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Dairy and Food Sanitation

A Publication for Sanitarians and Fieldmen

- Eggnog: Its Composition and Quality
- The Future of the Dairy Industry in the Northeast
- Government Involvement in the Food Industry
- Improved Acceptance of Retail Beef Through Proper Temperature Control



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

***“My eyes are closed,
yet somehow without knowing
my senses guess what beauty
lies between this sunlit nook
and those far blue hills.”***



Photo: David Fujiaro

Those are the words and images of Dr. Robert J. Smithdas, words he hasn't heard and images he hasn't seen since the age of four when he lost his sight and hearing. Dr. Smithdas is a published poet and a member of the American Poetry Society. "I started writing because I like to express myself. That can be said of most writers. And that's how I like to think of myself—just like any other writer."

His own education is a testimony to his strength and the support of others. At the Perkins School for the Blind, he achieved a scholastic average of 97 and dismantled and reassembled the transmission of a Chevrolet engine in 25 minutes. Later at St. John's University, a nonhandicapped student communicated classroom lectures to him through the manual alphabet. A large corps of volunteers transcribed all of his texts into braille. He graduated cum laude with a Bachelor of Arts Degree. Three years later, at New York University, he became the first deaf-blind person to earn a master's degree. In 1975 he married Michelle Craig who is also deaf and blind. He is a Yankee fan, an avid fisherman, a Red Cross swimmer and a man who has been known to tackle the New York subway on his own.

Today, Dr. Smithdas is the Director of Community Education for the Helen Keller National Center for Deaf-Blind Youths and Adults. In this capacity, his own life experience provides a very special sensitivity to the enormous need for rehabilitation of deaf-blind people.

He has proved that with proper rehabilitation, the deaf-blind person can participate fully and successfully in a complex society. He asks that the disabled be treated like any other human beings. Robert Smithdas says it all in his poem 'Shared Beauty': "I call it life, and laugh with its delight. Though life itself be out of sound and sight."

President's Committee on
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EGGNOG EGGNOG EGGNOG

ITS COMPOSITION AND QUALITY*

LESTER HANKIN¹, DONALD SHIELDS², and J. GORDON HANNA¹

¹Connecticut Agricultural Experiment Station, New Haven, CT.

²Dairy Division, Connecticut Department of Agriculture, Hartford, CT.

Egg Nog, a popular holiday beverage, is sold and consumed primarily during the seven holiday weeks each year, from before Thanksgiving until New Year's Day. Although some egg nog is prepared at home, much more is made by dairies. Egg nog is consumed as purchased, or fortified with various "spirits."

Webster's New International unabridged dictionary defines egg nog as a drink made from eggs beaten with sugar, milk or cream, often with rum, brandy, or other liquor, or wine added. It is served cold, often flavored with grated nutmeg.

The product is defined by Connecticut regulations and by many other states, but not by Federal law (1) as a clean, wholesome food product made from two or more of the following ingredients: milk products, eggs, sucrose and/or dextrose, spices, wholesome edible stabilizer, and salt. Optional ingredients may include, artificial flavor and color. Egg nog shall contain not less than 6% by weight of milk fats, not less than 1% by weight of egg yolk solids, not more than 0.5% by weight of stabilizer,

and not more than 50,000 standard plate count of bacteria per gram.

To make egg nog, dairies usually purchase a concentrate which contains flavoring, stabilizer, spices, egg yolk solids, and color. The concentrate is mixed with fresh milk and cream, and sugar, if not included in the concentrate. The egg nog is homogenized, pasteurized, bottled, and refrigerated.

Twenty-eight samples, quarts or half-gallons, of non-alcoholic egg nog were collected at Connecticut dairy plants and food stores from November 18-25, 1980. Twenty processors were represented with fourteen brands manufactured in the state.

The desired flavor and viscosity of egg nog is a matter of personal taste. Viscosities ranged from a consistency of cream to slightly heavier than whole milk. The flavor also varied among brands, from highly aromatic and strongly flavored to lightly flavored, somewhat bland products.

Some labels listed use of stabilizers; the types varied among brands. Most labels stated use of vegetable gums (carob bean gum, guar gum) and carrageenens. Some also stated they contained mono- and diglycerides and one stated use of calcium sulfate and cellulose gum. Stabilizers provide a heavier consistency and help disperse the fat particles in the product.

* This article adapted from Bulletin 793 of the Connecticut Agricultural Experiment Station, Box 1106, New Haven, CT 06504; available on request.

A few brands did not list ingredients, except to note that artificial color and flavor had been used. The use of natural flavors such as vanilla, ground nutmeg, and oil of nutmeg was indicated on some labels. Only five brands did not list artificial color or flavor on the labels.

The average open date or pull date for 27 samples was 20.1 days. The longest open date was 38 days; the shortest 10 days. One sample was undated, but an open date is not required in Connecticut for egg nog.

Each sample was stored at 40° F (4.4° C) until the expiration date. All had acceptable flavor quality to that date. One undated sample remained acceptable for the simulated expiration period of 20 days.

Two samples were above the standard of 50,000 standard bacterial plate count. Most samples, however, contained less than 1,000 standard plate count per gram, suggesting good manufacturing and packaging methods. There is no standard for the number of coliform bacteria in egg nog but milk must contain not more than 5 per milliliter. Four egg nogs contained more than 5 coliform bacteria per gram. Eight samples contained a few yeasts, less than 15 per gram, and only two samples contained milk contaminants, fewer than 4 per gram. Yeasts and molds in such small numbers in this type of product are not significant.

The acidity of the egg nogs ranged from 0.12% to 0.20%. Total solids averaged 28.3%. Total fat content ranged from 5.3 to 9.5%, averaging 6.6%, taking into

account the amount of fat derived from egg yolk solids. Only four samples did not contain the amount of milk fat required (6%).

Protein content per 8 oz. serving ranged from 5.9 grams to 10.6 grams, and averaged 8.0 grams. Carbohydrate content ranged from 12.6 to 26.3%. Carbohydrates present included both lactose from dairy products as well as sucrose or dextrose which was added. Caloric content per 8 oz. ranged from 265 to 461 calories. The average was 321 calories.

Nineteen of the 28 samples or 68% contained the amount of egg yolk solids required. The sodium content averaged 104 milligrams per 100 grams; the range was 59 to 178.

No egg nogs contained a preservative.

The flavor quality of all egg nogs remained acceptable to the expiration date. Flavor ranged from fairly bland to highly aromatic.

Of the 28 samples examined, 26 met the standard of less than 50,000 standard plate count. Yeast and mold contamination was minimal and only four samples contained coliform bacteria in excess of 5 per gram.

Consumers of egg nog in Connecticut generally receive a good quality product containing a high level of calories with no preservatives.

REFERENCE

1. Connecticut Food, Drug and Cosmetic Act of 1975. Section 19.234.13.

An Assessment: The Future of the Dairy Industry in the Northeast

DR. LEW S. MIX

*Director, Farm Management Research & Development
 Agway, Inc., Syracuse, NY*

“Projections are for increased milk production by 1985, paired with a slight reduction in per capita consumption. This will result in larger quantities of natural cheese and yogurt produced, forming the growth segment of the industry.”

Efficient financial management of dairy cooperatives is the key to the future of the dairy industry. Projections are for increased milk production by 1985, paired with a slight reduction in per capita consumption. This will result in larger quantities of natural cheeses and yogurt produced, forming the growth segment of the dairy industry. Production prices and costs are estimated to rise, with net cash income declining by some 25 percent. But the climate of the dairy industry can be improved by such measures as culling more low-production cows, stepping up advertising budgets, and strengthening dairy cooperatives by minimizing duplication of costs.

There are at least ten major factors that will determine the trend of milk production and the consumption of dairy products in the US, specifically in the northeast part of the country. Some will have a greater impact than others, but they are all interrelated.

Here's a capsulized look at these various factors. A discussion will follow:

Population Growth, Composition and Consumer Preferences

- Lower birth rate and higher percentage of adults
- Higher emigration rate from certain states
- Per capita consumption of fluid milk and other dairy products
- Consumer demand for imitation vs. natural dairy products
- Disposable income per capita

US Monetary Policy

- Level of federal spending
- Prime interest and rediscount rates
- Money supply and dollar support
- Magnitude of trade deficits
- Ability to defuse world tensions

US Agricultural Policy

- Dollar expenditures for dairy research
- Dairy and feed grain price support and CCC purchase programs
- Acreage set asides and target prices
- Quotas on dairy products and beef imports
- Restriction on casein imports
- Maintenance of the federal order system
- Maintenance of the two-class price system

US Energy Policy

- Availability and cost of energy for milk production, transportation, and processing

US Human Nutrition Policy

- Position on use of animal fat and protein
- School curricula on nutrition

FDA Policy and Federal and State Statutes on Food Labeling

- “Imitation” vs. “substitute” dairy products
- Required declaration on menus of product served

Impact of Advertising and Sales Promotion

- Level of producer funding of American Dairy Association, Dairy Council programs
- Ability to influence consumer eating habits

How the Dairy Climate Can Be Improved:

- Cull more low-producing cows; they are unprofitable and glut the milk market.
- Step up advertising and sales promotion dollars to 1 percent of the blend price.
- Protect the flavor of natural milk from the time it is removed from the cow until it reaches the consumer's table.
- Strive for more uniform year-round production through stored feeding and earlier calving.
- Intensify producer education in milk marketing basics. Emphasize the necessity of strong milk marketing cooperatives.
- Strengthen dairy cooperatives through minimizing duplication of assembly, administrative and sales costs. Implement permanent equity programs.
- Amend the federal orders to require all producers to share in the cost of processing and marketing surplus milk and minimize other market inequities.
- Select the best qualified cooperative directors and management personnel available and manage by objective.

Size of competitive beverage advertising budgets
Impact of imitation dairy products

Adoption Rate of New Technology

Expanded use of high PD bulls through AI and embryo transfers
Expanded use of computer balanced total mixed rations
Improved forage varieties, yields and preservation
Expanded use of DHIA and farm business record data banks for culling, feeding, breeding and investment decisions
Availability of adequate credit
Updating with more efficient production systems

Financial Stability of Dairy Cooperatives and Proprietary Firms

Consolidation of dairy cooperatives and proprietary firms to reduce transportation, marketing and administrative costs
Conversion from revolving to permanent capital financing
Ability of cooperative boards to establish sound fiscal policies and ability to select and maintain a truly professional management team that operates at a profit
Equitable sharing of the cost of balancing the market

Return to Producers for Labor, Management and Capital

Competition from other farm enterprises, cash

grain, beef, swine, vegetables and fruit

The cost of feed, interest, labor, fertilizer, machinery and other major production inputs

Price of herd replacements and cull cows

Return on assets employed

Alternative employment opportunities for farm owners and employees

Though this is not a complete list, it does suggest that the number of factors which bear on the future on the dairy industry is long and complex. No one can accurately predict the scope and magnitude of the changes which will occur in the next five years. However, the trends in population growth, consumption patterns, soaring energy costs, continuing inflation, new technology and on-going consolidation do set the stage for what can happen to the dairy industry.

These projections are based on many assumptions, some of which should be enumerated:

80 percent of parity dairy support prices

Average crop years

Milk-feed ratios in the range of 1.4-1.7

Inflation at 10 to 12 percent per year

Continuing adoption of new production technology

Some increase in the culling rate

Improved financial stability of dairy cooperatives

A slight increase in the birth rate

A 50-100 percent increase in advertising and promotion dollars for hard hitting sales and

**U.S. POPULATION, NUMBER OF MILK COWS, PRODUCTION PER COW,
TOTAL MILK PRODUCTION, DOMESTIC PER CAPITA DISAPPEARANCE
FOR 1970-1979 WITH ESTIMATES FOR 1980 THROUGH 1985***

YEAR BEGINNING JULY 1	POPULATION THOUSANDS	#MILK COWS THOUSANDS	PROD./COW LBS.	TOTAL MILK PRODUCTION MIL. LBS.	CONSUMPTION/ CAPITA TOTAL MILK EQUIVALENT	CONSUMPTION FLUID/CAPITA PRODUCT POUNDS
1970	204,878	12,000	9,751	117,007	562	275
1971	207,053	11,839	10,015	118,566	558	273
1972	208,846	11,700	10,259	120,025	561	275
1973	210,410	11,413	10,119	115,491	555	272
1974	211,901	11,230	10,293	115,586	544	264
1975	213,540	11,143	10,350	115,334	546	269
1976	215,118	11,055	10,879	120,269	548	266
1977	216,745	10,974	11,181	122,698	551	263
1978	218,548	10,848	11,240	121,928	558	261
1979	220,415	10,777	11,471	123,623	561	261
1980	221,651	10,793	11,800	127,357	575	258
1981	224,212	10,707	12,000	128,484	573	259
1982	226,341	10,621	12,200	129,576	572	258
1983	228,508	10,536	12,400	130,646	572	256
1984	230,692	10,452	12,600	131,695	571	255
1985	232,371	10,368	12,800	132,710	571	254

Sources: U.S. Bureau of Census, Series P-25, July 1979
Includes Armed Forces Overseas

Milk Production, ESCS-USDA, February 1979
Dairy Situation, ESCS-USDA, Pgs. 18-19, October 1979

*Estimates for 1980-1985 by L. S. Mix, Agway Inc., 9/08/80

education programs

A further increase in per capita cheese and yogurt sales with strict labelling requirements for imitation products

How the Dairy Climate Can Be Improved

- Cull more low-producing cows; they are unprofitable and glut the milk market.
- Step up advertising and sales promotion dollars to 1 percent of the blend price.
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- Amend the federal orders to require all producers to share in the cost of processing and marketing surplus milk and minimize other market inequities.
- Select the best qualified cooperative directors and management personnel available and manage by objective.

To expand some on the information previously highlighted, population growth nationally is expected to turn up slightly from the current 0.9% annually to about 1.0% by 1985. Population in the Northeast will grow about half as fast as for the nation as a whole. This will substantially limit the rate at which the dairy industry can grow in this region.

Within the Northeast, the rate of population growth will be greatest in Northern New England, New Jersey and Maryland. New York and Pennsylvania will have minimal growth. There will be a higher percentage of senior citizens and fewer children under twelve years of age, which will tend to reduce per capita consumption.

