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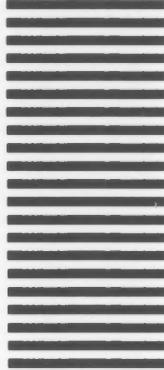
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Thoughts From the President . . .

By
Bob Sanders
IAMFES President



The 77th IAMFES Annual Meeting was very successful. Now you should begin making plans to attend and participate in next year's annual meeting. The Executive Board, Damien Gabis, the Program Committee Chair, and the Program Advisory Committee have already started planning. The meeting will be held at the Galt House in Louisville, Kentucky beginning on July 21, 1991.

You can benefit in many ways from attending an IAMFES annual meeting. You will hear many excellent technical and practical presentations on food safety while making new friends and renewing old acquaintances. Much can be gained from the hallway and after-hours discussions with your fellow colleagues. You can enrich your lives through participation in the social events with the spouses and families of your fellow colleagues.

Papers submitted by IAMFES Members and other Industry Professionals are also an important part of the technical presentation. If you have been working on a project, write it up and submit it for consideration by the program committee. Look for the Call for Papers in the October Issue of *Dairy, Food and Environmental Sanitation*.

While we are on the subject of IAMFES, I would like to tell you a little about your organization. IAMFES has over 3,500 members. These are not only from the United States but also from 38 outside countries. There are 32 affiliates, including two from our neighbor to the north, Canada. Soon, we may have a European affiliate, with Ron Case, our Past President, and our staff from the Ames office, working with some members there.

Steve Halstead, our Executive Manager, has been at the Ames office for a little over a year. I believe he is doing a fine job managing the association affairs and the Ames office staff.

The Ames office staff of eight full-time and four part-time persons are a dedicated group of people whose objective is to serve the membership of IAMFES. Much of their time is devoted to the publication of our two fine journals, *Dairy, Food and Environmental Sanitation* and the *Journal of Food Protection*. Both of these journals have long been considered the finest publications in the field of food and environmental sanitation.

Publications, printing and mailing of the journals is costly. Much of IAMFES's 1991 budget of approximately \$780,000 will go towards these costs. Much of this goes for publication, printing and mailing of the journals. Our income comes from membership dues (regular and sustaining members), subscriptions from libraries, the sale of advertising and the annual meeting. If we are going to continue to grow we must continue to get new members, and sell more advertising. You can help by encouraging your fellow workers to join.

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Dairy, Food and Environmental Sanitation

CONTENTS

Articles:

- Milk Safety - Who's Responsible543
Jay Boosinger

Protection of Lights in Food Plants

- Against Breakage 546
Joseph D. Foulk

Revision of the Somatic Cell Count

- Standard for Goat Milk 548
L. S. Hinckley

Legionnaire's Disease Outbreak Due

- to Produce Mist Machines 550
Khalil Sharifzadeh

News 551

- Rapid Methods and Automation in
Microbiology: Ten Years of Excellence

*** and much more ***

Industry Products..... 559

Updates 563

Food and Environmental

- Hazards to Health 564

Association News:

- Thoughts From the President 539
Sustaining Members 540
Call for Secretary 557
IAMFES Lending Library 572
New IAMFES Members 576

Forum for Professional

- Sanitarians 570

Affiliate News 571

National Mastitis Council 575

Instruction for Authors 577

Business Exchange 578

"Classified"

IAMFES Membership

- Application 581

Coming Events 582

On My Mind 584

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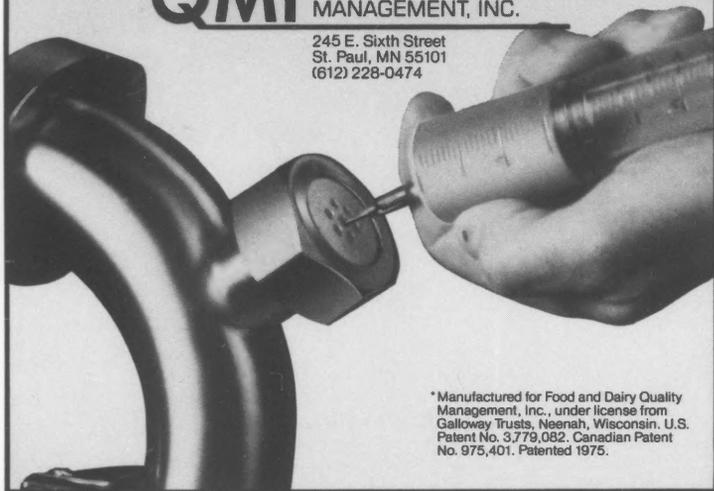
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Milk Safety - Who's Responsible

Jay Boosinger

Department of Agriculture & Consumer Services
Tallahassee, Florida

Millions of us will go grocery shopping this weekend to stock up on our favorite foods and drinks. We will clip coupons, pinch pennies, and look at labels.

If the produce looks healthy and the packaged foods look clean, we buy them.

Usually, that is all there is to it. Most of the food we buy is safe. But sometimes it can sicken us - or kill us.

Milk and dairy products are nature's most nearly perfect food - or are they?

During the past five years:

- 85 people in California, Texas and Arizona died after eating cheese containing *Listeria* bacteria.
- 16,000 people in Illinois, Wisconsin, Minnesota, Michigan, Iowa and Indiana became ill from salmonella poisoning in milk. Five people died.
- 8 people got sick from eating ice milk contaminated with ammonia.
- In North Florida and South Georgia milk and ice cream contaminated with cleaning compounds were recalled.
- Milk containing residues of the pesticides dieldrin, chlordane and heptachlor came to public attention.
- Recall after recall of milk products, ice cream and frozen dessert novelties took place because of contamination by pathogenic bacteria.
- Barium carbonate was found in both fluid milk and by-products.
- Salmonella contamination was linked to mozzarella and processed cheese.
- Aflatoxin was found in corn and milk and generated much publicity.

During the past year Florida's Dairy Division has dealt with the following contaminants in Florida's milk supply: antibiotics, including penicillin, sulfamethazine and other drugs, vinyl chloride, aflatoxin, added water, somatic cell counts, high bacteria, 2-4D, cyanide, lead and other heavy metals, volatile organic solvents, chlorine, acid sanitizers and numerous other potential contaminants.

Does this sound like a horror story? All of the incidents mentioned are true.

Milk, because of its composition, is an ideal medium for the transmission of disease. The disease may originate in the cow, or the milk may be contaminated by improper handling during and after the milking process. For this reason, milk has become one of the most regulated food products during production, transportation, processing and distribution. In

more recent years, since milk is a highly perishable product, emphasis has also been placed on its keeping qualities.

Obviously, everyone who comes in contact with milk has an *impact* on it's safety. The dairy farmer and his employees, the milk hauler, the feed supplier, the chemical salesman, the equipment installer, the processor, retailers, consumers, local, state and federal regulatory agencies and on and on. Let's not forget the veterinarians and educators either. The consumers of America expect, *NO-DEMAND* that their milk be readily available, wholesome and *yes* - safe.

When you consider the number of people and interests that impact on dairy product safety, our track record has been exceptional. We've had a few failures, but considering the fact that many millions of packages of dairy products are produced and consumed every day - we have an excellent safety record.

Now let's talk about a state regulatory agency's role in dairy product safety. First - Florida's legislature has recognized that there must be some governmental agency involved in the regulation of the safety of dairy products. Florida's dairy laws specifically state that the administration and enforcement of all regulatory legislation enacted, which apply to the production, processing and distribution of dairy products, shall be performed by the state regulatory agency. Further the laws spell out the purpose of the legislation which is paraphrased as follows - the assurance that dairy products sold or offered for sale to the public are produced under sanitary conditions, are wholesome and fit for human consumption, and are properly labeled.

To comply with our legislative mandate, we have implemented a comprehensive regulatory program. We ask, remind, cajole and sometimes initiate legal action to insure that unsafe conditions and procedures found on farms and plants are eliminated or corrected. Through our inspection process and product sampling, we attempt to insure that the safety net remains intact and that minimum product standards are met. At times we are frustrated because we know that additional emphasis by farmers and processors in a given area would result in a higher quality product and a more successful operation. Over the years both public perception and regulatory pressure have contributed to safer dairy products. For example - when the public demanded that the legislature pass a shelf life law requiring pull dates and an enforcement program, it resulted in a demand for better raw milk and greater sanitation on dairy farms.

However, regulation is not foolproof, and regulators cannot be everywhere. Self-regulation is essential; it's a

crucial clause in that unwritten compact between milk producers, their customers and consumers.

As dairy farmers what are your responsibilities to ensure that the milk you produce is safe? The basic requirements of safe, sanitary production procedures have not changed over the years. They may have become more stringent in some areas, but the basics are still there. You need to milk healthy cows in a clean environment and keep the milk cold!

Healthy cows are important because a number of bacterial and viral diseases including Salmonellosis, staphylococcal and streptococcal infection may get into the milk directly from the udder or through infected body discharges which may drop or splash into the milk. Unhealthy cows can contribute to further mastitis problems in your dairy herd. They can result in milkborne epidemics of scarlet fever, undulant fever or septic sore throat. Toxins produced by some staphylococci are not destroyed by pasteurization and can result in severe stomach problems.

A clean environment, including a properly constructed barn or parlor, holding lots, milk house and equipment which is cleaned and sanitized, is essential to prevent the contamination of the milk. Dirty equipment cannot be sanitized and unclean surroundings increase the possibility of contamination.

Quickly cooling raw milk is terribly important to maintaining its safety. Milk produced from disease free cows usually contains relatively few bacteria. These bacteria multiply to enormous numbers within a few hours unless the milk is quickly cooled. Usually the bacteria in raw milk are harmless, but proper cooling prevents spoilage and shortened shelf life which is reason enough for proper refrigeration. If harmful bacteria are present, proper cooling is essential to prevent their development.

It is also important to have properly constructed and operated toilets and water systems. Many disease organisms can be present in the body wastes of persons, even if they are not sick. Flies, rodents and insects that may contact these wastes can easily contaminate the milk. Polluted groundwater can also contaminate water supplies and streams from which the cattle drink. It takes a lot of potable water to run a dairy properly. If the water supply is contaminated it will surely contaminate the milk, and since milk has ideal nutrients to grow bacteria, somebody might get sick.

The processing plant cannot cover up production mistakes. If you produce milk with high bacteria counts, high somatic cell counts, added water, antibiotic residues or other contaminants, you are hurting the image of milk. You are affecting its marketability and palatability. It hurts you, the dairy farmer, by tarnishing our products image and creating loss in sales.

The Pasteurized Milk Ordinance outlines in detail the standards and requirements which the dairy farmer is responsible to meet in the production of Grade A raw milk. The PMO as the Pasteurized Milk Ordinance is known was first published by the Public Health Service in 1924. Since that time the dairy industry, academia, local, state and federal regulatory officials have all contributed to refining the requirements to ensure the safest milk supply possible.

Since 1944 the PMO has been used by the PHS/FDA and National Conference on Interstate Milk Shipments as the basis for shipment of Grade A raw milk in interstate commerce. Every two years the states, feds and industry gather to review the ordinance and the procedures used to conduct the IMS program to insure that the utmost safety is afforded the public in the production of milk and milk products.

The IMS developed the standard of 1,000,000 somatic cells/ml for abnormal milk. They were responsible for initiating more sensitive tests for antibiotics and other medicinals in milk.

Recently when the FDA revealed the presence of the drug sulfamethazine in a large number of market milk samples across the country - the IMS was quick to react and initiate an educational, sampling, inspection and enforcement program to eliminate the residues of this drug in our milk supply. In Florida sulfamethazine has been nearly eliminated as a problem. Inspection of drugs and drug storage areas have been intensified in an attempt to eliminate outdated, mislabeled and illegal drugs from dairy farms. We know there is a problem and it's your responsibility to help solve it.

The dairy industry can't afford to alienate consumers of milk by making a mistake and allowing contaminated milk to reach the market. You know what happened to the apple industry - Alar & 60 Minutes. I'll bet you didn't know that the draft report prepared for 60 Minutes by the National Resources Defense Council contained the following language:

"For preschoolers, milk products are perhaps the most conspicuous of foods absent from exposure estimates. For example, 60% or more of the preschooler's exposure to the carcinogenic fungicide Captan comes from residues in milk according to EPA. The average preschooler consumes almost five times the average woman's intake of milk. Pesticides get into animal products, including meat and eggs, as well as milk, via pesticide contaminated foods. The extent of actual pesticide contamination of the nation's dairy products and meat supply remains relatively unknown because testing methods cannot detect many of the residues, particularly of the metabolites."

Can you imagine what would have happened to your market if CBS had aired that portion of the report?

Fortunately they didn't, but, let me assure you that the media is out there looking for any story that they can sensationalize, and milk contamination is one they would like to jump on.

Food safety is a hot topic and it won't let up. Your industry is under a magnifying glass. You need to work with your veterinarians to be sure that both prescription and over the counter drugs are used properly and that extra label drugs are labeled correctly and that you're sure how they are to be used. Veterinarians need to provide training on the proper administration of drugs for each of their dairy farmer clients. You need to communicate with your chemical supplier, making sure that you know how your cleaners and sanitizers are to be used and that you are using them for the job which they were

designed. You need to communicate with your educators and be sure that milk safety is part of the dairy student's curriculum in both the manufacturing and production areas.

Milk Safety - Who's Responsible - morally and ultimately you, the dairy farmer and the processor, helped along by those of us in academia, regulatory, veterinary medicine, feed supplies, chemical sales and all the others which impact on dairy operations. Collectively we determine its safety and share the trust placed in us by milk consumers to ensure that they get what they pay for: Milk - Nature's most nearly perfect food.

This paper was presented at the 29th Annual Meeting of the National Mastitis Council, Inc., Louisville, Kentucky, February 12-14, 1990.

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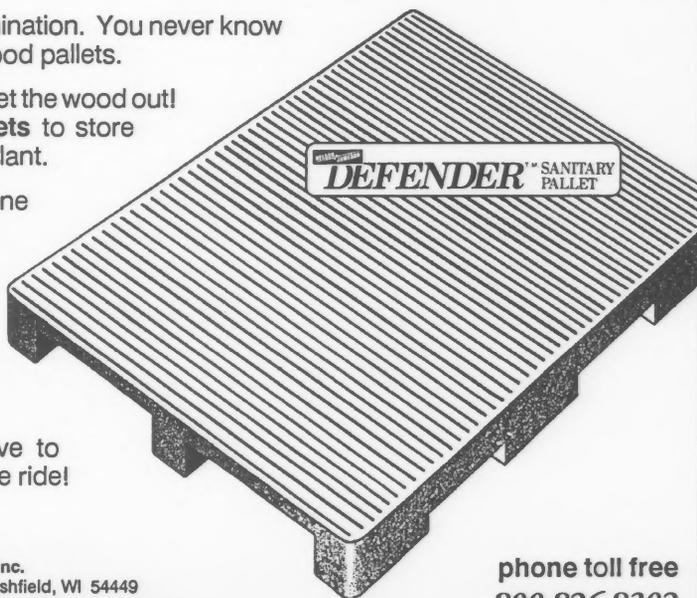
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Protection of Lights in Food Plants Against Breakage

Joseph D. Foulk, Ph.D., R.S., R.P.E., Director - Field Operations
Food Safety Associates, Edmonds, WA

The U.S. Food & Drug Administration's Good Manufacturing Practices state [GMPs Subpart B(b)(5)] that food plants "(shall)... provide safety-type light bulbs, fixtures, skylights, or other glass suspended over exposed food in any step of preparation or otherwise protect against food contamination in case of glass breakage."

As contaminants, shards of glass can be disastrous. They are a consumer *safety hazard*; they cannot be detected or extracted using magnets or screens, etc., --- and because lights can be effectively protected against breakage, the presence of broken glass in products suggests ignorance or lack of concern on the part of the food or beverage firm.

In addition to areas of product exposure, lights should also be protected above or even near food or beverage containers as they are conveyed towards fillers or other packaging stations. Some specific and "critical" sites for light bulb protection include: the discharge ends of returnable bottle soakers, heat lamps directed onto chocolate enrober stations (and lights above discharge ends of enrobed confectionery cooling tunnels), inspection lights in fermentation or pressure vessels, and any lights above unlidded weight scales, hoppers, etc., or proof boxes in grain, milling or baking industries. Lights usually need not be protected in areas such as maintenance shops, warehouses, offices or other non-production areas.

Incandescent (bare) bulbs, which were made shatterproof during their manufacture by 1) being dipped in molten plastic, or 2) including a plastic liner, can be purchased. The latter type is preferred because plastic "coatings" on bulbs will fray and slough due to heat if the bulb isn't mounted socket up.

