and sanitizers and that they are dispensed into the system at the correct time.
12. Use test kits to check cleaning and sanitizing solution strengths. This should be done on at least a monthly basis. Some plants with their own laboratory make this a weekly practice.

Coliform testing of pasteurized milk is necessary for regulatory purposes. Test product samples every day, if possible. Hold duplicate unopened samples of the first containers off the line at 45°F until the expiration date. Check odor, taste, and coliform count earlier than 10 days if complaints occur.

Provide training and material to plant processing personnel to help prevent coliform problems. Be sure they see the results of laboratory testing. Give them a list of the sources of coliform problems and help them locate the causes.

A coliform count offers a quick, easy source of information about plant sanitation and the potential shelf life of pasteurized milk. The goal of each milk processing plant should be to produce fresh products, free of coliform bacteria.



# Food Product Safety — The Basics

---

*“But the essential factor, perhaps not clearly understood by regulatory personnel or processors, is that to conform to regulatory objectives, one must institute programs and standards not only at the processing, storage and distribution level, but throughout the entire food chain.”*

---

## FRANK J. RAFFAELE, JR.

Vice President of Regulatory Compliance  
American Institute of Baking  
1213 Bakers Way  
Manhattan, KS 66502

*There are many aspects to a quality control and product safety program. External forces and regulations affect the program, through the Federal Insecticide, Fungicide and Rodenticide Act, Good Manufacturing Practices, and others. Internal considerations also affect a product safety program. Quality assurance, for example, is difficult to reduce to mere numbers for measurement so equipment, personnel, and funding may be difficult to obtain in times of cost-cutting.*

The year is 1967. Pollsters Harrison and Neilson have just completed a national poll in which the public is asked, “What do you think of the food industry?”

Justifiably that year, food processors were proud and quick to point to the poll results, for roughly 85% of the respondents indicated they felt the food industry was doing a good job. In following years, however, public opinion regarding the industry changed drastically, due to rising food prices, increased consumer awareness, and a number of specific cases of foodborne illness or contamination - the Bon Vivian soup botulism case, and lye in pretzels, among others. The revelation that the FDA allowed guidelines for a certain number of insect parts and rodent hairs in human foods did nothing to improve public attitude. A follow-up poll taken in 1977, also by Harrison and Neilson, saw a complete attitude reversal from the 1967 poll results. More than 90% of those polled felt the food industry should be the number one target for consumer activists. Additionally, the 1977 poll revealed that 80% of those polled had had major complaints about food products the

previous year and could recall the problems when questioned one year later.

Recently, less formal attempts have been undertaken to evaluate changes in consumer attitudes. Evaluation of the data, however, indicates the industry has gained little ground since 1977. In an effort to understand these consumer attitudes, questions immediately come to mind. But it is often difficult for regulatory food inspectors and environmentalists to answer such questions when they find themselves on the “outside” attempting to look “in” corporations.

It is generally recognized that the food industry should be a regulated industry and quality control is important due to mass production, because foodborne illness outbreaks or contamination could have disastrous results. Specific laws which apply to food processors include the following:

- Food, Drug and Cosmetic Act of the FDA
- USDA Regulations
- Federal Insecticide, Fungicide and Rodenticide Act (EPA)
- Good Manufacturing Practices, both Umbrella and Specific State and/or Local Health Regulations
- Military Standards for Processors with Government Contracts
- Labeling Regulations, administered by the FDA

Virtually all of these regulations, some of which are repetitive, are designed to produce a safe product. A “safe” product is food that is not directly adulterated or one that has not been exposed to potential adulteration during preprocessing, processing, shipping or storage.

Adulterants can be classified in three areas:

- Microbes, microbial toxins, and by-products
- Pest and pest evidence
- Foreign material

These are the objectives of regulation, in a very general sense. "But the essential factor, perhaps not clearly understood by regulatory personnel or processors, is that to conform to regulatory objectives, one must institute programs and standards not only at the processing, storage and distribution level, but throughout the entire food chain."

Regulations have proven worthwhile not only to the consumer but to industry as well. It is doubtful, however, that that statement will be heard from industry executives. Regulations have been responsible for forcing many processors into compliance with the law, but more importantly, for producing a more wholesome, high-quality product.

An example is the Federal Insecticide, Fungicide and Rodenticide Act. As of October 21, 1977, food processors are required to train and certify those individuals who apply pesticides in food plants. Prior to enactment of the regulations, like so many other aspects of sanitation, responsibility for controlling insects and rodents was left to those employees who are lowest on the totem pole, those least educated and lowest paid, the department with the greatest turnover and the highest rate of absenteeism. It is truly a miracle that in the past, serious and massive food poisoning outbreaks from pesticide misuse did not occur.

Over the past twenty-five years, there has been a trend toward larger, more sophisticated food plants with an accompanying reduction in small processing and retail establishments, except for the in-store bakeries.

Most of these larger companies have some organized approach to quality assurance and product safety but even today, many do not. The arch-enemy of sanitation, food product safety and quality control is the dollar, and those who control dollars in any given organization are often persons whose collective wisdom on food product safety is extremely limited.

The profit center concept used by most companies today reduces quality control and its measurement to mere numbers.

In most cases, sanitors are still lowest on the corporate totem pole. They often operate with the least esteem and seldom have much voice through established modes of vertical communication. When breakdowns occur in automated plants, it is usually the sanitation personnel who are called to assist and then not allowed to work overtime to complete their own assignments. In some unionized plants when sanitation is called upon to assist

manufacturing the contract states they will be paid according to the manufacturing rate - sometimes double the sanitor's hourly rate.

Quality assurance or quality control personnel have special problems. They lack equipment, personnel, and funding for adequate sampling. Often they report directly to the plant manager and depend on him for yearly evaluations. They find it difficult to obtain cooperation in implementing simple programs---such as weekly self-inspections. And when the quality assurance department is weak, raw materials and finished product specifications may become obsolete or ignored if a cheaper ingredient becomes available for use. Purchasing managers may overbuy merchandise in an attempt to save money and some of it eventually must be discarded due to insect infestation, rodents, or bacterial activity.

Suppliers of raw materials may cut corners, too, feeling that laws do not apply to them because they produce food additives rather than foods. Sometimes raw materials are shipped by common carrier and become adulterated in transit by insects, water, rodents, and even pesticides.

Engineers who repair and design new processing lines may be forced to install second hand equipment which is often rusty, infested, or otherwise unsuitable for production purposes. When this occurs, the sanitation department spends hours first cleaning, then trying to modify equipment so it can be properly cleaned in the future.

There are many, many personnel problems in sanitation and food safety, also, such as lack of trained, educated and experienced people with backgrounds in food product safety.

When a food plant runs into trouble with regulators, the statement offered as an excuse is, "they're picking on me." Though an interesting rationale, it's rarely ever valid. The real problem with food safety and quality assurance is management-or the lack of it. Some years ago the Food Processors Institute and the Institute of Food Technologists co-sponsored a course called *Control of Critical Points in Food Processing*. Somewhere in the course manual was the statement that control of critical points in food processing essentially amounts to management of complex phenomena. Somehow, as the control of the "complex" is attempted, simple management concepts often slip by.

---

---

# "CONSUMERISM" AND THE AMERICAN FOOD INDUSTRY

MARGARET J. SHERIDAN and  
ELIZABETH M. WHELAN

Can agribusiness marketing based on fear be considered pro-consumer? Many American corporations think so. Take, for example, Coors beer and "Halfies" cereal.

"No nitrosamines in Coors Beer" was the lead to advertisements heralding the discovery that some brews contained minute quantities of these carcinogenic compounds. Despite assurances from the health community that the levels found in domestic brands represented an insignificant risk, the ad implied that the products of some breweries might give you cancer.

A new cereal, "Halfies," with less sugar than other presweetened versions, recently hit the test market in Binghamton, New York. *The New York Times* observed that the advertisements appeal to parental worries about the dangers of sugar and called the Quaker cereal a "compromise product."

The *Times'* choice of words to describe "Halfies" was quite appropriate. However, the newspaper failed to note that it is the consumer who is being compromised by the ads for that cereal and the dozens of other products marketed in response to fears based on pseudoscience and emotionalism. It is clear that this trend represents a direct corporate reaction to the consumer movement, a reaction which seeks to capitalize upon, rather than solve, the problems that originally spurred the consumer advocates into action.

---

Reprinted from "ACSH News & Views," Vol. 1, No. 3, a publication of the American Council on Science and Health.

---

---

The consumer movement, through its effect on regulatory policy and public attitudes, has had a tremendous impact on the production and marketing practices of American food companies. The industry reaction has progressed through three phases. First, food companies tried to ignore the activists, later they adopted a defensive stance, and more recently some progressive companies have begun to develop an offensive strategy based on positive, constructive action.

Throughout these three phases of reaction, many food companies have tried to turn the bad press about their products into good news for the balance sheet by building profitable marketing strategies around the advocates' critical remarks. But now the consumer movement has reached a turning point and it is imperative, given the implications of current research and regulatory trends, that the food industry embark on a new and scientifically based effort to meet consumers' real needs rather than pander to their fears.

---

## Why The Food Industry?

---

Why was the food industry singled out for special attention by consumer advocates? Because during the 1950s and 60s the industry was unresponsive to emerging needs of the American public. Consumer resentment about a decade of rising food prices and concern about the safety and quality of their diet made the need for information particularly acute.

These public sentiments were an understandable, although not inevitable, reaction to modernization in the American food system which had increasingly removed the consumer from the production process. Progress brought both questions and unprecedented abundance to the American table. Now that there was "a chicken in every pot," consumers could afford to wonder: What was that chicken fed? Under what kinds of conditions was it slaughtered and packed? How was it preserved and processed?

---

## Ignorance Is Not Bliss

---

At this critical time the food industry failed to deliver adequate answers to the public, a shortcoming which Food Advisory Board director Peg Rogers believes was an evasion of responsibility. Consumer advocates, perceiving the public's need, stepped in to fill the void. "Unfortunately," says Rogers, "the activists . . . skillfully instilled distrust and chemical-phobia into the hearts of most consumers" as they attempted to fill the information gap.

The advocates also successfully communicated to consumers an important concept: there is a significant relationship between diet and health. However, while they taught, "You are what you eat," the advocates frequently distorted the related facts concerning food and safety.

---

### Industry Reaction

---

The first phase of the food industry's reaction to the criticisms from the consumer movement was based on the belief that activism was a passing trend. Therefore, industry executives developed no real strategy. Instead, they treated each new attack as if it were the last.

The polarized climate of hostility did not dissipate, however, and, as the list of controversial issues, additives and products grew, battle weary executives began to realize that the consumer movement was not a transient public relations problem. Rather, it represented a fundamental change in expectations for corporate performance.

---

### Coping With Consumerism

---

Recognition gave way to a second phase of corporate adjustment . . . but slowly. Moylan Brown, the Executive Director of the Society of Consumer Affairs Professionals in Business (SOCAP), explains that industry had to establish a mechanism for interfacing with both the consumer advocates and the public. Departments of consumer affairs were formed or reorganized to fulfill this function. According to Brown, the primary responsibility of such departments was to respond to customer complaints and provide the public with product information.

In some cases these new departments were simply a placating gesture—window dressing. In a few, where consumerism was perceived as a movement with important social implications and a potentially significant impact on profits, the new departments were formed to respond in a creative, although vaguely outlined, manner to this new challenge.

As the second phase of reaction to consumerism, departments of consumer affairs represented an organized defensive strategy. But, as the force of the movement continued to rise, it became apparent this was not enough. A third phase of industry adjustment with an offensive strategy was needed to stem the tide and channel the consumer movement's energies in directions that would benefit both the public and the corporation. Before entering this potentially constructive third phase, however, many food companies reacted to a new awareness of the power of organized consumers with products that capitalized upon the public's fears.

---

### If You Can't Beat 'Em . . . Join 'Em

---

These corporations based profitable marketing strategies on the advocates' criticisms. This led to the removal of food additives, the liberal use of terms like "organic" and "natural," and widespread fortification of products as diverse as cereals and candy bars.

An individual with a positive view of both the consumer movement and the food industry might view this proliferation of products as a pro-consumer response because it met a new customer demand and provided the public with additional alternatives in the marketplace.

More realistically, however, this marketing effort must be viewed as a successful effort to exploit the public's fears in the name of profits—a fear, ironically, that grew out of the industry's own failure to meet the more basic demands for facts and social responsibility.

Can repeated failure to meet their responsibility to the public be viewed as pro-consumer? The answer is no.

Some responsible food suppliers have recognized this. For example, when Dr. Frank's no aging diet—an unscientific regimen that relies heavily on sardines—was published it presented an opportunity for the sardine industry to realize a sharp increase in sales. The public relations representative of the Norwegian sardine industry, Botsford Ketchum Vice President Bee Marks, told ACSH their client realized that endorsing a nutritionally unsound program would be an irresponsible, although profitable, disservice to the consumer.

As the costs of coping with consumerism mount, a narrow focus on today's profits among food industry leaders may prove to be very costly in the long run. Some corporations which have chosen not to capitalize upon popular misinformation have realized this long-term effect. Pepperidge Farm cookies, which do not contain artificial additives, are recommended by many who believe that hyperactivity in children is caused by certain substances in the diet. A spokesman for the company told ACSH that if they chose to promote the absence of preservatives and artificial colors in their cookies as a desirable attribute, they would be implicitly condemning other products which do contain these substances.

---

### Regulation Proliferation

---

Marketing managers weren't the only ones listening to the consumer advocates. Legislators and regulators also had an ear attuned. Under attack for their failure to prevent the alleged food industry "abuses" activists were now "uncovering," a scramble ensued to shore up regulatory barriers in the USDA, FTC and FDA. The recent plethora of food related regulations has been the result.

Consumer advocates, public and the food industry all agree that the regulations are expensive. Higher taxes are required to pay for the army of regulators and higher food prices to cover the cost of industry compliance. While we pay these bills, debate continues on the need for certain regulations and the benefits accrued from each. Is our food safer or more plentiful as a result? There is no evidence to suggest that the answer is yes.

### APPLICATION FOR MEMBERSHIP, SUBSCRIPTION

All memberships on calendar year basis, Memberships include subscription to *Journal of Food Protection* or *Dairy and Food Sanitation*.

Name \_\_\_\_\_ Date \_\_\_\_\_  
 Address \_\_\_\_\_  
 \_\_\_\_\_ Zip Code \_\_\_\_\_

Dairy and Food Sanitation  
 Journal of Food Protection  
 Both

	<i>One Journal</i>	<i>Both Journals</i>
Direct Member annual dues .....	\$25.00	\$40.00
Affiliate Membership .....	\$22.00	\$37.00
Student Membership .....	\$ 7.50	\$15.00
(with verification of student status)		

new     renewal

### SUBSCRIPTION ORDER

All subscriptions on a calendar year basis.

Name \_\_\_\_\_ Date \_\_\_\_\_  
 Address \_\_\_\_\_  
 \_\_\_\_\_ Zip Code \_\_\_\_\_

Dairy and Food Sanitation  
 Journal of Food Protection

	<i>One Journal</i>	<i>Both Journals</i>
Educational Institutions .....	\$50.00	\$70.00
Government Agencies .....	\$50.00	\$70.00
Commercial Organizations .....	\$50.00	\$70.00

### PUBLICATIONS ORDER FORM

- 3-A Sanitary Standards
- ( ) Complete set of softbound ..... ea \$12.50
  - ( ) Complete set unbound (loose pages) ..... es \$10.00
  - ( ) Complete set softbound 3-A & Egg 3-A Stds ..... ea \$17.50
  - ( ) Egg 3-A Stds (unbound \$2.25) softbound ..... ea \$ 7.50
  - ( ) High Temp. - Short Time Standard ..... ea \$ 3.50
- Five-Year Service on 3-A Sanitary Standards
- All revisions and additions as published ..... 25 or more \$ 2.00
  - ( ) 3-A Stds ..... Five years \$ 9.50
  - ( ) Egg 3-A Stds ..... Five years \$ 5.50

- Procedures to Investigate Waterborne Illness ..... ea \$ 1.75  
 25-99 copies, \$1.50 ea., 100 or more, \$1.15 ea.
- Procedures to Investigate Foodborne Illness ..... ea \$ 1.50  
 25-99 copies, \$1.25 ea., 100 or more, \$.90 ea.

—All prices F.O.B., Ames, Iowa —  
 Order from: IAMFES, P. O. Box 701, Ames, Iowa 50010

Name \_\_\_\_\_ Date \_\_\_\_\_  
 Address \_\_\_\_\_ Zip Code \_\_\_\_\_

**PLEASE PRINT**



---



---

### Research Shift

---

The increased cost of food is a relatively obvious side effect of misdirected consumerism. But another detrimental effect is frequently overlooked: a shift in food industry research priorities away from new food technology and development. Because of its potential impact on future profits and national productivity, this outcome of advocate activity may, in the long run, be the most important.

Adolph S. Clausi, Vice President of Technical Research at General Foods Corporation, agrees. He reports that at General Foods untold numbers of research hours that could be devoted to improving our food supply are now spent "generating data to respond to irrelevant and insignificant issues based on pseudoscientific concerns or regulatory vacillation due to political pressures." What this means, of course, is less innovation in the food area and a slowing of progress in dealing with significant food technology challenges, ones that might make food more plentiful, varied, nutritious and lower in cost.

---



---

### Emerging Strategy

---

As the long-term implications of the consumer movement become apparent, far-sighted food industry leaders are beginning to enter a third phase of adjustment activities marked by offensive action. Realizing that remaining on the defensive was not enough, some companies are developing a strategy that will enable them to predict the future directions of the consumer movement and then avert confrontation through constructive action. Actively, but subtly, many food companies are entering this third phase of adjustment to the consumer movement by keeping a closer watch on both the pulse of the public and the advocates.

A recent Conference Board Survey of consumer affairs and customer relations executives found that most "like to stay in touch with those groups that have an influence on their company's business" and about half of those surveyed "make regular contact with them."

Progressive companies are now taking steps to identify and monitor changing consumer values. They realize that the emergence of the consumer movement in the late 1960s and the political response of the 70s was a sign of much more than dissatisfactions with food industry practices. It was an indicator of much larger changes in American ideological thought which have given rise to a broader perception of corporate and government roles and responsibilities. The food industry's failure to recognize and respond to these changes in attitude was a key factor contributing to the confrontation described as the consumer movement. Some companies have effectively remedied this situation and are now responding with programs designed to meet the consumer's new expectations of the corporation.