Milk production per cow for the Northeast is increasing more than twice as fast as cow numbers are decreasing. Consequently, total milk production by 1985 may be up 6.2% over 1980 and supply per capita up 3.8%.

The net result will be a regional decline in Class I

“The growth segment of the dairy food industry will be natural cheese, Italian cheese and yogurt. Imitation cheese will be a threat, especially in the fast food business. The trend to low fat milk will continue increasing supplies of butterfat.”

utilization from the present 48 percent (1979) to 45.0 percent by 1985. This probably will mean larger quantities of cheese will be manufactured in the Northeast, particularly in New York, Vermont and Pennsylvania where milk production may increase five times faster than the population. The Northeast will continue to produce about 21% of the nation's milk supply.

The profitability of milk production can be greatly enhanced by heavier culling and improved feeding, modern systems and management to achieve an output of 500,000 lbs. or more per worker.

The number of herd replacements per 100 cows in the Northeast is substantially higher than a year ago, signaling an expansion of milk production over the next five years. Dairymen need to be appraised of the dangers of overproduction such as that seen in 1976 and 1977. Increasing sales promotion monies to 1% of the producer price is essential.

The financial strength of several northeastern dairy cooperatives must be improved over the next five years if stable marketing is to be maintained. Great opportunity exists to reduce assembly, sales and administrative costs through consolidation of northeastern dairy cooperatives. This will be a slow, painful process but it is certain

to come. Cooperatives must adopt a producer permanent equity plan to keep interest costs lower and assure themselves of financially sound marketing for the future.

The growth segment of the dairy food industry will be natural cheese, Italian cheese and yogurt. Imitation cheese will be a threat, especially in the fast food business. The trend to low fat milk will continue increasing supplies of butterfat.

As the number of independent handlers continues to decrease, more dairy cooperatives will have to assume more of the processing and marketing functions. The need for sharp financial management throughout the dairy industry will increase. Dairymen will need to hire the best management obtainable to operate their cooperatives.

Government interference with the Federal Order Program, lowering supports to 75% of parity or substantially increasing imports all would have a negative effect on milk production nationally and regionally. The short run outlook is for producer prices to be about 7-9% higher for the year ahead compared with the same 12 months a year ago. Costs will be up 10-12%. Net cash incomes will be about twenty-five percent less in 1980 than in 1979.

Government Involvement in the Food Industry

WHEN IS ENOUGH TOO MUCH?

HARVEY EBERT

*Land O' Lakes
Minneapolis, MN*

The food industry is the "most regulated" American industry. Government regulations are thought to protect the consumers, general public, and industry alike. Unfortunately they can cause many more problems than they attempt to solve. The author discusses regulations which are too broad in scope or too narrow, ones which overlap or contradict themselves, those which are too expensive or too complex, and many more. Possible solutions to the dilemma are included. A solution must be found to preserve the assets of a health population and a bountiful variety of nutritious, wholesome food.

The reasons for government involvement in the food industry are basically praiseworthy, laudable attempts to protect the public, industry, and various special interest groups.

But aside from these agreeable thoughts, government regulations sometimes spawn for the sake of perpetuating themselves. They produce a spiral effect: regulations build up bureaucracy which produces more regulations to build a larger bureaucracy.

In fact, there are many, many difficulties associated with government regulations of food industry. For instance, some regulations are too broad, enabling bureaucrats to interpret them however they please.

Some are too specific -- so narrow they do not allow the individual to exercise personal judgment in applying them to variable conditions.

Many regulations are contradictory in themselves, or between the regulations of other industries. With the current proliferation of regulations and industries, it is almost impossible to gather the complete information and to have the breadth of view necessary to analyze

possible contradictions.

Overlapping regulations are yet another problem. Complying with one regulation can result in non-compliance with another.

Sometimes, benefits derived from regulations put too great a strain on productivity. Or, the benefits are directed mainly to a select few, thus penalizing the general public. Such a case can be made in the issue of labelling, where a higher product cost results from the extensive product analysis necessary for labelling to fit regulations.

Occasionally it costs too much to enforce government regulations. These extra costs add to the consumer's burden of an already-inflated food dollar.

Current technology has advanced to such a degree that many regulations are outdated and impractical.

Today, for example, common measurements are in "parts per million" or "parts per billion." Pesticides, herbicides and other trace residues are measured in these dimensions. But as measurements can be made in smaller and smaller increments, what would happen if pesticide and herbicide use were banned completely to gain compliance with increasingly smaller, or "zero tolerance" levels?

Some regulations are so conceived they appear to be self-perpetuating and grow, like quack grass, under their own existence.

Regulations can also be too complex to be practical. They should be written practically and realistically so industry can follow them. The old cliché "we must write music the band can play" applies to such a situation.

“Many regulations involve extensive clerical and paperwork. As a matter of fact, the government once attempted to evaluate the effect of its own red tape. The project itself was so complex and so filled with paper work it choked and died.”

Many regulations involve extensive clerical and paperwork. As a matter of fact, the government once attempted to evaluate the effect of its own red tape. The project itself was so complex and so filled with paper work it choked and died.

Regulations are often written by one group of persons and interpreted by another person, who may not understand the industry. This is perhaps the largest single problem with government regulations today. As an example, there are those who write regulations on nonfat dry milk without having been in a dry milk plant, let alone having dried a pound of milk.

The food industry has the dubious distinction of being the “most regulated” industry. Agencies involved in its regulation include:

- U.S. Treasury, Internal Revenue Service, Customs
- Commerce, Trade Departments
- U.S. Department of Agriculture
- Department of Health and Human Services
- Food and Drug Administration
- Federal Trade Commission
- Department of Justice
- Occupational Safety and Health Administration
- Environmental Protection Agency
- Department of Energy
- State agencies
- Local agencies

What is a reasonable solution to help control this much-regulated industry?

First, a return to good, common “horse sense” would help. Each issue about to be regulated should be

examined thoroughly. The need, the result and the cost/benefit ratio desired should be determined in a state of prudence rather than emotion. Issues should be approached with a concern for the good of the general public rather than specific interest groups—whether they are consumers, government or industry itself.

It’s also important to return to the practice of talking things out before regulations are finalized. A vocal majority has, to a degree, created the false impression that it is wrong for industry, government and the public to sit down and reason out an issue together.

One example of the need to reason before regulations are set is the case of determining who is responsible for proper nutrition:

- Is it, perhaps, the industry who is responsible?
- Is it government, “big brother?”
- Or is it consumers, using education provided to them to make wise decisions?
- Is it, on the other hand, a combination of all three?
- Is it a vocal minority of consumers and special interest groups who are interested in nutritional information and labelling?

What should our philosophy be as to the authority of government, industry, and the public in this and other issues as they arise? The subject is clouded today.

The objective must be to protect the very great blessings found in this nation: the U.S. has the most bountiful variety of safe, nutritious foods in the world and Americans have never been healthier.

Government regulations, the wishes of industry and the public need to be balanced so as not to lose these assets. When is enough too much? The problem is begging a solution.

IMPROVED ACCEPTANCE OF RETAIL BEEF THROUGH PROPER TEMPERATURE CONTROL¹

G. GORDON GREER

Agriculture Canada, Research Station
Lacombe, Alberta, Canada, TOC 1S0

Psychrotrophic bacteria can make retail beef discolored and unacceptable to the consumer within 2 to 3 days of retail display. Proper retail temperature control can retard bacterial growth and reduce discoloration. The color shelf life of rib steaks, for example, can be increased from 2.5 days at 10 C to 9 days at 1 C.

Simply by the nature of the display environment, the surface temperature of steaks can exceed that recorded at the blower thermometer by 9 C. Depending upon blower temperature, displayed steak temperatures can approach 12 C. Of course these temperatures exceed the recommended storage temperature of 4 C and increase the rate of steak surface discoloration. By removing the product from display each evening and storing it in a walk-in cooler set at 1 C overnight, color shelf life can be extended to 5 days. Also, it appears that retail cases are not operating maximally and steak shelf life can be extended to more than 8 days by reducing blower temperature to -8.6 C.

Consumer selection of beef is based, primarily, upon appearance. Although the degree of leanness is an important factor, the bright, "cherry red" color of fresh beef significantly affects its acceptance. The desirable appearance of beef rapidly deteriorates, however, and varying degrees of discoloration occur within a few days of retail display. Studies (3) have shown the retail acceptance of steaks was directly related to the extent of surface discoloration. Consequently, if beef is not purchased within 2 to 3 days of retail display the retailer can suffer losses.

Beef discoloration is accelerated by the growth and metabolic activities of psychrotrophic bacteria, those

that are "cold-thriving". These organisms are capable of growth at refrigeration temperatures. Results of a recent report (3) have shown the shelf life of beef was directly related to the degree of psychrotrophic bacterial induced surface discoloration. The color shelf life of beef can be extended by reducing the number of psychrotrophic bacteria which contaminate the meat and/or by restricting the growth of organisms which are present. Emphasis is given here to reducing the rate of bacterial growth on beef by proper retail temperature control.

Temperature and Bacterial Growth

Although beef spoilage psychrotrophic bacteria are capable of growth, at a limited rate, at 0 C, their growth rate increases rapidly with small increments in temperature and is optimal at about 25 C. Agriculture Canada studies have demonstrated that the growth rate of typical beef spoilage bacteria can double as the temperature of incubation increases from 1 to 5 C and can triple with a further increase to 10 C. As a consequence, the color shelf life of boneless rib steaks was found to decrease from 9 days at 1 C to 2.5 days at 10 C. In accordance with these findings, others (5) have reported that the rate of beef spoilage was 5-fold greater at 10 C than at 0 C. Collectively, these findings stress the importance of low temperature storage in preserving meat quality and the Canadian Meat Council (1) has recommended that fresh meats be stored at temperatures below 4 C.

Temperature of meats on retail display

In order for the consumer to purchase fresh meats, a means of display is necessary to allow the product to be seen. This is accomplished in most retail outlets by overwrapping meats in an oxygen permeable, polyvinyl wrap and displaying in open, refrigerated cases sufficiently lighted to enhance the meat appearance. Most display cases are horizontal or vertical, fan-assisted, convection type cabinets where air is cooled by passage over evaporator coils and then blown over the display case through ducts. The retailer should be aware that display case thermometers are situated directly in front

¹Scientific Paper No. 411, Lacombe Research Station, Research Branch, Agric. Canada.

"Consumer selection of beef is based, primarily, upon appearance. Although the degree of leanness is an important factor, the bright, 'cherry red' color of fresh beef significantly affects its acceptance. The desirable appearance of beef rapidly deteriorates, however, and varying degrees of discoloration occur within a few days of retail display."

of the incoming blower air and are thereby indicative of the blower temperature as opposed to the meat temperature. Thus, Davidson and Bodyfelt (2) noted the temperature of displayed meats, poultry and seafood was about 6 C higher than that recorded at the blower and the Canadian Meat Council (1) reported the temperature of meats on retail display could exceed blower temperature by 4 to 24 C. These temperatures are far above the recommended temperature of 4 C for fresh meat storage (1). So although retail display may be necessary for consumer selection, it appears not to be an efficient temperature control system.

A typical temperature profile for retail displayed rib steaks is shown in Fig. 1. Although the retail case was operating at a blower temperature of -0.5 C, steak surface temperature averaged 8 C. Also, in Fig. 1, steak surface temperature is subject to considerable fluctuation. This is due, in part, to defrost cycles of the case at regular 12 h intervals (at hour 5 and 17 in Fig. 1). During defrosting, product temperature reached maxima of up

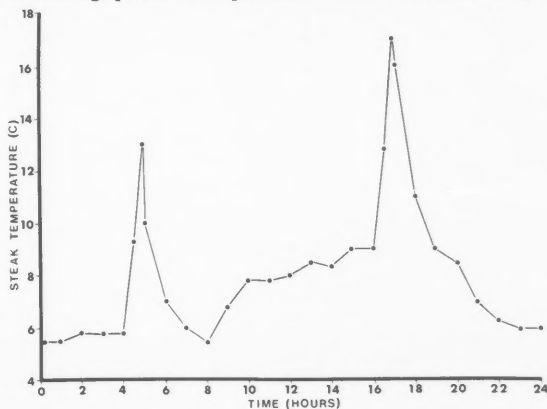


Fig. 1. The fluctuations in surface temperature of steaks during 24 h of retail display.

to 17 C. A second reason for fluctuations in displayed steak temperature is the influence of display illumination. In Fig. 1, the display lighting was activated at hour 8 and the case remained illuminated until hour 20. During this interval, the product temperature was somewhat higher than when lights were not on. This is a type of "greenhouse effect" (6). The heat produced by radiant energy is absorbed by the meat and trapped

between the polyvinyl wrap and the meat surface.

Apart from defrost cycles and illumination, other factors influence the meat temperature. These include fluctuations in room temperature, display case design and the position of meats within the case. For example, products located near the blower or at the bottom of a horizontal case will be colder than those displayed farther from the blower and nearer the load line. The cumulative effects of these factors account for the discrepancy between retail case blower and product temperature.

Methods of retail temperature control

Under the conditions depicted in Fig. 1, steaks on retail display are acceptable in appearance for only about 2.5 days. However, bacterial growth can be restricted and the color shelf life extended to 9 days if the product is stored in a walk-in cooler at 1 C. This method of storage is not a practical alternative to retail display since it eliminates consumer evaluation of product appearance. But there is a compromising alternative. Retail meats could be removed from display case at the end of each workday and stored in a walk-in cooler each evening. Studies (4) have shown that limiting the time of retail display to 8 h/day, through overnight storage at 1 C in a cooler, results in a greater than 30% reduction of psychrotrophic bacterial growth on the steak surface. The result is a substantial reduction in the onset and extent of steak surface discoloration (Fig. 2). By limiting the time of exposure of steaks to retail display the product remains visually acceptable for up to 5 days, compared to only 2.5 days for continuously displayed steaks. Although this procedure extends beef shelf life it has not yet been determined whether benefits of reduced spoilage losses are offset by increased labor costs of labor and cooler space.