Bulbs protected by separate shatterproof bowls are frequently used in ceilings of cooler rooms or refrigerated storage areas. Here, no condensate water should ever be permitted to accumulate in the bowl units. Short-circuiting and shattering of both bulb and bowl can result when the level of water rises to contact the bulb.

Fluorescent bulbs are frequently "sleeved" using full length tubes of clear plastic, which are secured with end caps at both ends of the bulbs. End caps must be of heat-resistant, non-fraying material, and "sleeves" must be seated securely into end caps to be effective. Sleeves offset from end caps (or even placed on bulbs alone), not only permit broken glass to fall, but also allow small gnats or other flying insects to collect in the small gap between the sleeve and fluorescent bulb.

Today, effective protection of fluorescent bulbs is achieved by using bulbs which are completely coated by Surlyn^(R) or similar plastic at the time they are manufactured. Such bulbs are available in various lengths to fit into most fixtures readily. With this coating, Quality Assurance and Maintenance personnel need no longer worry about missing or fraying end caps or heat-damaged plastic sleeves.

Where *reflection* is necessary, e.g., along can or bottle lines, or above accumulator tables at container palletizers, shatterproof panels of plastic, rather than glass mirrors, should be used.

Imholte (1984) describes other important aspects of lighting in food plants and Gilbert (1985) includes valuable information on the insect-attracting effect of wavelengths of different types of lighting.

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Slugs and Slime Don't Go with Sprouts

A trail of live slugs, slug slime, earthworms, spiders, dead rodents, and other filth led to a permanent injunction against a Seattle, Washington, food company.

On August 21, the U.S. District Court for the Western District of Washington ordered Angs Bean Sprout Company and its owners, Michael Yeung and Rosana Chin, to stop operations until the plant was thoroughly cleaned. The order followed 11 years of uncorrected violations uncovered by the FDA and the Washington State Department of Agriculture (WSDA).

The only recourse, says FDA compliance officer, James Trowbridge, was finally to "issue an injunction and force the firm to take necessary corrective action."

Angs Bean Sprout Company, which grows and distributes bean sprouts to trade outlets and restaurants in Washington state, had been amply warned of its violations. FDA first inspected the company on December 15, 1978. The agency documented insanitary conditions - including rodent droppings, insect filth, and inadequate equipment - and discussed the violations with the owners. The owners promised to clean up the plant, and an inspection on Feb. 21, 1980, showed no violations. Conditions did worsen, however.

The firm had changed ownership several times since those first inspections, but, according to Trowbridge and agency records, the changes in ownership were often just a recycling of partners.

FDA inspected the firm on March 5, 1985, and found spiders, insects, and live slugs in the mung bean storage area; slug slime trails on walls, floors and shelving; slime and mold in a drainpipe; and a live cat and catfecal matter on the premises. FDA issued a notice of adverse findings, instructing the firm to clean up the plant. The firm responded that it would comply.

Follow-up inspections on Sept. 9, 1985 and March 3, 1986, by WSDA, under contract with FDA, revealed slugs and earthworms on mung bean residues, slime and mildew on the walls, hundreds of insects in a holding room adjacent to the sprout washing and packaging area, and a water-damaged plasterboard ceiling that was loosely suspended and ready to fall. WSDA discussed the problems with the owners, who again promised to clean up.

FDA audited the state's inspections on April 30, 1986. The agency visited the plant and observed the same violations cited in previous inspections. Another notice of adverse findings was issued to then co-owners, Michael Yeung, Yuet Ngai, and Wing Dong, who said they planned to relocate and modernize the plant. The firm moved in September 1986 to a new facility in the city.

An initial state inspection at the new location on Dec. 10, 1986, turned up insect glue strips suspended over exposed mung bean sprouts in the packaging area, pooled water on the floor, mold on the ceiling, and accumulated debris throughout the location. WSDA discussed a written report of violative plant conditions with co-owner and partner Yuet Ngai, who, once again, agreed to clean up the plant.

But things at the plant did not improve, and following an FDA inspection on March 2 and 3, 1988, the agency's Seattle district office recommended proceeding with an injunction against Angs Bean Sprout Company and its owners.

FDA inspectors revisited the plant on June 2, 1988, before requesting the injunction, to verify that the violations remained uncorrected. The inspectors noted rodent droppings, and laboratory examination of samples collected during this visit confirmed observations of slugs and earthworms. However, Angs Bean Sprout Company had changed owners, and the injunction against the former owners was dropped.

After a mid-January 1989 inspection turned up the usual filth, the firm said it would put Angs Bean Sprout Company up for sale. If it was not sold within 30 days, they said, the then-owners (Sairchu Au, Nisa Kungjaya, and Surasak Wisesoongroj) would correct the business's defects and practices.

An FDA inspection on April 5, 1989, revealed the firm had been sold to a former owner, Michael Yeung, and current manager, Rosana Chin. Conditions had not improved, and on May 8, Trowbridge again recommended a permanent injunction.

The threat of this injunction finally spurred the company to act. It bought new equipment, repaired walls, and hired a sanitation expert. On August 29, 1989, Angs Bean Sprout Company was back in business.

FDA continues to inspect the firm every three months. During the most recent inspection, the agency did find a few minor violations - such as fruit flies in the plant. But this time Angs Bean Sprout Company quickly remedied the situation.

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Revision of the Somatic Cell Count Standard for Goat Milk

L.S. Hinckley, Microbiologist, Director Mastitis Laboratory,
Department of Pathobiology, University of Connecticut, Storrs, CT 06269-3089

ABSTRACT

The milk secretion system of the goat (apocrine) differs from that of the cow (merocrine), and mounting evidence indicates several basic differences between the composition of goat milk and cow milk. These differences create a lack of justification for applying cow milk regulatory standards to goat milk, especially in the area of somatic cell count. A study was conducted using various parameters to determine mastitis status in 560 goat milk samples. Results indicate that the present somatic cell count standard is discriminatory against goat milk and that a separate standard should be determined.

INTRODUCTION

In order to provide an accurate Somatic Cell Count (SCC) or leucocyte count in goat milk, two separate issues must be considered. The first is use of appropriate methods of counting leukocytes; methods must differentiate nucleated cells from cytoplasmic particles, present as a result of the apocrine milk secretion system of the goat which differs from the merocrine system of the cow. Methods must be specific for the DNA of nucleated cells. Cell counts from screening tests such as the California Mastitis Test (CMT) and Fossomatic cell counter must be confirmed by the official regulatory test for goat milk, the direct microscopic somatic cell count (DMSCC) with Pyronin Y Methyl Green stain.¹ A New York State regulatory laboratory recently tested 100 split samples of goat milk for somatic cell count with both Fossomatic and DMSCC. The Fossomatic counts were consistently higher.²

The second issue to be considered is nonspecific mastitis. Results from official testing methods indicate a large number of goat milk samples have an elevated somatic cell count and are free of culturable pathogenic bacteria. Such cases are defined as nonspecific mastitis and are not curable by antibiotic treatment. The issue is further complicated by the fact that goats are seasonal breeders and all approach late lactations at the same time of year, amplifying elevated SCC in both fall and spring months.

In dairy cows, DHIA records have proven a direct relationship between cell count and milk production. A recent survey of 290 dairy goats, conducted by the Provo, Utah DHIA laboratory, using cell counts determined by both Coulter counter and Fossomatic counter, concluded no relationship exists between cell count and milk production in dairy goats tested.³

A study conducted at the Connecticut Mastitis Control Laboratory was designed to determine the mastitis status of a large number of goats, the percent of nonspecific mastitis present and the role of Caprine Arthritis Encephalitis (CAE) in nonspecific mastitis.

MATERIALS AND METHODS

Sample collection was done according to National Mastitis Council (NMC) guidelines.⁴ Mastitis status was determined by diagnostic procedures recommended by the NMC.⁴ Leucocyte counts were determined by the DMSCC with Pyronin Y Methyl Green stain as described in Standard Methods for the Examination of Dairy Products.¹ Goat serum samples were tested for CAE virus antibodies by using cross-reacting bovine progressive pneumonia virus as antigen in agar gel immunodiffusion (AGID) tests.⁵

A total of 560 samples were tested for leucocyte count and cultured for mastitis pathogens. CAE tests were conducted on 196 samples.

RESULTS

Eighteen percent of the 560 samples tested had an elevated leucocyte count. Of the samples with an elevated count, 50% were determined to be free of culturable pathogenic bacteria and were classified as nonspecific mastitis. Of these samples, 56% had counts between 1.0-2.0 million leukocytes per ml. and 70% of these samples were from animals sampled between the first and sixth month of lactation.

A total of 25% of the CAE positive samples and 27% of the CAE negative samples were mastitic. Of the mastitic samples, 13% of CAE positive goats had nonspecific mastitis and 50% of the CAE negative goats had nonspecific mastitis.

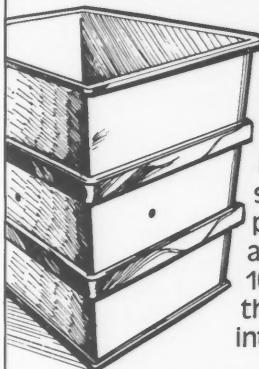
DISCUSSION

CAE virus infection did not appear to be a factor in nonspecific mastitis. Results indicate that dairy goats in mid-lactation with no bacterial mastitis may exhibit SCC of 1.0 million and more. A SCC standard of 1.0 million or lower appears to be discriminatory against goat milk. Basic differences between the two species in milk composition indicate parameters of quality would be different for each species, resulting in a lack of justification for applying cow milk standards to goat milk and necessitating the determination of a separate standard.

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Legionnaire's Disease Outbreak Due to Produce Mist Machines

by Khalil Sharifzadeh, D.V.M., M.P.H.

In October, 1989, an outbreak of Legionnaire's Disease occurred in Bogalusa, Louisiana involving at least 34 cases. A case control study by the Louisiana Department of Health and Hospitals found a strong association with buying fresh produce from a particular grocery store that used a mist machine to spray aerosol over produce bins.

Legionnaire's Disease is an infection caused by a bacterium called *Legionella pneumophila*. A culture from the aerosol produced by the implicated Louisiana machine grew *Legionella pneumophila* of the same type obtained from two individuals with the illness.

Legionnaire's Disease usually causes fever and flu-like symptoms, and in some patients it progresses to pneumonia. Certain people are more susceptible to the disease than others. Elderly individuals, persons with chronic heart or lung disease and smokers are more likely to become ill if exposed to the bacteria.

The illness cannot be spread from one person to another, nor is there evidence that it can be spread through food. It is acquired from the environment when persons inhale small water droplets that contain the bacteria. *Legionella pneumophila* lives in many different environmental water sources. It is frequently found in ground water, potable water systems and air conditioning cooling towers.

The mist machine implicated in the Louisiana outbreak was a type designed specifically for grocery store produce

displays. It generated a fine aerosol mist with an ultrasonic nebulizer. The mechanism that generates mist is the same as that used in many recently designed home humidifiers. However, the machine in this outbreak differed from home machines in several respects: the water reservoir was very difficult to access for cleaning, and it was designed to be connected directly to a water supply line and left operating continuously. At the time the outbreak occurred, the implicated machine had been operating without interruption and without maintenance for one year.

Manufacturer maintenance procedures for cleaning and sanitizing these misters are sometimes nonspecific with respect to cleaning methods and frequency. Some units have been found by the U.S. Food and Drug Administration (FDA) during inspection to be in disrepair and unclean, with slime-coated water contact surfaces.

While inspecting retail food stores selling produce, health inspectors should check to see if mist machines are in use. If so, proper cleaning and maintenance procedures should be required on a weekly basis. If machines are not properly cleaned and maintained, the establishment should be cited for violating item #16, Cleaning and Sanitizing Utensils, on the Food Establishment Inspection Report.

Reprinted from the Food and Drug Reporter, Massachusetts Department of Public Health, Div. of Food and Drugs, Vol. 8, Issue 90-1, Spring 1990.

Cleaning and Maintenance Requirements for Produce Mist Machines

Food establishments which choose to continue to operate a mist machine should carefully follow the manufacturer's most recent cleaning and maintenance guidelines. FDA recommends the following general procedures. They should be performed weekly:

1. Drain and completely disassemble all the water and mist contact parts;
2. Brush clean all parts of the reservoir, fog tubing and discharge nozzles with a suitable detergent solution;
3. Flush the complete system with potable water to remove detergent solution and particulate accumulation; and
4. Rinse and swab all parts of the reservoir, fog tubing and discharge nozzles with at least 50 ppm hypochlorite solution.

How to Spot Token Environmentalism

According to Clay Edmunds, Director of Sales & Marketing, Cato Gobe & Associates

As the saying goes, you can't always judge a book by its cover! Just because a product comes in a green package with pictures of trees, doesn't mean it is environmentally safe.

Cato Gobe & Associates, an international design firm, teaches us how to spot token environmentalism in consumer packaging and product design. Though the product you buy might be healthy and environmentally safe, inks, dyes, styrofoam, plastic and treated paper can make its packaging unrecyclable.

Consumers

- Don't buy too many disposable products. Washing dishes is safer for the environment than dozens of styrofoam or plastic plates, cups, utensils and paper tablecloths.
- Check for a "recycle" symbol or stamp. If the product does not have a marking (such as the now familiar three-arrowed recycling symbol) it has not been made from recycled material.
- Re-use containers. Paper containers able to withstand microwave ovens can also withstand years of waste disposal chemicals.
- Understand the difference between recycled and recyclable. Products made from material labelled recycled actually may be at the end of its recyclable life.
- Understand your purchasing power. If non-environmental products don't sell, manufacturers won't produce them.

Product Manufacturers

- Avoid excessive packaging. Layers of styrofoam cushions and plastic bags not only cause extra trash, but are non-recyclable.
 - Make shopping bags out of recyclable materials. Instead of a traditional hat, shoe, or coat box, produce environmentally safe, recyclable bags with the store's own personal design. You may even find that you have a trendy item on hand.
 - Use paper. Since it is the most biodegradable, paper or cardboard packaging makes it the environmental choice.
- Cato Gobe & Associates is an international design firm based in New York and Paris, and specializing in packaging and product design, retail store design and brand leveraging.

For more information contact: John La Place at (212)633-1445.

Rapid Methods and Automation in Microbiology: Ten Years of Excellence

Daniel Y.C. Fung, Department of Animal Sciences and Industry, Kansas State University, Manhattan, KS 66506. Contribution No. 90-157-J, Kansas Agricultural Experiment Station, Manhattan, KS.

In this fast-moving world of ours, any educational program that can last for ten years deserves some sort of recognition. At the Kansas State University (KSU), is celebrating the tenth anniversary of the international workshop on rapid methods and automation in microbiology July 6-13, 1990.

This unique workshop had a humble beginning in 1980, when Fung decided to teach a summer short course on the exciting topic of rapid methods and automation in microbiology to students at KSU. The emphasis of the course was "hands-on" experiences with the newest instruments and diagnostic kits and systems related to applied microbiology. In order to make the workshop functional, Fung needed the willing participation of companies who manufacture instruments and kits. In my first attempt to teach this workshop, I was greatly surprised that commercial companies (about 20) embraced the idea and sent materials and personnel to our university to help teach the students, who for practical purposes would not have any buying power, said Fung. The success of that first short course in the summer of 1980 sowed the seed of the international workshop which has been in existence since 1981.

The official workshop was held in July 1981 with Dr. Millicent C. Goldschmidt of the University of Texas Dental Science Institute in Houston and Dr. Nelson Cox of the USDA in Athens, Georgia as visiting professors. Seventeen students participated, and the workshop lasted nine days.

From the very beginning, the workshop had a national and international scope. Participants of the first workshop came from 11 states and three foreign countries (Mexico, Argentina, and Canada). The second workshop attracted 18 students. The number jumped to 34 in the third workshop and has been steadily increasing, until in 1990, there were 45 participants plus ten graduate students and visiting scientists participating in the workshop.

As the program developed through the years, Dr. Stan Bailey (USDA) became part of the core faculty. Outstanding scientists were also invited to be guest lecturers. Dr. Paul A. Hartman (Iowa State University), Dr. Cecil Lahellec (Poultry Experiment Station, France), Reginald Bennett (FDA), and Dr. P.C. Vasavada (University of Wisconsin-Riverfalls) have appeared on the program for more than one year.

In all, more than 400 participants came from 40 states and 25 countries in the past ten years.

The successful ingredients of the workshop are:

1. **Unique opportunity** -- Many people like to learn about the newest and best methods for applied microbiology, and many companies developing these methods are more than happy to find a place to demonstrate their systems to serious potential users of their products.
2. **Academic credibility** -- The workshop is certified by the American Society for Microbiology and also carries KSU graduate credits
3. **Strong scientific program** -- Outstanding speakers are invited to be visiting professors, instructors, lecturers, and presenters to interact with the participants.
4. **Appropriate social program** - There are receptions, dinner gatherings, a picnic, etc. to keep the participants refreshed and entertained during the workshop.
5. **Effective communications** - Before participants arrive, materials about the workshop are sent, and after they complete the workshop, about four mailings are sent per year to all participants to keep in touch with these newly-made scientist friends.