---



---



---



---

### "High-Water Mark" Or Turning Point?

---

*Fortune* identified March 9, 1977, the day the Food and Drug Administration announced its intention to ban saccharin, as "the high-water mark of consumer activism in the United States."

On the other hand, a recent Conference Board Study led CB Management Researcher E. Patrick McGuire to conclude that the consumer movement "remains remarkably healthy—and influential."

Can these opposing views of the consumer movement's future be reconciled? Yes, because a closer look indicates that a turning point has been reached. According to General Foods Vice President of Consumer Affairs, Peggy Kohl, an "institutionalization" of the consumer movement's values into both government and industry planning has taken place.

The public sector is incorporating the advocates themselves. Many of the Washington based consumer movement leaders in the 1960s and 70s have become the regulators and policy makers of the 1980s. It can be assumed that they have taken their goals and priorities with them as they changed the base of their activities.

Explaining "institutionalization" in industry, Ms. Kohl reports that individual food companies are attempting to incorporate the values and concerns of the consumer movement into their marketing practices and consumer relations efforts.

So far, the principal consumer movement concern that industry has responded to relates to additives. By choosing to exploit, rather than combat the public's fears in this area, business is encouraging the same pseudo-science and emotionalism that has led to shifts in research priorities and regulations. If these trends continue, the future impact of consumerism will prove to be a further decline in national productivity, progress and food industry credibility.

The consumer movement has instilled in the American public another concern: the achievement of good nutritional status. Hopefully, the food industry will seize upon the momentum the consumer movement has generated in this area by applying their tremendous resources toward the achievement of the goal the advocates have not reached: an informed, healthier public. The proliferation of new educational materials from food companies and the voluntary use of nutrition labels are two examples of industry efforts to do just that.

The direction the American food industry takes today in dealing with the demands of the consumer advocates is critical. The long-term impact of the movement can still be positive if industry chooses to concentrate their efforts to institutionalize the consumer movement in constructive ways. A continuation of the "I'd rather switch than fight" approach in the long run will prove to be a setback for both industry and the consuming public.

---



---

## A COMMON SENSE PSYCHOLOGY OF INSPECTION

GUY BRUPBACHER

*Louisiana Food and Drug Control Unit*

Persons in authority; whether policemen, executives, inspectors or fathers have a difficult time exercising authority because the nature of man is to resent being told what to do.

**One in authority must be constantly proving himself in his actions, justifying the trust that he asks for. He must be a leader by example, not by proclamation.**

The best advice that can be given to any regulatory agent, enforcement agent or person in authority is that he always allow the person with whom he is dealing to exercise judgement. Care must always be taken that a man be given the self-image that shows him in control of his own destiny. Overt condemnation of an act without qualification should be avoided at all costs because no one enjoys being told he is wrong even if the criticism is justified. No one likes bullying, assertive behavior. No one likes to be lectured or chided.

Few situations, if any, cannot be expressed as "choice-type" situations in which the violative person has the choice to take a better alternate route.

Use any and *all* common sense means to provide this person with a feeling of esteem and self-worth. React on a personal level only to praise. Show emotion only if it is to approve. Do not show personal anger or distaste.

On the surface, this may seem that you are deceiving or attempting to control the person, but this is not so. It is only deception if done without sincerity. It is only deception if you "talk down" or "condescend." The physical situation is there, the violations are real and you can't propose to change that. What you can change is the method of communication. You can do everything in your power to facilitate a smooth

person-to-person interaction. It is right because it is based on real, not feigned respect.

All successful human intercourse is based on mutual respect, a mutual acknowledgement that our fellow man has worth and right to self-esteem. The fastest way to totally alienate our brother, to make him completely hostile to ourselves and to our purpose, is to deny him that respect.

Never cut off a person's means of retreat. Don't create, by rhetoric or personal innuendoes, a feeling of being trapped or humiliated. Allow a person to retreat with his dignity intact. Your job is to correct wrongs, not step on emotions. You will probably have to face this person again and, remember, the simplest human contact is almost impossible if attempted in an atmosphere of hostility. We are higher on the evolutionary ladder than the ants and honey bees. We are not just lumps of protoplasm sitting there until an outside force causes us to react. We are, at all times, responsible. We, at all times, have free will. Let him have *his* free will.

And in the end, because we are dealing with human beings, with personalities that run the extremes from St. Francis of Assisi to Adolph Hitler, we are not always successful. Sometimes we become adversaries. This is all part of the human condition, a time when you just have to say, "It is so. It cannot be otherwise."

When this situation comes we must again use common sense by acting only to the extreme necessary and not one bit more.

But before we use force, before we fall back on a course which is at best unpleasant and a test of strength, let us ask ourselves if we have done everything to facilitate smooth, peaceful interaction. Have we at all times left all channels of communication open? Have we read the signs? Have we allowed our violator to express himself? Do we have wisdom enough to separate what a man says from what a man is?

As regulatory agents, we can't be overly sensitive to the spoken word, veiled threats, innuendoes, even personal comments. "Talk," it is said, "is cheap." As professionals, or more generally as human beings, interaction that degenerates to an exercise in one-upmanship is sterile, non-productive and totally frustrating. . . .

Assertiveness is no substitute for steadfastness. Arrogance is not the same as confidence. Retaliation is not bravery, nor is quiet in the face of attack a sign of cowardice.

We must at all times care. We must at all times think. We must at all times believe that man's capacity for harmony and common sense has no bounds because it is based on the greatest human attribute of all. . . LOVE.

*Reprinted from May-June, 1980 issue of Environmental News Digest, published by Single Service Institute, Washington, D.C.*

*Excerpt from an in-service training presentation conducted for the Office of Health Services and Environmental Quality, Dept. of Health and Human Services, New Orleans, La.*



***Cynthia Good is not your everyday riding enthusiast.***

Cynthia Good was paralyzed in 1961. She is now able to walk with the use of a cane. She graduated Magna Cum Laude in Business Management and received her M.P.A. in Health Administration. Today, she's logistics manager for the nursing department of the Institute of Rehabilitation Medicine of New York University.

Cynthia takes part in national and international riding competitions and is on the board of directors of two riding foundations, the Winslow and North American. She says, "Developing skills in riding produces an unparalleled sense of accomplishment and independent participation—an environment that allows people to deal with people."

*We love the same country.  
We care about the same things.  
We dream the same dreams.  
1981. The International Year  
Of Disabled Persons.*

*President's Committee on  
Employment of the Handicapped  
Washington, D.C. 20210  
The School of Visual Arts  
Public Advertising System*

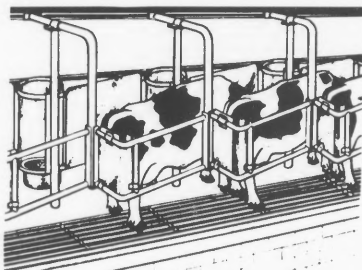
## New Product News

• *Hoffman Specialty ITT* has introduced a new version of its Thermodisc Steam Trap. The trap of the new model uses Teflon seals to prevent leakage and contamination of the condensate and steam used in sterilizing or similar operations. The trap can be used with temperatures up to 425° F., pressures from 10 to 250 psig and capacities to 2,300 lbs/hr. Contact: Hoffman Specialty, 1700 West 10th Street, Indianapolis, IN, 46222.



• *Dri-Dek interlocking floor tiles* from Kendall Plastics, Inc. offer protection from wet, slippery floors. For wet areas, Dri-Dek drains liquids and dirt while elevating feet above these unsafe materials. A special vinyl used to manufacture the tiles contains fungus inhibitors to fight bacteria. In stand-up operations, Dri-Dek's flexible design cushions against the strain of standing. The tiles quickly interlock without special tools or parts, and come in six colors. For more information and a free sample, contact Kendall Plastics, Inc., P.O. Box 787NR, Kendallville, IN 46755, 219/347-0700.

• *Anderson Instrument Co.* is producing a new remote dial thermometer for sanitary fluid processing. The thermometer can be mounted on wall or panel. Features include: a 5" dial with  $\pm 1\%$  accuracy reading; fahrenheit or centigrade degree scale reading; polycarbonate crystal to prevent breakage; up to 100' PVC-coated bronze armored capillary to reduce pulsation and vibration; with mercury, liquid, or gas fill; and water-tight construction. Contact: Anderson Instrument Company, RD 1, Fultonville, NY 12072.



• *A new herringbone parlor stall, the Easystall™*, offers benefits of suspended stall arches for easy access, with the low cost of a durable standard weight stall. Designed for cow fit, cow flow and operator comfort, the Surge Easystall™ provides plenty of room for milking and quick clean-up, yet allows space for automated equipment. Brackets traditionally used in herringbone stalls have been eliminated due to the semi-welded design. Easystalls are constructed of high-strength steel tubing and are finished with an epoxy powder coat for protection and easy cleaning. Contact your Surge dealer or write: Babson Bros. Co., 2100 South York Road, Oak Brook, IL 60521.

• *The Zero BETA-Z computer* controls the feed ration of individual cows and provides read-out information on cows still entitled to feed or the amount of feed left. The Zero BETA-Z computer can be located any distance from the barn and features a tamper-proof switch and back-up power supply. A personalized dura-collar identification for each cow and the Feed Saver Manger completes the system. Contact: Zero Manufacturing Company, 811 Duncan, Washington, MO 63090 or any Zero authorized dealer.

• *Crepac, Inc.* has published a 28-page brochure describing its line of volute series stainless steel pumps. The pumps are available in both sanitary and industrial models, in capacities up to 560 GPM, a wide range of seals and other features are described. A quick selection chart in the brochure simplifies the sizing of the proper pump for specific applications. For copies, write E. V. Keith, Marketing Communications Manager, Crepac, Inc., 8303 W. Higgins Road, Chicago, IL 60631. Ask for bulletin A-1-100.

• *A chemical test kit* for screening of bulk asbestos samples is available from the Anatole J. Sipin Co. The kit is used to detect asbestos

in building material by the K<sup>2</sup> method, developed at NIOSH. The K<sup>2</sup> Test is a colorimetric spot test for magnesium and for iron, contained in the three most common forms of asbestos. Special technical training is not required for use of the Sipin K<sup>2</sup> Test Kit. The procedure is simple and the instructions are easy to follow. The test can be conveniently performed in the field. The K<sup>2</sup> Test Kit is especially useful for identifying existing building components and materials that should be replaced because they may contain asbestos. Contact: Anatole J. Sipin Co., Inc., 505 Eighth Avenue, New York, NY 10018.



• *Fabricated from stainless steel, Mueller Half Pipe Coil Jackets* are designed for use where high flow rates of heating or cooling mediums are required. Mueller Half Pipe Coils can be installed on the shell or bottom head of the Reactors to fit individual requirements. The top head can be custom fabricated with sight and light glasses, inlet flanges and manway closures. For more information, contact the Paul Mueller Co., Box 828, Springfield, MO, 1-800-641-2830.

• *The Multispec M*, a high-speed, semi-automatic, infrared analyzer to measure fat, protein, carbohydrate and total solids or solids-nonfat (SnF) in milk and other dairy products, is available from Berwind Instrument Group's Analytic Equipment Division. No accessories are required for the analysis of fluid milk samples. For precise measurements of other dairy products, the Multispec is designed to interface with a desk-top microprocessor or other external computer systems. A high-speed printer and programmable calculator are available as optional accessories. Contact the Berwind Instrument Group, Analytic Equipment Division, 30100 Tele-



graph Road, Suite 378, Birmingham, MI 48010; or call, toll-free 1/800-521-7816 (in Michigan and Canada, dial 1-313/644-2861).



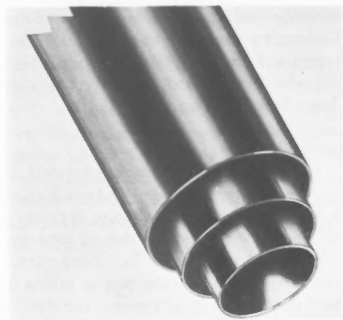
• An eight-page brochure, presenting the Commander series of automatic, high pressure cleaning and sanitizing systems, is available from Chemidyne Corporation. Featured are the Commander I and II cleaning systems and the Commander III, a central-flush sanitizing system. Commander systems are modular and provide centrally controlled pressure rinsing, foaming and sanitizing, with as many drop stations as are needed. Contact: Chemidyne Corporation, 8679 Freeway Drive, Macedonia, OH 44056, 216-467-1400.

• *Ladish Tri-Clover's Bulletin ST* outlines the sanitary standards followed in specifying and polishing welded tubing. It explains guidelines established for tubing by the 3A Sanitary Standards Committee and describes OD and ID polishing techniques required to meet compliance standards, such as the difference between a "buffed" finish and a surface finish that is "polish/ground." Tri-Clover stainless steel welded tubing is available in type 304 and 316 in both polished and unpolished OD and ID surfaces. For additional details send for Bulletin ST, Ladish Co., Tri-Clover Division, Kenosha, WI 53141.



• *Cross Fire<sup>TM</sup>*, a 3% multipurpose spray from Penick, is a synthetic pyrethroid that kills food storage pests at half the cost of natural pyrethrum. Designed for application in ULV equipment, mechanical misting sprayers or thermal foggers, it can be used alone as a flush/fogger, or with a residual pesticide. While showing no harmful effects on man in normal application, *Cross Fire<sup>TM</sup>* is effective against a wide range of insects. *Cross Fire<sup>TM</sup>* has a USDA "S" classification for use in food processing plants and warehouses. For more information, write: Penick Corporation, Pesticides Division, 1050 Wall Street West, Lyndhurst, NJ 07071.

• A new brochure that explains how to select coatings for interiors and exteriors of food processing plants is available from PPG Industries, manufacturer of Pittsburgh Paints. The 16-page booklet lists coatings accepted by the USDA for non-food-contact use in areas such as food processing, beverage, dairy and similar plants, and recommends specific coatings systems for various in-plant surfaces. "Coatings for the Food Industry," may be obtained by writing PPG Industries, 10 North, One Gateway Center, Pittsburgh, PA 15222.



• *Sanitary Processing Equipment Corp.* resumes manufacturing of its "Triple-Tube" Heat Exchangers. The exchanger heats liquid products by steam, vacuum steam or hot water recirculation to temperatures up to 300° F. It also cools liquid products by well water, ice water, glycol or direct expansion freon to 32° F. An inner tube, intermediate tube and outer tube are concentrically mounted. The stainless steel "Triple-Tube" can operate for capacities ranging from 1,000 lbs. to 120,000 lbs. per hour. In operation, the heating or cooling medium travels simultaneously in one direction through the inner tube and the annular space between the intermediate outer tube while the product flows in the opposite direction through the annular space between the inner and the intermediate tube. "Triple-Tube" meets USPHS, USDA and all leading State Health Department requirements for

CIP cleaning. It also carries the 3A symbol. For further information contact Robert Feldmeier at Sanitary Processing Equipment Corp., P.O. Box 26, DeWitt, NY 13214.

• A free brochure describes field test kits and laboratory equipment for public health inspection, sanitation testing in dairy and other industries, control of chlorination, and sewage and waste water treatment. Ranging from test papers to electronic laboratories, LaMotte Chemical's new brochure offers a choice of field test procedures. A one-step tablet tests feature sharp, rapid color changes which indicate whether a sanitizer's strength is above or below a required concentration. The electronic instrument section features direct-reading colorimeters, digital and analogue pH meters, and conductivity meters - all battery-powered for on-site testing. The brochure describes other combination outfits for swimming pool water testing, air pollution sampling and measurement, sanitizer testing, and sewage and waste water treatment. The brochure is available from LaMotte Chemical Products Company, Box 329, Chestertown, MD 21620, 301-778-3100.



• The Riken RI-550A gas analyzer can be calibrated by a replaceable span gas canister located inside the unit. A mechanical reference calibration filter is also provided. The Riken RI-550A is a single gas, lightweight, non-dispersive infrared analyzer. It lists for under \$2,000. The unit is applicable for the measurement of combustion processes, hazardous environments, process streams, and food and beverage environments. Contact: Martin H. Adelman, CEA Instruments, Inc., 15 Charles Street, Westwood, NJ 07675, 201-664-2300.

• Detailed specifications of spherical valves for solids or slurries flow control are given in a brochure from General Machine Company of New Jersey, Inc. In addition to the valve specifics, the brochure incorporates a se-

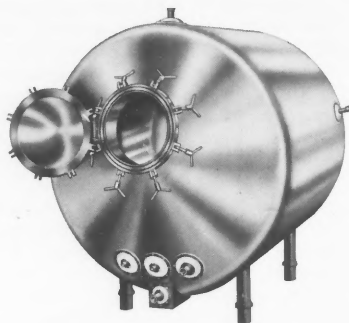


lection guide that discusses: flow capacity; valve actuators and controls; discs and positioners; disc orientation; materials selection; clearances and tolerances; elevated and low temperatures and pressures. For copies of the brochure contact: General Machine Company of New Jersey, Inc., 55 Evergreen Avenue, Newark, NJ 07114, 201-242-7405.



• *New 3 in 1 Continuous-Transition Phase Microscopes* from Unitron Instruments, Inc. offer more than phase contrast images. By raising or lowering the condenser, the specimen can be compared successively by darkfield and brightfield, as well as phase contrast. The microscopes are offered in monocular, binocular and trinocular models. All are equipped with 4X, 10X, 40X and 100X objectives plus 10X widefield eyepieces to give magnifications 40X-1000X. Accessories extend magnifications still further. Contact Unitron Instruments, Inc., 175 Express Street, Plainview, NY 11803, (516) 822-4601.

• *Walker Stainless Equipment Company* has a new aseptic storage tank which provides rapid and complete sterilization of internal tank surfaces with live steam under pressure. The tank is rated 50 P.S.I. internal pressure and full vacuum service at 300 F. Expansion joints between inner and outer jackets isolate fittings from the outer jacket as the tank expands and contracts with heating and cooling. An 18" diameter manhole with a bolted, hinged outside sealing door, features a double "O" ring gasket bacteria barrier in the front head to assure sterilization at all times. The unit meets all approved and pending 3A



Sanitary Standards and is tested in accordance with the ASME Code.