There is another alternative available to the retailer. Recent investigation results (*J. Food Prot.*, In Press) have indicated that retail display cases may not be operating at maximum efficiency. Presumably, display temperatures are set by manufacturers unaware of the extent to which the temperature of displayed meats exceeds that of the incoming blower air. Data (Table 1) demonstrates the effects of retail case temperature upon steak temperature and shelf life. Initially, it is apparent that the actual retail case temperature setting is somewhat lower than that recorded at the blower. Of more importance, the surface

"Although beef spoilage psychrotrophic bacteria are capable of growth, at a limited rate, at 0 C, their growth rate increases rapidly with small increments in temperature and is optimal at about 25 C."

temperature of retail displayed steaks is, on the average, about 9 C higher than the temperature recorded at the

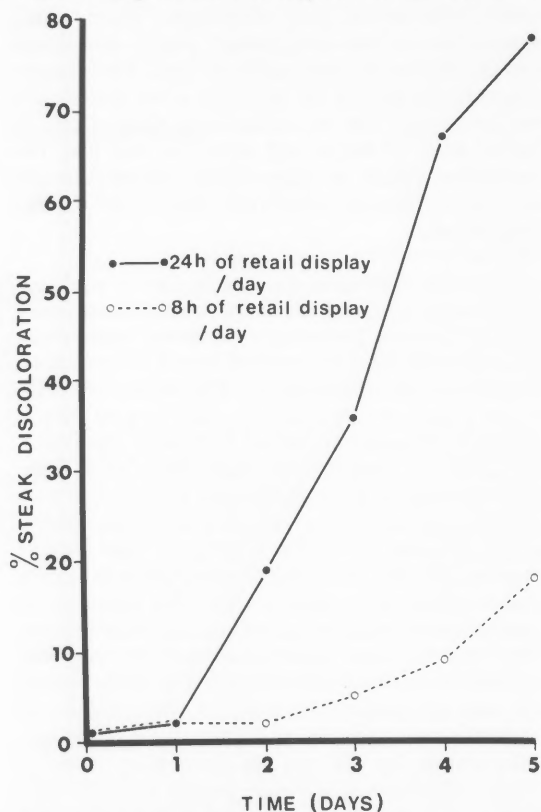


Fig. 2. The development of surface discoloration on steaks subjected to 8 or 24 h of retail display/day. Steaks were limited to 8 h of display/day by overnight refrigeration at 1 C.

blower thermometer. It should be stressed that although the retailer may observe a completely acceptable blower temperature of 2 C, the actual temperature of the product is closer to 12 C. Not only does this promote the growth of spoilage organisms but it may also permit the limited growth of pathogens such as *Salmonella*. As the temperature of blower air is reduced from +2 C to -8.6 C there is a reduction in steak surface temperature, bacterial growth and consequently, a more than 6 day increase in steak shelf life (Table 1). These results indicate that a relatively simple adjustment of blower temperature by the retailer can result in a prolonged case life for fresh beef.

A consequence of the nature of the retail environment is that meats on retail display are subjected to considerable temperature abuse and therefore a limited shelf life. The two practical methods of retail temperature control described, may be of direct economic benefit to the retailer by reducing spoilage losses. In addition, proper retail temperature control increases consumer satisfaction following meat purchase due to improved keeping quality in home refrigerators.

REFERENCES

1. Anonymous. 1978. Canadian industry takes stand on bacteriological standards. Nat. Prov. 178:8-24.
2. Davidson, W. D., and F. W. Bodyfelt. 1976. Bacterial standards for foods. Oregon State's experience. Presentation 6th Food Science Workshop. U.B.C., May 4.
3. Greer, G. G., and L. E. Jeremiah. 1980. Effect of retail sanitation on the bacterial load and shelf life of beef. J. Food Prot. 43:277-282.
4. Greer, G. G., and L. E. Jeremiah. 1980. Influence of retail display temperature on psychrotrophic bacterial growth and beef case-life. J. Food Prot. 43:542-546.
5. Ingram, M. 1972. Meat preservation - past, present and future. Roy. Soc. Health J. (U.K.) 92:121-130.
6. Malton, R. 1976. Refrigerated retail display for fresh meat. Inst. Meat Bull. (U.K.) 91:17-19.

TABLE 1. Effect of retail case temperature on bacterial growth and steak shelf life.

Case Temperature Setting (C)	Blower Temperature (C)	Steak Temperature (C)	Bacterial Growth Rate (generations/h)	Steak Shelf life (days)
- 9.4	- 8.6	1.9	0.09	8.2
- 6.7	- 5.7	4.2	0.11	6.0
- 3.9	- 3.6	5.3	0.14	5.6
- 1.1	- 0.5	7.3	0.17	3.8
+4.4	+2.0	11.8	0.28	1.9



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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."

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Amendment to 3-A Sanitary Standards for Sifters for Dry Milk and Dry Milk Products Number 26-02

NUMBER 26-02

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

The "3-A Sanitary Standards for Sifters for Dry Milk and Dry Milk Products, Number 26-01" is amended in the section set forth below:

Substitute the following for Appendix, Section I., Recommendations for Cleaning Dry Milk Sifters:

I.1 Dry Cleaning Program.

I.1.1 Completely dismantle and thoroughly vacuum or dry brush clean all product contact surfaces of the sifter. Reassemble as soon as finished and make every effort to keep all parts dry.

I.1.2 Check sifter screen(s) for broken or displaced wires (threads) and for other openings around the frame of the screen that might permit the passage of unsifted product. Other parts of the sifter, including ball trays and balls, if used, also should be inspected for condition. Any necessary repair or replacement should be made as soon as possible.

I.1.3 Flexible rubber or cloth connectors at the inlet and outlets of the sifter should be thoroughly cleaned, following procedures recommended for the sifter. Connectors should be closely examined for holes, cracks or other damage. (To facilitate removal for cleaning, use of easily removable fastening devices is recommended.)

I.1.4 Thoroughly vacuum or dry brush clean all external parts of the sifter, including the sifter frame and drive mechanism.

I.2 Wet Cleaning Program.

I.2.1 Completely dismantle, remove all loose dry product, then rinse all parts with clear water and follow with a thorough hand brushing of all parts using a general purpose cleaner. Rinse thoroughly, remove all cleaning solution or soil. It is recommended that hot water (170 F (76.7 C) or above) be used for rinsing in order to sanitize the equipment and to promote drying. Allow all parts to air dry completely prior to reassembly. Wet washing should be done as frequently as necessary, and may be done after each use if the sifter is not being used on a continuous basis. After cleaning, drying and reassembly, all openings should be protected against recontamination.

I.3 General.

I.3.1 Vacuum cleaning is preferred to brush cleaning or cleaning with air under pressure as it decreases dust drift to other areas of the plant.

I.3.2 Brushes or vacuum cleaner fittings used for cleaning product contact surfaces should not be used for cleaning non-products contact surfaces or for other uses which might result in contamination. Such brushes and special fittings should be stored in an enclosed cabinet when not in use. (For protection and housekeeping considerations, such cabinets preferably should be of non-wood construction and should have open mesh metal shelving.)

These standards shall become effective January 11, 1982.

FDA Conference Scheduled

The Third Annual Chicago F.D.A. - Industry Quality Conference will be held at the Hyatt Regency Woodfield Hotel in Schaumburg, IL on December 2.

Jointly sponsored by the Food, Drug and Cosmetic Division of the American Society for Quality Control and the Food and Drug Administration's Chicago Region

and Chicago District, the Conference features FDA officials and industrial executives speaking on the themes: "FDA Regulations In The 80's," "Protection At Least Cost," and "Radiation-Boon or Bane."

Cost of the one-day conference is \$55, including luncheon.

For information or to register, contact: Peter J. Tiemstra, Wm. Wrigley Jr. Company, 3535 S. Ashland Avenue, Chicago, IL 60609, 312-523-4040.

Amendment to 3-A Sanitary Standards For Farm Milk Cooling and Holding Tanks Number 13-06

NUMBER 13-07

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

The "3-A Sanitary Standards for Farm Milk Cooling and Holding Tanks" dated December 30, 1975 are hereby amended by adding the following at the end of the first sentence of D.23.2:

The gauge shall comply with the applicable provisions of the code entitled "Farm Milk Tanks" in the National Bureau of Standards Handbook 44-Fourth Edition, as amended by the 1977 Replacement Sheet for Section S.3.5, "External Gauge Assemblies."

This amendment shall become effective May 19, 1981.

Amendment to 3-A Sanitary Standards for Portable Bins for Dry Milk and Dry Milk Products Number 34-01

NUMBER 34-01

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

The "3-A Sanitary Standards for Portable Bins for Dry Milk and Dry Milk Products, number 34-00," are amended in the sections set forth below:

Change C.1.2 to read as follows: Plastic materials may be used in sight and/or light openings and for gaskets, inspection port covers, latch dog wear parts and parts used in similar applications. These materials shall comply with applicable provisions of the 3-A Standard for plastic materials, Number 20-00, as amended.

Add D.12.3. as follows: The radii in holes used for retention pins for wear surface parts of door latch dogs shall be not less than 5/64 inch.

These standards shall become effective January 11, 1982.

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PS Form 3526 (Page 1)
Aug. 1978

(See instructions on reverse)

Nominations Sought for Macy Award

The Minnesota Section of IFT established the Harold Macy Food Science and Technology Award in the spring of 1981 and nominations are now sought for the award candidates.

The award is to be given annually for an outstanding example of food technology transfer or cooperation between scientists or technologists in any two of the following settings:

- academic,
- government,
- private industry.

The award is designed to advance the profession and practice of food technology as well as to honor University of Minnesota Dean Emeritus Harold Macy. Awardees will be invited to address the Minnesota Section of IFT. The award consists of a \$500 honorarium and travel expenses.

Nominations are being sought from all IFT sections. They are due by December 15, 1981. Nominations forms are available from Dr. E. A. Zottola, Chairman, Macy Committee Award, 136 G ABLMS, 1334 Eckles Avenue, University of Minnesota, St. Paul, MN 55108.

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Food Service Sanitation Notes



Food Service Sanitation Notes is written by the National Sanitation Foundation. Write to the NSF with your questions on food service sanitation, problems for which you need answers, or issues you feel should be aired. They'll be included in a future issue of Dairy and Food Sanitation.

Q. One of my readers has asked about using plastic garbage containers for storing foods. Is it safe to store foods in an NSF listed refuse container?

-Millie Bingham, Columnist,
Dayton Daily News,
Dayton, Ohio

A. A summary answer is "no." NSF evaluates plastic refest containers under Standard 21. This standard does not call for evaluation for toxicity of materials, taste and odor, or cleanability acceptable for food contact applications. There are NSF listed food containers which look similar to refuse containers and have been evaluated specifically as food contact articles.

Q. How can items of equipment obtain the NSF seal for requirements relative to construction but not necessarily function or performance? (Exhaust hoods, for example.)

-Saginaw County Health Department,
Saginaw, Michigan

A. A standard is an agreement. The NSF standards are developed following a methodology allowing manufacturers of equipment, regulatory officials, and users of the equipment to be party to the agreement (standard).

In some instances, the committees may elect to forego functional requirements for a variety of reasons. It may be due to state of the art, technical reasons, or the estimation of how significant the issue is to the committee.

The NSF methodology also very specifically provides for the review and revision of standards to compensate for these issues. If anyone in the field feels an NSF standard should be modified, they should contact a representative on the appropriate NSF Joint Committee with their information.

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

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Presidential Address

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Previous presidents' addresses have covered a basic format as they should, addressing the important areas of this, our outstanding family, the IAMFES. To all of us, our organization is really like a family. It is extremely important to each of us. Our lives, our professional development, our successes and failures are intimate to our respect for this organization.

I have had the pleasure of being a member for twenty years. As I look across this audience, I see our past presidents with service up to and exceeding fifty years as well as the majority of other loyal members who may not have held an office or served as a committee chairman, but who are loyal, sincere, and *believe* in this organization.

We can brag for hours about the distinguished accomplishments of IAMFES. Of *all* other professional organizations that serve the food industry, none can rival the accomplishments of IAMFES. Our long standing working committees have always provided sound, positive recommendations that make our various industries better and safer and the envy of our peers.

The 3-A Sanitary Standards, the 3-A Symbol Council, and the National Mastitis Council, to name a few, have set international standards of excellence. The Farm Committee is what really got me involved with IAMFES many years ago. The excellence of their working sub-committees have provided more guidance to sanitation programs, the Interstate Milk Shipments Conference, and development of the logical requirements in the Pasteurized Milk Ordinance than all other organizations combined. To this, we must look back to the superb guidance of the original gang of three: Kelly Sanders, Art Parker, and Jim Smathers, and now to the continuation of their principles in our current leaders of the Farm Methods Committee, Dale Termunde, Boyd Cook, and Jim Kennedy. I could and probably should go on and on, but we need to look at our accomplishments of yesterday and our challenges for next year.

Our *Journal of Food Protection* is acclaimed world wide as the finest technical publication of its kind. Due to the guidance of the Journal Management Committee led by Pete Read and our Editor, Elmer Marth, our publication has grown from its meager beginnings to where we are now going from an average eighty page journal to one hundred and four pages issue to handle the back log of excellent technical reports that deserve publication.

You, the membership, the Affiliate Council, and others have been saying for years that we must have a new journal to speak or relate to the practicing sanitarian, fieldman, quality control, or laboratory person who really make up the corps of our current and future membership. This challenge was accepted by your elected board of directors and staff. An energetic effort to develop a practical journal of initiated, and today we have with pride our new journal, *Dairy and Food Sanitation*. The first introductory issue was developed for last year's annual meeting. *Food and Fieldmen* was a resounding success in that we now have approximately 1,600 subscriptions for our new and exciting publication.

Your board of directors estimated 3,000 new subscriptions will be required as a break-even point with the new journal. The affiliates' positive attitude as well as that of the direct membership indicated we would have this magic break-even number in one year, and we would and could grow from there. We all believe we will attain this goal by January 1982 . . . only if each of us, industry, educator, and regulatory becomes the *best* member of the membership committee we have ever had. None of us should ever be caught without a membership application in our pocket or brief case and sell IAMFES and our new journal daily.