The participants become a part of a large family of applied microbiologists. A cumulative participant directory is issued every year by Fung who keeps close track of all previous participants. One of the most enjoyable activities is the "Rapid Reunion" which has taken place in major national meetings, such as those of the Institute of Food Technologists and the American Society for Microbiology. About 80 people came to the "Rapid Reunion" in Anaheim, CA during the 1990 IFT meeting.

A fellowship program for graduate students from other universities to come assist us in the workshop was also developed. In return, these fellows were given a fee waiver and room and board during the workshop. Fung established an "international young scientist" program to provide opportunities for promising scientists from overseas to come to the workshop - so far several have come from France and Finland.

This workshop has truly been an educational experience for all involved. The 10th anniversary featured a symposium with the workshop. More than 130 people attended the symposium banquet to listen to Dr. Richard Forsythe, University of Arkansas who gave a talk on "Food Safety and Rapid Methods."

Fung coined the phrase "Ten Years of Excellence" for the 10th anniversary in honor of all those outstanding visiting professors, lecturers and guest speakers who came to help teach the workshop; the large number of commercial companies who spent much time and many resources to provide us with the newest, the best, and the most advanced technologies in applied microbiology; the fantastic group of assistants and co-workers in the conference center, who helped to conduct the workshop; and most important of all, the enthusiastic, intelligent, hard-working, fun-loving,

and professionally successful national and international participants, who not only came but spread the word about the workshop and even sent their own colleagues to the workshop. They are the best ambassadors.

It was a joyful 10th anniversary celebration on the advancement of science and technology in the wonderful world of *Rapid Methods and Automation in Microbiology*.

The 23rd International Dairy Congress

From October 7th to 12th, 1990, the Montreal Convention Centre will be the site for the largest International Dairy Congress and Exposition ever held under the sponsorship of the International Dairy Federation, a 33 country member organization which was founded in 1903.

The program will appeal to milk producers, educators, quality control managers, researchers, nutritionists, marketing and promotional personnel, environmental officials, processors, sales personnel both for developed and developing countries, consultants and many others. In short everybody who has an interest in the huge international dairying industry.

This Congress, held every four years, will be the first held in North America. It offers all delegates a chance to meet and discuss the events that are changing the international dairy industry - and because it is being held in Canada, particularly those changes on the North American continent.

"The Congress and Exposition have been in the planning for over three years and we believe that the wide reaching programme and the Exposition exhibitors will afford all the delegates an opportunity to benefit from this experience by attending. The fact that over 1,200 delegates have already registered from over 40 countries is an indication of the importance of this Congress to the international dairy industry", said Mr. Kempton L. Matte, Chairman of the Organizing Committee.

For further information, please contact: Mr. Richard Stern, Executive Director, 23rd International Dairy Congress 1990, P.O. Box 2143, Station D, Ottawa, Ontario, K1P 5W3. Telephone: (613)238-4116, FAX (613)238-6247 or Telex 053-3952.

Americans' Favorite Seafoods of 1989 Announced Tuna Still Most Popular, but Surprising Changes in List

Americans continue to love tuna, shrimp, and cod - their first, second and third choices for seafood - but recently released statistics for 1989 show some major changes in consumer behavior, resulting in a new high of seafood consumption - 15.9 pounds *per capita*. For the first

time, catfish has entered the "top five" in popularity and Alaska pollock consumption has increased substantially, due, in large part, to changes in American diets and new techniques in seafood production and processing.

"This is a noticeable change in consumer behavior," said Lee Weddig, executive vice president of the National Fisheries Institute. "The growth in popularity of Alaska pollock is related to the entrance of this species in the fillet marketplace as well as the enormous success of surimi seafood. The expanding catfish usage can be attributed to innovations in catfish aquaculture and product development in the United States."

Surimi seafoods are most often referred to as imitation crabmeat, although other imitation shellfish such as shrimp or lobster are also produced. Alaska pollock is the basic raw material in surimi seafood. The steady growth in *per capita* consumption of surimi seafood products underscores the fact that this category of seafood is now very popular in its own right - consumers love it.

Catfish has become increasingly popular with the growth of American aquaculture - or fish farming - techniques. Aquaculture has allowed U.S. fish "farmers" to raise healthier, and more economically-priced catfish on farms with controlled environments. Catfish are the most frequently "farmed" fish, but other species cultivated in the U.S. through aquaculture are salmon, rainbow trout, tilapia, oysters, mussels, and shrimp.

The "Top 10" in order of consumption are:

<i>Species</i>	<i>Pounds per capita</i>
1. Tuna	3.900
2. Shrimp	2.300
3. Cod	1.690
4. Alaska Pollock	1.447
5. Catfish	0.692
6. Clams	0.613
7. Flounder/Sole	0.573
8. Salmon	0.472
9. Scallops	0.329
10. Crabmeat	0.290

Weddig continued, "Americans are responding favorably to changes and new developments in the seafood industry. This, of course, reinforces the fact that national seafood consumption is up - consumers are more nutrition-conscious - and seafood plays a very important role in a healthy, low-fat diet.

Release #90-25. For more information contact the Communications department, the National Fisheries Institute, 1525 Wilson Boulevard, Suite 500, Arlington, VA 22209. (703)524-8881. Distribution: FS, IN, RT, FE.

Milkfat: Not So Bad and Getting Better

Dairy products may be getting blamed unfairly for promoting high cholesterol, according to a report from a

University of Wisconsin-Madison nutritionist speaking at the annual meeting of the American Dairy Science Association in Raleigh, N.C., last week.

Denise Ney pointed out that fat in dairy products consists of about 35 percent oleic and stearic acids, which have little effect on blood plasma cholesterol levels in humans. In addition, milk products contribute only about 15 percent of the cholesterol and 15 percent of the fat in the average American diet, far less than do red meats.

And research shows promise for reducing the troublesome components of milkfat, she stated. Scientists are experimenting with at least four different ways of altering the fat content of dairy products.

Fractionation Technology: This process involves separating milkfat into different fractions. Because different fatty acids melt at different temperatures, the more unsaturated ones can be skimmed off when the milkfat is cooled. A form of this technology is being used in Europe to create a butter oil marketed in the Middle East, Africa and the Indian subcontinent, while the harder, saturated portion is used in the European baking industry.

Cholesterol Removal: It is possible to remove the cholesterol from milkfat, Ney stated. Because the proportion of cholesterol is relatively low, it may not be a cost-effective procedure, however. One possible use for this technology is to produce cholesterol-free milkfat, which could be used as a raw product or ingredient for the food industry. The cholesterol-rich milkfat fraction could be used in the cosmetic industry.

Altering Feeding Practices: Researchers are now feeding cows polyunsaturated fats to alter the fat content of the milk they produce, she reported. This is done using heat-treated oilseeds such as roasted soybeans. Researchers have yet to determine how dramatic an effect such practices will have, she said.

Genetic Engineering: In the future, cows can be bred for characteristics that would produce lower-fat milk, she said. This will take a lot more experimentation and better understanding of fatty acids and the role genetics plays, however.

For more information contact: Denise Ney (608)262-2727.

Researchers on Threshold of Understanding Full Biological Role of Vitamin D

The importance of vitamin D in maintaining bone health has been long recognized, but only recently have scientists uncovered the other possible functions of this nutrient, states the most recent issue of Dairy Council Digest, published by National Dairy Council^(R) (NDC).

According to the Digest, new studies are investigating the role of Vitamin D in osteoporosis, cardiovascular function and blood pressure, diabetes, growth and differ-

entiation of a variety of cancer cells and regulation of immune responses.

Most of cow's milk available in the United States is fortified with vitamin D since very few foods contain sufficient amounts of the vitamin to meet physiological needs. For non-pregnant, non-lactating adults 25 or older, the Recommended Dietary Allowance (RDA) for vitamin D is 5 micrograms per day. During childhood, pregnancy or lactation the RDA is increased to 10 micrograms per day. For infants from birth to six months of age, the RDA for vitamin D is 7.5 micrograms. Two 8-ounce cups of milk provide 100 percent of the RDA for adults ages 23 to 50, for example.

NDC notes that vitamin D fortification of milk is largely responsible for the virtual elimination of rickets (skeletal deformities) and osteomalacia (a type of bone loss) in the United States. And apparently, vitamin D does much more.

Vitamin D regulates the body's absorption of calcium. And for this reason, a lack of vitamin D can impair one's ability to meet physiological needs for calcium. Poor calcium absorption is a common feature of osteoporosis, the bone-thinning disease that is today's most common skeletal problem. According to the Digest, osteoporosis is a major public health problem in the United States, affecting 15 to 20 million Americans to some degree.

Exciting new studies also suggest that calcitriol, the metabolically active form of vitamin D, may help cardiovascular function. Findings suggest that the vitamin is directly involved in maintaining normal cardiac and vascular muscle contractions and regulating blood pressure, according to NDC.

The Digest notes that one area of investigation explores the relationship between vitamin D and diabetes. In vitamin D-deficient humans, insulin secretion has been shown to be impaired, and in diabetes, the metabolism of vitamin D is altered.

In another area of research, a potentially protective effect of vitamin D against cancer has been suggested. A growing body of research indicates that calcitriol suppresses growth of a wide variety of cancer cells. Also, according to the Digest, epidemiological studies support the suggestion that vitamin D may actually reduce the risk of cancer in human populations.

In the area of immune responses, vitamin D may exert an important regulatory effect, the Digest notes. However, the method by which calcitriol regulates immune responses is still unknown.

Written and reviewed by nutrition professionals, Dairy Council Digest, is circulated to over 60,000 nutritionists, educators and health professionals.

The Digest is published six times yearly and is available from the Order Department, National Dairy Council, 6300 N. River Road, Rosemont, IL 60018-4233 on a subscription basis at a cost of \$4.50. Back issues are available for \$0.85 per copy, net postage paid.

National Dairy Council, one of the operating divisions of United Dairy Industry Association (UDIA), conducts a

nutrition education and nutrition research program. UDIA is a member-driven federation which conducts a total promotion program for U.S.-produced milk and other real dairy products.

For more information contact: Chris Stube or Lisa Coe at (312)696-1020.

Food Safety Conference for NYS Journalists

The elegant new amphitheater at Cornell's Statler Inn and Conference Center was the scene April 12-13, 1990 for a Food Safety Conference for New York state newspaper, radio and television journalists. Targeted specifically for non-farm reporters, the conference was sponsored by The New York State College of Agriculture and Life Sciences, The New York State College of Human Ecology, Cornell Cooperative Extension, The Northeast Farm Communicators Association and The Institute of Food Science at Cornell University.

Studies by the Food Marketing Institute and others show that consumers get much of their knowledge about food safety from newspaper, magazine, television and radio sources. These news media, especially television, have an incredible influence on what consumers believe about agriculture and the food supply in the United States. Many in Cooperative Extension have been advised about how to work with the news media to provide factual, scientifically-sound information about agriculture and foods and nutrition. This conference was a first attempt to formally expose NYS journalists to the wide range of information and subject matter experts have available at Cornell University. It is hoped that they will consider Cornell and Cooperative Extension as good sources of information when they do stories on agriculture, food and many related subjects.

In addition to covering some specific agricultural and food safety issues, the conference provided about 60 news and feature reporters with opportunities to interview faculty on other issues of concern to their editors and home communities. The specific topics covered included:

- public perceptions of food safety issues,
- foodborne illness,
- the way food toxicologists estimate food risk factors and the perceived threat of pesticide residues in food,
- risk communication,
- regulation of food safety,
- traditional pesticide use and new alternatives such as IPM in food production,
- products of biotechnology and food safety, including BST and PST, and
- locating sources and background materials to meet a deadline.

In addition, Keith Schneider, a national correspondent for the Washington Bureau of the New York Times

addressed conference participants and invited guests to a banquet on the evening of April 12 in the Main Ballroom of the Statler Inn. His topic was "What People Want and Need to Know About Food Safety." At a luncheon the next day, the Honorable Catherine Bertini, Assistant Secretary of Agriculture, USDA, spoke to the group about food surpluses, school lunch and other domestic feeding programs and the food stamp program in a talk entitled "Protecting America's Poor."

The conference was a good forum that provided some sound information and some controversial viewpoints, as well as valuable exposure of both the Cornell people and the news media people to each other. Evaluation of the conference is not yet complete, but those who planned and coordinated it (Bob Gravani, Matt Shulman, Senior Communication Associate for CCE and Donna Scott) agree that it was a good start on what we hope will be a regular event. One sign of success: Some reporters have already called to ask us who to contact at Cornell about subjects they are writing about.

Donna L. Scott, Extension Associate, Dept. of Food Science.

Packaging As A Competitive Advantage

With brand lines expanding and new food and beverage products being developed as new nutritional and environmental concerns arise, food and beverage companies, manufacturers and distributors are quickly learning the importance of packaging as a marketing tool. Packaging has become one of the few areas where small companies can afford to fight successfully and win the war on the shelf and in the display case.

The following advice was given during the presentation "Market Presentation and Package Design," by Marc Gobe, managing partner and creative director of the global industrial design firm Cato Gobe & Associates, at the recent American Cheese Society 1990 Conference.

How to Attract Consumers

- Develop product types which everyone comes to know. With wines, the California Wineries realized that French products were confusing, unapproachable and often unpronounceable. The various growers then developed packaging which reflected the friendliness of the American product and their American heritage vs. borrowing interest from the French.

- In chocolates, Godiva's success is legendary. From a purely packaging point-of-view, Godiva managed to outclass its competition. Even its retail positioning supported the overall prestige theme.

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- Haagen Daz duplicated the European imagery which was easy in this market due to the absence of truly European brands.

- Ben and Jerry's Ice Cream exploited the wealth of the U.S.'s natural resources and the needs of the demanding Americans.

"Packaging" as a Marketing Tool

- Graphics, as well as innovative product presentation and special sizing cement consumer loyalty.

- Increase competitiveness by understanding who your consumer is and how best to communicate to him/her.

- Discover what consumers know about a product and how they behave now, to create a new image or package design.

- Packaging and the right positioning can increase your chances of increasing consumer demand, and being above the price war.

- Effective packaging will gain competitiveness and establish a strong franchise for a company's brands.

Keys to Success

- Make the market accessible to the consumer via information, clear packaging, shelf liners and point-of-purchase material.

- Develop a clear and strong personality for your brands and take your product away from the commodity product market.

- Develop relevant American imagery. America is a country of tradition. There is no need to imitate Europeans.

Tendencies of U.S. Consumers

- "Society of grazers" as Americans move away from traditional sit-down meals. Companies should explore the many ways to take advantage of snackers, people on the go and children.

- People are interested in products which provide a strong added value. "On-pack" information, recipes and other helpful tips attract consumers.

- A return to healthy, natural foods. "Lite" foods and other health-conscious products are growing in demand. Environmentally-sound packaging is continually being researched and improved by packaging firms.

- "Fancy foods are an affordable luxury." Consumers are spending more for special food items.

Cato Gobe & Associates is an international design firm based in New York and Paris, and specializing in packaging and product design, retail store design and brand leveraging.

For more information contact: John La Place at (212)268-7790.

IDDA Announces Training & Certification Program for Deli

The International Dairy-Deli Association (IDDA) announced during its 26th annual seminary and exposition, "Dairy-Deli-Bake '90," that a comprehensive training program for deli employees is in development. The IDDA's "Deli Training & Certification Program" is an intensive two-phase program designed to increase employees' knowledge and skills in deli operations and reward knowledge and experience with a "Certified Deli Professional (CDP)" designation.

The training portion of the program consists of a set of educational modules covering deli department basics including: an introduction to the deli department, customer service, sanitation/food safety, profit center management, product knowledge, merchandising/display/case management and product care and handling. Modules are self-contained bodies of information comprised of videos and workbook tests. Trainers will be able to complete the modules of their choice in a self or group study setting. Separate tests and completion certificates are available for each module.

In the second phase of the IDDA's new program, individuals who score high in formal testing and who meet other criteria will be awarded the CDP designation.

The unique Deli Training and Certification Program will be governed by a Development Committee and procedures Certification Board, which includes retailers, wholesalers, distributors, manufacturers and other associations. This committee will be the primary consultation and review source, responsible for program design, context and testing.