• *Aeration from bottom-laid valved tubing* effectively treats wastewater from milk processing says the superintendent of a combined industrial-domestic sewage treatment plant in Lowville, New York. The Hinde Air-Aqua installation there requires 90 hp to provide 98 percent BOD removal from flows up to 1.5 mgd and 4,300 lbs. BOD per day. Despite BOD shock loads from cheese-making which reach 40,000 ppm, effluent meets EPA standards. For copies of the paper and help designing a treatment plant capable of handling industrial wastes write: Hinde Engineering Company 654 Deerfield Road, Highland Park, IL 60035; in Canada: Hinde Manufacturing Limited, 260 Burlington Street East, Hamilton, Ont L8L 4H4.

• *Constructed of sanitary stainless steel, the Cascade tube/pipe coupling and repair clamp* is designed to repair and add pipe or tubing to existing water, chemical and air transport systems and machinery. The clamp permanently repairs and couples pipe or tubing for both vacuum and liquid systems. The clamp is designed for use with or without a rubber gasket, and can accommodate pipe from 1 1/2" o.d. to 48" o.d. with widths from 4" to 48". For details and more information, write Cascade Manufacturing, 6275 South 143rd Place, Tukwila, Washington 98188.

• *A thread sealant* introduced by Loctite Corporation reduces the incidence of leakage--one of industry's costliest problems. Named Loctite PST® Pipe Sealant for Stainless Steel And All Other Metal Fittings, it cures on almost all metal fittings, including stainless, monel, galvanized and plated. Both the National Sanitation Foundation and USDA have approved Loctite PST Pipe Sealant for food related equipment. PST Pipe Sealant contains a lubricant to eliminate galling and seizure when assembling stainless fittings. It seals cast iron, malleable steel,

brass, bronze, lead, chromium, copper and almost any other metal. For further information contact: Technical Service Department, Loctite Corporation, 705 North Mountain Road, Newington, CT 06111.



• *Sanitary Processing Equipment Corp.* produces a vertical storage tank for edible liquids with an automatic "Spray-Up" cleaning system. In addition, it features inside overflow and venting arrangements that prevent CIP, vent, and overflow line freeze-ups and tank collapse. The "Spray-Up" device, located near the bottom of the tank, instead of the top as in conventional silos, scrubs ceilings, sidewalls, vents, and overflow tubes. Ground level servicing eliminates the expense, installation, and dangerous use of high ladders and catwalks. Contact: Sanitary Processing Equipment Corp., Butternut Drive, East Syracuse, NY 13057.

• *The Milli-R/Q water Purifier* produces 3 liters per hour of Type II laboratory grade water (1 to 3 megohm-cm resistivity). It is complete and self-contained. Water passes first through a 5-micron prefilter, then through a spiral-wound reverse osmosis (RO) cartridge to remove more than 90% of all dissolved and suspended impurities. This is followed by the 3-stage Trionex Cartridge, which contains activated carbon, a mixed-bed of nuclear grade ion exchange resins and a bacterial retentive membrane filter. Bulletin WS211 describing the Purifier is available free from Continental Water Systems Corporation, (a subsidiary of Millipore Corporation), P.O. Box 20018, El Paso, TX 79998, 800-351-2342.

# Calendar

Feb. 2-4---LAW AND THE FOOD INDUSTRY. Three-day class sponsored by Extension Service, University of California-Davis. Contact: University Extension, University of California, Davis, CA 95616, 916-752-0880.

Feb. 3-4---FOOD PROCESSORS-SANITATION WORKSHOP. Mission De Oro, Santa Nella, CA. Contact: Paulette De Jong, Food Science and Technology, University of California, Davis, CA 95616, 916-752-1478.

Feb. 10-11---70th ANNUAL OREGON DAIRY INDUSTRIES CONFERENCE. Valley River Inn, Eugene, OR. Contact: Mary K. Moran, ODI Secretary, Dept. of Food Science Room 100, Wiegand Hall, Oregon State University, Corvallis, OR 97331, 503-754-3131.

February 11-12---DAIRY AND FOOD INDUSTRY CONFERENCE. The Ohio State University. Contact: John Lindamood, Dept. of Food Science and Nutrition, 2121 Fyffe Road, The Ohio State University, Columbus, OH 43210.

Feb. 15-18---NATIONAL MASTITIS COUNCIL MEETING. Executive Inn, Louisville, KY. Contact: John Adams, NMC, 30 F Street NW, Washington, DC 20001.

Feb. 23-25---1981 EDUCATIONAL CONFERENCE FOR FIELDMEN AND SANITARIANS. Ramada Inn, Hurstborne Lane, Louisville, KY. Contact: W. Dale Marcum, 239 Woodhill Lane, Frankfort, KY 40601.

Feb. 23-25---SENSORY EVALUATION METHODS. Atlanta, GA. Shortcourse sponsored by IFT. Fee: \$200. Hotel Reservations: Hyatt Regency Hotel, 265 Peachtree St. NE, Atlanta, GA 30303. Registration: Institute of Food Technologists, 221 N. LaSalle St., Chicago, IL 60601.

Feb. 24-25---DAIRY INDUSTRY WORKSHOP, sponsored by Virginia Association of Sanitarians and Dairy Fieldmen. Donaldson Brown Continuing Education Center, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061. Contact: W. J. Farley, Secretary-Treasurer, AVSDF, Rt. 1, Box 247, Staunton, VA 24401.

Feb. 23-March 6---ADVANCED MICROANALYTICAL SANITATION. Two-week course, sponsored by American Association of Cereal Chemists. Course will be held at O'D. Kurtz Associates, Inc., Melbourne, FL. Fee: \$1000. Contact: Ruth Nelson, Short Course Coordinator, AACC, 3340 Pilot Knob Road, St. Paul, MN 55121, 612-454-7250; or James W. Gentry, O'D. Kurtz Associates, Inc., 2411 S. Harbor City Blvd., Melbourne, FL 32901, 305-723-0151.

March 4---SOUTHERN CALIFORNIA FOOD PROCESSORS SANITATION WORKSHOP. Inn at the Park, Anaheim, CA. Contact: Paulette De Jong, Food Science and Technology, University of California, Davis, CA 95616, 916-752-1478.

March 10-11---NEW YORK STATE CHEESE MANUFACTURERS' ASSOCIATION, ANNUAL CONFERENCE. Hotel Syracuse, Syracuse, NY. Contact: D. K. Bandler, 11 Stocking Hall, Cornell University, Ithaca, NY 14853.

March 11-13---PRACTICAL STATISTICAL METHODS FOR THE FOOD, DRUG AND COSMETIC INDUSTRIES. Holiday Inn, Mundelien, IL. Sponsored by Northeastern Illinois Section and the Food, Drug and Cosmetic Division, American Society for Quality Control. Contact: Keith Bitzinger, Abbott Laboratories, Dept. 916, Abbott Park, North Chicago, IL 60064, 312-937-4975.

March 23-27---MOLDS AND MYCOTOXINS IN FOODS. Short course sponsored by American Association of Cereal Chemists and the University of Minnesota. Course will be held at Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108. Course fee: \$375. Contact: Ruth Nelson, Short Course Coordinator, AACC, 3340 Pilot Knob Road, St. Paul, MN 55121, 612-454-7250, or Office of Special Programs, 405 Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108, 612-373-0725.

March 23-25 AMERICAN CULTURED DAIRY PRODUCTS INSTITUTE ANNUAL TRAINING SCHOOL AND JUDGING CONTEST. El Tropicano Hotel, San Antonio, TX. Contact: C. Bronson Lane, ACDPI, PO Box 7813, Orlando, FL 32854.

March 25-27---SOUTHEASTERN REGIONAL LABORATORY DESIGN SEMINAR. Atlanta, GA. Fee: \$400. Contact: Norman V. Steere & Associates, Inc., 140 Melbourne Ave., SE, Minneapolis, MN 55414, 612-378-2711.

May 13-15---3A SANITARY STANDARDS COMMITTEE MEETINGS. Galt House, Louisville, KY. Contact: Harold Thompson, DFISA, 5530 Wisconsin Ave., Room 1050, Washington, DC 20015.

May 18-21---INTERSTATE MILK SHIPPERS CONFERENCE. Hot Springs, AK. Contact: Herb Vaux, Indiana State Board of Health, 1330 W. Michigan St., Indianapolis, IN 46206.

June 7-10---IFT 81, 41st ANNUAL MEETING AND FOOD EXPO, Institute of Food Technologists. World Congress Center, Atlanta, GA. Contact: IFT, Suite 2120, 221 North LaSalle St., Chicago, IL 60601, 312-783-8424.

June 21-24---24th ANNUAL CANADIAN INSTITUTE OF FOOD SCIENCE AND TECHNOLOGY. Theme: "Research: Whose Business?" Winnipeg Convention Centre/Holiday Inn, Winnipeg, Manitoba, Canada. Contact: Barry McConnell, Conference Chairman, Dept. of Food Science, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

Aug. 9-12---IAMFES ANNUAL MEETING. Sheraton-Spokane, Spokane, WA. Contact: IAMFES, PO Box 701, Ames, IA 50010, 515-232-6699.

Aug. 17-21---21st ANNUAL MEETING, HOSPITAL, INSTITUTION & EDUCATIONAL FOOD SERVICE SOCIETY. Houston, TX. Contact: HIEFSS, 4410 West Roosevelt Road, Hillside, IL 60162.

Nov. 15-19---FOOD AND DAIRY EXPO '81, Dairy and Food Industries Supply Association. World Congress Center, Atlanta, GA. Contact: Fred Greiner, DFISA, 5530 Wisconsin Ave., Room 1050, Washington, DC 20015.

# Food Service Sanitation Notes



As a special feature to address current problems and questions on food service equipment and operation, *Dairy and Food Sanitation*, in collaboration with the National Sanitation Foundation will publish a "featurette," "FOOD SERVICE SANITATION NOTES," devoted to YOUR questions.

You're invited to submit any question or problems you need answered or which you feel should be aired. Questions and Answers will be published in *Dairy and Food Sanitation*.

To begin the series, it's appropriate to present some commonly asked questions about NSF.

## WHAT IS THE NATIONAL SANITATION FOUNDATION?

The National Sanitation Foundation (NSF), is a philosophy, more than a tangible thing. It is usually beneficial to describe NSF by what it does.

## WHAT DOES NSF DO?

NSF provides a forum within which representatives of industry, government and user organizations come together to establish minimum standards for environmental products, equipment, services, and devices.

NSF sponsors or conducts impartial research to determine facts relative to environmental problems and needs, and to find improved testing methods.

Industry voluntarily submits equipment and products to NSF for evaluation, to determine if they meet the minimum standards.

If products evaluated conform to NSF standards, they are listed by NSF. Makers of the equipment are also authorized to use the NSF seal

on the product as evidence of conformance.

Through conferences, seminars, publications and advertising, people are made aware of the NSF role in helping protect the public health.

## WHAT ARE THE BENEFITS OF NSF?

Nationally recognized, consensus standards are provided, together with a ready and easy method of ascertaining if a product meets standards.

Regulatory agencies and industry have found the basic philosophy and methodology to be a successful technique in arriving at uniform and mutually satisfactory standards for acceptance of products in the marketplace which are subject to regulatory control. A uniform design permits cost effective manufacture and public health safe products for public use.

Regulatory agencies do not normally have adequate staff and laboratory facilities for comprehensive evaluations. Many governmental agencies are not authorized to test and certify proprietary products for public use.

The consumer or user of products listed by NSF can generally rely on acceptance by the regulatory agencies to meet code requirements.

Address any problems or questions you wish answered or clarified to:

Food Service Sanitation Notes  
National Sanitation Foundation  
P. O. Box 1468  
Ann Arbor, Michigan 48106

Selected responses will be published in a scheduled issue of *Dairy and Food Sanitation*.

## Staphylococcal Food Poisoning at Graduation Banquet

Almost half the persons attending a graduating class banquet in Mason County, WV last May were affected by acute gastrointestinal disease. Of the 33 persons at the banquet, 17 had nausea and vomiting, diarrhea, abdominal cramps, and pain. Of the 17, ten were hospitalized and the remaining seven were treated at the hospital emergency room.

Potato salad was implicated in the disease transmission. The attack rate of persons who ate the potato salad was 79%, while 0% of those who did not eat the potato salad became sick. Coagulase-positive *Staphylococcus aureus* was isolated from the potato salad, chocolate pie, and deviled eggs. Two food handlers had lesions on their hands, and *S. aureus* was isolated from their hands.

All food except cake served at the banquet was prepared in a private home. Potato salad, ham, and deviled eggs had been stored at room temperature from 4½ to 12 hours, with potato salad having been held at room temperature for a minimum of 6½ hours and above 45° F for an additional 17 hours before it was served.

MMWR editors noted that staphylococcal food poisoning is the major cause of foodborne disease in the US and staphylococci are the second most common bacterial pathogens identified in foodborne outbreaks. Lesions on the hands of food handlers are a common source of the contamination and when food is improperly refrigerated or otherwise mishandled, organisms in the contaminated food multiply, producing toxin and causing disease.

Excerpted from *Morbidity and Mortality Weekly Report*, Vol. 29, No. 30, August 1, 1980.

## Salmonella hadar Incidence Increases

Data from England and Wales shows that foodborne disease outbreaks attributed to *Salmonella hadar* have increased dramatically since 1974.

Until 1971, only 8 strains of the serotype had been isolated from humans in England. In 1975, *S. hadar* was implicated in 3% of all human isolations, and in 1979 it was responsible for 15% of all human isolations in both England and Wales. It is now the second most common serotype isolated from humans in these two countries, with *S. typhimurium* first, at 35% of all human isolations.

*S. hadar* became established in flocks of the largest turkey breeder in Britain in 1973-74. The infected breeding stock was distributed throughout the country, spreading the serotype. The recycling of waste products from processing plants also contributed to the spread, and *S. hadar* is now common in broiler chicken flocks. The serotype was particularly entrenched in flocks of large turkeys produced for commercial catering, and it appears possible that particular genetic lines of turkeys are affected.

Turkey was the vehicle of infection for 46% of all general outbreaks of the disease caused by *S. hadar* between 1975 and 1979. Many of these cases occurred in restaurants and hotels, and follow-up investigations indicated that poor food protection practices--insufficient thawing, inadequate cooking, and storage of cooked meat without refrigeration--were involved in the incidents.

Excerpted from *Morbidity and Mortality Weekly Report*, Vol. 29, No. 42, October 24, 1980.

# National Mastitis Council Program

February 15-18, 1981  
Louisville, Kentucky

Sunday-February 15

2:00-5:30 p.m. Registration-Lobby  
4:00 p.m. Committee Meetings-Called by Chairman

Monday-February 16

8:00 a.m.-12:00 Noon Committee Meetings-Called by Chairman  
1:00-3:00 p.m. Committee Meetings-Called by Chairman  
3:00-5:00 p.m. Board of Directors Meeting

Tuesday-February 17

8:00 a.m.-5:00 p.m. Registration-Lobby

## GENERAL SESSION

8:30 a.m. Call to Order  
8:35 President's Address  
J. J. Jezeski-Gainesville, FL  
8:50 Nothing Happens Until you Get the Dairy-  
man Involved  
Fred Meyer-Minneapolis, MN

## SYMPOSIUM ON STRAY ELECTRIC CURRENT IN MILKING BARNES

9:20 a.m. Stray Electric Current: Economic Losses,  
Symptoms And How It Affects Cows  
Grady Williams-Puyallup, WA  
9:50 BREAK  
10:05 Stray Electric Current: Demonstration With  
A Farm Distribution System Model  
Harold Cloud\* -St. Paul, MN  
Robert Appleman-St. Paul, MN  
10:55 Stray Electric Current: Diagnosis and  
Corrective Action  
Robert Appleman\* -St. Paul, MN  
Harold Cloud-St. Paul, MN  
12:00 LUNCH

## GENERAL SESSION

### Symposium on Stray Electric Current in Milking Barns [continued]

1:15 p.m. Stray Electric Current: Voltages Tolerance  
Levels/Installation of Equi-Potential Planes  
Robert White-Petersborough, Ontario  
1:35 Stray Electric Current: Prevention By Proper  
Installation Of Equipment  
Joe Scolaro-Oak Brook, IL  
1:55 Stray Electric Current: Questions and  
Answers  
Panel Of All Speakers  
2:25 Mastitis Control in Denmark  
Olaf Klastrup-Ringsted, Denmark  
3:05 BREAK  
3:20 Genetic Resistance To Mastitis  
Robert Miller\* -Beltsville, MD  
W. D. Schultze-Beltsville, MD  
3:50 Panel Discussion: Priorities In Future  
Mastitis Research  
Paul Thompson-Madison, WI  
Don Jasper-Davis, CA

Barry Stevens-Columbia, MO  
F.H.S. Neubould-Guelph, Ontario  
ADJOURN

5:15 p.m.

## CONCURRENT SESSIONS

7:45-10:00 p.m. Concurrent Session A-Bovine Practitioners  
The Role Of Cell-Mediated Immunity in  
Staphylococcal Mastitis  
Stanislaw Targowski\* -Columbus, OH  
Phillip Sears-Columbus, OH  
Mycoplasma And Prototheca Infections-  
Refractory Mastitis On The Increase  
Leslie Wager-Canton, NY  
A Teat Barrier Film For Prevention Of  
Mastitis  
Ralph J. Farnsworth-St. Paul, MN  
Therapy Of Acute Toxic Mastitis  
Vaughn Larson-St. Paul, MN  
A Practitioner's Approach To Mastitis  
Control  
Roger Meads-Hortonville, WI  
7:45-10:00 p.m. Concurrent Session B-Extension-Sanitarrians  
Fieldmen  
A Fieldman's Encounter With Mastitis  
Ed Kaeder-St. Paul, MN  
Minnesota Mastitis Council Moves Out On  
The Farm  
Donald Berg-Minneapolis, MN  
Handling The Problem Herd  
Carl Webster-Davenport, IA  
Value And Practical Use Of DHIA Somatic  
Cell Count Reports  
Don Wesen-Raleigh, NC  
Allen Bringe-Madison, WI

Wednesday-February 18

## GENERAL SESSION

8:15 a.m. Some Restatements And Further Thoughts  
On Milking Management  
William Merrill-Ithaca, NY  
9:00 NMC BUSINESS MEETING  
9:45 BREAK  
10:00 A Sensitive And Fast On The Farm Test For  
Antibiotics In Milk  
Rodney Brown-Logan, UT  
10:30 Scandinavian Approach To Practical Masti-  
tis Control  
Olaf Klastrup-Ringsted, Denmark  
11:00 The Nebraska Mastitis Awareness Program  
U.N.L. "Team"  
Don J. Kubik\* -Concord, NE  
P. H. Cole-Lincoln, NE  
Jerry Bodman-Lincoln, NE  
Duane Rice-Lincoln, NE  
11:30 Review Of NMC Educational And Teaching  
Materials  
Richard Webber-Washington, D.C.  
12:00 FINAL QUESTIONS  
12:30 p.m. NMC BOARD OF DIRECTORS LUNCH  
1:30 NMC BOARD OF DIRECTORS MEET-  
ING

\* Denotes Presenter

## News and Events

### Scott Joins ADMI/WPI Staff

John A. "Tony" Scott has joined the staff of the American Dry Milk Institute (ADMI) and the Whey Products Institute (WPI), with responsibilities in the Membership Services area.