Why am I telling you this? It is very basic. Unless we increase our membership by 1,500 or more members and increase membership dues to keep up with the times, we will not have our organization this time next year!

This organization has always operated on a minimal budget; always attempting to operate so close at times we have not recognized inflation growth. Your board of directors is now faced with a deficit of \$29,000, which is the printing cost of the new journal. Up to now, we have heeded the guidance of our affiliates in *not* insisting on the Ames office handling mailings to the affiliate members and potential members. We recognized the fact we have a paid staff who can send one, two, three or four bulk mailing to potential or current members and affiliates. This direct mailing from Ames will obtain membership where some affiliates have been hard pressed to send out even one notice. We recognize the fact there are several affiliates who do an outstanding job in maintaining or increasing affiliate membership. This is due to the sincerity and dedication of affiliate people. Some affiliates do not have this ability or capability.

The Ames office can put out multiple notices to membership via bulk mailing for less than first class mail by an affiliate secretary-treasurer. This does not take away the local personality of the affiliate because the signature of the notices *can* and should be of the local affiliate secretary. This also does not prevent any other personal affiliate letters, information, or newsletters.

Yesterday, your Affiliate Council voted almost unanimously to follow the recommendations of your board. We are convinced this effort will aid in increasing our membership to where we wipe out our \$29,000 deficit and continue this outstanding and viable organization. Do you want less?

Later, you will hear the reports of all your important functional committees. Since these reports will speak for themselves, I will not elaborate. They are what make us great and have such an impact on the entire food industry.

As you know, our Associate Editor, Jan Richards, Earl Wright's right hand, has tendered her resignation due to her husband's move to a greater challenge in Davenport, Iowa. She has agreed to stay with us for six months until January 1, 1982, due to her loyalty to IAMFES. Jan, we really know you do not want to and will never in your heart leave us, but you must. We all will always appreciate and cherish your sincerity and dedication. You will always be a part of the IAMFES family. Thanks!

Earl Wright, our Executive Secretary-Treasurer, recently underwent open heart bypass surgery. You could not tell with the hard work he has done at this meeting. Earl agreed to become executive secretary-treasurer for IAMFES eight years ago. His commitment was for only five years. He has notified the board this week that he would like to step down in two years.

These two situations we appreciate and understand. They do, though, present special problems to your board of directors. We will thoroughly investigate our alternatives of hiring a successor to Jan's role plus attempt to, in such a selection, hire an individual who could ultimately partially replace Earl Wright and Jan Richards. There are other possible alternatives that your board will explore, and we will report back to you either through the journal or at next year's annual meeting in Louisville.

Speaking of Louisville, your local arrangements committee, under the guidance of Leon Townsend, Board Affiliate Council Member, has already arranged many spouse activities highlighted by a three to four hour dinner cruise up the Ohio River on the sternwheeler riverboat, "The Belle of Louisville". Family involvement has always been important in IAMFES, and Louisville will be no exception, so see you there.

Sid Barnard of Penn State, has been elected as your new secretary-treasurer and board member of IAMFES. We welcome Sid's talents and ability to your board.

As I have commented before, the International is the most viable, exciting family group of professionals in the world. We are proud of what we are, what we do, and what we have accomplished. Due to inflation and minor financial setbacks in the development of a new journal for our professional membership, we have a temporary setback. The positive action of your affiliate council and executive board have given us, as usual, the tools to continue this, the best professional organization in America. We have nothing to be ashamed of. We have many multitudes of things to be proud of. Let us all this year and in the future years, dedicate ourselves to continue building what we already know is the best.

It has been an honor and a sincere pleasure to serve you. Thank you.

APPLICATION FOR MEMBERSHIP

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

Name _____ Date _____
 Address _____ Dairy and Food Sanitation
 _____ Journal of Food Protection
 _____ Zip Code _____ Both

	<i>Journal of Food Protection</i>	<i>Dairy & Food Sanitation</i>	<i>Both Journals</i>
Direct Member annual dues	\$40.00	\$28.00	\$50.00
Affiliate Membership	\$40.00	\$28.00	\$50.00
Student Membership	\$10.00	\$10.00	\$20.00
(with verification of student status)			

new renewal

APPLICATION FOR SUBSCRIPTION

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	\$60.00	\$75.00
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 () Complete set 3-A Dairy ea \$20.00
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 () Egg 3-A Stds ea \$15.00

Five-Year Service on 3-A Sanitary Standards
 () 3-A Stds Five years \$12.00
 () Egg 3-A Stds Five years \$ 6.00

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

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 Address _____ Zip Code _____

PLEASE PRINT

Sixty-Ninth Annual Meeting of IAMFES

Galt House, Louisville, KY
Aug. 22-26, 1982

Instructions to Prepare Abstracts of Contributed Papers

Procedure

1. Use the printed Abstract form that appears on the other side of this page. Complete the form using a typewriter equipped with a reasonably dark ribbon.
2. Type in the title, capitalize the first letter of the first word and of any proper nouns.
3. List authors and institution(s). Capitalize first letters and initials. Indicate with an asterisk the author who will present the paper. Give complete mailing address of the author who will present the paper.
4. Type the abstract *double-spaced*, in the space provided on the abstract form.
5. Mail *two* copies of the abstract before February 15, 1982 to:
Earl O. Wright
Executive Secretary, IAMFES
P.O. Box 701
Ames, Iowa 50010
6. Enclose *two* self-addressed standard post cards. One will be used to acknowledge receipt of the abstract and the other to notify the speaker about the scheduling of the paper. Two cards must be included with *each* abstract that is submitted.

Content of the Abstract

The abstract should describe briefly: (a) the problem that was studied, (b) methods used in the study, (c) essential results obtained, and (d) conclusions. Statements such as "results will be discussed" should not appear in a abstract.

Oral Presentations

Papers will be scheduled so a speaker has a maximum of 15 minutes, including discussion. Hence the actual presentation should be no more than 11-13 minutes so that time for discussion will be available. Projectors for 2 x 2 inch slides will be available. If the speaker needs other projection equipment, E. O. Wright (address given earlier) should be contacted as soon as possible.

Subject Matter for Papers

Papers should report results of applied research in such areas as: food, dairy, and environmental sanitation and hygiene; foodborne disease hazards; food and dairy microbiology; food and dairy engineering; food and dairy chemistry; food additives; food and dairy technology; food service and food administration; food and dairy fermentations; quality control; mastitis; environmental health; waste disposal, pollution, and water quality.

Additional Abstract Forms

Extra copies of the abstract forms may be contained from E. O. Wright (address given earlier).

Membership in IAMFES

Membership in IAMFES is NOT necessary for presenting a paper at the annual meeting.

(OVER)

Annual Meeting

INTERNATIONAL ASSOCIATION OF MILK,
FOOD, AND ENVIRONMENTAL SANITARIANS, INC.

ABSTRACT FORM

Title _____

Authors _____

Institution and Address _____

Please type abstract, double-spaced, in the space provided above.

Sixty-Ninth Annual Meeting of IAMFES

Galt House, Louisville, KY
Aug. 22-26, 1982

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(OVER)

Annual Meeting

INTERNATIONAL ASSOCIATION OF MILK,
FOOD, AND ENVIRONMENTAL SANITARIANS, INC.

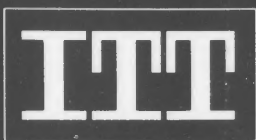
ABSTRACT FORM

Title _____

Authors _____

Institution and Address _____

Please type abstract, double-spaced, in the space provided above.



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Although an air traffic controllers' strike which broke the week before the meeting worked against a large attendance for IAMFES' 68th Annual Meeting, the Executive Board and the Local Arrangements Committee were pleasantly surprised with this year's meeting turnout.

The meeting was held August 9-12 at the Sheraton-Spokane, Spokane, Washington. The Local Arrangements Committee had worked against the obstacle of high hotel rates at the original meeting city, Seattle, and the meeting was moved across Washington to Spokane, billed as the "Capital of the Inland Empire." Spokane proved to be a beautiful site for the meeting, despite record-setting high temperatures which swept across the Northwest the week of the meeting.

New ideas were tried for this year's social events, including an "Ice Cream Social," as Sunday night's "Early Bird Reception." Monday night featured a delicious salmon barbecue and the trimmings in the Riverfront Park, site of the 1974

Association's Executive Board this year were a change in the price structure of membership to accommodate a larger *Journal of Food Protection* for 1982, and to encourage increased circulation of the new journal, *Dairy and Food Sanitation*. Membership and the *Journal of Food Protection* will be \$40, membership and *Dairy and Food Sanitation* will be \$28, and membership with both journals will be \$50 for 1982.

The Board discussed at length the importance of emphasizing membership increases and increased circulation of *Dairy and Food Sanitation*. In short, the Board determined at this year's meeting that it must see a strong return on investment in *Dairy and Food Sanitation* in 1982, or face squarely the question of whether the new magazine can continue to be offered in future years.

In additional action at the meeting, the two Texas affiliate associations were dissolved and a single Texas affiliate was granted its charter at the Awards Banquet.

Action was taken on a number of

1981: Meeting New Challenges

World's Fair. The barbecue was quite popular and quickly sold out. Tuesday night offered a wine and cheese reception prior to several Cracker Barrel sessions, while Wednesday night, of course, featured the Annual Awards Banquet.

Spouses' activities this year included a cruise on Lake Coeur D'Alene, shopping in nearby downtown Spokane, a luncheon and fashion show, and the usual Ladies' Hospitality Room, held this year in the cozy wood-paneled "Inner Circle," atop the Sheraton-Spokane.

Among important transactions during the meetings of the Asso-

ciation's Executive Board this year were a change in the price structure of membership to accommodate a larger *Journal of Food Protection* for 1982, and to encourage increased circulation of the new journal, *Dairy and Food Sanitation*. Membership and the *Journal of Food Protection* will be \$40, membership and *Dairy and Food Sanitation* will be \$28, and membership with both journals will be \$50 for 1982.

The 68th Annual Meeting of the IAMFES Executive Board convened August 9, 1981, 1:30 p.m. at the Sheraton-Spokane Hotel, Spokane, Washington. It was called to order by President Bill Arledge. Arledge welcomed Sid Barnard of Pennsylvania as the newly elected Secretary-Treasurer of IAMFES and Dr. Michael P. Doyle of Wisconsin who is serving as Associate Editor for the *Journal of Food Protection*.

Recognition of Ivan Parkin: Bill Arledge recommended that Ivan



1981-82 Executive Board, front row, l to r, William Kempa, Archie C. Holliday, A. Richard Brazis, Sid Barnard, Howard Hutchings. Back row, l to r, Earl Wright, Harry Haverland, William Arledge, Jan Richards, and Robert Marshall.



Scenes from Spokane: the welcome at the hotel, and the clock tower of Riverfront Park, just outside the hotel.

Photos in this section by Dietrich Wolfram and Robert Crombie

Parkin be recognized for having been a member of the Association for 50 years and for the many ways he has helped with the annual meetings. He suggested that Ivan be presented an engraved Cross Pen and Pencil set. A motion was made by Bill Kempa and seconded by Harry Haverland. The motion passed.

President's activity report: Bill Arledge reported that he attended several affiliate meetings as well as the IFT meeting in Atlanta. He visited with the North Texas affiliate and with Clair Gothard of the other Texas affiliate. As a result of this visit the two groups have gotten together and it is hoped that arrangements will be completed to present a new charter for a single Texas affiliate representing the whole state.

Minutes of previous meeting: Since the minutes of the previous meeting of the board have been distributed to all members, Dick Brazis moved that the minutes be accepted as distributed. The motion was seconded by Harry Haverland and passed. Archie Holliday spoke about the fact that he did not get last year's Affiliate Council minutes recorded in

time for them to be published. A copy of these minutes was made available to each board member and reviewed.

Financial and Budget report: Earl Wright distributed copies of an up-to-date accounting of Affiliate and total membership. He reviewed the accountant's report on June 30, 1981 against the budget approved last year. The financial statement shows that while expenses have been within the budgeted amount, income has fallen below the amount anticipated. Earl indicated the inability to solicit the anticipated one thousand additional members with the new publication. Earl presented a detailed review of the expenses of the Association. He reported that it became necessary to change banks in order to take advantage of interest checking without a service charge. The new bank requires authorization by the Executive Board for the Executive Secretary. In this regard Harry Haverland moved that the Executive Secretary be authorized to borrow money for the operation of the Association not to exceed \$15,000 without further Board approval. This

motion was seconded by Dick Brazis and passed.

Proposed Budget for 1981-1982: Bill Arledge indicated that Harry Haverland, Leon Townsend, Clarence Lucherhand and Dick Gillespie worked to prepare a budget proposal for the coming year. He called upon Harry to present this proposal. Discussion continued during the remaining annual meeting sessions of the Executive Board. The primary subject of discussion was establishing dues, subscription and other charges to provide adequate funding for the organization and the Journals. Upon a motion by Bob Marshall, seconded by Dick Brazis, the following dues structure was adopted for the coming year: membership dues and the *Journal of Food Protection*, \$40; membership dues and the *Dairy and Food Sanitation* publication, \$28; membership dues and both the *Journal of Food Protection* and the *Dairy and Food Sanitation* publication, \$50. The motion passed with one dissenting vote, that of Bill Kempa, who indicated that he felt the fee for membership and both publications should be higher than \$50. In addition to the dues structure



Registration Committee Meetings

the Board agreed to the following charges: manuscript charges per page, invited, \$15 and submitted without invitation, \$45; subscription for the *Journal of Food Protection*, direct, \$60 and agency, \$50; subscriptions for both publications, direct, \$75 and agency, \$65. Student dues are to be as follows: with the *Journal of Food Protection*, \$10; with the *Dairy and Food Sanitation* publication, \$10; and with both publications, \$20.

Report of Local Arrangements Committee: Jim Lum, Chairman, presented the preliminary Local Arrangements Committee report. There were 185 persons pre-registered, 66 spouses and 17 children, 8 ADA members and 2 from HIEFSS (Hospital, Institutional and Educational Food Service Society) members registered. Harry Haverland indicated that forms are available for those who want continuing education credit. A total of 216 signed up for the banquet. The salmon barbecue was sold out. Nineteen signed up for the fashion show and 34 signed up

for the boat cruise on Lake Couer D'Alene.