According to Mary Kay O'Connor, director of education for the IDDA, the Association's to-be-released deli program will be valuable for managers as well as front-line personnel. The Deli Training and Certification Program was designed to address the needs of both retail and wholesale service deli personnel. "Entry-level workers and assistant managers and department managers, as well as deli manufacturers, brokers and distributor staffs, could benefit from the program," she commented. The IDDA Deli Training and Certification Program will be possible through grants from leading deli manufacturers, retailers, wholesalers, brokers, distributors and other trade associations.

Additional information on the deli program may be obtained by contacting the IDDA office, P.O. Box 5528, Madison, WI 53705, (608)238-7908.

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High Temperature Pasteurization OK

Cheesemakers can use higher pasteurization temperatures without sacrificing cheese quality, according to research reported at the annual meeting of the American Dairy Science Association in Raleigh, N.C.

University of Wisconsin-Madison researchers reported that taste panels found no flavor differences in 6-month-old cheese for which milk had been pasteurized at 164 degrees Fahrenheit, 168 F and 172 F for 16 seconds.

Higher pasteurization temperatures are sometimes recommended for better control of foodborne disease organisms; cheesemakers sometimes worry that such changes would damage the quality of the cheese.

According to the report from L.J. Paluch, M.E. Johnson, B.A. Riesterer and N.F. Olson, the only distinguishing feature was a firmer bodied, more curdy cheese from the high pasteurization temperatures.

The researchers also reported that milk pasteurized at the highest temperature took a bit longer to clot after rennet was added, but that addition of calcium chloride reduced the clotting time.

The research was supported by the Wisconsin Milk Marketing Board.

For more information contact Mark Johnson at (608)262-0275.

IAMFES Secretary Nominations Due for 1991 Elections

Nominations are now being taken for Secretary for IAMFES. This year an industry representative will be elected.

Once all nominations are received by the nominating committee, two persons will be chosen to run for the office. This is a five-year term, moving up yearly until he or she is President of IAMFES, then serving one year after as Past President. The term of office begins the last day of the 1991 Annual Meeting. All IAMFES Executive Board Members meet three times a year.

Two people selected are placed on the ballot. The winner is determined by majority vote of the membership through a mail vote, in the spring of 1991.

Please send a biographical sketch and photograph NO LATER THAN OCTOBER 18, 1990 to the Nominations Chairperson.

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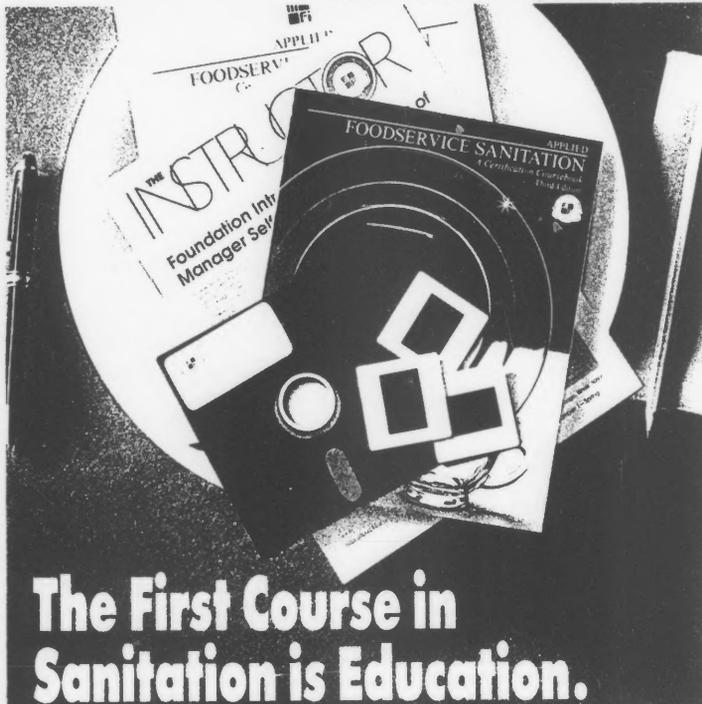
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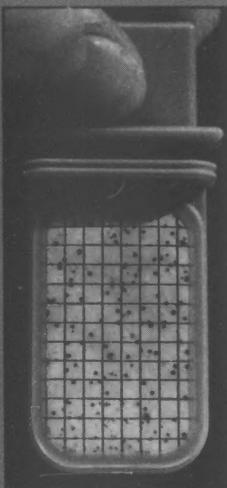
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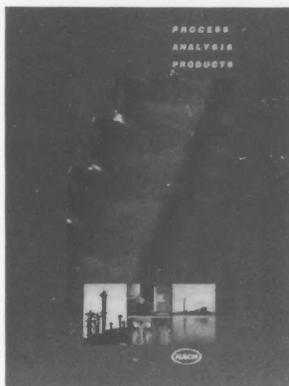
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558 DAIRY, FOOD AND ENVIRONMENTAL SANITATION/SEPTEMBER 1990

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Industry Products



New Hach Catalog Highlights Process Analysis Products

Plant managers and engineers in drinking and wastewater, chemical manufacturing, food processing and power/steam generation who need on-line water analysis capabilities will want to look at this new catalog from Hach which describes equipment to measure more than 20 parameters including alkalinity, chlorine, conductivity, hardness, pH, silica, and turbidity.

Turbidimeters, chlorine analyzers, pump colorimeter analyzers, and hardness monitors are some of the 35 instruments detailed in this free catalog.

The new Series 5000 Aluminum/Hydrazine/Phosphate/Silica analyzers are also featured. These instruments offer reliable, versatile, grab sample or continuous monitoring for just pennies per hour and require only 15 minutes per month to change reagents. The analyzers are operator-programmable with two adjustable set-point alarms and self diagnostics to alert operators of abnormal operating conditions.

Hach Company - Loveland, CO

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Bio-Rad provides a complete line of blotting grade immune detection reagent, Immun-Blot[®] assay kits, enzyme substrate kits, total protein stains, and blotting standards. All of Bio-Rad's blotting grade antibody conjugates are affinity isolated and further purified by affinity chromatography, to provide highly specific results while eliminating false positive reactions in blotting immunoassays. All blotting grade reagents are quality tested in actual blotting experiments.

Bio-Rad Laboratories - Richmond, CA

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Waste & Wastewater Testing - New Orbeco-Hellige Catalog 90

New all-color Orbeco-Hellige Catalog 90 illustrates an expanded line of products for water analysis. It includes new instruments, meters and kits for testing water, sewage, process fluids, boiler & cooling water, etc. Specialities for public health, industry, ecology and education are included.

Equipment for over 80 different tests is featured. It includes single and multi-test portable Photometers with EPA-accepted methods, Turbidimeter to ERPA and ASTM specs, and Analyzers for pH, fluoride, color, conductivity, DO/BOD, and bacteria colony counter. For a free Catalog 90:

Orbeco-Hellige - Farmingdale, NY

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Real Time Factory Floor SPC System Announced by Stochos, Inc. - Provides Fast and Comprehensive Process Monitoring

The first real-time, on-line SPC program - which goes beyond monitoring variables individually to indicate overall process problems - has been announced by Stochos, Inc.

Called SPC DIRECT[™], the powerful, general purpose, PC-based system statistically monitors each of up to 32 variables - along with the relationships between variables - bringing operators more comprehensive process monitoring. With SPC DIRECT, factory floor operators are quickly alerted to out-of-control conditions to allow for prompt process adjustment.

SPC DIRECT can be easily configured - in just minutes - to any factory floor application in which a given block of data is gathered for analysis.

Variable and attribute data can be entered in English or in most foreign languages. The standard package accommodates up to 32 variables and 32 attributes.

The operator can display all 32 variables in real time. When any variable goes out of control, one of several indicators appears to the left of the variable denoting a specific out-of-control condition.

Stochos, Inc. - Schenectady, NY

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FoodSpex by RybCorp, Inc.

FoodSpex is the restaurant food inspection system that provides a total solution for both field and office use. This is a truly integrated system providing the capability to maintain a central database in the office while putting a powerful field inspection tool in the hands of your sanitarians.

The field inspection unit will provide these immediate benefits:

- * Professional, legible and well organized inspection reports.
- * Reduction of sanitarian time in generating the inspection report, resulting in more consultation time with the operator. This will enhance the ability to achieve compliance while developing a better rapport with the operator.
- * Elimination of travel time to deliver lengthy inspection reports, which are currently prepared in the office following the inspection.
- * Improved sanitarian productivity and record keeping.
- * Automation of the office record keeping and reporting function.

Because this is a totally integrated system, any data collected in the field inspection process will be maintained on the central database. This will provide management with the ability to generate reports to meet their specific needs.

RybCorp., Inc. - Petersburg, MI

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New Brochure Available from ASTEC

The ASTEC Pump is a single or dual piston type with pistons having diameters of 6", 8", 10", and 12". The pump is hydraulically operated and capable of pressures to 440 psi. The pump can be used for transferring products or timing applications. Capacity of the pump varies with model and is to 300 gpm. The pump was developed for products with particles or products which are extremely viscous. Typical products which can be transferred include fruits in syrup, vegetables in brine, products with minimal carriers i.e. macaroni and cheese and meat emulsions, and whole fruits and vegetables.

ASTEC - Cedar Rapids, IA

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Quantab Makes Sulfite Testing for Foods and Beverages Easy

Quantab, a fast, accurate, economical method of ascertaining the sulfite content in food and beverages, without the need for a laboratory, special equipment or highly trained technical personnel, is now available from Environmental Test Systems, Inc., according to the firm's director of marketing, Mark Stephenson.

"Knowing the content of sulfites used in many food and beverage preparation processes has always been critical to the maintenance of product quality and consistency, but until the coming of **Quantab**, methods of measuring sulfites were apt to be cumbersome, time consuming and relatively expensive," Stephenson stated. "With **Quantab**, tests can be made quickly anywhere by virtually anyone with only a **Quantab** titrator, test capsule and conversion table."

Quantab titrators consist of a simple, yet reliable, disposable strip, that, when placed in the solution to be tested, shows a reaction on the strip's graduated scale that can then be converted to parts per million using a chart provided, Stephenson said.

"Each **Quantab** titrator contains a color reactive indicator that signals when a test is completed, and produces definitive results in minutes," Stephenson added. "And because **Quantab**'s so simple to perform, more frequent testing is encouraged, thereby affording a greater degree of product control."

Quantab, for the measurement of sulfites is available in three test ranges: 1 to 60 parts per million (ppm) SO_2 , 10 to 1,000 ppm SO_2 and 150 to 2,500 ppm SO_2 to measure the presence of sulfite from any source, SO_2 , sulfite or bisulfite salts.

"Processors of corn products, wine, fruit, pickles, seafood and other food or beverage products will find **Quantab** a simple, cost-effective answer to required testing for sulfites," Stephenson concluded.

Also available are **Quantab** for Chloride, Peroxide, Chlorine, Iron and Copper. For a FREE **QUANTAB SAMPLE** and complete information on all ETS products including AquaChek tests trips for Nitrite/Nitrate:

Environmental Test Systems - Elkhart, IN

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Wheaton Sequential Unispense

The Wheaton Sequential Unispense is a microprocessor controlled liquid dispenser that offers repetitive dispensing for petri-dish, vial, bottle, and ampule applications. It can also dispense aqueous liquids and medium syrups.

Our fully automatic, Sequential Unispense contains a heavy duty, two speed peristaltic pump. The unit has a wide dispensing range of 0.5 mL to 8000 mL per dose, and flow rates of 2/mL/sec. to 40 mL/sec. An adjustable delay can be set from 0.5 to 5 seconds between doses to accommodate user dexterity and work load. A footswitch is included for manual operation.

The user can expect accuracy and reproducibility in the +/- 1% range. Features include continuous recycling, slow start, slow finish, and solenoid driven gates. A broad selection of silicone and Viton rubber tubing assemblies are available for many dispensing requirements.

The Wheaton Agency - Millville, NJ

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New Centrifugal Pumps from Gelber Industries Feature Pure Non-Metallic, Sanitary Design

A new series of non-metallic sanitary centrifugal pumps, being introduced by Gelber Industries, offers an economical substitute for conventional stainless steel sanitary pumps in the food, beverage, cosmetic, pharmaceutical, biotech and pure water industries.

Representing a breakthrough in material of construction for sanitary design pumps, the new Gelber units feature efficient hydraulic performance, clamp-type connections and superior corrosion resistance. Molded of virgin, pure non-filled plastics, in compliance with FDA standards, they ensure non-contaminating transfer, boost or circulation of contamination-sensitive fluids.

Economically priced in comparison with similarly rated stainless steel constructions, the new Gelber units feature wetted parts of pure polypropylene and are rated for pumping temperatures up to 160° F. Optional polyvinylidene fluoride (PVDF) constructions are rated for 220°F pumping temperature, suitable for hot clean-in-place fluids, with corrosion resistance greater than stainless steel. For non-sanitary applications of pure plastic pumps, off-the-shelf fittings are available to convert standard clamp connections to other types.

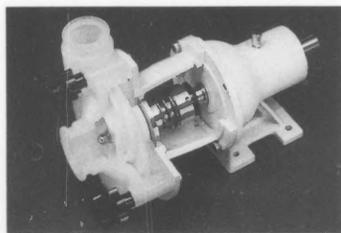
The new line offers impeller sizes ranging from 4 1/2" to 6" diameter, with flow rates up to 300 GPM and maximum discharge pressures up to 70 psi. Balanced external mechanical seals with Viton elastomers are provided as standard; other elastomers are available as options. Standard seal faces are carbon vs. ceramic, with silicon- or tungsten-carbide materials optional. Replaceable stationary seats effectively prolong seal life.

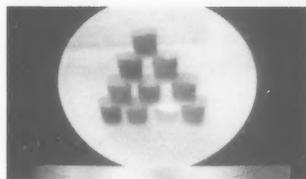
Both close-coupled and pedestal-mounted designs are available. The close-coupled design uses standard NEMA JM shaft motors, ensuring a positively locked impeller that eliminates alignment problems. Standard NEMA motor frames allow the use of readily available standard motor enclosures including Totally Enclosed Fan Cooled (TEFC) and Wash-Down (WD) Duty.

Gelber Industries provides custom-engineered pumps, filters and systems, ranging from simple off-the-shelf products to complex fluid-handling systems. In addition, Gelber provides nationwide distribution for a wide variety of standard industrial pumps, accessories, sanitary products and filters.

Gelber Industries - Lincolnwood, IL

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Food Processing and the Role of Thermal Imaging

Questions have been raised recently regarding temperature control of several aspects of food processing and storage. The preparation of packaged food, both cooked and uncooked, necessitates very critical monitoring of temperatures to insure yields and consistency of quality.

EEV, known for its Thermal Imaging Camera widely used by both civil and military fire fighting services, had developed a version of the camera for use in the food manufacturing industry.

Cook/chill/or cook/freeze processes require the knowledge that the food is properly cooked and the freezing/chilling has occurred uniformly within required time limits to correct temperatures. This is easily monitored using thermal images. Feedback of information to modify the cooking or cooking control is also possible.

Once processed and packaged the Thermal Imager can be used to ensure that no product is dispatched until it has attained the correct temperatures in the cold store. The need for expensive destructive testing is reduced because the thermal image will determine the carton most likely to contain an out of temperature product and only this need be probed.

The energy efficiency of the food processing plant may also be monitored ensuring a minimum of waste through aging or ill-fitting door seals and good thermal insulation throughout. The integrity of cold stores is also monitored.

The most recent model of the EEV thermal imager contains a comparison cell which allows direct temperature measurement or a pass/fail function to operate allowing food to pass if it has achieved greater than the required temperature during cooling and lower than that required during storage and transport.

EEV, Inc. - Elmsford, NY

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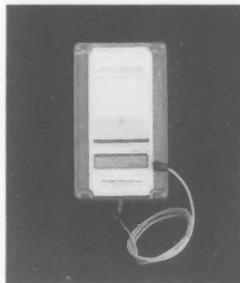
The Baker Company Offers Eight Page Brochure on A Class II, Type B2, 100% Exhaust Biological Safety Cabinet **SterilchemGARD[®]**

The Baker Company, Inc. offers an 8-page, 4-color brochure detailing their Class II, Type B2, 100% Exhaust Vertical Laminar Flow Biological Safety Cabinet, SterilchemGARD. Airflow patterns are discussed and clearly illustrated in color diagrams, including an explanation of Baker's unique zoned airflow principle. Design details are discussed, including HEPA filter rating, testing and installation, motor/blower capabilities, work surface characteristics, and SterilchemGARD's construction features. In addition, numerous user-features such as work area lighting, air balance capabilities, pet cocks and valves, work area electrical outlets and the sliding viewscreen are presented. Dimensions, specifications and warranty are also included for this UL[®] listed safety cabinet.

Copies of this brochure are available upon request.