Prior to joining the Institutes, Scott worked for Illinois Power Company where he served as an energy use adviser to farmers, builders, and homeowners, and also was responsible for community relations.

Raised on a grain and livestock farm near Scottland in east-central Illinois, Scott attended the University of Illinois, Champaign-Urbana, where he received a Bachelor of Science degree in agricultural communications.

ADMI and WPI are not-for-profit national trade associations representing the dry milk and whey processing industries. Both associations are comprised of domestic and international firms who process dry milk and whey products, as well as domestic and international companies that supply equipment and services to the industries.

### AACC Elects New Officers

The American Association of Cereal Chemists (AACC) installed members of its new Board of Directors at the 1980 AACC Annual Meeting held recently in Chicago.

Serving as AACC President is Dr. William J. Hoover, President of the American Institute of Baking in Manhattan, Kansas. Dr. Hoover, who obtained his B.S., M.S. and Ph.D. degrees in food science from the University of Illinois, served as Director of the Food and Feed Grain Institute and Head of the Department of Grain Science and Industry at Kansas State University before joining the American Institute of Baking. Also, he has been employed as a food technologist at the U.S. Quartermaster Food and Container Institute; as assistant director of the Refrigeration Research Foundation; as manager of technical services and administrative vice president of Corn Industries Research Foundation. Dr. Hoover has authored or co-authored more than 60 scientific papers and is co-inventor on five patents. He is an internationally recognized expert on cereal grains and has devoted much of his professional life to agribusiness development and the nutritional improvement of cereal-based foods and diets in the developing countries.

AACC's other new officers include President-Elect John J. Watson, president of Watson Foods Co., Inc., Flour Enrichment Products Co., Inc., and Polymer Films, Inc. of New York, NY. Clyde E. Stauffer, Secretary, is supervisor of Product Development and Technical Services for the Baked Foods Division of the Kroger Co., Cincinnati, OH. Warren M. Schwewe, Treasurer, is director of Quality Control for Consumer Foods at General Mills, Inc., Minneapolis, MN. Immediate Past-President of AACC, Roland A. Morck, is now serving as Chairman of the Board. Dr. Morck is retired vice-president of Research for Nabisco, Inc., Fair Lawn, NJ.

The new Board also consists of four Directors: John Halverson, Peavey Co., Chaska, MN; Beverley N. Thompson, Robin Hood Multifoods Ltd., Wollowdale, Ontario, Canada; Doyle H. Waggle, Ralston Purina Co., St. Louis, MO; and Halleck Warren, Interstate Brands Corp., Kansas City, MO.

The AACC is an international scientific society founded in 1915. Members include some 3000 scientists who are employed by government laboratories, universities and the cereal processing industry, to conduct research, develop new cereal-based food products and supervise quality control programs.



Karl Jones, left, receives Nolan Award from G. Richard Schreiber, NAMA.

### Jones Honored by NAMA

Karl Jones was one of two public health officials honored by the National Automatic Merchandising Association (NAMA) at its national convention in Kansas City in late October. Both men honored have long records of service on the NAMA Automatic Merchandising-Health Industry Council (AMHIC).

Jones, of the Purdue University Student Health Service, was honored with the 1980 Arthur Nolan Award. He has been a member of AMHIC since 1959 and served as its co-chairman from 1963 to 1974. He authored the nation's first statewide uniform vending sanitation code which was adopted by Indiana in 1958. He is a longtime IAMFES member and chairman of IAMFES' *Committee on Food Equipment Sanitary Standards*.

The Nolan Award, named after a vending industry public health pioneer, was established by NAMA to honor outstanding service in sanitation.

Captain William F. Bower, Deputy Director of FDA's Bureau of Food Protection, Washington, was presented with a Special NAMA Award for 23 years of distinguished service on AMHIC. He has represented the federal government on AMHIC since he joined FDA in 1963.

Bower is a founding member of the Council and attended its first meeting in Philadelphia in 1957. From 1961 to 1963 he served as co-chairman. He received the Arthur Nolan Award, NAMA's highest public health recognition, last year. He is the author of the highly regarded Oregon State Vending Regulations and of the 1965 and 1978 revisions of the FDA/Public Health Service Vending Code.

From 1957 to 1961 he represented the Oregon State Board of Health and the National Association of Sanitarians on AMHIC.

\* \* \*

A chemical process has been found which can break down PCB's. Developed by Goodyear Tire & Rubber Co., it could lead to less dangerous disposal of waste products.

Source: Market Frontier News, Dairy Society International, 3008 McKinley St., NW, Washington, DC 20015



## Comment Period on PCB Proposal Extended to March 4

The deadline for public comments has been extended to March 4 on the USDA's proposal to ban liquid polychlorinated biphenyl (PCB) from federally-inspected meat, poultry and egg product plants, Assistant Secretary of Agriculture Carol Tucker Foreman said.

Foreman said the comment period was extended at the electrical utility industry's request to provide the industry with sufficient time to detail the economic impact of the proposal for USDA's administrative record.

Under the proposal, companies regulated by USDA's Food Safety and Quality Service would remove equipment or oil containing PCB from their plants. Companies could also flush PCB-containing oil from equipment and dispose of it under approved procedures. Equipment containing less than three pounds of PCB fluids would be exempted from the regulations, Foreman said.

The FDA and the EPA have issued similar proposals for companies under their jurisdiction, Foreman said. The comment period for their proposals is also being extended to March 4.

A public meeting on the three agencies' proposals was held Nov. 7. Most of the testimony at the meeting concerned the possible adverse economic impact of the proposed actions on the regulated industries, Foreman said. Transcripts of that meeting are available from Annie Johnson, room 2637-S, FSQS-USDA, Washington, D.C., 20250. Comments on the USDA proposal should be sent, by March 4, to the same address.

PCB is a class of toxic industrial chemicals which have been widely used since 1929 in transformers, heat transfer equipment and capacitors. This equipment is present in many industrial plants serving the food industry, and industrial accidents have caused the chemical to enter the food chain, causing major contamination incidents, Foreman said.

The proposal was published in the May 9 *Federal Register* and notice of the comment period extension was scheduled to be published in the Dec. 2 *Federal Register*.

## Food Engineering Award Nominations Open

Nominations for the 1981 Food Engineering Award are being accepted by the Dairy and Food Industries Supply Association (DFISA) and American Society of Agricultural Engineers. (ASAE) sponsors of the award. Deadline for nominations is Feb. 1, 1981.

The award is presented biennially for original contributions in research, development or design or in management of food processing equipment or techniques of significant economic value to the food industry and the public. The award consists of a gold medal, certificate and \$2,000 cash.

Candidates will be evaluated on the application of human performance and progress to engineering and technology, development of machines, processes or methods for the food industry, and leadership in the professional development of the food industry.

Nominations should include a 500-word statement describing the nominee's achievements and recognition in the food industry, how he or she meets the award criteria, a professional and business history, published works, educational background and professional memberships.

Nomination may be made by letter or on an official form, available from James L. Butt, ASAE executive secretary, 2950 Niles Road, St. Joseph, MI 49085.

## Pieper, Baird and Walter Relected BISSC Officers

William E. Pieper was unanimously reelected chairman, and J. Allen Baird was unanimously reelected vice-chairman at the 66th meeting of the Baking Industry Sanitation Standards Committee (BISSC), held in Washington in September.

Pieper represented the Biscuit and Cracker Manufacturers Association on the BISSC Board of Directors for many years. He also served on many BISSC task committees and is chairman of the Sanitation Committee of the American Society of Bakery Engineers. He represents that organization on the BISSC Board of Director.

Baird is executive vice president of Mrs. Baird's Bakeries, Inc. He has been active on many committees and is currently chairman of the BISSC Finance and Marketing Promotion Committees. He represents the American Bakers Association on the BISSC Board of Directors.

Raymond J. Walter, was unanimously reelected secretary-treasurer. He serves as BISSC counsel at its executive offices, 521 Fifth Avenue, New York, NY 10017.

Previous winners were Dr. Arthur W. Farrall, professor and chairman emeritus of the agricultural engineering department, Michigan State University; Robert P. Graham, Western Regional Research Laboratory, U.S. Department of Agriculture; Dr. Walter M. Urbain, professor emeritus, department of food science, Michigan State University, and Dr. Marcus Karel, professor of food engineering and associate head of the department of nutrition and food science, Massachusetts Institute of Technology.

## NSF Plans Foodservice Seminars

National Sanitation Foundation-sponsored seminars on foodservice sanitation will be held throughout the United States during 1981.

The seminars will be held in two-sessions. Participants may attend one or both days. The first day will feature sanitation aspects of foodservice equipment design and construction.

The second session will emphasize specific sanitation aspects of facility plant preparation and review.

The seminar schedule is as follows:

Feb. 9-10	Honolulu, HI
Mar. 16-17	New Orleans, LA
April 6-7	Seattle, WA
May 11-12	Minneapolis, MN
June 8-9	San Francisco, CA
June 22-23	Niagara Falls, NY
June 25-26	Hartford, CT
Sept. 15-16	Chicago, IL

For more information on the seminars, contact: NSF Education Service, PO Box 1468, Ann Arbor, MI 48106, 313-769-8010.

\* \* \*

Convenience foods, which accounted for \$60 billion of 1979 grocery store sales, may reach \$104 billion by 1989. This would amount to a change in market share of total grocery sales from 49 to 51%.

Source: Market Frontier News, Dairy Society International, 3008 McKinley St., NW, Washington, DC 20015

## Inspection, Recall Manual Available

The Whey Products Institute (WPI) recently sponsored three regional seminars on participating in government inspections, and approaching product recalls positively.

A manual developed for use in these seminars is available through the Institute. Prepared by WPI's Washington counsel, Richard J. Leighton, the manual includes three major sections, "General Guidelines for Government Inspections," "Preparing for a Food and Drug Administration Inspection," and "General Guidelines for Product Recalls." Each section, prepared as a manual in itself, gives detailed information and tips on how to prepare, what to do, and how to follow-up inspections and recalls.

The manual is \$45.00 (\$25.00 for Institute members) and is available from WPI, 130 North Franklin Street, Chicago, IL 60606. Request WPI *Seminar Series on Government Inspections and Product Recalls* manual.

## USDA Sponsors Food Safety Poster Contest

Elementary school students will take an active part in food safety education through a USDA national poster contest.

Donald L. Houston, administrator of USDA's Food Safety and Quality Service, said the contest is part of USDA's 75th anniversary celebration of the Federal Meat Inspection Act.

The contest began December 15 and closes March 15.

One winner in each of two categories will receive a \$100 U.S. Savings bond and a trip to Washington, D.C., to attend an awards ceremony. Additional prizes will also be awarded, Houston said.

"The contest was designed to teach children how to prevent food poisoning," Houston said. "More than 2 million cases of food poisoning occur each year. Many of them result from poor food handling practices in the home and school.

"We hope the contest will teach children--and their parents--that it is up to them to learn how to recognize and eliminate conditions that can cause food poisoning," Houston said.

By mid-January, contest kits will have been sent to every elementary school in the country, except where prohibited by law. The kits include activities that teach proper food handling practices. Students can use this information to create posters illustrating any facet of food safety.

## FPI Offers Food Processing Sanitation Text

The organization and management of food plant sanitation programs are discussed in a new textbook offered by The Food Processors Institute.

*Principles of Food Processing Sanitation* provides information to establish sanitation programs which meet laws and regulations governing food plant operations, including the FDA's Good Manufacturing Practice Regulations, OSHA Standards, the Federal Insecticide, Fungicide and Rodenticide Act, and USDA sanitation requirements.

The new text also discusses advances in sanitary equipment and structural design of food processing operations. It includes discussions on microbiological aspects of sanitation, sanitary construction of buildings and equipment, warehousing, control of rodents and other pests, handling of waste materials, and plant inspection.

To order, contact: Jill Strachan, The Food Processors Institute, 1133 20th Street, N.W., Washington, D.C. 20036. Phone 202/857-0890.

## Law and Industry Class Set

The Law and The Food Industry, a special three-day class designed especially for plant managers and quality control supervisors who must deal with inspections and be familiar with food adulteration laws, is to be offered by the University of California-Davis.

Held on the U.C. Davis campus on February 2-4, the class features lectures by representatives from the food industry and state and Federal compliance offices. Topics include state and Federal food laws; adulteration and misbranding of food; how to handle an inspection or administrative violation; laws governing antitrust and product liability; and actual case studies. The class offers a unique opportunity for plant managers to discuss law, problems of enforcement, and rights and responsibilities of processors with representatives from the private and public sector.

For more information or enrollment contact University Extension, University of California, Davis, CA 95616 or phone (916) 752-0880.

"Many of the victims of food poisoning are children," Houston said. "If we can make them aware of the hazards, then they can learn to keep food safe to eat."

Under the Federal Meat Inspection Act and the Poultry Products Inspection Act, FSQS conducts in-plant inspection programs to assure that meat, poultry and egg products are safe, wholesome and properly labeled, when such products leave the plant.

## Glossary of Environmental Sanitation Published

A new "Glossary of Environmental Sanitation", including over 3,400 words, terms and definitions, has been published by the Environmental Management Association (EMA) and its five subsidiaries.

Like the EMA 1968 and 1970 editions, the 1980 glossary provides new definitions basic to industrial and institutional sanitation maintenance and the management of work, product and grounds functions.

The glossary includes sixteen specific sections under general terms, trade terms, consolidated terms, carpet, safety, food, microbiological, pesticide, pollution control, waste management, incinerator, grounds maintenance and plant, security, pool chemistry, hotel/motel/travel and nuclear terms.

Copies of the 1980 copyrighted "Glossary of Environmental Sanitation" are available from EMA, 1701 Drew Street, Clearwater, FL 33515, for \$18.75 each, which includes postage and handling. Allow two weeks for delivery.

## NSF Courses Awarded CEU'S

The National Council on Continuing Education in Environmental Health has approved four National Sanitation Foundation programs for continuing education units. The approved courses are:

Sanitation Requirements for Food Service Equipment (Seminar). 0.6 CEU.

Sanitation Aspects of Food Service Facility Plan Preparation and Review (Seminar). 0.6 CEU.

Sanitation Aspects of Food Service Facility Plan Preparation and Review (Workshop) 2.4 CEU.

Individual Onsite Wastewater Systems (Conference) 2.4 CEU.

## Microanalytical Sanitation Course Set

The American Association of Cereal Chemists (AACC) has scheduled a two-week intensive course, "Advanced Microanalytical Sanitation" for February 23 through March 6. The course, taught by James W. Gentry, will be held at the facilities of O'D. Kurtz Associates, Inc., Melbourne, FL.

The course is designed for the advanced sanitation student who has substantial knowledge, experience and/or training in the microanalytical sanitation area. Prospective students should be familiar with the characteristics of insect fragments, hair, feathers, metal, glass and other extraneous materials.

The program will emphasize the identification of fragments from specific insects as well as identification of the entire insect. Life histories, habits and product damage also will be covered with emphasis placed on evaluation of results and problem solving.

Course fee will be \$1,000 for the two-week program. Each student must provide his/her own microscope, light and extra bulbs. All other training materials and transportation to and from hotel/motel and classroom will be furnished. Meals and hotel accommodations are included in fee. Hotel reservations may be made through AACC. Course registration is limited to 15 students and will be on a first come, first served basis.

For more information contact Ruth Nelson, Short Course Coordinator, AACC, 3340 Pilot Knob Road, St. Paul, MN 55121, 612-454-7250, or James W. Gentry, O'D. Kurtz Associates, Inc., 2411 S. Harbor City Blvd., Melbourne, FL 32901, 305-723-0151.

## Food Mycology Course Set for March

"Molds and Mycotoxins in Foods," a short course sponsored by The American Association of Cereal Chemists (AACC) will be offered in cooperation with the Department of Food Science and Nutrition and the Department of Plant Pathology at the University of Minnesota. The course, scheduled for March 23-27, will be held on the St. Paul campus of the University.

The four-and-one-half-day intensive course is designed for quality control personnel in all facets of the food industry, private testing laboratory personnel, and other scientists interested in the taxonomy of yeasts and fungi as it relates to the quality of food.

Course discussions will range from the identification of fungi and yeasts which generally cause problems in the food industry to an update on mold growth inhibiting substances in food. The significance and identification of fungi associated with cereal grains, meats, fish and cheeses, as well as those found in fresh and processed fruits and vegetables will receive individual attention.

In addition, the course is designed to provide an update in the area of mycotoxins, with a laboratory session included. The effects of water activity and controlled atmosphere storage of cereal grains on growth of these organisms also will be discussed.

The course fee is \$375.00 and includes lecture and lab fees, lab equipment, and written material, as well as coffee breaks and four group lunches. Hotel accommodations are included and reservations should be made by each course registrant. Enrollment is limited to 25 and will be on a first come, first served basis.

For more information contact Ruth Nelson, Short Course Coordinator, AACC, 3340 Pilot Knob Road, St. Paul, MN 55121, 612-454-7250, or the Office of Special Programs, 405 Coffey Hall, 1420 Eckles Avenue, University of Minnesota, St. Paul, MN 55108, 612-373-0725.

## Insect Control Pamphlet Offered

"Insect Control in Food Handling and Processing Establishments," a pamphlet developed by W. L. Gojmerac, is available from the University of Wisconsin Extension Service.

"Sanitation and Insect Problems," "Building Design, Construction and Use," a large section on "Insect Characteristics and Development," and "Safety Precautions" are among the pamphlet contents.

Among the insects discussed in the 32-page pamphlet are flies; ants; bees; wasps and hornets; beetles; centipedes, millipedes and sow bugs; silverfish; spiders; wood destroying insects, and others.