Report of Farm Methods Committee: Bill Arledge introduced Dale Termunde, Chairman of the Farm Methods Committee. Dale presented each Board member with a copy of the 1981 Farm Methods Report. After the committee meeting August 10, copies of the report will be made available to meeting attendees. Because Babson Brothers supported the cost for printing and publication of this report, Bob Marshall recommended that we present Dale with a sincere vote of thanks for publishing the report. This was put in the form of a motion, seconded by Bill Kempa and passed. The report is to become a part of the Board minutes.

Committee on Sanitary Procedures: Dick B. Whitehead, Chairman of the Committee on Sanitary Procedures of the 3-A Sanitary Standards Committees came before the Board. He indicated his report would be presented at the annual business meeting Tuesday morning. Restrictions on travel allowances

have made it difficult to maintain a full strength, viable committee membership. The committee has agreed with DIFSA to have only one meeting a year except during the year of the dairy show. With the reduced number of meetings the need to communicate with committee members by mail will increase. Money to take care of mailing costs will be needed. Dick hopes to have names to present to the incoming president so that 6 or 8 new committee members can be selected to maintain the proper balance. After Dick Whitehead left, Earl Wright indicated we have in the past, and will continue, to support this committee for printing, mailing and telephone costs. Expenses for travel should not be covered by the Association, the Board agreed.

Executive Secretary's Contract: Bill Arledge called on Earl Wright to discuss the matter of the expiration of his contract. Earl explained that his second five year contract as Executive Secretary of IAMFES will end in two years at the St. Louis



Ice Cream Social, Wine and Cheese Reception





Spouses' Program Varied



meeting. He wants to step down at that time, although he plans to continue his work with the 3-A Symbol Council. Bob Marshall suggested that we look into the possibility of having management services and, possibly, publication services provided by the American Dairy Science Association. After discussion, Bob moved that the President and President-Elect pursue the possible opportunities available through ADSA management services. The motion was seconded by Dick Brazis and passed. Bill suggested that there be a report on this at the next Board meeting.

Dr. Michael P. Doyle to continue as Associate Editor, Journal of Food Protection: Upon a motion by the President which was seconded by Harry Haverland the Board approved Dr. Marth's recommendation. This motion passed.

Sustaining Member Fee: Bob Marshall moved that effective September 1, 1981 the fee for sustaining members be increased from \$250 to \$300 and that a \$100 credit be allowed for an advertisement in one of the Journals of the Association. The motion was seconded by Harry Haverland and, after discussion, the motion passed.

Affiliate Council: In the absence of Leon Townsend, Chairman of the Affiliate Council, Archie Holliday was asked to serve as temporary chairman. Bill Arledge reported that there are possibilities for new affiliates in Georgia and Alabama. In the latter state there will be a second organizational meeting in October. Some work has been done in both Louisiana and North Carolina. The new affiliate in Tennessee is doing well as is the one in Ohio. Earl Wright reports that there are two

Dairy Technology Societies in Indiana which have expressed interest in the new journal. Sid Barnard reported that the Pennsylvania affiliate has a great opportunity to include laboratory people and people in the food field as members if the current organization can move away from being so strongly oriented to dairy fieldmen. There is much greater potential for new membership in Texas with the combining of the two affiliates there. Sid Barnard suggested that Bill Arledge might contact Bill Hastings for the possibility of an annual meeting in Pennsylvania.

Booth at IFT Annual Meeting: Excellent interest in the Association was expressed at the booth during the IFT Annual meeting in Atlanta. A booth at the coming IFT meeting will cost between \$1,500 and \$1,700 including travel. Bill Arledge sug-



Salmon Barbecue



gested that a decision on this be deferred until the October Board meeting.

Report of the Nominating Committee: Henry Atherton reported that the Nominating Committee included Orlowe Osten, Harold Barnum and himself. There were total of

341 ballots voted. Sid Barnard was the winner of the office of Secretary-Treasurer of IAMFES. Next year's nominees should be industry representatives.

Report of the Dairy and Food Sanitation Magazine Management Committee: Bill Arledge welcomed

Harold Bengsch as chairman of the new magazine management committee. The primary thrust of the committee is to develop ways to market the new magazine. The first effort will be to send a trial copy along with a membership application to non-members in the larger affiliates such as New York, Kentucky and Michigan. Second, the committee suggests that mailing lists be purchased from allied organizations to be used for soliciting new members and subscribers. Interest has been expressed in the use of case studies from the membership as articles for the magazine. Also it is



suggested that the use of job related cartoons be considered.

Journal of Food Protection Management Committee: Bill Arledge acknowledged that the Board had approved Elmer Marth's recommendation that Mike Doyle become Associate Editor of the Journal. Dr. R. E. Read, Jr., chairman of the Journal Management Committee gave the report. The primary concern of the meeting was financing and

publication. This recommendation, if instituted, would reduce the Journal backlog significantly. Acknowledgement would be given for contributions.

It was further recommended that the editors evaluate the use of index descriptions for research articles and that editors become more selective in the acceptance and review of papers.

Harry Haverland moved that the reports of both of these committees



several recommendations were made in this area.

It was recommended that the page charge be changed from \$35 to \$45, and the charge for submitted review papers be \$15 per page. The page charge will be excused only under extenuating circumstances. Those who cannot pay should notify the editor at the time the manuscript is submitted. The editors will review the possibility of changing to three columns per page. It was also suggested that the table of contents be set up in three column format.

It was suggested that a directory of members be published, and that IAMFES purchase the mailing list of the Food Microbiology Division of the IFT, and solicit this group for membership. A suggestion was submitted that the editors be selective when publishing papers from symposia and that the Association conduct a review of reprint prices. A recommendation was made that we investigate the feasibility of a special issue to be published commemorating the many years of service by C. K. Johns. Contributions could be solicited from industry to fund the

be accepted. This was seconded by Dick Brazis and passed.

Awards Committee: Howard Hutchings, Chairman of the Awards Committee submitted the report. See this report at end of Annual Meeting write-up (p.487).

No member of the Executive Board shall be eligible for any major award while he or she is on the Board.

Non successful candidates should be held over for one award cycle. Those held over should have their names published in the Journals.

The Shogren award needs to be revamped since current guidelines discriminate against the small affiliate which is not able to sponsor an annual meeting, etc.

The Shogren Award winner should not be eligible for the next 5 years.

All awards were filled this year. The Crumbine Award was presented to the Nassau County Health Department of New York. The C. B. Shogren Memorial Award went to the Missouri Affiliate. The Citation Award was presented to Henry Atherton. Honorary Life Member-



Top to bottom, Mike Doyle, Pete Read, Harold Bengsch, Frank Bryan.

Business Meeting



ship was awarded to Dr. Robert M. Parker. The Sanitarian Award went to Paul Pace and the Industry/Educator Award went to Dr. Francis F. Busta. An Affiliate Charter was presented to the Texas Association of Milk, Food and Environmental Sanitarians. Bill Arledge received the Past President's Award and special recognition for outstanding service was given to Ivan Parkin and Jan Richards. In addition to chairman Hutchings, members of the Awards Committee were Dick Brazis, Jim Edmondson, Earl Almond and Earl Wright. Howard Hutchings moved that items 1, 2, 4, and 5 of his report be acted upon to become recommendations of the Board. Dick Brazis seconded the motion and it passed. Howard Hutchings moved that non-successful candidates be held over for one award cycle and that this become a part of policy and published. This was seconded by Dick Brazis and passed.

Baking Industry Sanitation Standards Committee (BISSC): Harold Wainess presented the BISSC report for chairman Martyn Ronge. An article calling for more support from Sanitarians is to be prepared for publishing in both Journals.

The International Dairy Federation Report: Harold Wainess presented a report of what has transpired since last year's IAMFES annual meeting. Steps have been taken toward the formation of a permanent U.S./IDF Committee. We presently have a committee called the United States National Committee for the International Dairy Federation in the United States (USNAC). USNAC was accepted as a full member of IDF in March 1981. A drive to increase membership is now being made, allowing USNAC to attain full participation in IDF.

Bidding for the 1984 Annual Meeting: Bill Arledge introduced a delegation from Alberta, Canada led by Don Paradis. A sound-slide presentation was made featuring

Edmonton, Alberta as an annual meeting site for 1984. The proposal offered included two conference date choices July 7-12, or July 28 to August 2. The proposal included information on lodging facilities, transportation, and special event opportunities.

Recognition of Past Presidents: Bill Arledge acknowledged the presence of past Presidents Dick Whitehead, Harold Barnum, and Henry Atherton. Each made brief comments.

Announcement about Direct Billing: Bill Arledge reported that the Affiliate Council, at its meeting, voted to allow the IAMFES office in Ames, Iowa, to direct bill and mail affiliate membership with arrangements to be made on a state by state or province by province basis.

Texas Affiliate Charter: A special meeting of the Board was held to consider recognition of the formation of a new affiliate in the State of Texas. This meeting was attended by H. Haverland, B. Arledge, E. Wright, J. Richards, H. Hutchings, B. Marshall, D. Brazis, A. Holliday, C. Gothard, K. Smith, and R. Page. After a discussion of the Texas situation, Bob Marshall moved that the Board recognize the absolvment of the two current Texas organizations and the formation of a new Texas organization upon submission of the name of the organization and its members to the IAMFES office. The motion was seconded by Howard Hutchings and passed.

Respectfully submitted,
Archie C. Holliday

The IAMFES Executive Board Breakfast meeting was convened Thursday by Harry Haverland at 7:10 A.M.

Local Arrangements Committee members who were present along with Executive Board members, included: Don Kilgore, Lloyd Lue-

Top to bottom: Dale Termunde, Archie Holliday, Harold Wainess, Dick Whitehead.



Scenes from the Annual Awards Banquet.



Awards to Pace, Busta,

decke, Dick White, Herb Andrews, Jim Lum, Don Stueve, and Don Penders.

The Washington affiliate reported that registration was 215 members and 95 spouses and children. Speakers may increase this 310 total by about 20. They have \$8,750 in a checking account with expenses estimated at over \$8,600. Although they sent out three letters, only \$2,500 was received in contributions. This was the lowest budget in recent memory. It usually varies between \$15,000 and \$18,000.

Suggestions from the local arrangements committee include:

- 1) speakers be asked to complete a preregistration form.
- 2) rolls and coffee in hospitality room not be available until after breakfast.
- 3) more complete packet of suggestions be available as a check list as to what needs to be done.

Cracker Barrel sessions: These may not be needed after full day programs and a wine and cheese

party. If included for '82 they should cover "hot issues" and use speakers on main programs.

Sustaining members: Dale Ter-munde reported 31 for current year. He suggested that an announcement and application be sent to all members with a list of current sustaining members. The brochure will be revised in the near future.

Fall Board meeting: The dates were set for Oct. 30 and 31, 1981 at the Galt House in Louisville, KY starting at 1:30 on Friday.

'84 meeting: It was moved, seconded and passed that Earl Wright pursue arrangements with the Alberta affiliate prior to the fall meeting and a final vote be taken then.

Committee reports: It was moved, seconded and passed that all members of the Executive Board receive a brief written report from each committee chairman at least two weeks prior to the annual meeting, and that time be set aside for them to appear before the board. The committee

should recommend their continuance or termination.

Exhibition booths: These were unanimously opposed for the '82 meeting.

Discussion of a possible name change was postponed until the fall board meeting.

Membership, advertising and other rates were finalized from earlier meetings.

NMC voted not to have a joint meeting with IAMFES in 1981.

A copy of DFS, letter and application blank will be sent to members of all affiliates by Oct. 30, 1981.

Each board member should make at least five contacts to gain advertisers.

It was suggested that each member who gets a new sustaining member be given a free annual membership for both journals.

The meeting was adjourned at 10:50 A.M.

Respectfully submitted,
Sid Barnard



Above, left, Paul Pace, center, receives the Sanitarian's Award from C. R. McDuff, left, representing Klenzade Products, and Mike Gagnon, right, of Diversey-Wyandotte. Above, right, Francis Busta, center, is presented the Educator Award by Martin Auman, and Paul Lammert, representing the Farm and Industrial Equipment Institute, sponsor of the award.

Atherton, Parker

PACE WINS SANITARIANS AWARD AT IAMFES ANNUAL MEETING

Paul J. Pace, Chief Bacteriologist for the Milwaukee Health Department, Milwaukee, WI, was the winner of the 1981 Sanitarian's Award. The award was presented at the 68th Annual Meeting of the Association, held August 9-13, 1981 in Spokane, WA.

Pace won the \$1000 award for the outstanding contributions to the field of food sanitation. As Chairman of the Food Standards Committee of the Wisconsin Milk Conference, Pace directed a study of delicatessen foods in Wisconsin which resulted in the adoption of Chapter 32 of the Wisconsin Administrative Code relating to sanitation to retail food establishments.

Working closely with the Milwaukee Health Department Bureau of Consumer Protection and Environmental Health, Pace is regularly consulted for advice on food-borne disease outbreaks and food and water sampling programs. Expertise in the field of botulism in smoked

fish led Pace to serve as expert witness in a federal lawsuit. Pace is currently working on a special study with the Milwaukee Metropolitan Sewage District relative to isolating pathogenic organisms in sludge used as soil conditioning on agricultural land.

The achievements of the 1981 Sanitarian's Award winner include being named 1975 Sanitarian of the Year of the WI Association of Milk and Food Sanitarians. Pace serves on the Management Committee of the *Journal of Food Protection*.

BUSTA WINS IAMFES EDUCATOR AWARD

Francis F. Busta, Professor of Food Microbiology at the University of Minnesota, St. Paul, MN, is the recipient of the 1981 IAMFES Educator Award. The award was presented at the 68th Annual Meeting of the Association, held in Spokane, WA.

Dr. Busta won the \$1000 award for outstanding academic contributions

made to the field of food sanitation and safety. A nationally recognized authority in food microbiology and sanitation, Dr. Busta is active in the Department of Food Science and Nutrition teaching numerous courses, as well as advising graduate and undergraduate students. He is also responsible for research.