The Baker Company - Sanford, ME

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Portable Thermal Conductivity for Food Production Engineers

Decagon Devices, Inc. has developed a new Thermal Conductivity Meter, model TC-2; a readout device and probe for the measurement of thermal conductivity in foods.

The enclosure of TC-2's readout is environmentally sealed to keep out dust, water and oil. Easy two-button menu selection and digital two-line LCD readout make for easy user interface. Thermal conductivity is computed internally and is displayed at the end of a measurement cycle. Measurements are stored in TC-2 memory for later transfer to a computer. Standard alkaline "C" cells allow maximum portability.

Applications include heat transfer, production line scheduling, cool time, food research projects and food production engineering.

Decagon Devices, Inc. - Pullman, WA

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Klenzade Assur-Ring Receives EPA Registration

Klenzade, a Service of Ecolab Inc., has received EPA registration of its product Assur-Ring[®], as a non-food contact sanitizer for use in dairy, beverage and food processing plants.

The Assur-Ring is a time-released solid sanitizer ring designed to control soil, odor and micro-organism build-up in floor drains, troughs and pits, as well as in overhead drip and collection pans.

The product comes in two formulations - blue for areas that receive cold or low flow water, and red for areas that receive occasional hot or continuous water.

Both formulations have been proven effective against a broad spectrum of gram negative and gram positive organisms found on plant surfaces. These organisms include: *Staphylococcus aureus*, *Enterobacter aerogenes*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Listeria monocytogenes* and *Salmonella typhimurium*.

Current drain cleaning procedures call for manual cleaning with a brush and pouring liquid quat sanitizer down the drain on a daily basis.

"The Assur-Ring isn't designed to replace regular brush washing and sanitizing, but is intended to supplement them for superior results," says David Hurry, senior marketing manager for Klenzade. "The present state of dairy and food plant sanitation requires attention to detail, and floor drains are certainly one of these. The Assur-Ring covers this detail, assuring improved drain sanitation."

The product's water-activated time-released sanitizing system helps maintain a cleaner plant environment 24 hours per day and helps solubilize soil deposits, reducing buildup between daily cleanings and controlling drain odors. The Assur-Ring is designed to be installed around the standpipe and under the drain cover.

For more information on the Assur-Ring and other cleaning and sanitation products and services for the dairy and food processing industries:

Klenzade - St. Paul, MN

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Improved Drug Residue Test System Gives Fast, Easy Results

Idetek's LacStation II™ provides printed, numerical results and PASS/FAIL interpretation of all LacTek™ rapid drug residue tests. The system includes Idetek's programmed spectrophotometer with a built-in printer. Dispensers eliminate all reagent pipetting and allow a technician to test a number of simultaneous samples in two minutes of 'hands-on' time. All LacTek kits use the identical, very simple procedure.

Using enzyme-linked immunoassay technology in precoated plastic test tubes, the tests indicate violative levels with color changes. No toxic or radioactive reagents are used. Kits are currently available for beta-lactam (penicillin family), sulfamethazine and gentamicin drugs. Several additional tests are under development.

Contact Idetek at (800)433-8351; in California (800)433-8352.

Idetek, Inc. - San Bruno, CA

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New Bulk Shipping Container Available from Buckhorn

A space-saving Bulk Container, designed for shipping heavy, bulky objects, has been introduced by Buckhorn, Inc. of Milford, Ohio. The Bulk Container is the newest addition to Buckhorn's 45" x 48" Modular Handling System, a line of heavy-duty returnable shipping containers. The collapsible container has several unique features that make it superior to other models now on the market.

The container features - 1. A latchless interlocking Assembly System (patent-pending) for gate and sidewalls - eliminates unreliable screws and springs. 2. Guide pins lock the container's sides in place to allow safer one-person assembly and knock down. 3. A special hinge design allows the side walls to fold flat for storage. 4. The container's side gate closes securely with the interlocking system, or folds down to provide access to contents. 5. Ergonomic handles located in side walls provide easy-on-the-hands assembly.

The Bulk Container has a 2,500 lb. capacity. The units can be safely stacked three high when full and collapse in a 3:1 ratio for compact storage.

The container's nine molded feet are cored from the inside and reinforced with plastic ribbing for added strength. The round, smooth exterior prevents chipping, cracking and shearing, which are common problems with other designs.

The Bulk Container is available with replaceable steel runners and steel foot plates for added durability. The steel foot plates on the outside corners prevent forklift spearing. The steel runners and four-way fork-lift entry simplify handling.

Buckhorn, a Myers Industries, Inc. company, manufactures plastic shipping and storage containers and molded rubber products for industrial, commercial and consumer applications.

Buckhorn, Inc. - Milford, OH

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Gundle Lining Systems

Gundle Lining Systems, Houston, Texas, manufacturer of high density polyethylene (HDPE) liners is now offering a prefabrication service. Gundle can now fabricate HDPE of VLDPE into custom sized sheets. And, sumps, penetrations, and tanks can be prefabricated for improved installation efficiencies.

Prefabricated boots, pipes, truck linings, floating covers and disposable tanks connect easily to field installed liners using HDPE prefabricated flanges. The disposable tank, "Gundtank", is a temporary containment system that does not require excavation. The modular tank system is similar to an above-ground swimming pool which allows erection in the field to any shape with a standard modular from up to 3 million gallons. Suggested uses for this system are temporary or permanent storage for water, waste water or sludge, aquaculture systems, leachate containment or solution ponds in mines. These forms are 4 or 6 feet high, with or without a floating cover, and can be reused by modifying the size or other elements.

For more information concerning Gundle's new prefabrication service, contact Gundle Lining Systems, Inc. (713)443-8564.

Gundle Lining Systems - Houston, TX

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Elkay/Labsystems Microstrips^(R) and Combiplates

Elkay Products, Inc., a division of Labystems, is announcing the availability of the Labystem's line of microtitration products featuring Microstrips^(R) and Combiplates. Labsystems of Finland, a recognized leader in plate reader technology, was the first to develop a 96 well plate comprised of removable strips. This allows the user the flexibility to control the number of samples without using entire plate.

Microstrips and Combiplates are ideal for immunology, cell culture, and clinical chemistry.

The optical clarity of the flat bottom wells eliminates loss of sensitivity due to background absorbencies. Consistent binding from well to well, strip to strip, and plate to plate makes our Microstrips and Combiplates ideally suited for immunoassay techniques used by EIA Kit manufacturers or researchers developing new tests.

Additional features/benefits include:

- * Unique patented design of the well which protects the optical surface from dirt and scratches.
- * 100% quality control of optical characteristics.
- * Each lot is tested for consistency in protein binding.
- * Available in three strip configurations - 1 x 8, 1 x 12, and 3 x 8.
- * Customization of product for kit manufacturers.

Evaluation samples available. Call (800)522-7763.

Elkay Products, Inc. - Shrewsbury, MA

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Updates . . .

Food Contamination Symposium/Workshop

The International Symposium and Workshop on Food Contamination-Mycotoxins and Phycotoxins will be held November 4-15, 1990 in Cairo, Egypt. It will focus on the development and implementation of effective food safety monitoring programs. "Your attendance will contribute to the efforts of bringing the participants up-to-date on the latest developments, to analyze the significance of these developments and to provide suggestions on future directions for research," said Dr. Khayria Naguib, chairman Research Centre, Cairo, Egypt.

The symposium will be held November 4-8, 1990, at the Egyptian International Centre of Agriculture, Dokki, Cairo, Egypt. Presentations will be given by leading scientists in the field of mycotoxin and phycotoxin research, and regulation and hazard assessment. Areas of pesticide, industrial chemical and heavy metal contamination of foods will also be discussed.

Lectures and poster sessions to be given include:

- Handling toxicoses of unknown origin
- Diet/toxin interactions
- Perspectives on mycotoxin decontamination procedures
- Seafood safety regulatory programs
- Poster session on phycotoxins
- Advances in pesticide residue analysis

Panel discussions will encompass most of the final day of the symposium. The subjects discussed will be determined by attendees.

The workshops will be held November 10-14, 1990, at the National Research Centre, Dokki, Cairo, Egypt. They will present hands-on experience in sample collection and preparation; rapid, accurate analytical methods based on immunochemical technology; and food hazard assessment techniques.

Areas the workshops will cover are:

- Sampling (two 2-day sessions)
- Quality Assurance (two 2-day sessions)
- Immunoassay Methods (two 2-day sessions)
- Practical Methods in Mycotoxin analysis (four 1/2 day sessions)
- Toxicity screening techniques (two 1-day sessions)

Sponsors of this symposium/workshop are: Academy of Scientific Research and Technology, Cairo, Egypt; National Research Centre, Cairo, Egypt; United States Agency for International Development Cooperative Marine Technology Program for the Middle East, USA; International Union of Pure and Applied Chemistry; and Food and Drug Administration, USA.

Canada Host of 23rd International Dairy Congress and Exposition 1990

With three months left before the opening of the first Congress of the International Dairy Federation ever held in North America, over 1,200 delegates from over 40 countries have already registered.

This Congress will feature many special activities. Over 40 sessions with 200 international speakers will address 16 subjects concerning the dairying industry. All these sessions will be interpreted into ENGLISH, FRENCH, GERMAN and SPANISH.

Professionals from many countries will present over 200 Scientific Poster Sessions where delegates can discuss the latest research papers and developments. 150 students from over 20 universities will compete in a Dairy Products Competition. In addition, there are over 20 technical sightseeing tours available.

Over 40 leaders and decision makers from 20 countries will participate in two special sessions with guest speakers from Developing Countries to cover the needs and challenges of dairy development.

The Congress will be held in conjunction with Exposition 1990 with over 130 international suppliers who have taken space. They will exhibit products and services used by milk producers, processors, packagers, researchers, retailers and others involved in the Dairying Industry.

"This gathering of dairy executives, government and industry decision makers, educators, scientists, marketing and promotion specialists, producers, processors, consultants, nutritionists and many others will be a learning experience and offer tremendous opportunity for business development, an opportunity to discuss and share knowledge and experience in all aspects of 'Dairying in a Changing World,' the theme of this Congress and Exposition," said Mr. Kempton L. Matte, Chairman of the Organizing Committee.

Mr. Matte urged companies and organizations involved in the dairying industry to attend and to ensure that their employees be allowed this unique opportunity to meet their colleagues from all over the world.

To receive a Registration and Programme Brochure, please contact:

Mr. Richard Stern, Executive Director
23rd International Dairy Congress
P.O. Box 2143, Station D
Ottawa, Ontario
Canada K1P 5W3
Telephone: (613)238-4116
Facsimile: (613)238-6247
Telex: 053-3952

Food and Environmental Hazards to Health

Bovine Tuberculosis - Pennsylvania

In July 1989, the first outbreak of bovine tuberculosis reported in Pennsylvania since 1978 was detected during routine veterinary surveillance. No human cases were detected.

In a herd of 122 dairy cattle, 109 (89%) had positive skin tests for *Mycobacterium bovis* after routine cervical injection of bovine purified protein derivative (PPD). Since 1985, 11,336 cattle were known to have had contact (e.g., were in the same shows, corrals, or adjacent pastures or were transported together) with the index herd. All identified contacts were tested, and 12 (0.1%) had positive skin tests for *M. bovis*. All cattle with positive skin tests were euthanized and autopsied. Caseating granulomata were present in 16 (15%) of the 109 cattle with positive tests in the index herd but none of the 12 others with positive tests associated with the outbreak. Culture specimens of granulomatous mediastinal lymph nodes from 15 of the 16 grossly positive animals were positive for *M. bovis*.

Forty-two persons were identified who had consumed raw milk products from the index herd or had had direct contact through work with skin-test-positive cattle from the index herd during the past 5 years. Each of these persons was tested with an intradermal injection of 0.1 mL (5 tuberculin units [TU]) of tuberculin, PPD (Tubersol*, Connaught Laboratories, Inc.); none were positive (i.e. induration \geq 10 mm).

In Pennsylvania, more than 150,000 cattle annually are given caudal skin tests for *M. bovis*. Initially, 2500 TU of bovine PPD are injected intradermally into the caudal region of each animal. Any animal with palpable induration at the injection site 72 hours later receives confirmatory testing. Confirmatory testing consists of intradermal injection of matched equipotent doses of bovine and avian PPD (approximately 2500 TU and 800 TU, respectively) at separate sites in the cervical region. Induration at each site is measured 72 hours after injection and the results plotted against a standard curve. Animals with greater than expected induration at the bovine PPD site are considered positive and are euthanized and autopsied. If any cattle in a herd are positive for bovine PPD on confirmatory testing, the entire herd is retested with a cervical intradermal injection of 5000 TU of bovine PPD. All animals in the herd with induration in response to this double-strength bovine PPD injection are considered positive and are euthanized and autopsied.

Since 1978, less than five cattle per year have been euthanized and autopsied as a result of this protocol. In 1988, 178,013 cattle were given caudal skin tests in Pennsylvania, of which 378 (0.2%) were positive; two of these animals were positive on confirmatory cervical testing, and neither of these was positive on autopsy. The infected index herd reported

*Use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

here had been tested during 1988, and none had induration after caudal skin testing during that year. The veterinarian and source of tuberculin used in screening were the same in 1988 as in 1989, and no cattle were introduced into the herd between skin testing in 1988 and 1989.

The Pennsylvania Department of Health advised all persons known to have contact with skin-test-positive cattle, especially consumers of raw milk products, to have skin testing performed by the department of health. The source of this outbreak is unknown.

Editorial Note: From 1900 to 1930, *M. bovis* was isolated from 6%-30% of human tuberculosis patients in the United States and the United Kingdom. *M. bovis* can be transmitted from cattle to humans by consumption of raw milk or by respiratory exposure either to live infected cattle or to their carcasses. Humans with pulmonary *M. bovis* infections can transmit the disease to other humans or to cattle; cattle can also be infected by humans with *M. bovis* urinary tract infections. Cattle can transmit *M. bovis* to other cattle, probably by respiratory secretions. Since opportunistic *Mycobacterium* sp. also infect cattle, comparative testing with *M. avium* antigen is useful to enhance the specificity of skin testing with bovine PPD.

Declining rates of *M. bovis* isolation from human tuberculosis patients have been associated with milk pasteurization and with other cattle inspection programs such as that initiated in the United States in 1917. Since 1950, *M. bovis* had accounted for <1% of human tuberculosis cases in North America. *M. bovis* continues to cause disease in humans, however, and is sometimes fatal. Continued surveillance of cattle and continued warning against the consumption of raw milk are necessary to protect the human population from this infectious agent and can help eliminate tuberculosis by the year 2010.

MMWR 3/30/90

Two Outbreaks of Clostridium Perfringens Food Poisoning - Ontario

Outbreak 1

On March 15, 1989, the Niagara Regional Health Unit was notified of a possible food poisoning outbreak at a corporate luncheon. Most of the management and staff, approximately 300 of 420 individuals who had attended the event the previous day, were ill.

A total of 113 people who had eaten the lunch were interviewed. The predominant symptoms of those who were ill were diarrhea, abdominal cramps, and nausea. The duration of the symptoms for most of the cases was 12 hours, and the incubation period varied from 2 to 18h, with a mean average of 9.5h. Fecal kits were distributed to those who exhibited gastrointestinal symptoms.

The buffet lunch consisted of chicken, roast beef and gravy, lasagna and mixed vegetables. Analysis of a food-specific attack rate table implicated the roast beef as the likely source of the food poisoning, because 98% of those who had consumed the beef became ill compared to only 8% of those who had not.

The caterer, who was not licensed, had prepared the food in a private residence which was not inspected by the local health agency. The inspection revealed that the entire menu for the 420 people had been prepared in a small domestic kitchen with 2 stoves and 3 household refrigerators. The temperature of the refrigerators was about 7°C (45°F), inadequate for cold storage of food. Preparation of the meal began on March 11 (3 days before serving). Several 9 kg roasts of beef were cooked and then refrigerated.

Stool specimens screened by the Hamilton Regional Public Health Laboratory were found to have very high numbers of *Clostridium perfringens*. Results from swab tests taken at the caterer's private home revealed the presence of high levels of bacteria indicating poor sanitation. Inspection indicated that the cutting boards were never sanitized and *C. perfringens* in excess of $2 \times 10^6/g$ were isolated from a representative roast beef sample.

Outbreak 2

On May 1, 1989, a suspected food poisoning was reported to the Windsor-Essex County Health Unit. The first case involved a woman who had eaten dinner on April 29, at a local Mexican-style restaurant. About 10h later, she developed diarrhea which lasted approximately 12h. On April 30, a party of 4 people also dined at the same restaurant. Twelve hours later, 3 of the 4 people developed cramps and diarrhea. The fourth person, who did not become ill, had not eaten the same meal as the others.

An investigation revealed improper food preparation practices. Very large quantities of ground beef were cooked, refrigerated overnight, and then reheated the next day prior to serving.