Wisconsin residents may obtain the pamphlet from their county extension agents. Out-of-state purchasers should order the pamphlet from the Agricultural Bulletin Building, 1535 Observatory Drive, Madison, WI 53706. It should be ordered by the serial number, A2518, and title. Payment of \$2.00 plus \$.59 postage per pamphlet should be included with the order.

## Hazardous Waste Guide Out

Two new "Hazardous Waste Management Guides" have been published by J. J. Keller and Associates. The new publications provide companies the information needed to comply with the Environmental Protection Agency's "Resource, Conservation, and Recovery Act", (RCRA) for the proper handling and disposal of hazardous wastes.

The "Hazardous Waste Management Guide" gives companies an overview of their responsibility in the handling of hazardous wastes. It gives a management compliance program for identifying, monitoring, treating, and disposing of hazardous wastes as defined by the RCRA. The 800-page guide sells for \$69.00.

The "Hazardous Waste Services Directory" provides vital information on firms involved with hazardous waste disposal problems. Included in the directory are lists of haulers of hazardous wastes, processors, disposal sites, laboratory facilities, and consulting services. The directory sells for \$49.00.

To order, contact the publisher: 1-800-558-5011, or write: J. J. Keller & Associates, Inc. 145 W. Wisconsin Avenue, Neenah, WI 54956.

## FPI Offers Waste Management Guide

A comprehensive guide to waste management in the food processing industries is available from The Food Processors Institute, (FPI). The *Guide for Waste Management in the Food Processing Industries* is a two-volume manual and bibliography. The cost for both volumes is \$50.00. An additional \$5.00 handling charge is made to customers who do no prepay. Included in Volume I is:

- Information on quantities and characteristics of wastes generated during preparation and processing of major food commodities;
- Definitive and practical solutions for reducing waste volume;
- Detailed instructions for instituting monitoring programs;
- Discussions of demonstrated treatment and disposal techniques for both liquid and solid wastes; and
- Discussions of environmental laws and regulations affecting food processing establishments.

Volume II is a comprehensive annotated bibliography listing more than 2,000 references of articles, papers, publications and books dealing with food processing wastes. The bibliography is cross-indexed for easy reference.

To order, write or call FPI, The Food Processors Institute, 1133 20th Street, N.W., Washington, D.C. 20036, 202-857-0890.

## Gastroenteritis Outbreak At Trailer Park

Coliform contamination of the water supply to a South Carolina trailer park was responsible for an outbreak of gastroenteritis which affected almost 50% of the park's residents.

Residents of a Richland County trailer park noted low water pressure in their water system on July 2, 1980. They reported this to the South Carolina Dept. of Health and Environmental Control's Division of Water Supply. A water sample taken on July 30 because of the complaints showed 21 total coliform/100 ml. and 1 fecal coliform/100 ml. High coliform counts throughout the entire system were shown through other samples. Further investigation showed that 1 of 3 wells serving the trailer park was in operation, and the management of the park had not responded to residents' earlier requests to upgrade the water system. The Water Supply Division issued a "boil water" notice on July 31 to residents of the trailer park and also provided emergency chlorination of the water.

The Divisions of Disease Control and Water Supply of the state health dept. began to investigate the health effects of the contamination. On August 6, a survey of 18 of 104 trailers in the park found 30 persons with gastrointestinal complaints among 60 residents

surveyed.

A detailed questionnaire was prepared and distributed to all trailers in the park. A second questionnaire was delivered to those who did not respond to the first, and nearby control community was surveyed with the same questionnaire. Trailer park response rate was 55%, the control rate was 47%.

A case was defined as any person with diarrhea and one other systemic symptom, or any two of these symptoms: nausea, vomiting, diarrhea or abdominal cramps from May 1 - August 7. The attack rate for trailer park residents was 53.2% and 15.6% for the controls.

Water consumption was strongly associated with the illness. The amount of water consumed each day varied significantly between ill and well persons in the park, but no significant difference was shown in water consumption between the trailer park and control community respondents.

Excerpted from *Morbidity and Mortality Weekly Report*, Vol. 29, No. 48, December 5, 1980.

## Frozen Milk Concentrate Developed

Researchers at the University of Wisconsin-Madison have developed a process for making frozen milk concentrate. The product could be marketed and stored like frozen orange juice, according to food scientist Owen Fennema.

The advantages of such a product over normal liquid milk include reduced shipping costs, longer storage life and less waste from spoilage.

In addition, the process can be used to make lactose-free milk for persons who are lactose-intolerant.

In taste tests, reconstituted frozen milk concentrate was judged to have nearly normal milk taste, Fennema said.

The first step in development of a frozen milk product was to stabilize proteins during freezing and frozen storage. Lactose crystals form when milk freezes, and milk's normal calcium levels destabilize milk proteins during freezing. The protein stability problem was solved by separating milk into parts; one containing lactose and calcium with vitamins, minerals and salts, and the other containing proteins.

Separation is done by ultrafiltration, where milk is forced through a membrane with holes small enough to permit small particles, such as lactose and calcium, to pass through while holding back larger-sized proteins.

The two parts are then concentrated and frozen separately before being placed together in a can. When the product is thawed for use, the milk constituents mix in their original proportions.

Typically, the two milk fractions are concentrated so that, when thawed and mixed, the milk is three times more concentrated than normal milk—about as concentrated as frozen orange juice. Four-times concentrated milk could also be produced, Fennema noted.

Separating milk into the two fractions is also the first step in making a lactose-free milk product. Lactose is then replaced in the lactose-containing fraction with a replacement sugar, such as glucose.

Lactose-intolerant individuals lack adequate levels of one of the digestive enzymes that break down lactose in the small intestine. They experience abdominal pains and diarrhea after drinking large quantities of normal milk. Milk containing glucose in place of lactose does not produce these symptoms, and when properly formulated, it has the same sweetness as normal milk. Researchers are also evaluating other sugars as lactose replacements.

Ultrafiltration offers advantages over other ways to produce a frozen milk concentrate, the food scientist says. It changes the flavor only slightly and doesn't require protein-stabilizing additives.

Frozen milk concentrate is not available commercially, and Fennema cannot predict when it might be. He says the dairy industry is already using the ultrafiltration process for other purposes.

According to some estimates, commercially produced frozen milk concentrate would cost a few cents more per gallon of reconstituted milk than normal milk. But the UW scientist says he doesn't think these estimates take into account the frozen product's lower shipping costs or the fuel savings to the consumer when fewer trips to the store are necessary to buy milk.

### 3A Amends Standards for Sifters, Bins, Plastics

Amendments to 3A Sanitary Standards for sifters and portable bins for dry milk products and multi-use plastics were adopted by the 3A Sanitary Standards Committees at their fall meeting in Des Moines.

The amendments cover a cleaning regimen for the sifters, a new type of door latch for the bins and two new generic classes of multi-use plastics.

Drafts, revisions and amendments to other tentative standards were reviewed and referred to appropriate 3A subgroups for development. They included tentative standards for bag collectors, mechanical conveyors and pneumatic conveyors; revision of standards for filters and batch processors; amendments to the accepted practices for dryers and standards for silo-type storage tanks and tentative accepted practices for membrane processing systems.

The newly adopted amendments will be signed and published in the *Journal of Food Protection*.

3A Standards and Practices for the cleanability of dairy processing equipment safeguard the public health by protecting the product against contamination from the equipment itself or foreign elements of dust, dirt or liquids. The program is conducted through the voluntary participation of dairy processors, equipment manufacturers, public health officials and sanitarians and their trade and professional associations.



## Research Shows New Whey Uses

A recent research project has shown that whey has significant economic and ecological advantages for both breweries and dairies. The project was sponsored by the Whey Products Institute (WPI) and Dairy Research, Inc. (DRINC).

Among conclusions of the study were:

- That portion of the whey protein which could cause a haze in cold beer can be removed as a profitable by-product.
- The remaining protein will feed the brewer's fermentation process.
- Lactose can be converted to its simple sugars, which are more easily fermented in brewing.
- The mineral salts in whey can be used to replace those salts normally purchased for hardening purposes.

A commercial brew has been successfully made from the process and

further research is planned. In the initial research, a method was developed to economically deodorize and stabilize the raw whey.

Concentrated ammoniated whey has been approved by the FDA as a cattle feed supplement. The whey-based supplement stacks up favorably with soybean meal, when compared on protein equivalency, and feeding trials have shown no significant difference between the two supplements.

A commercial process developed from the original lab technique was partially developed by Dairy Research, Inc. (DRINC). The supplement could be sold at 15 to 20% below the price of soybean meal, again, based on protein equivalency.

Calor Agricultural Research, working with a Michigan State University developed process, has proven the practicality of producing such a whey-based feed supplement. Lacto-Whey, a result of the new technology, is one new protein feed supplement.

## Culling Urged to Correct Supply — Demand Imbalance

Failure to hold milk production in line with demand is bringing dairy farmers dangerously close to losing their present level of price-support protection, according to University of Wisconsin-Extension dairy economist Truman Graf.

"If the current imbalance between milk supply and demand is not corrected, it could eventually lead to a radical reduction in price-supports, if not the total loss of the program," reports Graf in a study sponsored by the USDA Federal Extension Service and the National Milk Producers Federation.

Purchases by the government's Commodity Credit Corporation (CCC) accounted for 7.7 percent of national milk marketings and totaled a record \$1.4 billion during the 1979-80 marketing year. Legislators are becoming more receptive to charges that the price-support program has encouraged excessive milk production at the expense of the government and consumers.

Under the present program, support prices are set at a minimum of 80 percent of parity and are adjusted twice annually. On Oct. 1, Agriculture Secretary Bob Bergland set the support price at \$12.80 per hundredweight (cwt.) of milk testing 3.5 percent butterfat.

Program revisions now under consideration range from discontinuing the program to setting the minimum support level at 75 percent of parity. Critics have also proposed trigger pricing--price-support levels would decrease as support purchases increase--and changing the procedure for calculating support prices.

If Congress adopts any of the revisions under consideration, farm milk prices would plummet, Graf says. He estimates that rejecting price supports entirely would cause milk prices to drop 16 percent--from the current support level of \$12.80 per cwt. to about \$10.75 per cwt. A drop like this would have cost the nation's dairy farmers \$2.6 billion in 1980, Graf estimates.

Dropping the support level to 75 percent of parity would lower farm milk prices by 82 cents per cwt. This would trim the total annual return of the average Wisconsin dairy farmer by \$4,170, Graf says. He estimates the overall loss in the state would total \$184.5 million.

The economist does not feel the present supply-demand imbalance justifies changing the price-support program at this time.

"In 26 of the past 30 years, farm milk prices were above price-support levels," Graf says. "Maintaining the minimum price supports at 80 percent of parity has been an insurance policy that has protected both farmers and consumers against wide swings in milk prices and supplies."

While Graf opposes dismantling the present program, he does feel

dairy farmers must take steps to correct the current imbalance. Culling dairy herds, Graf says, "is one way to reduce production or at least hold it in check."

So far, a nationwide call for dairy farmers to cull their herds appears to have fallen on deaf ears. Milk production has increased in each of the last 18 months.

Farmer organizations and industry leaders are saying simply that a reduction in national milk production will cause milk prices to rise. The UW economist agrees, noting that because of supply-price relationships, each drop of 1 percent in milk production translates into a 2.5 percent increase in milk prices.

"This results in 1.5 percent more total dollars for dairy farmers for every 1 percent decrease in milk production," Graf says.

Graf also points out that the farmer who refrains from culling lower-producing cows from his herd is penalizing himself by creating more work for less hourly pay.

With average milk production per cow at 11,471 pounds annually and milk selling at \$12.80 per cwt., farmers net only about \$2.89 per hour, Graf says.

"The average 'wage' for dairy farmers now is about 60 percent lower than the average hourly wage for manufacturing workers," he says.

"Dairy farmer wages would increase to \$7.33 per hour if lower-producing cows were culled so that the remaining cows averaged 16,000 pounds of milk annually.

"In short, culling would result in fewer hours of dairy herd work at substantially increased hourly wages."

Although most dairy farmers recognize the need to trim milk production, the individual farmer is often reluctant to cull his herd. The farmer reasons that if the majority of farmers cull their herds, he stands to benefit from higher milk prices because he has not cut back production by removing lower-producing cows from his herd.

As a result, farmers have been keeping their lower-producing cows. Since most of these cows are older and have already been paid for, the returns from their milk is viewed as profit. When milk prices are high and production costs are relatively low, this practice can be profitable, despite lower rates of production.

With production costs expected to increase rapidly, Graf predicts the returns from lower-producing cows will decrease, providing a greater incentive to cull.

Copies of Graf's report can be obtained by writing him at the Department of Agricultural Economics, 316 Agriculture Hall, UW-Madison, Madison WI 53706.



## Committee Reports - 1980 Annual Meeting

### IAMFES Representative to the International Dairy Federation

For the 1979-80 period, your representative has been active in two fields, with the International Dairy Federation (IDF) and the Interim National Committee for IDF in the United States (INCUS).

With IDF, we have actively participated in the following "Groups of Experts":

- Factors Affecting the Quality of Heat-Treated Milk.
- Development of a Monograph on UHT Milk and Milk Products.
- Definitions for Heat Treatments of Milk
- Technical Aspects of Packaging Milk and Milk Products.

We have been included in writing a number of chapters in 1, 2, and 3 above, including Sanitation of Single Service Containers; Sanitary Standards for Filling Equipment (where the 3A Standards have been used as a reference); Energy Recovery from Dairy Packaging; and Basic Environmental Problems in Pasteurization and UHT Treatment.

In this period, IDF has published about twenty manuals and monographs on technical subjects of interest to IAMFES. Outstanding in this group is a Comprehensive Study of CIP. Other interesting activities include Control of Water and Waste Water in the Dairy Industry; Prevention of Noise; Corrosion; Membrane Processes; Symbols Used by Dairy Equipment Manufacturers; Technical Problems in the Manufacture and Storage of Dairy Products Caused by Lipolysis; Control Systems for Automated Processes; Sampling Techniques; Psychrotrophs; Coliforms; Water Content of Milk and Milk Products; Heavy Metals and Other Elements in Dairy Products; Genetic Manipulation of Dairy Cultures; Dairy Education; Iodine in Milk; Reproductive Performance of Dairy Cows; and many other subjects.

Obviously, all of the above are of interest to IAMFES, and it may be opportune to establish similar groups within our organization.

Of particular interest at this time would be the sanitation and health problems involved with UHT and aseptic packaging, since these products may soon be a factor in the US dairy industry.

Another interesting subject for IAMFES would be the appointment of a committee to develop guidelines for Energy Recovery from Food Plant Wastes and Packaging Materials.

INCUS was originally established in 1979 to investigate the potential for the establishment of a permanent IDF National Committee in the United States and to prepare a format for accomplishing this aim.

At present, INCUS has 45 members, representing many facets of the dairy industry, including dairy cooperatives, milk plants, cheese plants, equipment manufacturers, instrument manufacturers, culture suppliers, universities and associations such as Dairy and Food Industries Supply Association (DFISA); United Dairy Industry Association (UDIA); American Dry Milk Institute/Whey Products Institute (ADMI/WPI); American Butter Institute/National Cheese Institute (ABI/NCI); Dairy Research, Inc. (DRINC); American Dairy Science Association (ADSA); and International Association of Milk, Food and Environmental Sanitarians (IAMFES). Each group paid \$100.00 to join, and the money is used to meet a small operating budget for stationery, postage and maintenance.

It now appears that there is a consensus for the formation of a permanent IDF National Committee in the United States. As a result, a committee of INCUS has developed by-laws delineating responsibilities for such a national committee, to be called U.S. National Committee for IDF (USNAC).

In order to have a functioning group and to maintain a relatively small operating budget, it has been determined that for most groups, annual fees of \$1,000 - \$3,500 will be required. The amount of the fee will be determined by the activity desired by each group. As an example, a corporate fee of \$3,500 is recommended and one of \$1,000

for such groups as ADSA and IAMFES. The ADSA has already pledged their fee for the first year of USNAC's establishment.

These fees would give USNAC members the following benefits:

- A voice in all IDF matters.
- U.S. input in IDF "Groups of Experts".
- A position in the development of International Standards, including co-operative programs with FAO (Codex), ISO, WHO, AOAC and others.
- Circulation and opinions on questionnaires by IDF -- which may be preliminary to the development of International Standards, Monographs and Guidelines by the various "Groups of Experts".

A preliminary report of U.S. activities will be given to IDF at their annual meeting in Bristol, England on September 7 - 12, 1980.

If sufficient funds are available, formal application for the affiliation of USNAC with IDF will be made by January 1, 1981.

**Harold Wainess**

### Sanitarians' and Fieldmen's Committee

The Committee sees the new publication as a positive step toward reaching practical sanitarians with information. Much concern remains about the name, Food and Fieldmen. We unanimously recommend to the Executive Board that the name, *The Dairy and Food Sanitarian*, be used, starting with the January, 1981 issue.

Future issues will contain six to eight articles among the 48 pages per issue. A backlog of three months' articles is available and topic suggestions of about 75 others were reviewed, with some indicated as having top priority.

Practical articles should be reviewed by two persons, including industry and regulatory people. Additional names were suggested for the editorial board and as reviewers.

We commend and support Jan and Earl in their efforts toward the practical publication, but believe that a name change is essential to attract more dairy people as IAMFES members.

**Sid Barnard**

Chairman

### Committee on Communicable Diseases Affecting Man

The Committee is slowly progressing on a new manual, "Procedures to Investigate Zoonoses and Vectorborne Diseases," which will probably be two years in development, and could be split into two manuals.

Significant progress is being made to revise the "Procedures to Investigate Foodborne Diseases." The "Procedures to Investigate Waterborne Diseases" manual will go into its second printing this year.

The Pan American Health Organization has translated the foodborne disease investigation manual into Spanish and is in the process of translating the waterborne disease manual into Spanish.

**Thomas McKinley**

### Committee on Food Equipment Sanitary Standards

The IAMFES Committee on Food Equipment Sanitary Standards, known hereafter as the Committee, is charged with the responsibility of carrying out the following objectives:

1. To cooperate with other interested health organizations and related industries in the formulation of sanitary standards and educational materials for the fabrication, installation, and operation of food equipment and food vending machines.