As a member of IAMFES, Dr. Busta has served on the Editorial Board of the *Journal of Food Protection* since 1976. He is a member of the Minnesota Sanitarians Association. His other professional memberships include Institute of Food Technologists, the National Environmental Health Association, Minnesota Environmental Health Association, Henrici Society for Microbiologists and Minnesota Dairy Technology Society.

Dr. Busta has conducted research on the control of *Clostridium perfringens* in foods, as well as research on sanitation-related topics pertaining to milk, meat products, soy and single cell proteins. His work with microbiological safety of longtime-low temperature cookery of meat was publicized in a UPI News Release,

Awards Presentations, right, included: Ivan Parkin, left, presents the Citation Award to Henry Atherton while, far right, Robert Parker receives the Honorary Life Membership plaque from Paul Pace, right. Below, left, Harry Haverland, left, receives the President's gavel from Charles Felix while in the right photo, Harry Haverland presents the Past President's plaque to William Arledge. Bottom right photo, David Zalkind, center, receives the Sherman Award from C. Dee Clingman, left, and William G. Stratton.



which resulted in USDA regulations on time-temperature relationships in preparing precooked meat. Busta testified before a Senate subcommittee in 1978 concerning the use of nitrite in cured meat products. He is currently serving as a member of the National Academy of Sciences National Research Council on Nitrites and Alternative Curing Agents in Foods.

Dr. Busta has authored numerous reports and articles for publications such as the *Journal of Food Science*, *Journal of Food Processing and Preservation*, *Journal of Food Protection* and *Food Technology*. He has also patented a process of treating lettuce and other salad ingredients (1974) and a method of production and recovery of protein from food wastes (1977).

ATHERTON WINS IAMFES CITATION AWARD

Henry V. Atherton, Professor, of

Dairy Technology and Extension Dairy Bacteriologist for the University of Vermont was named recipient of the 1981 IAMFES Citation Award.

Atherton was cited for his outstanding contributions to the Association. Dr. Atherton is active in numerous professional associations in addition to IAMFES, including the American Dairy Science Association, Vermont Dairy Industry Association and the Twin State Sanitarians. He served the Farm Practices Committee of the New York State Association of Milk and Food Sanitarians from 1956 to 1970. He also served on the original Board of Directors of the Northeast Dairy Practices Council from 1970 to 75.

Atherton has been active in the International Association of Milk, Food and Environmental Sanitarians (IAMFES) since 1959. He served on the Farm Methods Committee from 1959-1973 and the Executive Board from 1973-1979. Atherton was president in 1976 and 1977. Currently Dr.



Atherton serves as a member of the 3A Symbol Council.

He co-authored a textbook, *Chemistry and Testing of Dairy Products*, 3rd and 4th editions. He is also responsible for numerous experiment station bulletins. Atherton is a regular contributor to such professional journals as *Hoard's Dairyman*, *Dairy Herd Management* and *Dairy World*.

The Vermont Dairy Industry Association presented Atherton with the John C. Finley Memorial Award in 1977 for his dedication to agriculture and education in Vermont.



Above left photo, Dick Whitehead, left, presents the Shogren Award to John Stark, president of the Missouri affiliate. Above right, Earl Wright, left, presents the charter for the Texas affiliate to, l to r, Rick Page, Clair Gothard, and Edith Mazurek. Right, Henry Atherton presents engraved Cross pens to Ivan Parkin and, far right, Jan Richards.



PARKER RECEIVES HONORARY LIFE MEMBERSHIP

Dr. Robert M. Parker, DVM, was awarded an Honorary Life Membership by IAMFES at its Annual Meeting.

Dr. Parker served as Director of Safety and Sanitation for the Kohl Corporation, Milwaukee, WI from 1973-78. As Assistant Superintendent of the Milwaukee Health Department, Dr. Parker supervised the Food Division which conducted meat and milk inspection, as well as enforced ordinances pertaining to food stores, processors and restaurants.

Dr. Parker is a Gold Honorary member of the American Veterinary Medical Association. He is active in the Wisconsin Association of Milk and Food Sanitarians and the International Association of Milk, Food and Environmental Sanitarians. Parker is past president of Wisconsin

Association Food Administration of State Organization (WAFAS) and is a member of the Wisconsin Public Health Association. He also serves on the Meat Inspection Committee of the Wisconsin Association of Milk and Food Sanitarians.

1981 SHERMAN AWARD PRESENTED FOR FOOD PROTECTION ARTICLE

The 1981 Sherman Award was presented to David Zalkind. C. Dee Clingman, Director of Quality Control, Red Lobster Inns of America, and William G. Stratton, President of National Institute for the Foodservice Industry and former Governor of Illinois presented the award. Clingman is Chairman of the *Journal of Food Protection's* Foodservice Food Protection Committee.

The Sherman Award is offered annually by NIFI, the foodservice industry's not-for-profit educational foundation, to provide recognition to articles that best reflect the principles of Norbert F. Sherman, late chief executive of North American Foodservice Companies, Inc. and former NIFI Treasurer.

Winners of the 1981 award were Zalkind and O. B. Kaplan for their article, "Improved Inspection Scheduling for Foodservice Establishments," published in the May, 1980 issue of the *Journal of Food Protection*.

Zalkind is with the Office of Research and Statistics, Social Security Administration, Washington, D.C., and Kaplan is with the Department of Environmental Health Services, San Bernardino, CA.

Committee Reports

FARM METHODS COMMITTEE

EDUCATION SUBCOMMITTEE

- Bulletin NDPC 23 Sept. 1976 Cost \$.50
- Name: Guideline for Preventing Rancid Flavors in Milk
Prepared by: Subcommittee on Rancid Milk of the Quality Assurance Task Force, D. K. Bandler, Chairman, Subcommittee The Northeast Dairy Practices Council, R. P. March, Chairman
- Write to: Northeast Dairy Practices Council
 118 Stocking Hall
 Ithaca, New York 14853
- Bulletin NDPC 26 April 1977 Cost \$ 1.00
- Name: Guidelines for Milking Parlor Types and Selection . . . and Suggested Milking Procedures in Parlors
Prepared by: A Subcommittee of the Buildings and Utilities Task Force, F. E. Gilman, Subcommittee Chairman, The Northeast Dairy Practices Council, D. F. George, Chairman
- Write to: Northeast Dairy Practices Council
 118 Stocking Hall
 Ithaca, New York 14853
- Manual Special Report 29 Revised Edition Cost \$ 1.00
- Name: Dairy Plant Fieldman Haulers Grader and Tester's Manual
Prepared by: V. S. Packard
 Extension Specialist Dairy Products, University of Minnesota
- Write to: Agriculture Extension Service
 University of Minnesota
 St. Paul, Minnesota 55101
- Bulletin NDPC 27 Jan. 1977 Cost \$.50
- Name: Guidelines for Dairy Manual Management
Prepared by: The Building and Utilities Task Force Subcommittee Chairman, A. R. Grout The Northeast Dairy Practices Council, D. F. George, Chairman
- Write to: Northeast Dairy Practices Council
 118 Stocking Hall
 Ithaca, New York 14853
- Bulletin NDPC 25 March 1977 Cost \$.50
- Name: Guidelines for Cleaning and Sanitizing Bulk Pickup Tankers
Prepared by: The Cleaning and Sanitizing Task Force Subcommittee (Thomas Chicoine, Chairman) Northeast Dairy Practices Council D. F. George, Chairman
- Write to: Northeast Dairy Practices Council
 118 Stocking Hall
 Ithaca, New York 14853
- Publication 1977 Single Copy Free
- Name: "CMT, Your Tool for Detecting Subclinical Mastitis"
Prepared by: Bob Appleman, Extension Dairyman and Ralph Farnsworth, Veterinarian Specialist, University of Minnesota
- Write to: Bulletin Room
 University of Minnesota
 St. Paul, Minnesota 55018
- Guide BVMM-27 Single Copy Free
- Name: Drug Use Guide: Dairy Cattle and Calves
Prepared by: FDA Bureau of Veterinary Medicine in Regards to Intramammary Infusion Products for Treating Mastitis
- Write to: Industry Information Branch
 Bureau of Veterinary Medicine
 Food and Drug Administration
 5600 Fishers Lane
 Rockville, Maryland 20857
- Guide Cost \$ 2.00
- Name: Hoard's Dairyman Herd Health Guide
Prepared by: Recognized Veterinarians-What to do before the Problem Creates a Loss

Write to: Hoard's Dairyman
Fort Atkinson, Wisconsin 53538

Book 1978 Cost Free

Name: Mastitis Management
Prepared by: Dr. W. Nelson Philpot
Louisiana State University
Homer, Louisiana 71040

Write to: Babson Bros. Co.
2100 S. York Road
Oak Brook, Illinois 60521

Colored Slides Cost \$50.00

Name: Milk Quality Tests, sixty colored slides with script including information on procedures, standards, and corrective measures for eight common tests for milk quality
Prepared by: Dr. Sidney E. Barnard
Pennsylvania State University
University Park, Pa 16802

Write to: Dr. Sidney E. Barnard
Pennsylvania State University
University Park, Pa. 16802

Booklet 1978 Cost Free

Name: Milk Producer Aids
Prepared by: HI-Life Rubber Inc.
Ninety Seven Page Booklet on milk producers aids in the production of high quality milk

Write to: HI-Life Rubber Co.
110 Lincoln Street
Johnson Creek, Wisconsin 53083

Color Movie Sound Film 1978 Cost Rent for
two days \$10.00
One week \$15.00

Name: A New Training Film for Bulk Milk Haulers (28 minutes)
Prepared by: Prof. R. P. March of Cornell University, Mr. Ray A. Belknap of the FDA, USPHS Served as a consultant

Write to: Cornell Film Library
31 Roberts Hall
Cornell University
Ithaca, New York 14853

Book 1979 Cost \$2.25

Name: Current Concepts of Bovine Mastitis Second Edition
Prepared by: The National Mastitis Council, Inc.

Write to: Hoard's Dairyman
Fort Atkinson, Wisconsin 53538

Book 1979 Cost \$2.15

Name: The Modern Way to Efficient Milking
Prepared by: The Milking Machine Manufacturers Council of the Farm and Industrial Equipment Institute

Write to: Hoard's Dairyman
Fort Atkinson, Wisconsin 53538

Book 1979 Cost \$15.70

Name: Management and Diseases of Dairy Goats
Prepared by: Dr. Sam Guss, Professor Emeritus, Veterinary Science Extension, Penn State University and Veterinary Editor, Dairy Goat Journal

Write to: Dairy Goat Journal
Box 1808
Scottsdale, Arizona 85252

Hand Book M7 1980 Cost \$3.00

Name: Dairy Housing and Equipment Hand Book 104 Pages
Prepared by: Qualified Agriculture Engineers

Write to: Hoard's Dairyman
Fort Atkinson, Wisconsin 53538

Publication 125 1980 Cost Free

Name: Stray Voltage Problems with Dairy Cows
Prepared by: H. A. Cloud, R. D. Appleman, R. J. Gustafson, Extension Agriculture Engineer, Extension Dairyman, and Associate Professor, Agriculture Engineering Department at the University of Minnesota

Write to: Norman A. Brown
Director of Agriculture
Extension Service
University of Minnesota
St. Paul, Minnesota 55101

Pamphlet 1981 Cost Free

Name: Eradicating Cattle Brucellosis
Prepared by: United States Dept of Agriculture, How the disease is contacted in dairy cattle, How the disease is diagnosed, How owners can keep their herds brucellosis free.

Write to: Midwest Regional Information Office
USDA - APHIS
536 South Clark Street, Room 635
Chicago, Illinois 60605

Audio-Visual Beta Tape 1980 Use Free

Name: Dairy Farm Inspection Film
Prepared by: St. Louis City Health Dept.
 Twenty minute colored film on training for dairy farm inspection program

Write to: For details for use
 Vernon R. Cupps
 Chief of Milk Control
 Division of Health-City of St. Louis
 634 No. Grand Blvd.
 P.O. Box 14702
 St. Louis, MO 63178

SUBCOMMITTEE MEMBERS:

Sid Barnard
Bender Luce
Vernal Packard
Ron Richter
Ewing Roe
Howard Eastman
Vernon Nickel [Chairman]

PLASTICS SUBCOMMITTEE

Cleanability of milk handling systems and components is dependent on several factors among which are construction material, surface smoothness and design. The use of plastics as containers, gaskets, components of stainless steel and glass assemblies and hoses has been successful because improved technology has been able to satisfy cleanability requirements. A regulatory authority showed this committee some hose recently introduced to the market and asked for an opinion on cleanability. The inner surface of the hose was wrapped with plastic tape and it was our opinion that this presented a major cleanability problem. The 3A Standards for Multiple Use Plastics recognizes the need for proper choice of materials and surface smoothness and outlines the requirements.

At the 1977 International Meeting in Sioux City, several on this committee felt that our 1978-1979 project should involve a survey of the types of flexible and rigid hoses and pipes which are now being used to handle milk.

We found two new products marketed since 1977. The first is a clear tanker hose, which is reinforced by a spirally wound clear rigid plastic in the wall. The outside

surface resembles a vacuum cleaner hose, but the inside surface is sufficiently smooth to permit good cleaning. A piece of this hose had been returned from the field --- and where a truck had run over the product, the reinforcement had cracked. It is suspected that with continued coiling and flexing, the broken reinforcement could penetrate the inner surface and cause a soil buildup problem. However, since we had not seen this occur, we can say that if the tubing is well maintained, it would not pose a problem in cleanability.

The second product is of the same general design, but is opaque and is available in several colors with various plastic or rubber linings. No field reports have been received on the performance of this hose.