Samples of cooked ground beef obtained from a steam table container disclosed $1.4 \times 10^3/g$ of *C. perfringens*. Stool samples from the cases also exhibited very high counts of the organism (1.6×10^6 to $2.0 \times 10^7/g$).

Comment

In these 2 outbreaks, several questionable food handling practices were observed which contributed towards the occurrence of illness. Meat was inadequately cooled in large cooking pots inside the refrigerator, which permitted the germination of the spores that survived the normal cooking temperatures. The effect of container size on the cooling rate is important. Meat in a 40cm cooking pot stored inside a normal walk-in refrigerator, with an air flow of 2040 fpm, requires at least 6 days to cool from 65°C (150°F) to 5°C (41°F), whereas only 11 h and 4h are required in 5cm and 15 cm pans, respectively. The optimal growth temperature for *C. perfringens* is 43°C to 47°C. In this range, *C. perfringens* will have a generation time of approximately 8 minutes. With such long refrigeration times, where the meat was inadequately

cooled in large cooking pots, there would have been ample time for the agent to multiply to an infectious level. Preparation of food too far in advance of serving and frequent handling also contributed to the outbreaks. Reheating to a warming temperature served only to provide more optimal growth conditions for the organism.

The following measures are recommended to prevent a foodborne disease outbreak caused by *C. perfringens*:

- * serve meat dishes hot as soon as they are cooked (*C. perfringens* spores will not germinate about 53°C); or
- * cool the meat rapidly (to 5°C in less than 4 hours) in a properly designed chiller and refrigerate until serving time (shallow pans should be used to facilitate the cooling process);
- * reheating, if necessary, should be thorough (internal temperature of at least 60°C and rapid); and
- * food handlers should be educated on the risks inherent in large scale cooking, especially of meat dishes. Serving hot dishes following the initial cooking is to be encouraged wherever possible.

Can. Dis. Weekly Report 3/3/90

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Group A Beta-Hemolytic Streptococcal Pharyngitis Among U.S. Air Force Trainees - Texas, 1988-89

In December 1988 and January 1989, an outbreak of pharyngitis caused by group A beta-hemolytic Streptococcus (GABHS) occurred among military trainees at Lackland Air Force Base, Texas. From January through November 1988 the incidence of culture-positive GABHS pharyngitis was 2.1 cases per 1000 trainees per month. By comparison, in December and January, the rates were 9.5 per 1000 and 18.7 per 1000, respectively. The outbreak prompted the administration of penicillin prophylaxis program to all trainees (>6000) - the first time in at least 15 years that a mass pharyngitis program was implemented at this air force base.

Between December 23 and January 10, GABHS was isolated from throat swabs of 186 trainees from 13 flights (one flight = approximately 50 trainees) in four of eight squadrons (one squadron = 16-20 flights). Each flight occupies a single open-bay sleeping area; each squadron occupies a single dormitory building. The outbreak was detected by a surveillance system for streptococcal pharyngitis: when streptococcal pharyngitis is detected in three or more trainees in a flight within a 7-day period, throat cultures are obtained from all members of that flight. If GABHS is isolated from 10% of throat cultures, all persons in the flight who are not allergic to penicillin are given penicillin prophylaxis.

In the last week of December and first 2 weeks of January, 11 flights from three squadrons exceeded the threshold for prophylaxis. Six additional flights with less than three trainees with streptococcal pharyngitis were screened; two of those flights exceeded the threshold. Throat cultures were positive for 17% (17/101) of a sample of male trainees in the first half of their 4-week training course, compared with 31% (101/330) of a sample of trainees in the second half. All women were in the second half of their training.

In the second week of January, benzathine penicillin G (1.2 million units IM) was administered to >6000 trainees already on the base. In addition, penicillin prophylaxis was initiated for all nonallergic, incoming personnel during their second week of training. During the third week of January, no flights exceeded the threshold. However, after two flights had three or more positive throat cultures in the fourth week of January, timing of prophylaxis was changed to the first week of training; subsequently, incidence rates of GABHS pharyngitis decreased markedly.

Routine prophylaxis was discontinued on April 30. In July, one flight exceeded the threshold for prophylaxis. No cases of acute rheumatic fever or other sequelae have been reported from Lackland Air Force Base or secondary training bases.

Editorial Note: During World Wars I and II, GABHS disease caused substantial morbidity among recruits, probably because of the introduction of large numbers of suscep-

tible persons into crowded environments. A marked decrease in the incidence of GABHS disease and sequelae in military recruits occurred from 1965 to 1985. This coincided with penicillin prophylaxis programs to prevent GABHS disease in military trainees and with a nationwide decrease in the incidence of rheumatic fever. By 1979, most military training centers had discontinued year-round prophylaxis of incoming recruits against GABHS disease.

This investigation and other recent reports demonstrate that military training centers remain at risk for outbreaks of GABHS-related disease and underscore the importance of surveillance in these settings. Although outbreaks of GABHS infections can be seasonal and self-limited, the abrupt decrease in incidence after January suggests that surveillance and antibiotic prophylaxis were important in limiting this outbreak. During other outbreaks of GABHS pharyngitis in military recruits, mass prophylaxis has been used successfully.

Some military training centers have policies for use of penicillin prophylaxis when the incidence of GABHS infections exceeds a specified threshold. The Armed Forces Epidemiological Board has suggested that when the incidence of GABHS disease exceeds 10 cases per 1000 trainees per week, epidemics of acute rheumatic fever may occur. The appropriateness of such policies for other institutional settings requires evaluation. State health departments are requested to notify CDC's Respiratory Diseases Branch, Division of Bacterial Diseases, Center for Infectious Diseases at (404)639-3021 about outbreaks of GABHS infections and their sequelae in such settings.

MMWR 11/12/90

Acute Schistosomiasis in U.S. Travelers Returning from Africa

In December 1988 and May 1989, CDC was notified that members of two groups of travelers who had recently returned to the United States from Botswana and Cote D'Ivoire, respectively, had experienced illnesses characterized by an influenza-like syndrome and eosinophilia. Subsequent investigations documented the occurrence of acute schistosomiasis in each group.

Botswana. From September 14 to October 2, 1989, a group of 16 persons visited the Okavango Delta region of Botswana. Twelve of 13 travelers who responded to mailed questionnaires reported contact with fresh water (e.g., wading, swimming, bathing, washing, and boating) while in this region. None reported recent water contact in other geographic areas in which schistosomiasis was endemic. Within 5 weeks of the expedition, 11 persons had onset of symptoms that included fatigue, fever, sweats, chills, headache, and gastrointestinal discomfort. These symptoms lasted 1-30 days (mean: 8 days) and recurred in five persons 11-20 days (mean: 15 days) after the initial episode.

Complete blood counts done for six persons found peripheral eosinophilia (range: 10%-57%; normal: 0-4%). Of fecal specimens from 11 persons, nine contained small numbers of *Schistosoma* eggs having characteristics of both *S. mansoni* and *S. rodhaini*. Urine samples from three persons were negative for ova of *S. haematobium*. Fifteen travelers submitted serum specimens, and all were positive for antibodies to *Schistosoma* sp. The one member of the group who did not submit a serum sample reportedly had *S. mansoni* ova in a stool specimen.

Persons with positive fecal and/or serologic specimens were treated with a single oral dose of praziquantel (40 mg/kg). All symptoms resolved after treatment, and no serious adverse reactions to therapy were reported. Twelve of the 13 travelers who completed questionnaires were aware of the risks of acquiring malaria and diarrheal illness in this region; seven reported having been advised about the risks for schistosomiasis.

Cote d'Ivoire. From March 1 to April 15, 1989, eight persons traveled to a remote rural area of western Cote d'Ivoire. During their visit, seven members of this group were briefly in contact (bathing, wading, and/or swimming) with fresh river water. None had recently traveled to other areas in which schistosomiasis was endemic.

All seven persons reported transient pruritus immediately after their exposures. Two to four weeks later, six of these seven persons developed symptoms including fever, chills, fatigue, headache, and gastrointestinal discomfort. Initial symptoms lasted 2-25 days (mean: 12 days) but recurred within 1-4 weeks in all six patients. Four persons required hospitalization, and five were treated presumptively for malaria. Eosinophilia (range: 15-48%) occurred in all patients. Fecal examinations in four persons detected ova of *S. mansoni*; egg counts were low and ranged from 16 to 24 eggs per gram of feces. For all seven persons, urine examinations were

negative for *Schistosoma* ova. For six persons, serum specimens were positive for antibodies to *Schistosoma* sp. All six were successfully treated with praziquantel.

Each of these seven travelers had received pretravel health advice and were taking malaria prophylaxis. Four were advised about methods for avoiding diarrheal illness; one was cautioned regarding the potential risks for schistosomiasis.

Editorial Note: The occurrence of these two outbreaks within a 9-month period and the high infection rates emphasize that schistosomiasis poses a continuing hazard for persons traveling in areas in which the disease is endemic. Reports of at least five similar outbreaks among U.S. and European tourists since 1975 have indicated similarly high infection rates (range: 55%-100%; mean: 77%). In these five outbreaks, symptoms of acute schistosomiasis (Katayama syndrome) were reported to occur in 40%-93% (mean: 76%) of those infected. These symptoms are thought to result from an immunologic response to the maturation of adult worms and subsequent egg deposition in the vasculature surrounding the intestines and bladder. Although the clinical outcome in travelers is usually benign, hospitalization is sometimes necessary, and manifestations can be severe. For example, in 1984, two U.S. students developed transverse myelitis and paraplegia after acquiring infection in Kenya.

Early manifestations of acute schistosomiasis are often nonspecific and may easily be misdiagnosed. The diagnosis should be considered when eosinophilia is associated with fever, fatigue, headache, and/or gastrointestinal distress in persons who have been exposed to fresh water in areas in which schistosomiasis is endemic. Early diagnosis and treatment based on clinical, epidemiologic, and serologic criteria may be important in preventing serious sequelae (e.g., transverse myelitis) of acute infection. Screening stool and urine specimens for ova and parasites is the traditional method of diagnosis, but signs and symptoms of acute infection can

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occur before detectable egg excretion. Sensitive and specific serologic tests have recently been developed that can help establish the diagnosis before substantial egg deposition or excretion. Single-day therapy with praziquantel (40-60 mg/kg) is effective against all species of schistosomes. Although side effects to treatment have been reported, they are generally mild and transient.

Because there is no practical way to distinguish infected from noninfected water, all fresh water in schistosomiasis-endemic areas should be considered suspect. If fresh water contact is unavoidable, bathing water should be heated to 50° C (122 F) for 5 minutes or treated with iodine or chlorine in a manner similar to that used for treating drinking water. In addition, water can be strained with paper filters or allowed to stand for 3 days before use. Vigorous towel drying and application of rubbing alcohol to exposed skin immediately after contact with untreated water also may reduce cercarial penetration and subsequent infection.

Schistosomiasis is endemic in 74 countries in Africa, South America, the Caribbean, and Asia. Because travel to these areas is becoming increasingly popular, health-care providers should be aware of the clinical manifestations, methods for diagnosis, and appropriate treatment of this disease. In addition, health and travel professionals should provide more intensive preventive counseling to persons planning to travel to areas endemic for schistosomiasis.

MMWR 3/9/90

Mercury Exposure from Interior Latex Paint - Michigan

In August 1989, a previously healthy 4-year-old boy in Michigan was diagnosed with acrodynia, a rare manifestation of childhood mercury poisoning. Symptoms and signs included leg cramps; rash; itching; excessive perspiration; rapid heartbeat; intermittent low-grade fevers; irritability; marked personality change; insomnia; headaches; hypertension; swelling; redness and peeling of the hands, feet, and nose; weakness of the pectoral and pelvic girdles; and nerve dysfunction in the lower extremities. A urine mercury level of 65 μ g/L was measured on a 24-hour urine collection. Treatment with intensive chelation therapy increased his urine mercury excretion 20-fold. Examination of his mother and two siblings found urine mercury levels greater than or approximately equal to his; his father had elevated, although lower, levels. Parents and siblings were asymptomatic, although electromyographic abnormalities were detected in one sibling.

The Michigan Department of Public Health (MDPH) identified inhalation of mercury-containing vapors from phenylmercuric acetate contained in latex paint as the probable route of mercury exposure for the family; 17 gallons of paint had been applied to the inside of the family's home during the first week of July. Samples of the paint contained 930-955 ppm mercury; the Environmental Protection Agency (EPA) limit for mercury as a preservative in interior paint is 300 ppm. During July, the house was air-conditioned, and the windows were not opened.

*The manufacturer sold this paint only in Michigan.

Following 4 months of hospitalization with repeated courses of chelation therapy and intensive rehabilitation, the patient's symptoms abated except for residual lower extremity weakness. Although electroneuromyographic abnormalities persist, he is able to walk and continues to improve.

In October, the Michigan Department of Agriculture prohibited further sales of the inappropriately formulated paint,* and the MDPH advised persons not to apply the paint, to thoroughly ventilate freshly painted areas, and to consult a physician if unexplained health problems occurred. In November, the MDPH and DCD began an ongoing investigation in selected communities in southeastern Michigan to assess mercury levels in the air of homes in which this paint has been applied and in urine samples from persons living in these homes.

Editorial Note: Phenylmercuric acetate is routinely added by some paint manufacturers to interior latex (water-based) paint as a fungicide and bactericide to prolong the paint's shelf-life. EPA permits interior latex paint to contain \leq 300 ppm elemental mercury and exterior latex paint to contain \leq 2000 ppm. However, neither the presence nor the concentration of mercury in the paint is required to be labeled on the paint can. Mercury may not lawfully be used in oil-based paint.

One case of acrodynia associated with the use of interior latex paint has been reported previously. Acrodynia may occur at urine mercury levels as low as 50 μ g/L. Because the Reinsch test, a urine screening for heavy metals, is not sufficiently sensitive to detect low mercury levels, urine should be tested for mercury content by cold vapor atomic absorption.

Little information is available about background urine mercury levels, especially in children. Data are largely limited to a 1961 World Health Organization multicountry survey of adults, which found that 95% of adults had urine mercury concentrations $<20\mu$ g/L, and 89% $<10\mu$ g/L.

In adults, chronic exposure to mercury vapors can cause nerve-conduction delays, tremor, insomnia, loss of appetite, and irritability. In 1965, mercury vapor exposure from paint may have been the cause of a cluster of neuromyasthenia cases (with symptoms including headache, weakness, tremor, unsteady gait, and depression) in workers in an electronics factory. However, the long-term health effects in clinically asymptomatic persons with elevated urine mercury levels and the potential adverse health effects to children and fetuses have not been well established.

Because alternative paint preservatives are available, EPA is determining the distribution of mercury-containing paints and is reviewing the use of mercury as a paint preservative. To prevent mercury exposure from paint, proper ventilation should be assured both during and after painting. Cases of mercury poisoning considered to be associated with interior latex paint should be reported through state health departments to the Health Studies Branch, Division of Environmental Hazards and Health Effects, Center for Environmental Health and Injury Control, CDC; telephone (404)488-4682.

MMWR 3/2/90

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PS Forum For Professional Sanitarians

The response of food service operators to AIDS reflects the general lack of knowledge about health and sanitation issues throughout the industry. It is no wonder that misconceptions about AIDS exist in an industry that, for the most part, is ignorant about how diseases are spread.

Last summer's push on the part of the food service industry to enact laws enabling restaurant owners to displace workers infected with the human immunodeficiency virus (HIV) was not surprising. Ignorance and misconceptions about HIV exist in a large portion of the American population. If managers don't know that handwashing is important in the prevention of hepatitis and other fecal-oral diseases, how can they be expected to understand the transmission of a non-foodborne disease.

As public health professionals Sanitarians should know and understand how the AIDS virus is transmitted. AIDS is not a foodborne disease. It is transmitted through the exchange of body fluids (blood, semen). The most common route of infection is through sexual intercourse. The virus can be spread through vaginal, anal or oral sex.

There is no excuse for any public health practitioner to not know the facts about AIDS. A number of excellent articles on AIDS have been published in the *FDA Consumer*. The following issues are recommended: September 87, April 86, May '85, October '85. The Public Health Service has a toll-free AIDS information hotline: 1-800-342-2437.

It's unfortunate that the food industry hasn't demonstrated the same level of concern for real health hazards. The unwashed hands of food handlers are a real public health hazard, yet 60% of foodhandlers still fail to wash their hands after using the toilet. If the same emphasis and resources (money) were spent on the promotion of handwashing, foodborne disease outbreaks could be cut in half.

The food industry should be concerned about AIDS. That concern should be focused on informing employees and consumers about the facts. How many restaurants provide condom machines in their restrooms? How many provide educational materials on the prevention of AIDS to employees and customers?