2. To aid the food and vending industry in improving the design, construction and installation of food equipment so that it will lead to easy cleaning and proper functioning when it is placed into service.
3. To cooperate with the food industry in the preparation of standards or guidelines which public health agencies will accept, thereby securing uniformity in the manufacture and nation-wide acceptance of such equipment.
4. To present to the IAMFES membership those standards and educational materials which the Committee recommends be endorsed by the Association.

The following report will outline the Committee's activities during the past year in working with two health and industry organizations (National Sanitation Foundation's Joint Committee on Food Equipment Standards and the National Automatic Merchandising Association's Automatic Merchandising Health Industry Council) and its progress in meeting its purposes and objectives. It is expected these organizations will be the two groups that the Committee will work with during the coming year.

### National Sanitation Foundation (NSF)

The National Sanitation Foundation's Joint Committee on Food Equipment Standards, at its 1980 meeting, received status reports and took action on a number of current proposals. A summary of these proposals is listed as follows:

#### *Standard 2 - Food Shields*

A task committee on food shields was formed at the request of the 1979 Joint Committee and met on December 18, 1979. The majority of the task committee members expressed an opinion that the current provisions of Standard 2 for protection of food from aerosol contamination were adequate if these provisions were properly implemented. These same Committee members felt that protection of food from customer contamination due to mishandling was, for the most part, an operational problem and that further operator education should be undertaken.

According to the NSF staff, NSF Standard 2, when reviewed, will include a number of questions relative to customer contamination. Furthermore, NSF will publish and distribute a guide on sanitation aspects of display and serving of food to cover the customer contamination aspect in more detail. According to some members of this Committee, the above comments appear to be contrary to certain public health practices in that they place the entire responsibility for providing protection of food from customer contamination on operational personnel and management. The necessity of building adequate protection into food shielding equipment to reinforce steps recommended for operational personnel and management should be implemented and has been so recommended to NSF.

#### *Standard 3-Revisions*

An industry advisory committee on conveyor-type chemical sanitizing dishwashing machines met January 16, 1980. It was apparent that to establish uniform parameters for the evaluation and listing of these machines, Standard 3 for Spray-Type Dishwashing Machines should be revised.

#### *Standard 4 - Request for Waiver*

A request to NSF from Roll-A-Grill Company to waive requirements in Standard 4 for holding readily perishable foods at 140° F was presented to the Joint Committee. The request related to a rolling frankfurter grill on which the frankfurters are held for a few minutes to several hours at 100-115° F, for display purposes, and then heated to 160° F for serving. The Committee recommended that the request for a waiver be denied. Further, it recommended that NSF assist the manufacturer in modifying operating procedures for the unit to resolve the problem.

#### *Standard 5 - Preheaters*

A presentation to the Joint Committee at the 1979 meeting by a manufacturer of heat recovery systems led to a request that NSF explore the development of appropriate requirements for evaluation

and listing of these systems. On December 19, 1979, a task committee met and unanimously recommended that proposed revisions to NSF Standard 5 for Commercial Hot Water Generating Equipment be prepared. Upon receipt of the task committee's input, revisions will be transmitted for our review and action.

#### *Standard 12 - Ice Dispensing Equipment*

As recommended by the public health representatives to the Joint Committee last year, NSF explored their thoughts on automatic ice dispensing with manufacturers listed under NSF Standard 12 for Automatic Ice Making Equipment. This study indicated that automatic ice dispensing is widely used but that problems of bridging, solidification, dispensing, quantity, and so on, exist. According to the NSF Staff, at least two companies have already eliminated these problems and economic competition should stimulate other firms to do likewise.

#### *Standard 25-Revisions*

According to the NSF Staff, the NSF Standard 25 for Vending Machines for Food and Beverages had been reviewed for consistency with the FDA Recommended Ordinance and Code. This review has been completed and the proposed revisions will be transmitted to the NSF Council of Public Health Consultants for their review and ballot in the near future.

#### *Standard 29-Revisions*

- A. Chemical Sanitizing Agent Feeders: In an effort to provide an appropriate interface between chemical sanitizing machines evaluated and listed under NSF Standard 3 for Spray Type Dishwashing Machines and chemical sanitizing agent feeders evaluated and listed under NSF Standard 29 for Detergent and Chemical Feeders for Commercial Spray Type Dishwashing Machines, revisions to Standard 29 have been prepared. This will permit the establishment of a matrix to assure proper interfacing between feeders and dishwashing machines. The revisions are currently out for review and ballot by the Joint Committee.
- B. Chlorine Generators: At the request of the Joint Committee in 1979, a task committee was formed to propose revisions to Standard 29 to include requirements for onsite electrolytic sanitizer generators/dispensers for chemical sanitizing dishwashing machines. These revisions include definitions, inclusion of signal type on data plate and pressure drop information on the manual for the feeder. These revisions will not be submitted to the Joint Committee for review and ballot until the revisions on chemical sanitizing agent feeders are completed.

#### *Retail Food Store Refrigerators*

The Hussmann Refrigeration Company representatives presented their recommendation to revise NSF Standard 7 for Food Service Refrigerators and Storage Freezers to include requirements for service display refrigerators ("deli cases"). As was pointed out, these units differ greatly in design, installation, operation and maintenance from those covered under Standard 7. It was the consensus of the public health representatives that, due to the major differences between refrigerators intended for use in food service establishments and those for retail food stores, Standard 7 should not be revised. They further recommended that the standards development project for Retail Food Store Refrigerators, initiated in 1971 and discontinued until the Food and Drug Administration and Underwriters Laboratories documents on this equipment could be completed, be reimplemented.

#### *Review Committee Activities*

The NSF staff reported that a routine complete review of the following standards is being conducted to determine what changes, deletions or additions, if any, are necessary to maintain current and effective requirements consistent with new technology and progress:

- Standard 5 for Commercial Hot Water Generating Equipment
- Standard 20 for Commercial Bulk Milk Dispensing Equipment and Appurtenances
- Standard 26 for Pot, Pan and Utensil Washers
- Standard 36 for Dinnerware
- Standard 37 for Air Curtains for Entrances in Food Establishments

## NSF/NRA Project

NSF, in cooperation with, and sponsored by, the National Restaurant Association is involved in a study of hot water sanitizing dishwashing machines. This study is being conducted to determine if and what energy conservation measures can be instituted on commercial hot water dishwashing machines without compromising the public health aspects. The project is divided into five steps - literature search, research, correlation and analysis of data, preparation of a report, dissemination of the report and implementation. The first phase has been completed and the second phase is under way.

## National Automatic Merchandising Association(NAMA)

The National Automatic Merchandising Association's Automatic Merchandising Health-Industry Council (AMHIC) held its twenty-fourth annual meeting during October, 1979, and this Association and other public health organizations and the affected industries were represented and participated in AMHIC's discussion.

### *Food Shelflife*

A wide-ranging discussion by members of AMHIC on this subject included these highlights: (a) that perishable food waste in vending, including pastries, is a significant percentage; (b) that open dating and poor distribution practices trigger excessive snack item discard; and, (c) that a scientific base for operator selection of pull dates could convince consumers to accept longer dating periods. There was also agreement that any NAMA publication on product shelflife must clearly distinguish between quality changes and hazardous deterioration.

### *Food-Air Temperature in Vending Machines*

Machine manufacturers should be asked to comment on the possibility of obtaining a 40° F food temperature in refrigerated machines. Discussion: The members of AMHIC reported a 40° F standard in Wisconsin which vending operators are apparently meeting. The Secretary observed that the stabilization temperature of foods in a vendor operating under a 45° F cut-off control is below 45° F (air temperature maximum) and probably at 42° F. He agreed to have NAMA and the Evaluation Agencies review existing cold food vendor test records and, if necessary, obtain manufacturer data on internal food temperatures under factory thermostat settings.

### *Sanitation Analysis and Audit Service*

The Secretary will discuss with NAMA's President the concept of a food service sanitation analysis and audit service for requesting operators and advise AMHIC, and the AMHIC Executive Committee will appoint a Commissary Analysis and Evaluation subcommittee to advise NAMA on audit service implementation.

The members of AMHIC recommended that a NAMA handbook incorporating the present NAMA "Operators' Guide" information, the completed shelflife report, other data from FDA recommended codes, and suitable evaluation checklists, be undertaken for operator use and as a guideline in sanitation auditing. They further recommended that a qualified expert should be retained by NAMA to conduct sanitation "audits" on a fee basis for requesting operators.

### *AMHIC Organization Plan and Bylaws*

AMHIC voting procedures will be given a final review by AMHIC before publication of the Organization Plan and Bylaws.

### *Ambient Test Temperature*

The Secretary researched the history of the Evaluation Manual cold food machine ambient test temperature of 105° F, met with NSF personnel, and reconciled the NAMA and NSF (100° F) standards for the same test. Furthermore, the members of both AMHIC and NSF Joint Committee on Food Equipment Standards have agreed that the ambient test temperature would be 100° F.

### *Miscellaneous*

The General Counsel of NAMA discussed beverage container legislation, proposed legislation, and sanitary considerations on a similar informational basis.

## Recommendations

1. The Association reaffirms its support of the National Sanitation Foundation and the National Automatic Merchandising Association and continues to work with these two organizations in developing acceptable standards and educational materials for the food industry and public health.
2. The Association urges all sanitarians to obtain a complete set of the National Sanitation Foundation's Food Equipment Standards and Criteria and a copy of the National Automatic Merchandising Association-Automatic Merchandising Health Industry Council's Vending Machine Evaluation Manual and related educational materials; to evaluate each piece of food equipment and vending machine in the field to determine compliance with the applicable sanitation guidelines (construction and installation specifications); and to let this Committee and the appropriate evaluation agency know of any listed manufacturer or fabricator failing to comply with these guidelines.
3. The Association urges all sanitarians and regulatory agencies to support the work of the Association's Committee; submit suggestions for developing new guidelines and for amending same; and to subscribe, by law or administrative policy, to the principles represented by the Standards, Criteria, and Evaluation Manual for Food Equipment and Vending Machines.

### **Karl K. Jones**

Chairman  
Purdue University Student Hospital  
West Lafayette, Indiana

### **David J. Hodgson**

Michigan Department of Public Health  
Lansing, Michigan

### **Douglas A. Pelton**

United States Army  
Fort Campbell, Kentucky

### **W. Joel Simpson**

Pa. Dept. of Environmental Res.  
Harrisburg, Pennsylvania

### **Kirmon C. Smith**

Texas Department of Health  
Austin, Texas

### **Harold Wainess**

Harold Wainess and Associates  
Northfield, Illinois

## Journal Foodservice Committee

A committee meeting was held consisting of the judges for the Norbert F. Sherman Award on February 25, 1980, in Washington, DC. Attending the meeting were Charles Felix, Dennis Westhoff, K. J. Baker, Patricia Dames, and Dee Clingman. The following actions were taken with regard to the Norbert F. Sherman Award:

1. For three consecutive years, commencing with the 1980 IAMFES Annual Meeting, the National Institute for the Foodservice Industry (NIFI) will present an award for an outstanding article in foodservice food protection, which has been published in the *Journal of Food Protection*, during a one year period (12 issues).

2. Where an article recipient has coauthorship, the senior or primary author will receive the award.
3. The Chairman of the *Journal* Foodservice Committee shall appoint a panel of judges confirmed by the Editor of *JFP* to:
  - (a) Establish guidelines for the selection of articles qualifying for the award.
  - (b) Establish procedures for evaluation of articles and their subsequent review.
  - (c) Select the award winning article.
4. If in any annual award year insufficient articles are available for qualification or if the panel of judges do not select an award winning article, no award shall be given for that year.
5. The award shall consist of a recognition plaque and \$200.00 cash.
6. A representative of NIFI shall present the award during the IAMFES Annual Meeting at a date and time selected by the IAMFES Executive Board.
7. After the IAMFES Annual Meeting in 1982, NIFI and IAMFES will confer on the success of the award program and make recommendations regarding continuance if so warranted.

In April 1980, the article, "Hazard Analysis and Control of Roast Beef Preparation in Foodservice Establishments" by Frank L. Bryan and Thomas W. McKinley was selected by the judges for the Sherman Award.

In July 28, 1980, a committee meeting was held in Milwaukee, Wisconsin. Present at the meeting were Patricia Dames, Ruth Dickie, Jan Richards, and Dee Clingman. The following items were discussed:

1. More information and articles on food protection (training/sanitation/safety), which would be relevant to dietitians, could be obtained for the *Journal of Food Protection*.
2. Effort should be directed toward stimulating more articles in foodservice nutrition.
3. Self-evaluation or self-inspection forms for foodservice sanitation could be published in the *Journal*.
4. The committee questioned their role with regard to the new publication *Food and Fieldman* (now *Dairy and Food Sanitation*). Jan Richards indicated she would contact the Executive Board and obtain their input and recommendations.

The Norbert F. Sherman Award was presented at the IAMFES Annual Meeting in Milwaukee, Wisconsin, by Patricia Dames (NIFI) and Dee Clingman (Committee Chairman).

### C. Dee Clingman

Chairman

## BISSC Committee

Our committee was actively engaged in the work of the Baking Industry Sanitation Standards Committee (BISSC) at both the 1979 fall meeting in Kansas City, MO and the 1980 winter meeting in Chicago, IL.

At the fall meeting in Kansas City, task committees were convened and assigned to the development of proposed standards.

Members of our committee were requested to and served as consultants to the task committees wherever possible. Sheer lack of numbers prevented our committee from being represented on all task committees on a full time basis.

Five standards were reviewed by the full BISSC organization with the following dispositions:

1. Pretzel equipment: Referred back to task committee for further development and report to the winter meeting in

Chicago.

2. Sugar wafers & cones: Referred back to task committee for further development and report to the next meeting.
3. Dough Forming Equipment: Distributed to Committee members and the Board of Directors.
4. Packaging Equipment: Distributed to Committee members and the Board of Directors.
5. Cookies, Crackers & Sandwich Equipment: Distributed to Committee Members and the Board of Directors.

The BISSC office of Certification met in Kansas City, MO., reviewed, corrected, revised and approved for editing revised standards for:

- #7 Conveyors
- #12 Coating Equipment
- #13 Bread, Cake and Roll Slicing, Wrapping and Bagging machines
- #14 Ovens
- #18 Continuous Mix Equipment and a new standard
- #38 Particle Size Reduction Equipment which will be published in the next Sanitation Standards Book.

The Office of Certification discussed requests for certification of equipment from the manufacturers of Food Cutting equipment and glass beaded surfaces used in the baking industry. The request for certification, of the food cutting equipment was granted while the one for the use of the glass beaded surface was held in abeyance for further study and presentation at the next meeting.

The BISSC winter meeting was held in Chicago, IL. IAMFES committee members were requested to, and did, serve as consultants to task committees engaged in Standards revision and the formulation of new standards wherever possible. The task committee activities participated in by members of the IAMFES committee members were: Dough Forming Equip., Editorial, Sandwich Equip., Sugar Wafers and Cones and Pretzel Equip. BISSC Sanitation Standards for Dough Forming Equip., Sandwiching Equip., for cookies, crackers and Pretzel equipment were approved for editing and circularization. Standards #13-Cutting and Slicing Equip., and #37-Packaging Equip., have been approved, made available for Certification and will be published in the new BISSC Standards Book. As of April 21, 1980, BISSC Office of Certification Registrations were granted to 73 companies, having authorizations of equipment in compliance with BISSC standards in 41 categories and basic criteria.

BISSC information booklets and BISSC standards are available and we urge all sanitarians to acquire a set of these standards and adopt them as guidelines and subscribe to the principles represented by the BISSC Standards and Basic Criteria.

Copies may be obtained by writing Ray Walter, Exec. Secretary, BISSC, 521 5th Ave., New York, NY 10017.

The 1980 Fall Meeting of BISSC will be held in Washington DC, September 11th & 12th.

### Martyn A. Ronge

Chairman  
Harold Wainess & Assoc.  
464 Central Ave.  
Northfield, IL 60093

### Jerome A. Mithen, Jr.

P.O. Box 1148  
Manhattan, KS 66502

### Tom Rolles

Dir. of Sanitation  
Continental Baking Co.  
P.O. Box 731  
Rye, NY 10580

### Phillip E. Winters

5446 Karen Ave.  
Cincinnati, OH 45211

## IAMFES Representative to the National Mastitis Council

The Education Subcommittee on uniform procedures and recommendation for mastitis prevention is presenting a new NMC



brochure. The purpose of this brochure is to communicate to the dairymen, dairy plant fieldmen, milking machine dealers, veterinarians, county agents and vocational ag. instructors the basic procedures that should be considered to improve udder health.

This brochure includes or recommends procedures concerning locating infected cows, determination of organism, how to determine causes of infection and how to interpret data and implement long-term control of mastitis.

The Education Committee plans to produce a new brochure each year, 1981 - Subject of Somatic Cell Interpretation, 1982 - Mastitis Treatment Guideline.

Dr. Nelson Philpot with support of the NMC and Louisiana State University has prepared materials for a Mastitis Training Seminar for field personnel. It includes 586 slides arranged in 14 chapters with cassettes and scripts.

The NMC continues to work for the benefit of dairymen and the dairy industry. NMC has written to FDA asking that the NMC's original petition requesting regulatory action on teat dips sent in April, 1974, be withdrawn. This is still pending - supporting data has been supplied to the agency as requested.

On iodine residues there isn't sufficient evidence to indicate regulatory action at this time. The American Medical Association study found that each person in the US consumes 10 times the recommended daily allowance of iodine. But this amount hasn't shown to be injurious to human health.

The Bureau of Veterinary Medicine is drafting changes in the guidelines for intramammary infusion products which are going to be similar to those of NMC.

We would like to encourage you to attend the National Mastitis Meeting this Thursday, July 31, for a program that will challenge all of us.

Following that meeting, the American Association of Bovine practitioners is planning a Microbiology of Milk-Wet Lab Seminar here at the Red Carpet Inn.

**Carl Webster**

### 3-A Sanitary Standards Administrative Council

There were two meetings of the Council held during the year. The first meeting was held in conjunction with the Food and Dairy Exposition in Chicago, IL, November 15th, 1979. The second meeting was held at the Chicago Marriott Hotel, O'Hare, May 20, 1980.

The Council published a list of 3-A Symbol authorization holders in the September and March issues of the *Journal of Food Protection*. The number of holders increased from 180 to 182 this year. The holders list has remained rather stable around 182 holders. The office has received a few more applications that are in the process of being accepted.