SUBCOMMITTEE MEMBERS

Robert Goheen
Byron DeYoung
Ronald P. Christianson
Omer Majerus
Joseph Smucker
Ken Kirby
Gaylord Smith
Bernard Saffian [Chairman]

FARM METHODS COMMITTEE

ANTIBIOTICS, PESTICIDES AND OTHER ADULTERANTS SUBCOMMITTEE

The Subcommittee, through its various task groups, is continuing its responsibility concerning the adulteration of milk supplies. Since the last report the Subcommittee has been involved in the following areas:

I. The potential problem of detergents and sanitizers in the milk supply.

Cleaning and sanitizing compounds are essential in effective programs for the production of a safe, quality milk supply. But potential problems need to be recognized and prevented. Therefore, there needs to be a continued emphasis through educational programs directed towards the producer for the proper handling, storage, and use of these compounds. The Subcommittee will follow-up on the possibility of developing such an educational program.

II. The potential problem with surfactants in water supplies.

Inquiries have been made of federal, state, and local regulatory officials and industry personnel involved with both potable and farm water supplies as to an alleged problem with surfactants in the water supplies. No evidence of a problem has been found. If a problem does exist, it must be local in nature rather than of national significance. As a sideline to the investigation, a number of individuals commented that improperly functioning farm type chlorinators and psychrophiles in dairy farm water supplies are the two major problems encountered with rural water supplies. The Subcommittee recommends that there is no need to take any action on the problem of surfactants in water supplies at this time.

III. Current activity by State regulatory agencies concerning adulterants in the milk supply.

A survey was conducted of the State regulatory agencies concerning adulterants in milk and milk products. A total of 47 States responded. From those States responding, 16 have only Grade A milk while 31 have Grade A and manufacturing grade milk. Survey results:

1. <i>Aflatoxin</i>	
1. Is aflatoxin a problem in your State?	
	<i>Responses</i>
Yes	13
No	31
Not known	3

2. Are aflatoxin tests run on Grade A raw milk by a State Agency?

	<i>Responses</i>
Yes	18
No	29
<i>Frequency</i>	
Yearly	2
Twice	1
Monthly	3
Random	8
Upon Request	1
<i>Where feed is found</i>	
positive	1
<i>When test results show</i>	
.3 ppb	1
Not stated	1

3. Are aflatoxin tests run on manufacturing grade raw milk by a State Agency?

	<i>Responses</i>
Yes	10
No	20
Not stated	1
<i>Frequency</i>	
Yearly	1
Random	6
Where feed is positive	1
Upon request	1

4. Are aflatoxin tests run on finished products by a State Agency?

	<i>Responses</i>
Yes	19
No	27
Not stated	1
<i>Frequency</i>	
Yearly	3
Quarterly	1
Monthly	3
Continuous	1
Random	7
Not stated	5
<i>Type of product (s)</i>	
<i>(a) Dairy</i>	
Grade A milk	11
Dairy products	3
	<i>Responses</i>
Cheese	2
Cottage cheese	1
Ice cream	1
Butter	1
NDM	1
<i>(b) Feed</i>	
Feed	3
Silage	2
Corn	2
Soybeans	1

5. What test procedures (methods) are being used?

	<i>Responses</i>
Thin layer chromatography	14
AOAC - 12th Edition	5
High pressure liquid chromatography	4
Mini-column	3
FDA	1
Not stated	4

6. List those products in which aflatoxin has been found.

(a) Dairy

Milk	8
Raw milk	6
Cottage cheese	1
Cheese	1
Buttermilk	1
Yogurt	1
Ice cream	1

(b) Feed

Corn or corn meal	6
Cottonseed or cottonseed meal	4
Finished feeds	3
Silage	2
Cereal grains	1
Rice bran	1

II. Antibiotics

1. Are antibiotic tests run on Grade A raw milk by a State Agency?

	Responses
Yes	49
No	5
Not stated	2
Frequency	
8 x per yr.	5
4 x in 6 mo.	8
every 6 wks.	1
quarterly	2
monthly	9
weekly	2
daily	1
random	1
all samples taken	3
routine	1
not stated	7

2. Are antibiotics test run on manufacturing grade raw milk by a State Agency?

Yes	20
No	10
Not stated	1
Frequency	
yearly	1
2 x per yr.	1
4 x in 6 mo.	2
every 6 wks.	1
quarterly	1
monthly	3
daily	1
random	5
all samples taken	1
not stated	4

3. Are antibiotic tests run on finished products by a State Agency?

Yes	40
No	5
Not stated	2
Frequency	
8 x per yr.	7
4 x in 6 mo.	7
every 6 wks.	1
quarterly	1
monthly	7
weekly	2

daily	1
winter mos.	1
all samples taken	5
random	2
upon request	1
not stated	5

Type of product (s)	Responses
All milk products	10
Grade A milk	12
NDM	7
Frozen desserts	2
Butter	1
Not stated	5

4. What test procedures (methods) are being used?

Bacillus subtilis disc assay	39
Sarcina lutea cylinder plate method	10
BB1 cylinder plate method	1
Delvo P	1
AOAC	1
Not stated	1

5. List those products in which antibiotics have been found.

Raw milk	21
Homo milk	18
All milk products	7
NDM	7
Skim milk	6
2% and lowfat milk	4
Chocolate milk	4
Cream	3
Ice milk mix	1
Cottage cheese	1

III. PCB

1. To what degree is PCB a problem in the milk supply of your State?

	Responses
None	27
Insignificant	12
Significant	1
No information	4
No stated	3

2. What test procedures (methods) are being used?

Gas chromatograph, gas	
Liquid chromatograph,	
Electron capture Detector	15
FDA's Pesticide Analytical Manual	10
AOAC - 12th Edition	2
Not stated	14
Not testing	6

3. What is the frequency that you test for this compound?

	Responses
Yearly	7
Every 6 mo.	4
Quarterly	1
Every 30 or 90 days, producers	1
Every 6 mo., routes	1
Monthly	1
Weekly screening	1
720 samples/yr.	1
200 samples/yr.	1

Random	5
On request only	5
FDA requirements	1
Not stated	18

IV. PBB

1. To what degree is PBB a problem in the milk supply of your state?

None	34
Insignificant	3
Significant	0
No information	8
Not stated	2

2. What test procedures (methods) are being used?

Gas chromatograph, gas liquid chromatograph	13
FDA Laboratory Information Bulletin	4
AOAC	1
Not stated	16
Not testing	13

3. What is the frequency that you test for this compound?

Yearly	2
Every 6 mo.	3
Quarterly	1
720 samples/yr.	1
200 samples/yr.	1
Random	5
On request only	4
FDA requirements	1
Not stated	15
Not testing	14

V. Pentachlorophenol, Wood Preservatives.

1. To what degree are these compounds a problem in the milk supply of your state?

None	30
Insignificant	6
Significant	0
No information	6
Not stated	5

2. What test procedures (methods) are being used?

Gas chromatograph gas liquid chromatograph	10
FDA Pesticide Analytical Manual (221.136)	2
FDA Laboratory Information Bulletin	1
Modified Procedure By ACPB, FDA	1
EPA, PAM, Section 5A (4) (a)	1
AOAC	1
Metholation	1
JAOAC, Vol. 61, No. 4, 1971	1
Not stated	11
Not testing	17

3. What is the frequency that you test for this compound?

Yearly	2
Bi-monthly	1
Random	5
On request only	7

When a known problem exists	1
Not stated	15
Not testing	16

VI. What are the State compliance procedures when an adulterant is found in the milk or finished product?

Suspend sale of product	
Until in compliance//	33
Product recall	9
Destroy product if detrimental to health	9
Condemnation following a hearing	1
Not stated	4

// (a) one reason: second violation in 2 yrs. - milk or product withheld from market for 2 days.

Additional violation in 2 yrs. - Milk or product withheld from market for 4 days.

(b) One response: positive antibiotic - Milk not picked up until negative, and a 4 day suspension imposed.

VII. What other adulterants does your agency feel a need for a surveillance program?

	Responses		Responses
Added Water	7	Endosulfon	1
Pesticides used in Insect and rodent control	5	Methoxychor	1
Sediment in fluid milk	3	Aldrin	1
Organophosphates	2	Encrin	1
Dieldrin	2	Sulfa	1
Heptachlor epoxide	2	Toxophane	1
All chlorinated pesticides	2	Lindane	1
All phosphate pesticides	2	Detergents	1
Carbonates	1	Pharmaceutical drugs other than inhibitory substances	1
DDT	1	Arsenic	1
DDE	1	Trace metals	1
TDE	1	Radiation	1
Endrin	1	Stabilizers and Added color in frozen desserts	1
Pentachlorophenol	1	Vitamin analysis	1
Malathion	1	None	4
Holocarbon	1	Not known	1
		No reply	4

The task group working specifically in the area of antibiotics has not completed its work on rapid test methods as related to the user. This work should be completed during the coming year for inclusion in the next report.

SUBCOMMITTEE MEMBERS

Matthew Andrews
Jay Boosinger
A. Richard Brazis
Gerald Heine
Richard White

Robert Marshall
Michael Roman
Kenneth Whaley
Richard Webber
Kirron Smith [Chairman]

JFP Abstracts

Abstracts of papers in the November Journal of Food Protection

Incidence and Origin of *Clostridium botulinum* Spores in Honey, C. N. Huhtanen, D. Knox and H. Shimanuki, Eastern Regional Research Center, Philadelphia, Pennsylvania 19118

J. Food Prot. 44:812-814

Eighty honey samples, including some from foreign countries, were obtained from a local processor or from apiaries in Pennsylvania, Illinois and New Jersey. They were analyzed for *Clostridium botulinum* spores by a dilution-centrifugation (DC) procedure and by direct addition (DA) of honey to two different enrichment media. All were negative by the DC method; five were positive by DA in fluid thioglycollate media and six by DA in cooked meat media. Some samples positive in fluid thioglycollate media were negative in cooked meat media and vice versa.

Bees (*Apis mellifera*, 25,000 per hive) were experimentally inoculated with spores of *C. botulinum* by feeding a 50% sugar-water solution containing 1.6×10^5 spores of 20 strains (equal numbers of 11 type A and 9 type B). Honey collected from the hive 2 weeks later contained 1100 spores per g; that collected after 5 weeks contained 50 spores per g. Quantitative estimates of honey yield and spore contents indicated that all the spores originally ingested by the bees had been incorporated into the honey. No botulinus spores were found in the intestinal or rectal contents of the bees 2 weeks or more after spore ingestion.

Production of Histidine Decarboxylase and Histamine by *Proteus morganii*, R. R. Eitenmiller, J. W. Wallis, J. H. Orr and R. D. Phillips, Department of Food Science, University of Georgia, Athens, Georgia 30602

J. Food Prot. 44:815-820

Examination of 22 *Proteus morganii* strains revealed that each possessed histidine decarboxylase activity. Strain GRMO 6 produced maximal activity (nanomoles of CO₂ released /mg cells/h) when grown at ambient temperature (24 C) and at acid pH levels that tended to inhibit growth. Minimal activity was present when the culture was grown at pH 8.5. Histidine decarboxylase activity decreased as the age of the culture increased. Maximal reaction rates occurred at 37 C and pH 6.5. Rapid enzyme and histamine formation occurred in tuna fillets inoculated with *P. morganii* and stored at 24 and 30 C. Histamine levels reached 520 mg/100 g and 608 mg/100 g at 24 and 30 C, respectively. Little enzyme was produced in the inoculated fillets stored at 15 C and in the uninoculated control fillets.

Microbiological Quality of Some Delicatessen Meat Products, N. P. Tiwari and V. W. Kadis, Food Laboratory, Agricultural Regional Centre, Airdrie, Alberta, Canada TOM OBO

J. Food Prot. 44:821-827

A total of 124 delicatessen meat products were analysed for microbiological quality shortly after purchase and following storage at 22 C for 24 h. Sixty-seven of these products were portion packages and 57 were cuts from bulk products. Coliforms, coagulase-positive staphylococci and *Clostridium perfringens* contamination was low. *Salmonella* was not detected in any of the samples. Initially, 34.3% of the portion-packed and 24.5% of bulk cuts contained more than 10⁷ total aerobic plate count per g and, following storage this proportion increased to 62.7% and 57.9%, respectively. Eight samples (11.9%) of portion-packed and seven samples (12.3%) of bulk cuts contained more than 10⁷ psychrotrophs per g initially. After storage, 35% of both types of products yielded >10⁷ psychrotrophs per g. Significant levels of fecal streptococci and yeasts were also isolated from many of these products, indicating need for improvement in manufacturing procedures and retail storage conditions. However, the results of this investigation indicated that chances of public health hazard from delicatessen meat products would be low.

A New Screening Method for the Detection of Antibiotic Residues in Meat and Poultry Tissues, Ralph W. Johnston, Richard H. Reamer, Elmer W. Harris, Harold G. Fugate and Bernard Schwab, United States Department of Agriculture, Food Safety and Quality Service, Science, Microbiology Division, Washington, DC 20205

J. Food Prot. 44:828-831

A simplified procedure is described for screening meat and poultry tissues for the presence of antibiotic residues. The method involved inserting a cotton swab directly into meat or poultry tissues, allowing it to absorb tissue fluids. The swab is then removed and placed on a test plate using Antibiotic Medium No. 5 (BBL) and a seed layer of *Bacillus subtilis* ATCC 6633 spores. The plate is incubated overnight at 29 C, then observed for evidence of inhibition around the swab. The method was compared with the conventional bioassay procedures using routing meat and poultry tissues submitted for analysis. Of a total 1,780 tissues tested, the screening procedure was either in agreement with or detected inhibition was not found by the conventional procedures in 99.4% of the samples. The test was shown to have equal sensitivity to conventional procedures for detection of chlortetracycline, oxytetracycline, tetracycline, erythromycin, neomycin, penicillin, streptomycin and tylosin.

Rapid Detection of Bacterial Content in Cereal Grain Products by Automated Impedance Measurements, K. M. Sorrells, Wilson Foods Corporation, 4545 Lincoln Boulevard, Oklahoma City, Oklahoma 73105

J. Food Prot. 44:832-834

Automated impedance measurements can be used to rapidly ascertain total bacterial numbers in various cereal grain products, along with preliminary detection of coliforms. Detection times for both total numbers and coliforms were usually less than 12 h.