As the current AIDS epidemic continues, the food service industry will lose both employees and customers to this deadly disease. It's time the food service industry became real leaders on this issue. The right leadership in the right direction could save a few lives.

OFF THE CLIPBOARD: - Duain Shaw, Chair of the IAMFES Food Equipment Committee provides the following information: - The National Automatic Merchandising Association has published the "1990 Listing of Certified Food and Beverage Vending Machines". The publication is available from NAMA, 20 North Wacker Drive, Chicago, IL 60606.

- The National Sanitation Foundation (NSF) is developing guidance on cleaning and storage of fat filter systems. Problems have been reported from the field with contamination of oil contact surfaces during storage.

- Uniformity of cooking temperatures in microwave ovens is being reviewed by the ASTM. As more commercial microwave ovens are used in large processing systems, temperature uniformity will be more important.

- Duain is a member of the NSF Joint Committee on Food Equipment and a Registered Sanitarian in Pennsylvania.

- The National Civic League, in conjunction with the Public Health Service Office of Disease Prevention and Health Promotion, has developed the "National Healthy Communities Project (NHCP)". The NHCP has established anti-tobacco campaigns, environmental enhancement, injury prevention and other public health programs at the community level. A goal of the project is to demonstrate that health and social change is possible through a grassroots effort. For information on how your community can participate in this unique program contact: John Parr, National Civic League (303)832-5615.

- A listing of training videos and other material available from the FDA State Training Branch can be obtained by sending a request to: Training Resources, P.O. Box 1832, Frederick, Maryland 21702.

Homer C. Emery, RS
Chair, FDA Interpretations Committee

September Field Inspection Quiz

- The prime target of the AIDS virus is:
A. T4 lymphocytes
B. red blood cells
C. liver cells
D. HIV cells
- A person with the AIDS virus may:
A. not develop symptoms for several years
B. transmit the virus through sexual intercourse
C. show no signs of infection
D. all the above
- The AIDS virus can be transmitted in:
A. blood
B. semen
C. vaginal secretions
D. all the above
- During the evaluation of an immersion freezing system for a cook-freeze operation you are asked about the type of heat transfer liquid to use. You should recommend a USDA approved formulation of:
A. propylene glycol
B. ethylene glycol
C. plain water
D. brine solution
- Which of the following should be considered as a critical control point (CCP) in the above immersion freezing system?
A. use of NSF approved equipment
B. time required to reduced temperature to 45°F
C. temperature of immersion liquid

Answers to August FIQ: 1. (B); 2. (B); 3. (B); 4. (B); 5. (B).

Affiliate News

Report From Affiliate Liaison

Affiliate Council Meeting

Topics discussed at the Affiliate Council Meeting, August 5, 1990, were better communication and more interaction between the central office and the affiliates. Specific areas covered were:

- a) goals of the affiliate council
- b) IAMFES' central office expectations of the affiliates
- c) responsibilities of the affiliate delegate
- d) responsibilities of office and affiliates

The last item gave this office a better understanding of how to help each affiliate reach its goals.

Of the 31 affiliates, 27 had delegates at this meeting. A future delegate, Louisiana, was represented by Dr. Doug Marshall. New Jersey and Arizona may be represented in the future.

Bill Coleman chaired the meeting, while Lloyd Luedecke took the minutes.

Changes

At the 77th Annual Banquet, Dr. Ron Schmidt replaced Bill Coleman as affiliate council chairman. Ruth Fuqua is the new affiliate secretary, taking Dr. Lloyd Luedecke's place.

Travel Schedules

This month, Steve Halstead, executive manager, will attend affiliate meetings in Indiana and California, while Margie Marble, assistant executive manager/editor, will attend the Minnesota affiliate meeting. Also, Dee Buske, affiliate liaison, is planning to travel to Casper, Wyoming and Seattle, Washington.

Steve travels to Lansing, Michigan for the Michigan Affiliate Food Protection Meeting in October. Later that month he travels to Grand Forks, North Dakota for the affiliate meeting and then on to Waterloo, Iowa for the affiliate conference.

Also in October, Scott Wells, advertising manager, and Dee will go to Montreal, Canada, for the 23rd International Dairy Congress. While exhibiting, they will be looking for new members among Quebec's 23 international members. Scott and Dee will discuss forming a new affiliate with them.

At the 1990 International Dairy Show in Anaheim, CA, Scott and Margie will, once again, distribute journals and look for new members.

For more information, contact Dee Buske, affiliate liaison, at (515)232-6699 or (800)369-6337 or FAX (515)232-4736.

Upcoming IAMFES Affiliate Meetings

1990

OCTOBER

• **9-10, North Dakota Environmental Health Association's 1990 Fall Educational Conference and Meeting** will be held at the Holiday Inn, Grand Forks, ND. For more information please feel free to contact Mel Fischer, Bismarck Fire and Inspections, 1020 East Cental Avenue, Bismarck, ND (701) 258-2070.

NOVEMBER

• **14-15, Alabama Dairy Food Conference** to be held at the Howard Johnson Motor Lodge in Birmingham. For more information contact Tom McCaskey at (205)844-1518.

• **28, Ontario Food Protection Association Annual Meeting**, will be held at the Air-port Hilton Hotel, Toronto, Ontario. The title of the all-day symposium is "FOOD PROTECTION: HOT TOPICS FOR THE '90's". For more information, please contact program convenors: Garth Sundeen (416)-239-8411 or FAX (416)239-2416 or Patrick Kwan (416)671-5080 or FAX (416)671-5176.

IAMFES Secretary Nominations Due for 1991 Elections

Nominations are now being taken for Secretary for IAMFES. This year an industry representative will be elected.

Once all nominations are received by the nominating committee, two persons will be chosen to run for the office. This is a five-year term, moving up yearly until he or she is President of IAMFES, then serving one year after as Past President. The term of office begins the last day of the 1991 Annual Meeting. All IAMFES Executive Board Members meet three times a year.

Two people selected are placed on the ballot. The winner is determined by majority vote of the membership through a mail vote, in the spring of 1991.

Please send a biographical sketch and photograph NO LATER THAN OCTOBER 18, 1990 to the Nominations Chairperson.

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

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DAIRY

- **Causes of Milkfat Test Variations and Depressions** - (140 slides-tape-script-30 minutes). This set illustrates the many factors involved in causing milkfat test variations or depressions in your herd, including feeding, management, stage of lactation, age of samples, handling of samples, and testing procedures. The script was reviewed by field staff, nutritionists, laboratory personnel and county extension staff. It is directed to farmers, youth and allied industry. (Penn State-1982)
- **Controlling Volumes and Fat Losses** - (110 slides-tape-script-30 minutes). Keeping milk volume and product loss from farm to supermarket of fluid dairy products is discussed. This set was done with the cooperation of the dairy industry who reviewed the script and provided opportunities to take pictures. It is designed to be used by milk plants for their processing personnel, regulatory representatives, field staff and milk haulers. (Penn State-1982)
- **The Farm Bulk Milk Hauler** - (135 slides-tape-script-30 minutes). This set covers the complete procedure for sampling and collecting milk from farms. Each step is shown as it starts with the hauler entering the farm lane and ends when he leaves the milk house. Emphasis is on universal sampling and automated testing. Funds to develop this set were provided by The Federal Order #36 Milk Market Administrator. (Penn State-1982)
- **Frozen Dairy Products** - (27 minute videotape). Developed by the California Department of Food and Agriculture. Although it mentions the importance of frozen desserts, safety and checking ingredients; emphasis is on what to look for in a plant inspection. Everything from receiving, through processing and cleaning and sanitizing is outlined, concluded with a quality control program. Directed to plant workers and supervisors, it shows you what should be done. (CA-1987)
- **High-Temperature, Short-Time Pasteurizer** - (59 minute videotape). Provided by the Dairy Division of Borden, Inc. It was developed to train pasteurizer operators and is well done. There are seven sections with the first covering the twelve components of a pasteurizer and the purpose and operation of each. The tape provides the opportunity for discussion after each section or continuous running of the videotape. Flow diagrams, processing and cleaning are covered. (Borden, Inc., 59-min.-1986)
- **The How and Why of Dairy Farm Inspections** - (110 slides-tape-script-15 minutes). This was developed at the request of seven northeast dairy cooperatives and with their financial support. Emphasis is on clean cows, facilities and equipment and following proper procedures. Regulatory agencies cooperated in reviewing the script and taking pictures. This was developed for farmers, youth and allied industry. (Penn State-1984)
- **Milk Plant Sanitation: Chemical Solution** - (13 minute video). This explains the proper procedure required of laboratory or plant personnel when performing chemical titration in a dairy plant. Five major titration are reviewed — alkaline wash, presence of chlorine and iodophor, and caustic wash and an acid wash in a HTST system. Emphasis is also placed on record keeping and employee safety.
- **Milk Processing Plant Inspection Procedures** - (15 minute videotape). Developed by the California Department of Food and Agriculture. It covers pre and post inspection meeting with management, but emphasis is on inspection of all manual and cleaned in place equipment in the receiving, processing and filling rooms. CIP systems are checked along with recording charts and employee locker and restrooms. Recommended for showing to plant workers and supervisors. (CA-1986)
- **Processing Fluid Milk** - (140 slides-script-tape-30 minutes). It was developed to train processing plant personnel on preventing food poisoning and spoilage bacteria in fluid dairy products. Emphasis is on processing procedures to meet federal regulations and standards. Processing procedures, pasteurization times and temperatures, purposes of equipment, composition standards, and cleaning and sanitizing are covered. Primary emphasis is on facilities such as drains and floors, and filling equipment to prevent post-pasteurization contamination with spoilage or food poisoning bacteria. It was reviewed by many industry plant operators and regulatory agents and is directed to plant workers and management. (Penn State-1987)
- **Producing Milk of Good Quality and Flavor** - (114 slides-tape-script-25 minutes). The steps and corrective measures necessary to produce quality milk with good flavor are outlined. It is directed at dairy farmers, field staff, milk haulers and youth. (Penn State-1982)
- **Tests for Milk Quality and Composition** - (140 slides-tape-script-25 minutes). This set shows and describes in simple terms the various quality tests performed on milk samples. These include bacteria, antibiotics, freezing point, pesticides, somatic cells, flavor and others. The purpose, desirable results, and ways to improve poor results are outlined. It was developed for farmers, youth, field staff and allied industry. (Penn State, 1983)

FOOD

- **BISSC - A Sign of Our Times** - (50 slides-script-tape). The presentation was prepared by the Baking Industry Sanitary Standards Committee. The purpose of BISSC, formed in 1949 by six of the national organizations serving the baking industry, is to develop and publish voluntary standards for the design and construction of bakery equipment. Those Standards are now recognized as the definitive sanitation standards for equipment used in the baking industry.
- **Food Quality, Food Safety, and You!** - (80 slides, script, and cassette tape). This is an educational program designed for consumers. The presentation deals with the role of the consumer in maintaining the freshness, quality and safety of food in the home. It is intended for use by home economists, dieticians, cooperative extension agents and others interested in food quality and safety. (Cornell University)
- **Food Safe - Series I** - (4-10 minute videos). (1) "Receiving & Storing Food Safely", details for food service workers the procedures for performing sight inspections for the general conditions of food, including a discussion of food labeling and government approval stamps. (2) "Foodservice Facilities and Equipment", outlines the requirements for the proper cleaning and sanitizing of equipment used in food preparation areas. Describes the type of materials, design, and proper maintenance of this equipment. (3) "Microbiology for Foodservice Workers", provides a basic understanding of the microorganisms which cause food spoilage and foodborne illness. This program describes bacteria, viruses, protozoa, and parasites and the conditions which support their growth. (4) "Foodservice Housekeeping and Pest Control", emphasizes cleanliness as the basis for all pest control. Viewers learn the habits and life cycles of flies, cockroaches, rats, and mice. (Perennial Education).
- **Food Safe - Series II** - (4-10 minute videos). Presents case histories of foodborne disease involving (1) *Staphylococcus aureus*, (sauces) (2) *Salmonella*, (eggs) (3) *Campylobacter*, and (4) *Clostridium botulinum*. Each tape demonstrates errors in preparation, holding, or serving food; describes the consequences of those actions; reviews the procedures to reveal the cause of the illness; and illustrates the correct practices in a step-by-step demonstration. These are excellent tapes to use in conjunction with hazard analysis critical control point training programs. (Perennial Education).
- **Food Safe - Series III** - (4-10 minute videos). More case histories of foodborne disease. This set includes (1) Hepatitis "A", (2) *Staphylococcus Aureus* (meats), (3) *Bacillus Cereus*, and (4) *Salmonella* (meat). Viewers will learn typical errors in the preparation, holding and serving of food. Also included are examples of correct procedures which will reduce the risk of food contamination. (Perennial Education).

□ **Food Safety Is No Mystery** - (34 minutes videotape). This is an excellent training visual for food service workers. It shows the proper ways to prepare, handle, serve and store food in actual restaurant, school and hospital situations. A policeman sick from food poisoning, a health department sanitarian, and a food service worker with all the bad habits are featured. The latest recommendations on personal hygiene, temperatures, cross contamination, and storage of foods are included. (USDA-1987)

□ **Legal Aspects of the Tampering Case** - (about a 25-minute, 1/2" videocassette). This was presented by Mr. James T. O'Reilly, University of Cincinnati School of Law at the fall 1986 Central States Association of Food and Drug Officials Conference. He emphasizes three factors from his police and legal experience - know your case, nail your case on the perpetrator, and spread the word. He outlines specifics under each factor. This should be of the greatest interest to regulatory sanitarians, in federal, state and local agencies. (1987)

□ **On the Line** - (30 minute VHS videocassette). This was developed by the Food Processors Institute for training food processing plant employees. It creates an awareness of quality control and regulations. Emphasis is on personal hygiene, equipment cleanliness and good housekeeping in a food plant. It is recommended for showing to both new and experienced workers.

□ **100 Degrees of Doom — The Time and Temperature Capers** - (14 minute videotape). Video portraying a private eye tracking down the cause of a salmonella poisoning. Temperature control is emphasized as a key factor in preventing foodborne illness. (Educational Communications, Inc.)

□ **Pest Control in Seafood Processing Plants** - (26 minute videotape). Videotape which covers procedures to control flies, roaches, mice, rats and other common pests associated with food processing operations. The tape will familiarize plant personnel with the basic characteristics of these pests and the potential hazards associated with their presence in food operations.

□ **Product Safety and Shelf Life** (40 minute videotape). Developed by Borden Inc., this videotape was done in three sections with opportunity for review. Emphasis is on providing consumers with good products. One section covers off-flavors, another product problems caused by plant conditions, and a third the need to keep products cold and fresh. Procedures to assure this are outlined, as shown in a plant. Well done and directed to plant workers and supervisors. (Borden-1987)

□ **Psychiatric Aspects of Product Tampering** - (about a 25 minute, 1/2" videocassette). This was presented by Emanuel Tanay, M.D. from Detroit, at the fall 1986 conference of CSAFDA. He reviewed a few cases and then indicated that abnormal behavior is like a contagious disease. Media stories lead to up to 1,000 similar alleged cases, nearly all of which are false. Tamper proof packaging and recalls are essential. Tampering and poisoning are characterized by variable motivation, fraud and greed. Law enforcement agencies have the final responsibilities. Tamper proof containers are not the ultimate answer. (1987)

□ **Safe Handwashing** - (15 minute videotape). Twenty-five percent of all foodborne illnesses are traced to improper handwashing. The problem is not just that handwashing is not done, the problem is that it's not done properly. This training video demonstrates the "double wash" technique developed by Dr. O. Peter Snyder of the Hospitality Institute for Technology and Management. Dr. Snyder demonstrates the procedure while reinforcing the microbiological reasons for keeping hands clean. (Hospitality Institute for Technology and Management).

□ **Sanitation for Seafood Processing Personnel** - A training video suited for professional food handlers working in any type of food manufacturing plant. The film highlights Good Manufacturing Practices and their role in assuring food safety. The professional food handler is introduced to a variety of sanitation topics including: 1) food handlers as a source of food contamination, 2) personal hygiene as a means of preventing food contamination, 3) approved food storage techniques including safe storage temperatures, 4) sources of cross contamination, 5) contamination of food by insects and rodents, 6) garbage handling and pest control, and 7) design and location of equipment and physical facilities to facilitate cleaning.

□ **Seafood Q & A** - (20 minute VHS). Anyone who handles seafood, from processor to distributor to retail and foodservice, must be prepared to answer questions posed by customers. This tape features a renowned nutritionist and experts from the Food & Drug Administration, the National Marine Fisheries Service, and the National Fisheries Institute who answer a full range of questions about seafood safety. Excellent to educate and train employees about seafood safety & nutrition. (National Fisheries Institute).