Only one Non-Compliance Report was received this past year. The corrections in the equipment were made and the company was allowed to continue with the 3-A Symbol program. The Symbol Council continues to receive several inquiries a year from foreign manufacturers.

There were two new standards printed this past year. 3-A Accepted Practices for a Method of Producing Steam of Culinary Quality, number 609-00 was published in the August 1979 issue of the *Journal of Food Protection*. The other was 3-A Sanitary Standards for Cottage Cheese Vats, number 38-00, published in the June 1980 *Journal of Food Protection*. Extra copies of these standards are always available from the IAMFES office.

The Symbol Council had a booth at the Food and Dairy Expo at McCormick Place in Chicago, IL last fall where our program was explained and materials displayed concerning the 3-A Symbol

program.

Dr. Henry Atherton of the 3-A Symbol Council has written an article entitled, "3-A Sanitary Standards - Their History and Development", which was published in the sample copy of *Food and Fieldmen* (now *Dairy and Food Sanitation*). He is also authoring a pamphlet on the 3-A Symbol story that is being printed.

The Symbol Council wishes to thank all sanitarians, fieldmen, dairy processors, equipment manufacturers and the 3-A Standards Committee for their fine cooperation and assistance in making this a successful year.

**Earl O. Wright**

Secretary-Treasurer

The 3-A Symbol Council members are:

<b>Dr. W. S. Clark, Jr.</b>	Chairman
<b>Mr. P. K. Girtton</b>	Vice-Chairman
<b>Mr. E. O. Wright</b>	Secretary-Treasurer
<b>Mr. P. J. Dolan</b>	Asst. Secretary-Treasurer
<b>Mr. D. G. Colony</b>	Member
<b>Dr. H. V. Atherton</b>	Member
<b>Mr. O. M. Osten</b>	Member
<b>Mr. D. D. Fry</b>	Member

### Journal Management Committee

The committee met and discussed the status of the *Journal of Food Protection* and the new publication scheduled for January 1981. The feeling of the committee was that the sample copy of the new journal was excellent and it should generate extensive readership throughout IAMFES. As in the past, the committee would like to make recommendations to the Executive Board for their consideration on journal associated matters.

- As requested, the committee evaluated various names for the new journal and recommends:  
*Food Protection Reports*  
-A Publication for Professional Sanitarians
- The committee recommends that mailing lists of the membership of the Food Microbiology Division of the American Society for Microbiology and the Institute for Food Technology be obtained and the membership sent a specimen copy of J. F. P. along with an invitation to join the society.
- The committee recommends that the J. F. P. be advertised in *Food Technology* along with information on joining IAMFES. The committee further recommends that a booth be set up at the National IFT meeting to attract attention to the J. F. P. and new members to IAMFES.
- The committee recommends a three column format be used for scientific articles in JFP.
- The committee recommends that a Directory of Members of IAMFES be published.
- The committee recommends that the source of the material printed as filler in the main section of the journal and in the News and Events section be identified at the end of each article.
- The committee recommends that there be two Journal Management Committees, one for JFP and another for the new publication. The committee further recommends that the Chairman of each be a member of the other committees.

**R. B. Read, Jr., Ph.D**

Chairman



## Dairilab Service

A  
STATE  
CERTIFIED  
LABORATORY  
SERVING THE  
FOOD AND  
DAIRY  
INDUSTRY WITH  
OVER 33 YRS.  
EXPERIENCE.  
CALL OR  
WRITE:  
(414) 682-7998  
2415 Western  
Avenue  
Manitowoc,  
Wisconsin  
54220

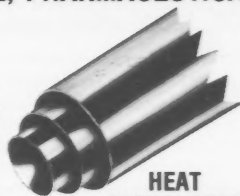
## QUALITY

# FELDMEIER

Design • Engineering • Fabrication  
STAINLESS STEEL PROCESSING EQUIPMENT  
DAIRY, FOOD, BEVERAGE, PHARMACEUTICAL

## Triple-Tube®

HTST-Pasteurization of all dairy products. HTST-Pasteurization of fruit juices. Ultra-High temperature pasteurization. Aseptic systems— heaters, regenerators and coolers. Regeneration efficiency to 90%. Heating to 300°F and cooling to 32°F. Increased yields when pasteurizing cheese milk, heating and cooling of mince meat, catsup, barbecue sauces, etc. Pasteurization of chocolate drinks and beverages, beer pasteurization and wort cooling. Capabilities far beyond plate type heat exchangers. Lasting durability—little maintenance. Coiling suspension saves floor space. Robert H. Feldmeier is the designer and originator of Triple-Tube, and in 25 years his patent has proven successful in over 1000 installations in the U.S.A., Canada and Mexico.



## HEAT EXCHANGERS

Manufacturer of: Triple-Tubes, Multi-Tubes, Double-Tubes, Process Vessels and Spray-up Silo Tanks.

Call or write for full information.  
SANITARY PROCESSING EQUIPMENT CORPORATION

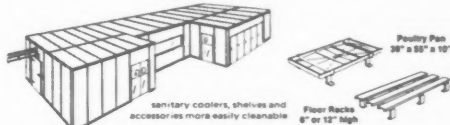
Factory: Syracuse, N.Y.

Mailing address: P.O. Box 26, DeWitt, N.Y. 13214

## ELIASON® CORPORATION

MANUFACTURER OF SANITARY USER ORIENTED PRODUCTS

Rustproofed, Fireproofed, Sectional Steel WALK-IN COOLERS & FREEZERS



Easy Swing® Patented NO SPRING Self Closing DOUBLE ACTION DOORS for Safety in ALL Doorways



ECONO-COVER® Patented NIGHT COVERS for Open Refrigerated Cases and Freezers - Better Sanitary and Food Protection Safety



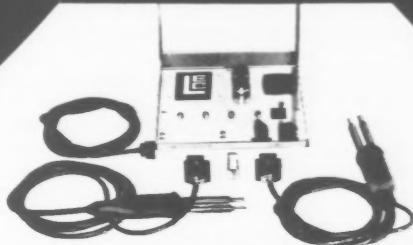
ELIASON'S Commitment Fulfills "MANUFACTURERS warranty/guarantee of Sanitary, Safety, Performance SPECIFICATIONS Plan" to meet USER LAWFUL PERFORMANCE REQUIREMENTS

*Carl Elison* PRESIDENT

## ELIASON CORPORATION

Corporate Headquarters: KALAMAZOO, MI U.S.A. CALL: EASYSWING  
P.O. BOX 6188 KALAMAZOO, MI 49003 PH: 616 387-7003  
P.O. BOX 1088 WOODLAND, CA 95685 PH: 616 889-5484

## STOP! HOLD IT!



### LUMENITE MILK TESTER APPARATUS

A simple, efficient method of measuring short time pasteurizing holding periods, as required under the U.S. Public Health Code, is now available from Lumenite Electronic Co. With the aid of portable testing equipment developed by Lumenite, dairy plant operators can now precisely measure the holding time without use of dyes or similar unsanitary methods. The flow metering device will accurately determine whether milk is passed through the pasteurization system at the proper flow rate, thus assuring the plant manager that every particle of milk is heated for proper time and temperature. Complete details are available by writing Lumenite Electronic Co., 2331 N. 17th Avenue, Franklin Park, Illinois 60131.

Manufacturers of superior liquid level controls and time switches for over a half a century.



## LUMENITE ELECTRONIC CO.

Engineers . Designers . Manufacturers  
2331 North 17th Avenue, Department T  
Franklin Park, Ill. 60131 . Phone (312) 455-1450

## Book Reviews

*Hygienic Design and Operation of a Food Plant*. First American Edition. Ronald Jowitt, Editor. AVI Publishing Company, Inc., Westport, CT. 1980. 292 pages, \$22.00.

In 1966, the Joint Technical Committee for the Food Manufacturer's Federation (FMF) and the Food Machinery Association (FMA) in the United Kingdom published the "Hygienic Design of Food Plant: A guide to good practice with particular reference to the design of tanks, pumps and pipeworks" (completely reproduced by R. Jowitt in the Appendix of the book, pages 241-273). In 1973, the FMF Food Engineering Committee decided that the guide to good practice needed updating and expansion in order to include developments of the 70's, to cover a wider scope than the original guide, and to include hygienic aspects of food process plant operation. The Food Engineering Committee sponsored a symposium on the subject with the prime objective of subsequent publication of the proceedings as a successor to the original guide. The symposium, held on the 19th and 20th of April, 1978 at the National College of Food Technology, was organized by the Food Engineering Panel of the Society of Chemical Industries on behalf of FMF, FMA and the Food Research Association, Leatherhead.

This book, *Hygienic Design and Operation of Food Plant*, is the result of the symposium. It is an up-to-date (1978) guide to good practice in sanitary design and operation of food plants. The principles illustrated in the book endorse the principles of the American 3A Sanitary Standards Committee. An important attribute of the book is that it is the result of the collaboration of engineers, chemists and microbiologists. For the successful operation of a food plant, engineers, food chemists and microbiologists should collaborate during the layout and general design stage of the food plant. The synergistic contribution of the three groups of professionals will ultimately simplify operating procedures and aid in the overall quality control of the food product. The book is very well illustrated with clear diagrams and many photographs, including 8 in color and 16 electron micrographs. Every chapter is divided into various sections and all chapters include discussion sections in order to maximize the readers interpretation of the subject.

The book covers two important and related aspects (as shown in by the title of the book), namely the hygienic design and the hygienic operation of processes, plant and equipment for the food industry. The principles and practices that would affect the hygiene of food process equipment at the design and manufacturing stages are discussed. The editor states that his book looks in detail at the procedures for the testing and determination of hygienic standards in food processing plants and their components. The relevance of recent legislation for the health and safety aspects of food plants is discussed where appropriate. Emphasis is placed on the interaction that exists between plant design and operation from a sanitary, hygienic aspect. In addition, the book covers the effect of incoming raw material into a plant, the personal hygiene of employees and clean-in-place (CIP) systems. Perhaps, too much emphasis is placed on CIP systems. Overall, the authors have provided a guide to establishing and maintaining sanitary standards in critical areas in food plants.

Chapter 10, "Bacteriology of Raw Materials, Handling and Processing of Fish" written by W. Hodgkiss is an excellent chapter covering the microbiology of fishery products and how their quality is affected with handling and processing. However, this is the only chapter in which the design and/or operation of a food (seafood) plant is not covered. Hodgkiss' survey of seafood microbiology and safety belongs in a food microbiology or food safety book. Throughout the chapter, no mention to the hygienic design of a seafood processing facility is given. This is an area where this topic would have been of utmost importance.

This book should belong to all persons and companies involved in the

design and/or operation of equipment for food processing facilities, as well as the design of the facilities themselves. The editor suggests as potential readers: designers, managers and operators of food establishments and equipment; food engineers, food technologists, hygienists, quality controllers, plant supervisors, chief operators; teachers of food engineering courses; management in food distribution, storage and retailing; public health and factory inspectors; and industrial detergent and sanitizer manufacturers. In addition, I would like to suggest this book as a reference textbook for food engineering courses. R. Jowitt concludes the General Discussion (Chapter 13) by asking about the economics of hygiene design and operation of food plants. He leaves the readers with the thought that between the two extremes (any surface is cleanable if you are willing to spend the time and money to clean it and the other alternative, to pay the high prices for unsoilable surfaces), neither of which is very practical, there is a whole spectrum of combinations of more or less expensive surfaces and more or less expensive schemes for cleaning the surfaces available to the food engineer and food processor.

Richardo J. Alvarez  
Department of Food Science and Human Nutrition  
University of Florida  
Gainesville, FL 32611

*Waste Disposal Effects on Ground Water*.  
David W. Miller, Editor. Premier Press. 512 pages.

*Waste Disposal Effects on Ground Water* is described in its introduction as a reproduction of a 1977 report issued to Congress by the U.S. Environmental Protection Agency. Its publication in book form is meant to be a comprehensive survey of the occurrence and control of ground water contamination; however, it is far more. This publication is a clarion call to all environmental professionals. It defines and describes what has perhaps been a somewhat neglected environmental problem - the pollution of this nation's ground-water resources.

The first four chapters serve as an excellent introduction to ground-water resource development and could be used as a text in introductory hydrology courses. Chapter five explains the mechanisms by which ground-water becomes contaminated. Other chapters focus on specific sources of ground-water pollution from septic tanks to mine wastes. Each chapter describes current practices that result in contamination, characteristics of the contaminants, technological considerations in abatement, and provides case histories of actual contamination problems. In addition, the last two chapters provide an excellent reference to existing federal legislation and a guide for state and local agencies in protecting ground-water resources.

I found the case histories to be extremely useful as teaching examples in an energy management course this fall. I would recommend this publication to practicing sanitarians working in areas dependent upon ground-water and to other environmental and engineering professionals as a technical reference. Hopefully, the message contained in *Waste Disposal Effects on Ground Water* will be heeded before the words of Samuel Taylor Coleridge, "Water water everywhere and all the boards did shrink, water water everywhere and not a drop to drink" become a reality.

Homer C. Emery  
Maj MSC USA  
Academy of Health Sciences  
Fort Sam Houston, TX

# JFP Abstracts

## Abstracts of papers in the January Journal of Food Protection

**Prevalence of *Staphylococcus aureus* in Meat Samples from Traditional Markets in Benin City, Nigeria and Possible Control by Use of Condiments**, E. J. Nkanga\* and N. Uraih, Department of Biological Sciences, University of Benin, Benin City, Nigeria

*J. Food Prot.* 44:4-8

An investigation was carried out for detection and enumeration of coagulase-positive *Staphylococcus aureus* from fresh, fried and dried meat samples sold in the traditional markets in Benin City. Using Salt Milk Agar for presumptive detection and coagulase test for confirmation, it was found that all samples of meat from the traditional markets contained coagulase-positive staphylococci. Weekly sampling was done over a 6-month period to demonstrate the prevalence of the coagulase-positive staphylococci in both traditional market, supermarket and abattoir meat samples. The range of counts fell between  $10^4$  and  $10^{11}$  cells per gram. Fresh pork from the traditional market had the highest average number,  $6.4 \times 10^{10}/g$ , followed by dried beef  $3.7 \times 10^{10}/g$ , fresh goat and fried chicken  $6.8 \times 10^9/g$  each and fresh beef  $7.0 \times 10^9/g$ . The supermarket meat showed that chilled beef had the highest,  $4.5 \times 10^5/g$ , followed by chilled pork  $3.0 \times 10^5/g$  and frozen chicken  $2.0 \times 10^4/g$ . The abattoir meat had  $3.5 \times 10^4/g$ . The effects of condiments on inhibition of *S. aureus* were determined in abattoir meat homogenates. Clove was the most active of the spices tested with 1% (w/v) preventing outgrowth of *S. aureus* for up to 18-h contact time. When used at 10% (w/v), clove was found to be bactericidal, reducing the *S. aureus* load from  $2.9 \times 10^3/ml$  of homogenate at 0 h to  $1.2 \times 10^1/ml$  after 18 h of contact time.

**Growth and Survival of *Clostridium perfringens* in Rare Beef Prepared in a Water Bath**, A. M. Smith, D. A. Evans and E. M. Buck, Department of Food Science and Nutrition, University of Massachusetts, Amherst, Massachusetts 01003

*J. Food Prot.* 44:9-14

The low-temperature, long-time cooking of beef, using either a water bath or a conventional oven, resulted in partial inactivation of *Clostridium perfringens* vegetative cells. Beef roasts were cooked in a water bath for process times calculated to inactivate low and high levels of *C. perfringens* vegetative cells. Cooking beef in a water bath to an internal temperature of 60 C and holding for at least 12 min, as required by the USDA, reduced a population of *C. perfringens* by approximately 3 log cycles. To decrease the risk of subsequent outgrowth of *C. perfringens*, roasts ( $\leq 1.5$  kg) may be subjected to a process calculated for a 12-log reduction in population, which would include holding times of 2.3 h or longer at an internal temperature of 60 C. Recommendations are given for cooking and cooling roasts to minimize microbiological problems.

**Bacteriological Control of Food Equipment Surfaces by Cleaning Systems. I. Detergent Effects**, D. G. Dunsmore,

National Dairy Laboratory, Ruakura Agricultural Research Centre, Private Bag, Hamilton, New Zealand

*J. Food Prot.* 44:15-20

A cleaning simulator was used to determine the changes in soil and bacterial numbers on stainless steel surfaces over 36 soiling and washing cycles (each of 12 h) with four cleaning systems. The soiling milk contained  $10^6$  *Streptococcus faecalis* colony forming units/ml. One system included a pre-milk iodophor rinse (20 C), milk soil (30 C), post-milk water rinse (20 C), alkaline detergent (50 C) and a final water rinse (20 C). The second system was similar, but without the final rinse. In the third system, the post-milk rinse was omitted. The fourth system was similar to the second, except that water at 20 C was substituted for the detergent. The simulator technique proved effective for determining changes in soil and bacterial numbers on surfaces over time. The detergent was the most important system component for controlling bacterial numbers, with the sanitizer contributing some control and the rinses very little. The numbers of *S. faecalis* on the surfaces were related to the amount of surface soil (detergent efficiency), and also to the inhibitory effect of solutions used before the intercycle rest period of 9.5 h between washing and the next soiling. *S. faecalis* did not grow during the intercycle period of 9.5 h at 30 C and a relative humidity of 80%, even on surfaces where a significant milk soil was present.

**Bacteriological Control of Food Equipment Surfaces by Cleaning Systems. II. Sanitizer Effects**, D. G. Dunsmore\* and M. A. Thomson, National Dairy Laboratory, Ruakura Agricultural Research Centre, Private Bag, Hamilton, New Zealand

*J. Food Prot.* 44:21-27

A cleaning simulator was used to determine the changes in soil and bacterial numbers on stainless steel surfaces over 30 12-h soiling and washing cycles with four cleaning systems. The soiling milk was inoculated with  $5 \times 10^5$  *Streptococcus faecalis* and  $5 \times 10^5$  *Enterobacter aerogenes* organisms/ml. One system included a pre-milk rinse of water (20 C), soiling milk (30 C), wash with alkaline detergent (50 C) and two rinses with water (20 C). In the second system, an iodophor sanitizer (25 mg available iodine/L, 20 C) was substituted for the pre-milk water rinse, and in the third the iodophor was substituted for the final water rinse. In the fourth system, the iodophor was applied instead of the final water rinse, but was left for the 9.5-h intercycle period and drained immediately before the next milk soiling. Results showed that the sanitizer can be an important and, under some conditions, the most effective system component in controlling the bacterial population on surfaces. Of the short contact-time sanitizer applications, the post-wash sanitizer was more effective in reducing the bacterial count than the pre-milk sanitizer, but application of the sanitizer for the complete intercycle period completely eliminated all viable bacteria and was thus far more effective than either of the short contact-time methods. It was also shown that the sanitizer can play an important role in the detergency of the system. The

organisms studied (*S. faecalis* and *E. aerogenes*) differed in their soiling characteristics and survival in intercycle conditions.