Rapid Determination of Ortho- and Polyphosphates in Soft Drinks, Yasuhide Tonogai and Masahiro Iwaida, National Institute of Hygienic Sciences, Osaka Branch, 1-1-43, Hoenzaka, Higashi-ku, Osaka, Japan

J. Food Prot. 44:835-838

Ortho-, poly (pyro- and higher)- and meta-phosphates can be separated from each other with two dimensional thin layer chromatography, the detection level being 1 µg as P₂O₅. For determination of ortho- and poly (including polymeta-) phosphates, an ion-exchange column chromatography was used. A single concentration elution with 0.2 M potassium chloride was effective for separating of orthophosphates from polyphosphates, and the residual polyphosphates could be recovered with 6 N hydrochloric acid. This system was used for a survey of polyphosphates in 61 samples of soft drinks sold in Osaka. Results showed that the total phosphate contents within the range of 0 - 0.420 g of P₂O₅/kg. Only three samples contained polyphosphates. The highest being 0.261 g of polyphosphate/kg in a soft drink containing 20% mango juice.

Variation in Counts, Enterotoxin Levels and TNase in Swiss-Type Cheese Contaminated with *Staphylococcus aureus*, E. Todd, R. Szabo, H. Roborn, T. Gleeson, C. Park and D. S. Clark, Bureau of Microbial Hazards, Food Directorate, Health Protection Branch, Health and Welfare Canada, Tunney's Pasture, Ottawa, Ontario K1A 0L2 Canada

J. Food Prot. 44:839-848

In 1977, a number of staphylococcal intoxications occurred as a result of several lots of Swiss-type cheese being contaminated with *Staphylococcus aureus*. Blocks of cheese representing 59 of the recalled lots manufactured between January 5 and April 25, 1977, were examined for *S. aureus* counts and for staphylococcal thermonuclease (TNase), enterotoxin and pH. Counts ranged from <25 to 10⁸ *S. aureus*/g, with most blocks containing between 10⁴ and 10⁶/g. Enterotoxin B was present in 72.6% of 186 samples and TNase in 52.5% of 122 samples tested. The pH was generally between 5.5 and 5.7 with some samples as high as 6.2; normal pH for Swiss-type cheese is 5.7. Variations in levels of these parameters occurred within lots and even within blocks, as well as between lots. Within blocks there seemed to be differences between samples at the center and the periphery. The activity and degree of contamination of the starter cultures, temperatures of cooking and ripening and the speed of salt penetration could be factors causing these variations. TNase was not detectable in all samples containing enterotoxin, especially those with <0.5 µg/100 g. Therefore, cheese suspected of being a health hazard, such as being manufactured under unsanitary conditions or suspected of being contaminated with *S. aureus*, should be sampled at the center and periphery of blocks, if these are available, and analyzed for *S. aureus* counts, TNase and enterotoxin.

Properties of Commercial Flavored Frozen Yogurts, Frank V. Kosikowski, Department of Food Science, Cornell University, Ithaca, New York 14853

J. Food Prot. 44:853-856

A study was made of the composition, acidity, bacterial levels and related characteristics of 34 flavored frozen yogurts obtained in the Northeast United States from various sources. Wide variations were observed. pH of frozen yogurts varied from 4.0 to 6.5 and titratable acidity from 0.31 to 1.27%. Most brands of frozen yogurt had a pH of 4.4 or lower and a titratable acidity above 0.9% with accompanying typical flavor and tartness.

Equations for Estimating Cutability of Beef Wholesale Cuts, H. R. Cross, G. C. Smith, H. C. Abraham and C. E. Murphey

J. Food Prot. 44:857-860

Steer, heifer and cow carcasses (N=280) were selected from seven commercial firms in three states and completely fabricated to provide information on bone-in and boneless yields from the four primal wholesale cuts. Equations using combinations of easily obtainable subjective and objective traits accounted for between 63 and 80% of the variation in yields of bone-in or boneless retail cuts from the round, loin, rib or chuck. When bone was removed in preparation of retail cuts, scores or measures of muscling increased in importance as components of prediction equations. Prediction equations comprised of two, three or four independent variables that could be used in a commercial grading situation were developed for rounds, loins, ribs and chucks.

Experimental Infection by Waterborne Enteroviruses, Dean O. Cliver, Food Research Institute (Department of Food Microbiology and Toxicology), W.H.O. Collaborating Centre on Food Virology, and Department of Bacteriology, College of Agricultural and Life Sciences, University of Wisconsin, Madison, Wisconsin 53706

J. Food Prot. 44:861-865

This study concerned infections caused by minimal quantities of waterborne enteroviruses. The model system comprised young weanling swine and their homologous enteroviruses; the porcine digestive tract and its enteroviruses are like those of man, and the system affords greater reproducibility and safety than those employing humans or other primates. Subjects swallowed known numbers of viral plaque-forming units (pfu) in 5 ml of drinking water. The body was about 1000 times (600 to 750 for one virus and 1800 to 2500 for another) less likely than a tissue culture to be infected by a given quantity of enterovirus. Doses given after eating, or in four daily portions, produced similar results. No infected animal became ill, despite the reported virulence of the viruses. Chlorination reduced viral infectivity greatly, but short of total extinction, in a single trial. Two newborns were not infected by 20 pfu administered by gavage.

Microbial Flora of Normal and High pH Beef Stored at 4 C in Different Gas Environments, Inger Erichsen and Göran Molin, Swedish Meat Research Institute, POB 504, S-244 00 Kävlinge, Sweden

J. Food Prot. 44:866-869

Beef of high pH (6.6) and of normal pH (5.8) was packed in air, a mixture of 78% N₂ + 20% CO₂ + 2% O₂, vacuum, and 100% CO₂ and stored at 4 C. The effect of the different gas environments on development of the microbial flora of the two types of beef was examined. The shelf-life increased in the order: pure CO₂ > vacuum > gas mixture (20% CO₂) > air. After storage in air for 14 days, *Pseudomonas* spp. comprised 76% of the flora on the normal beef and 88% of the flora on the high pH beef. In the gas mixture, after 21 days the microbial flora on the normal beef was dominated by lactic acid bacteria (52%), *Enterobacteriaceae* (16%) and coryneforms (16%) while the high pH beef contained *Pseudomonas* spp. (44%), lactic acid bacteria (28%) and *Brochothrix thermosphacta* (28%). In the vacuum, after 21 days 96% of the flora in normal beef consisted of lactic acid bacteria, whereas 60% lactic acid bacteria and 40% *B. thermosphacta* were found on the high pH beef. In pure CO₂, stored for 51 days, both the normal and high pH beef were completely dominated by lactic acid bacteria.

Effect of Combinations of Fresh and Frozen Beef on Microbial Flora of Ground Beef Patties, A. A. Kraft, K. V. Reddy, J. G. Sebranek, R. E. Rust and D. K. Hotchkiss, Departments of Food Technology, Animal Science and Statistics, Iowa State University, Ames, Iowa 50011

J. Food Prot. 44:870-873

Beef patties composed of fresh beef, blast frozen beef or combinations of fresh and frozen beef were then frozen by liquid nitrogen (LN₂) or liquid carbon dioxide (LCO₂) and stored at -20 C for 6 months. Analyses for various bacteria were made at monthly intervals to evaluate effects of originally combining fresh and frozen beef on the subsequent microbial flora. Of the different combinations of fresh and frozen meat, the mixture in a 50:50 ratio produced highest bacterial numbers during frozen storage. Lowest bacterial counts resulted from use of fresh beef with no blast frozen meat but frozen subsequently with LN₂ or LCO₂.

Apparent Viscosity of Milk and Cultured Yogurt Thermally Treated by UHT and Vat Systems, A. E. Labropoulos, A. Lopez and J. K. Palmer, Department of Food Science and Technology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061

J. Food Prot. 44:874-876

Apparent viscosity of ultra-high-temperature (UHT) treated milk and of yogurt prepared from this milk was studied and compared to that of vat-treated milk and yogurt. UHT-treated milks (149 C, 3.3 sec) had an apparent viscosity of 2.3 to 2.7 cp, while the apparent viscosity of vat-treated milks (63 C and 82 C, 30 min) ranged from 1.9 to 2.0 cp. The apparent viscosity of unheated (raw) milk was 1.7 cp. The apparent viscosity of yogurt prepared from UHT-treated milk became nearly constant at 0.8 cp after 14 min of shearing, while the apparent viscosity of yogurts prepared from vat-treated milks ranged from 1.8 to 3.8 cp under the same conditions. All yogurts exhibited thixotropic behavior.

Rapid Microbial Identification Systems in the Food Industry: Present and Future, Daniel Y. C. Fung and Nelson A. Cox, Department of Animal Sciences and Industry, Kansas State University, Manhattan, Kansas 66506 and U.S. Department of Agriculture, Richard B. Russell Agricultural Research Center, P.O. Box 5677, Athens, Georgia 30613

J. Food Prot. 44:877-880

A symposium at the 1980 Annual Meeting of IAMFES permitted manufacturers to explain their diagnostic kits and food microbiologists to relate their experiences with the kits. Discussions between manufacturers and users resulted in the identification of means for improving systems used to rapidly identify pathogens and nonpathogens in foods. The general conclusions reached were: (a) food microbiologists continue to seek rapid methods to identify isolates from foods, and commercial diagnostic kits are valuable for this purpose, (b) current identification methods established by diagnostic kit manufacturers, although useful for clinical isolates, need improvements when applied to food isolates, (c) the ideal situation would be for manufacturers to generate specific identification methods for food isolates, (d) comparative analytical studies should be made before adapting commercial systems to routine use and (e) under special conditions, researchers can expand the use of existing diagnostic kits to purposes not originally envisioned by the manufacturers.

Use of Nitrite and Nitrite-Sparing Agents in Meats: A Review, N. G. Marriott, R. V. Lechowich and M. D. Pierson, Department of Food Science and Technology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061

J. Food Prot. 44:881-885

Nitrite plays a major role in the curing of meats. However, the potential problem of nitrosamine formation has been responsible for reduction or elimination of nitrate and nitrite in curing. Reduced amounts of nitrite in curing can provide less protection against botulism, and subsequent investigations have examined solutions to this situation. Residual nitrite has been reduced by limiting the ingoing nitrite and by introducing curing substances, i.e., phosphates, lactobacillus cultures, and phenolic smoke compounds, to lower the pH. Ascorbates, alpha-tocopherol and other blocking agents have been used with nitrite in an attempt to devise a curing system that can provide a safe product with the color and flavor associated with nitrite-cured products while retarding nitrosopyrrolidine formation. This review focuses on the efficacy of various curing methods using nitrites that have the goal of reducing formation of nitrosamines.

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SOMEONE YOU SHOULD KNOW IN THE DAIRY INDUSTRY



**Dr. Anita Todd,
Nutrition Educator**

Dr. Todd is Director of Nutrition Education for the Dairy Council of Arizona, which is a non-profit nutrition education organization supported by the dairymen of the state. As an affiliated unit of National Dairy Council, they provide nutrition information, literature, workshops and services to educators, health professionals, and consumers. Dr. Todd has an extensive educational background. Earning a Bachelor of Science degree in Home Economics from the University of Arkansas, she taught high school home economics before receiving a Master of Arts in Education and her Doctor of Philosophy in Education from Arizona State University. Child development and early childhood education were her areas of specialization. Dr. Todd is also a wife and mother.

Food... Your Choice!

"Ten years of Elementary classroom teaching make it possible to perform my responsibilities for the Dairy Council of Arizona. My primary responsibility in nutrition education is to encourage and aid Arizona schools to implement Dairy Council's nutrition education programs. Since nutrition is not always a required subject, my first job is to 'sell' teachers and/or administrators on the benefits of including nutrition in their busy schedule. Where enthusiasm is generated, training workshops are scheduled and materials ordered for each teacher. Materials provided to teachers of grades K-6 are curriculum kits called 'Food... Your Choice.' The kits have teacher guides with carefully outlined, activity oriented lessons, books of worksheets for the students, punch-out serving size photos of many foods, posters, records, song sheets and take-home material for the parents.

"In the workshops, basic nutrition is presented as teachers are trained to use the curriculum materials. In the three years since 'Food... Your Choice' has been available, it has appeared in more than 200 Arizona schools.

"Soon, the 'Food... Your Choice' curriculum will expand to cover grades 7-10. Teachers in selected subject areas will have teaching kits available, and it will be necessary to devise a different strategy for implementing 'Food... Your Choice' at this level.

Food... Early Choices

"The most exciting recent addition to Dairy Council's curriculum is a nutrition education program for preschoolers called 'Food... Early Choices.' Since I strongly feel early childhood is one of the best periods for learning in all areas, I was especially glad when National Dairy Council decided to develop this program, and I could be a part of development from the beginning.

"Trial runs for the materials and activities of 'Food... Early Choices' were conducted in Arizona day-care centers and preschools during the summer of 1979. When complete, the program made its national debut in Arizona through a project I developed for the Arizona Department of Education. The project, a part of Arizona's Nutrition Education and Training Program, aimed at the Child Care Food Programs of the state. In just six months, more than 445 preschool teachers in Arizona were trained in the nutritional needs of young children and the use of curriculum materials.

"Chef Combo, an appealing, mustached hand puppet is the star of the preschool program. The children are told he is a food expert and knows what is good to eat and how to fix good food. He easily captures the attention and affection of young children and adults, making it easy for the teacher to use him when introducing the more than 20 different nutrition learning activities in the program. Other versatile components of this program are colorful food picture cards, a food floor mat game, posters, a song record and playing cards. Through the use of these materials, the preschoolers learn why they need to eat good food, and why they need to taste new or different foods. They also learn to be clean and careful when working with food. Chef Combo also communicates with parents through information sheets sent home with the children. This program potentially influences the eating habits of thousands of families.

In Addition

"Paperwork galore is associated with arrangements, orders and follow-up of these workshops. In addition, I make presentations to other groups who are interested in nutrition education such as college classes, parent organizations and other nutrition educators. Ongoing nutrition education programs must be serviced with material replacement, consultation and sometimes re-motivation or 'pep talks.'

"Many authorities on health agree that good nutrition is the foundation of good health. For this and many other reasons, I consider it a privilege to be involved with the dairy industry and the Dairy Council of Arizona in its unique role of service to the Arizona community through nutrition education."



SURGE