**Initial Reaction Intermediates in the Oxidation of Ascorbic Acid by Nitrous Acid**, J. B. Fox, Jr., R. N. Fiddler and A. E. Wasserman\*, Eastern Regional Research Center, Philadelphia, Pennsylvania 19118

*J. Food Prot.* 44:28-32

Nitrite and ascorbate react to form nitric oxide at pH 5.5. In the initial stages of the reaction, seven intermediates can be identified spectrally and chromatographically; these include two colorless nitroso derivatives which contain 30-60% of the initial nitrite, two nitroso reductant derivatives absorbing at 345 and 412 nm, diketogulonic acid and two further decomposition products. None of the intermediates was paramagnetic; except for diketogulonic acid, all decomposed rapidly during or after isolation. Based on the order of appearance of the ultraviolet and visible absorption bands in the reaction mixtures, the observed characteristics of the intermediates, and the lack of organic radicals, a sequence is proposed for the initial steps in the oxidation of ascorbic acid by nitrous acid.

**A Research Note, Potassium Sorbate as Preservative of Butter**, A. Kaul\*, J. Singh and R. K. Kuila, Department of Dairy Bacteriology, National Dairy Research Institute, Karnal-130001 (Haryana), India

*J. Food Prot.* 44:33-34

Potassium sorbate was incorporated at the rate of 0.1% in a lot of butter at the time of working. Samples of butter were analysed each week for 6 weeks for mold, coliform bacteria, free fatty acids and thiobarbituric acid values after storage at different temperatures (20 C, 27 C, 37 C). Potassium sorbate inhibited the mold in all the samples at the end of 5 weeks at -20 C. Coliform counts increased rapidly in control samples at 37 C; however, consistently lower coliform counts were recorded in the butter samples containing potassium sorbate. Incorporation of potassium sorbate in butter samples at -20 C reduced the coliform count <1/g after 2 weeks, and decreased the release of free fatty acids and thiobarbituric acid value (TBA) as compared to control butter samples.

**Evaluation of a Prototype Beef Carcass Washer in a Commercial Plant**, M. E. Anderson, R. T. Marshall\*, W. C. Stringer and H. D. Naumann, U.S. Department of Agriculture, Science and Education Administration, 113 Eckles Hall, University of Missouri, Columbia, Missouri 65211 and Food Science and Nutrition Department, University of Missouri-Columbia, Columbia, Missouri 65211

*J. Food Prot.* 44:35-38

Eighty half carcasses were either: (a) hand-washed with tap water (15 C) or (b) washed (15 C) with an experimental beef carcass cleaning unit. Overall logarithmic mean reduction in aerobic plate counts were 0.99 for hand-washed carcasses and 1.07 for those machine-washed. No significant difference ( $P \leq 0.05$ ) was noted in percentage dirt and smear reductions due to type of wash (hand or machine). However, 12.5% of the hand-washed carcasses and 22.5% of the machine-washed carcasses contained defects caused by hair. The authors

concluded that the machine was at least as effective as the careful hand washing in this experiment.

**Patulin and Rubratoxin B: Interactions of Toxic and Hepatic Effects and Mutagenic Potential**, K. Kangsadampai, D. K. Salunkhe\* and R. P. Sharma, Interdepartmental Toxicology Program, Utah State University, Logan, Utah 84322

*J. Food Prot.* 44:39-42

The toxic interactions of patulin and rubratoxin B were studied in terms of either antagonistic or synergistic effects. A range of sublethal doses of test substance(s) (patulin, rubratoxin B or their combination) was administered to mature male rats. Mortality elicited by 0.25 mg of rubratoxin B/kg was prevented by the simultaneous administration of 1 mg of patulin/kg. Dose-related reductions in body weight by rubratoxin B were counteracted by patulin when it was added to the treatment. Toxic doses of patulin caused an increase in EPN-dealkylase and aryl hydrocarbon hydroxylase and these effects were prevented when rubratoxin B was administered simultaneously. Antagonistic interactions between patulin and rubratoxin B were shown on mortality rate, body weight and levels of mixed function oxidase enzymes. Mutagenicity with the Ames test could not be obtained by pure mycotoxins or in combination, suggesting that this test could not be used for this purpose, perhaps because of the antibiotic property of the mycotoxins.

**Salt, Water and Oilseed Proteins Affect Brine Content of Sausages**, R. N. Terrell\* and J. A. Brown, Meat and Muscle Biology Section, Department of Animal Science, Texas Agricultural Experiment Station, Texas A & M University, College Station, Texas 77843, and Miles Laboratories, Inc., Schaumburg, Illinois 60195

*J. Food Prot.* 44:43-46

Brine contents of commercial sausage products ranged from 3.7 to 5.9% and were different among brands. Frankfurters to which either isolated soy or cottonseed protein isolate were added had greater process shrinkage values and higher moisture, lower fat and lower brine contents than did controls. Frankfurters prepared with oilseed proteins had higher ( $P < .05$ ) process shrinkage percentages, higher moisture percentages and lower brine contents than did controls (all-meat). Although not significant among all comparisons, as in-going (lb per 100 lb raw meat) salt levels increased from 2.5 to 3.0 to 3.5 lb, brine contents increased regardless of level of added water (25, 30, and 35 lb per 100 lb of meat). Within added-salt levels, brine content generally decreased with increasing level of in-going water but these differences were not significant ( $P > .05$ ). At the beginning and end of a 6-week storage period, frankfurters with high brine contents (4-50-5.25%) had lower total microbial numbers than did frankfurters with low (2.50-3.49%) or medium (3.50-4.49%) brine contents. Because of simplicity, brine content determinations may be further developed as a practical tool for predicting product performance of cured sausages.

**Excessive Energy for Food Distribution Associated with Food Seizures**, N. Unklesbay, Department of Food Science and Nutrition, College of Agriculture, University of



Missouri-Columbia, Columbia, Missouri 65211

*J. Food Prot.* 44:47-54

Energy expended to distribute food shipments during a 2-year period to, and within, the United States before their seizure was documented for four distribution modes: ship, truck, train and air. The food shipments were described according to their wholesale value, energy usage per distribution mode, nutrient content, energy/nutrient ratios and violation code(s) of the Food, Drug and Cosmetic Act. Results were used to illustrate how this type of study could be used as an administrative tool to develop strategies for avoiding excessive energy consumption during food distribution. Recommendations were made for collecting further data to facilitate reductions in the amount of energy used to distribute human food. Finally, rather ethical questions were raised about the problem of purchasing protein foods from less-developed countries; using energy to distribute them to the United States when they are subsequently declared unfit for human consumption.

**Nutritional and Microbial Changes During Production of Tostones [Fried Plantains]**, R. J. Alvarez, J. A. Koburger\*, and H. Appledorf, Food Science and Human Nutrition Department, University of Florida, Gainesville, Florida 32611

*J. Food Prot.* 44:55-58

Tostones (fried plantains) are consumed by a large segment of the Latin population in Florida. In addition, their use in specialty restaurants is on the increase. However, little is known about the microbial and nutritional quality of this product, particularly as affected by processing. Tostones are prepared by peeling and cutting the plantains into slices; soaking slices in a salt brine; frying, drying and flattening the slices; and refrying them until golden brown. Protein, ash, crude fiber and carbohydrate content increased during preparation as a result of moisture loss during processing. Fat content increased due to uptake during frying. Phosphorus, Na, Hg, Se and Zn content also increased, whereas that of K and Fe decreased. Changes in water activity and pH were not significantly pronounced. *Bacillus* and *Penicillium* species were the only organisms isolated from laboratory-prepared samples. The finished product contained 48.0% carbohydrate, 26.5% moisture, 21.5% fat, 2.5% protein, 1.0% ash, 0.5% crude fiber and 395 Kcal/100 g.

**Evaluation of the Botulism Hazard from Nitrogen-Packed Sandwiches**, D. A. Kautter\*, R. K. Lynt, T. Lilly, Jr. and H. M. Solomon, Division of Microbiology, Food and Drug Administration, Washington, D.C. 20204

*J. Food Prot.* 44:59-61

*Clostridium botulinum* was inoculated into hamburger, sausage and turkey sandwiches, which were subsequently placed in a nitrogen atmosphere. Growth of the bacterium was studied to assess the botulism hazard. Hamburgers inoculated with *C. botulinum* types A and B and incubated at room temperature became toxic on day 4 while remaining fully acceptable organoleptically. Sausages became toxic on day 7 while appearing marginally acceptable. In air at room temperature, all sandwiches were obviously decomposed before toxin was produced. Refrigeration under nitrogen prevented toxin

production by types A and B; however, hamburgers inoculated with type E were toxic at 12 C in 30 days while appearing fully acceptable. All refrigerated sandwiches were either fully or marginally acceptable organoleptically throughout the 60-day observation period; none were obviously decomposed. Turkey sandwiches did not become toxic at any temperature or incubation time studied.

**Microbial Quality of Ground Beef after Simulated Freezer Failure**, F. S. Ali and F. O. Van Duyn\*, Department of Foods and Nutrition, University of Illinois, Urbana, Illinois 61801

*J. Food Prot.* 44:62-65

Six lots of ground meat, obtained at intervals from a local supermarket, were frozen, and later held with other frozen foods in the freezer compartment of a refrigerator-freezer where power failure was simulated by unplugging the unit. Mean values for the counts ( $\log_{10}$ ) of the beef as purchased were as follows: aerobic and psychrotrophic plate counts 6.35 and 6.66, respectively; presumptive coliforms 4.48; coagulase-positive staphylococci 4.67; and presumptive *Clostridium perfringens* 1.43. Presumptive salmonellae were detected in three of the six lots. Counts of the same order of magnitude as above were obtained after 7 days in the freezers, complete defrost of the meat and 6 h thereafter. Between 6 and 24 h, aerobic and psychrotrophic plate counts and numbers of coliforms and coagulase-positive staphylococci increased approximately 10-fold. Forty-eight hours after complete defrost, further increases in counts occurred. The appearance and aroma of the meat were acceptable 24 h after defrost; after 48 h, it would have been discarded because of browning, slime and off-odors.

**Inhibition of Microbial Growth in English Sole [*Parophrys retulus*]**, Y.-M. Chung and J. S. Lee\*, Department of Food Science and Technology, Oregon State University, Corvallis, Oregon 97331

*J. Food Prot.* 44:66-68

The influence of potassium sorbate on growth of microorganisms in seafood was tested by treating English sole (*Parophrys retulus*) homogenate with 0, 0.1 and 1.0% potassium sorbate. Viable counts during 1.1-C storage revealed that 0.1% potassium sorbate delayed the onset of logarithmic growth of bacteria for 1 day, compared to no delay for the untreated control. The generation time of 1.7 days and a maximum growth level of  $10^9$  cells per g were unchanged by the presence of 0.1% potassium sorbate. The 1.0% sorbate treatment extended the lag period to 6 days. The generation time was increased to 2.1 days and the maximum level of growth reached was  $10^7$  cells per g on the 14th day. Tests of the microbial flora of the fish revealed that *Pseudomonas* spp., which comprised 17.1% of the total at 0 day, increased to 96.0% of the microbial population in 14 days at 1.1 C for the untreated sample. During the same period the *Pseudomonas* population reached 100% for the 0.1% sorbate-treated sample, and to 98.2% for the 1.0% sorbate-treated sample. Potassium sorbate at the concentrations employed, therefore, did not seem to alter the typical microbial spoilage pattern.



**Variability and Interrelationship of Various Herd Milk Components**, R. Grappin, V. S. Packard\*, and R. E. Ginn  
*J. Food Prot.* 44:69-72

A study was made of the variation in herd milk composition and the interrelationship of various milk components as factors to be considered in milk pricing schemes, involving milkfat and/or other milk components. As measured by the coefficient of variability, fat was found to be the most variable component, followed by, in descending order of variability, protein, total solids, lactose, and solids-not-fat (SNF). Non-protein-nitrogen (NPN) level averaged 4.36% of total nitrogen in 99 herd samples collected and analyzed in November, 1978. Coefficient of variation of NPN was 15.18. Thus NPN represents a significant factor in protein analysis where the Kjeldahl procedure is used as a reference standard. This fact lends weight to the desirability of basing milk purchase, if protein is involved, on "true" protein (total nitrogen minus non-protein-nitrogen) rather than total nitrogen.

**Some Characteristics of Acid Injury and Recovery of *Salmonella bareilly* in a Model System**, L. C. Blankenship, Animal Products Laboratory, Russell Research Center, USDA, SEA-AR, P.O. Box 5677, Athens, Georgia 30613  
*J. Food Prot.* 44:73-77

The injury and recovery characteristics of *Salmonella bareilly* after treatment with acetic acid in saline solution containing 0.5% sucrose were studied. Injury and death rates were dependent upon acid concentration and temperature. Several enzyme activities were substantially reduced in injured cells. Recovery rates were greater in peptones and casamino acids than in several commonly used culture media. The effects of a variety of inhibitors and antimetabolites on recovery of acid-injured cells indicated that protein and RNA synthesis, as well as electron transport, were necessary for recovery.

**Yogurt: Nutritive and Therapeutic Aspects**, H. C. Deeth and A. Y. Tamime\*, Otto Madsen Dairy Research Laboratory, Queensland Department of Primary Industries, Hamilton, Queensland, 4007, and Department of Dairy Technology, West of Scotland Agricultural College, Auchincruive, Ayr KA6 5HW, Scotland

*J. Food Prot.* 44:78-86

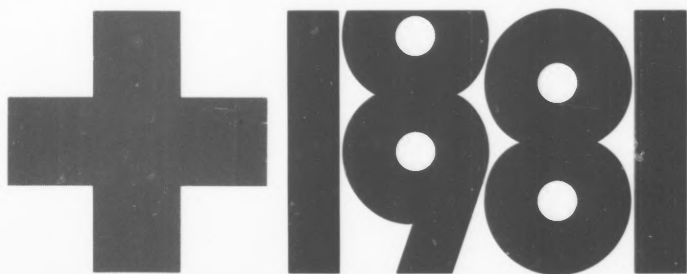
This review deals with the nutritive value of yogurt in terms of its chemical composition, vitamin content and digestibility. The reported therapeutic benefits of yogurt for gastrointestinal disorders, coronary heart disease and other maladies are also discussed.

# How a 100-year-old helps your business stay healthy and safe.

This 100-year-old is the American Red Cross. That's right. And Red Cross is helping businesses like yours stay healthy and safe with CPR—cardiopulmonary resuscitation—a first aid method for sustaining life when a heart stops beating and breathing stops. And it happens every day. If it happened to an employee on the job, would you ... would anyone know what to do until help arrived? Permanent brain damage or death can result in a matter of minutes ... unless someone there knows CPR.

You'll breathe a lot easier knowing your business has CPR-trained people on hand—maybe one for every 50 people. You already have the manpower, and training doesn't take much time. Red Cross can train one of your employees to become an instructor certified to teach CPR classes in your company.

Find out more about CPR training. Call your local Red Cross chapter today. **Red Cross: Ready for a new century.**



# ***SOMEONE YOU SHOULD KNOW IN THE DAIRY INDUSTRY***



**Clarence Pearson,  
VO-AG Instructor**

*Mr. Pearson grew up on a small dairy farm in Elma, Washington. Graduating from Washington State University with a degree in Agricultural Education in 1959, he eventually returned to his alma mater, Elma High School, as a vo-ag teacher after teaching twelve years in Eatonville and three years at Winlock. Earning a masters degree through summer study at the University of Wisconsin at River Falls in 1970, his teaching efforts in animal science, farm management and forestry have contributed to the continued success of the Vo-ag program at Elma High. Each year, FFA judges rank the school's program among the national leaders and in 1979, Elma was the only school in the nation receiving gold medals in all areas of competition. In addition, Mr. Pearson operates a dairy farm consisting of 84 registered Guernseys and grade Holsteins.*

## **We Stress Variety and Practical Management**

"Our program exposes young people to a large variety of agricultural related areas from grades nine through twelve. We plan a good, well rounded program of activities so each student can find an area suiting their interests. Once a student finds an area of interest, they really become dedicated to the Ag Program. Success in one area seems to rub off on other areas and the student finds he or she can accomplish many things; a positive attitude results, which helps them succeed in life.

"We tour many farms in the area to see what farmers are doing to find out what things are working for them. We stress the practical application of dairy management, so knowledge gained in the classroom can be used on the home farm or the place of employment.

"As part of this effort, each student must have a project for the school year called a 'supervised occupational experience program' or SOEP. These projects range from actual on-farm production to agri-business related activities. In this way, students who might not actually live on a farm can still participate in the many vocational opportunities which exist in and around the agricultural industry. The goal is to profit from the experience and build on it for the future."

## **Leadership and Quality are the Goals**

"It is very rewarding to see the growth of a student who, on the surface, might appear shy and awkward at first. Time and time again we have seen these kids blossom into leaders. They have learned that success requires participation, confidence and determination. We teach the importance of taking pride in workmanship, being dependable, having a good attitude, and being able to enjoy those whom you must associate with each day, whether in business or leisure activities.

"We believe anyone can be a leader if they have the desire. It often takes some kind of program to bring this out. It is very self satisfying for me to see someone succeed, and become a leader in the community or industry.

"I feel being an active dairyman, in addition to my teaching duties, helps bring a certain value to my efforts with students. At a recent ag teachers conference, the question of teacher's involvement in farming arose. The conclusion was that it does help in two ways: It helps improve the teacher's knowledge and, perhaps more important, it tends to help the teacher keep current on the latest advances in agriculture.

"However, being active in farming is far less important for a vo-ag teacher than being dedicated to helping his students succeed. This requires a certain amount of sacrifice such as not being home much on weekends and contributing some of your vacation time to helping students who ask for extra assistance. But the rewards of helping young people succeed far outweigh the sacrifice. Successful teaching and farming both have the same important ingredient; 'Dedication'."



## **SURGE**