□ **Tampering: The Issue Examined** - (37 minutes videotape). Developed by Culbro Machine Systems, this videotape is well done. It is directed to food processors and not regulatory sanitarians or consumers. A number of industry and regulatory agency management explain why food and drug containers should be made tamper evident. (Culbro-1987)

□ **Wide World of Food Service Brushes** - An 18 minute video tape that discusses the importance of cleaning and sanitizing as a means to prevent and control foodborne illness. Special emphasis is given to proper cleaning and sanitizing procedures and the importance of having properly designed and constructed equipment (brushes) for food preparation and equipment cleaning operations.

ENVIRONMENTAL

□ **Acceptable Risks?** - (16 minute VHS). Accidents, deliberate misinformation, and the rapid proliferation of nuclear power plants have created increased fears of improper nuclear waste disposal, accidents during the transportation of waste, and the release of radioactive effluents from plants. The program shows the occurrence of statistically anomalous leukemia clusters; governmental testing of marine organisms and how they absorb radiation; charts the kinds and amounts of natural and man-made radiation to which man is subject; and suggests there is no easy solution to balancing our fears to nuclear power and our need for it. (Films for the Humanities & Sciences, Inc.)

□ **Air Pollution: Indoor** - (26 minute VHS). Indoor air pollution is in many ways a self-induced problem — which makes it no easier to solve. Painting and other home improvements have introduced pollutants, thermal insulation and other energy-saving and water-proofing devices have trapped the pollutants inside. The result is that air pollution inside a modern home can be worse than inside a chemical plant. (Films for the Humanities & Sciences, Inc.)

□ **Asbestos Awareness** - (20 minute videotape). This videotape discusses the major types of asbestos and their current and past uses. Emphasis is given to the health risks associated with asbestos exposure and approved asbestos removal abatement techniques (Industrial Training, Inc.)

□ **Down in the Dumps** - (26 minute VHS). Garbage is no laughing matter. The fact is that we are running out of space to dump the vast amounts of waste we create each day. Since many of the former methods of disposal are environmentally unacceptable, what are we to do? The program examines the technological approaches to the garbage dilemma, including composting, resource recovery, and high-tech incinerators, and public reaction to the creation of new waste treatment facilities. (Films for the Humanities & Sciences, Inc.)

□ **Fit to Drink** - (20 minute VHS). This program traces the water cycle, beginning with the collection of rain water in rivers and lakes, in great detail through a water treatment plant, to some of the places where water is used, and finally back into the atmosphere. Treatment of the water begins with the use of chlorine to destroy organisms; the water is then filtered through various sedimentation tanks to remove solid matter. Other treatments employ ozone, which oxidizes contaminants and makes them easier to remove; hydrated lime, which reduces the acidity of the water; sulfur dioxide, which removes any excess chlorine; and flocculation, a process in which aluminum sulfate causes small particles to clump together and precipitate out. Throughout various stages of purification, the water is continuously tested for smell, taste, titration, and by fish. The treatment plant also monitors less common contaminants with the use of up-to-date techniques like flame spectrometers and gas liquefaction. (Films for the Humanities & Sciences, Inc.)

Kentucky Public Swimming Pool and Bathing Facilities - (38 minute videotape). It was developed by the Lincoln Trail District Health Department in Kentucky and includes all of their state regulations which may be different from other states, provinces and countries. It was very well done and could be used to train those responsible for operating pools and waterfront bath facilities. All aspects are included of which we are aware, including checking water conditions and filtration methods. (1987)

Putting Aside Pesticides - (26 minute VHS). This program probes the long-term effects of pesticides and explores alternative pest-control efforts; biological pesticides, genetically-engineered microbes that kill objectionable insects, the use of natural insect predators, and the cross-breeding and genetic engineering of new plant strains that produce their own anti-pest toxins. (Films for the Humanities & Sciences, Inc.)

Radon - (26 minute VHS). This program looks at the possible health implications of radon pollution, methods homeowners can use to detect radon gas in their homes, and what can be done to minimize hazards once they are found.

RCRA - Hazardous Waste - (19 minute video). This videotape explains the dangers associated with hazardous chemical handling and discusses the major hazardous waste handling requirements presented in the Resource Conservation and Recovery Act. (Industrial Training, Inc.)

Waste Not: Reducing Hazardous Waste - (35 minute VHS). This tape looks at the progress and promise of efforts to reduce the generation of hazardous waste at the source. In a series of company profiles, it shows activities and programs within industry to minimize hazardous waste in the production process. Waste Not also looks at the obstacles to waste reduction, both within and outside of industry, and considers how society might further encourage the adoption of pollution prevention, rather than pollution control, as the primary approach to the problems posed by hazardous waste. (Umbrella films)

OTHER

Diet, Nutrition and Cancer - (20 minute video). Investigates the relationship between a person's diet and the risk of developing cancer. The film describes the cancer development process and identifies various types of food believed to promote and/or inhibit cancer. The film also provides recommended dietary guidelines to prevent or greatly reduce the risk of certain types of cancer.

75th IAMFES Annual Meeting Presentations. 30 cassette tapes covering the complete conference. 5 videotapes covering various symposia and sessions (For more specific information, contact Sandy.)

If you are interested in checking out any of our audio-visuals, please fill out this form with the box or boxes checked as to which presentations you wish to view. Mail to: IAMFES, Lending Library, 502 E. Lincoln Way, Ames, IA 50010-6666. (You'll be notified by telephone when your tape or slide set is being mailed. Material from the Lending Library can be checked out for one week only so that others can benefit from its use.)

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Minimize Conditions Which Increase Exposure to Environmental Pathogens

The term environmental mastitis is used to describe intramammary infections caused by pathogens whose primary reservoir is the environment in which the cow lives. These pathogens are routinely found in feces, bedding materials, feed stuffs, dust, soil, and water. This distinguishes them from contagious pathogens (such as *Streptococcus agalactiae* and *Staphylococcus aureus*) whose primary reservoir is other infected quarters within the herd, and skin flora opportunists (staphylococcal species other than *S. aureus*). Of fundamental importance is the fact that environmental pathogens cannot be eliminated from the dairy farm and consequently teat ends are constantly exposed to such pathogens.

Environmental pathogens include two groups of bacteria; the gram-negative bacteria (primarily coliforms), and species of streptococci other than *Streptococcus agalactiae*. The gram-negative bacteria most frequently encountered are *Escherichia*, *Klebsiella*, *Enterobacter*, *Pseudomonas*, and *Serratia*. The most common coliforms isolated from mammary glands are *Escherichia coli* and *K. pneumoniae*. The primary source of *E. coli* is feces, while *K. pneumoniae* is generally associated with vegetative material such as sawdust. The environmental streptococci are likewise a diverse group with *Streptococcus uberis* appearing to be most frequently associated with mastitis. Environmental streptococci are found throughout the cows' environment with high concentrations in straw bedding materials.

Environmental mastitis control is complicated by the fact that environmental pathogens are always present in the cows' surroundings. Teats are continuously exposed to environmental pathogens between milkings and throughout the dry period. As a result, methods for controlling contagious pathogens (primarily teat dipping and dry cow therapy) are largely ineffective against environmental pathogens. Post milking teat dipping has little impact on exposure of teats to environmental pathogens, and dry cow therapy does not reduce the reservoir of environmental pathogens in the dairy herd.

Herd problems with environmental mastitis differ significantly from problems associated with other types of mastitis. The prevalence of quarters infected with environmental pathogens in a herd at any one point is generally low, seldom exceeding 10%. Coliform infected quarters seldom exceed 2 to 3%. Prevalence is a function of both the rate of new infections and duration of infections. A major factor in the low prevalence of environmental infections is the short duration of such infections. The majority of environmental streptococcal infections last less than 30 days and the majority of coliform

infections last less than 10 days. Due to the low prevalence of infection, environmental mastitis has minimal effects on bulk tank milk somatic cell count (SCC), which is in contrast with contagious mastitis. The short duration of infection also reduces the reliability of individual cow SCC to detect infected cows, particularly when counts are obtained at monthly intervals.

A comparatively high percentage of environmental infections result in clinical mastitis. Approximately 80-90% of all coliform infections are clinical, with symptoms ranging from mild to peracute mastitis, while about 50% of environmental streptococcal infections result in clinical mastitis.

Control of environmental mastitis is achieved by decreasing the exposure of teat ends to pathogens and/or by increasing the resistance of cows to intramammary infections. The herd environment should be kept clean, dry and comfortable. Minimize conditions which increase exposure to environmental pathogens, such as overcrowding; elevated temperature and humidity in barns; poor ventilation; accumulations of manure, urine and water; poor stall design; access to ponds or muddy lots; and dirty maternity stalls or calving areas. Teats should be cleaned and dried with individual towels prior to milking. Milking wet udders and teats is likely to increase the incidence of environmental mastitis. Dipping the teats in an effective germicide prior to milking (pre-dipping) reduces the exposure of teats to environmental pathogens during the milking process. Teats that have been pre-dipped must be wiped dry prior to machine attachment to prevent contamination of milk. Milking systems must be maintained regularly. Malfunctioning equipment can cause liner slips and teat end impacts which increase the likelihood of infection by environmental pathogens. Cows should be fed a well balanced diet. Vitamin E and selenium deficiencies have been associated with both increased susceptibility to environmental mastitis and longer, more severe infections.

Treatment of clinical cases during lactation is a necessity but of little value in controlling environmental mastitis. Cure rates are generally about 50% for environmental streptococcal infections and 10-20% for coliform infections. All quarters of all cows should be dry treated. Dry cow therapy significantly reduces the rate of new environmental streptococcal infection during the early dry period, but not the week or two before calving. Reinfusion of antibiotics during the latter part of the dry period is not recommended. Dry cow therapy does not control coliform infections.

This article is one in a continuing series made available by the National Mastitis Council. For additional information, contact the NMC, 1840 Wilson Blvd., Arlington, VA 22201; (703)243-8268.

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Dairy, Food and Environmental Sanitation Instructions for Authors

Nature of the Magazine

Dairy, Food and Environmental Sanitation is a monthly publication of the International Association of Milk, Food and Environmental Sanitarians, Inc. (IAMFES). It is targeted for persons working in industry, regulatory agencies, or teaching in milk, food and environmental protection.

The major emphases include: 1) practical articles in milk, food and environmental protection, 2) new product information, 3) news of activities and individuals in the field, 4) news of IAMFES affiliate groups and their members, 5) 3-A and E-3-A Sanitary Standards, amendments, and lists of symbol holders, 6) excerpts of articles and information from other publications of interest to the readership.

Anyone with questions about the suitability of material for publication should contact the editor.

Submitting Articles

All manuscripts and letters should be submitted to the Associate Editor, Margaret Marble, IAMFES, 502 E. Lincoln Way, Ames, Iowa 50010-6666.

Articles are reviewed by two members of the editorial board. After review, the article is generally returned to the author for revision in accordance with reviewer's suggestions. Authors can hasten publication of their articles by revising and returning them promptly. With authors' cooperation articles are usually published within three to six months after they are received and may appear sooner.

Membership in IAMFES is not a prerequisite for acceptance of an article.

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Types of Articles

Dairy, Food and Environmental Sanitation readers include persons working as sanitarians, fieldmen or quality control persons for industry, regulatory agencies, or in education. *Dairy, Food and Environmental Sanitation* serves this readership by publishing a variety of papers of interest and usefulness to these persons. The following types of articles and information are acceptable for publication in *Dairy, Food and Environmental Sanitation*.

General Interest

Dairy, Food and Environmental Sanitation regularly publishes non-technical articles as a service to those readers who are not involved in the technical aspects of milk, food and environmental protection. These articles deal with such topics as the organization and application of a milk or food control program or quality control program, ways of solving a

particular problem in the field, organization and application of an educational program, management skills, use of visual aids, and similar subjects. Often talks and presentations given at meetings of affiliate groups and other gatherings can be modified sufficiently to make them appropriate for publication. Authors planning to prepare general interest nontechnical articles are invited to correspond with the editor if they have questions about the suitability of their material.

Book Reviews

Authors and publishers of books in the fields covered by *Dairy, Food and Environmental Sanitation* are invited to submit their books to the editor. Books will then be reviewed and the review will be published in an issue of *Dairy, Food and Environmental Sanitation*.

Preparation of Articles

All manuscripts should be typed, double-spaced, on 8-1/2 by 11 inch paper. Side margins should be one inch wide.

The title of the article should appear at the top of the first page. It should be as brief as possible and contain no abbreviations.

Names of authors and their professions should follow under the title. If an author has changed location since the article was completed, his new address should be given in a footnote.

Illustrations, Photographs, Figures

Wherever possible, submission of photos, graphics, or drawings to illustrate the article will help the article. The nature of *Dairy, Food and Environmental Sanitation* allows liberal use of such illustrations, and interesting photographs or drawings often increase the number of persons who are attracted to and read the article.

Photographs which are submitted should have sharp images, with good contrast.

Examples of Proper Bibliographic Citations

Paper in a journal

Alderman, G. G. and E. H. Marth. 1974. Experimental production of aflatoxin in citrus juice and peel. *J. Milk Food Technol.* 37:306-313.

Paper in a book

Marth, E. H. 1974. Fermentations. pp. 771-882. In B. H. Webb, A. H. Johnson, and J. A. Alford (eds.), *Fundamentals of dairy chemistry* (2nd ed.), AVI Publishing Co., Westport, CT.

Book

Fennema, O. R., W. D. Powrie, and E. H. Marth. 1973. *Low-temperature preservation of foods and living matter*. Marcel Dekker, Inc., New York. 598 p.

Patent

Hussong, R. V., E. H. Marth, and D. G. Vakaleris. 1964. *Manufacture of cottage cheese*. U. S. Pat. 3,117,870. Jan. 14.

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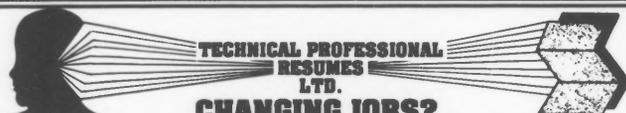
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- 1-2, Ninth Annual Midwest Food Processing Conference**, sponsored by the Chicago, Iowa, Minnesota and Wisconsin IFT sections, will be held at the Radisson Hotel, LaCrosse, WI. This years conference theme is "The Quality Connection." Registration fees are \$65 before September 15; \$85 after September 15. For further information contact Kris Nelson, MFPC Publicity Chairperson, Minnesota Grain Pearlring Company, P.O. Box 545, Cannon Falls, MN 55009, (507)263-3325.
- 2-3, MEHA Food Conference** will be held at the Clarion Hotel in Lansing, MI.
- 4-5, The Canada/United States Chemical Regulation Conference**, will be held at the Sheraton Parkway North, 600 Highway 7 East, Richmond Hill, Ontario L4B 1B2. For more information call (800)831-8333 or (212)645-7880 outside the U.S.
- 7-12, Twenty-Third International Dairy Congress**, sponsored by the International Dairy Federation, and Exposition 1990, will be held at the Montreal Convention Centre, Montreal, Canada. For further information, contact: Richard Stern, Executive Director, International Dairy Congress, 1990, P.O. Box 2143, Station D. Ottawa, Ontario, Canada K1P 5W3 (613)238-4116.
- 8, Safety for the Line Supervisor**, an AIB seminar, to be held at the American Institute of Baking, 1213 Bakers Way, Manhattan, KS 66502. For more information call (913)537-4750 or (800)633-5137.
- 9-10, North Dakota Environmental Health Association's 1990 Fall Educational Conference and Meeting** will be held at the Holiday Inn, Grand Forks, ND. For more information please feel free to contact Mel Fischer, Bismarck Fire and Inspections, 1020 East Central Avenue, Bismarck, ND 58501, (701)258-2070.
- 10-11, Sanitation Through Design Workshop**, an AIB seminar to be held at the American Institute of Baking, 1213 Bakers Way, Manhattan, KS 66502. For more information call Bill Pursley at (913)537-4750 or (800)633-5137.
- 15-16, Pests Associated with Food Industry and Environmental Sanitation Seminar**, Okumura Biological Institute, Holiday Inn, Elk Grove Village, IL. For more information contact George Okumura, 6669 14th Street, Sacramento, CA 95831(916)421-8963.
- 17-18, Advanced Course on Pest Recognition and Food Industry Problems**, Okumura Biological Institute, Holiday Inn, Elk Grove Village, IL. For more information contact George Okumura, 6669 14th Street, Sacramento, CA 95831 (916)421-8963.
- 17-18, North Central Cheese Industries Association Annual Conference**, will be held at the South Dakota State

University, Brookings, SD. For more information contact E.A. Zottola, Executive-Secretary, NCCIA, P. O. Box 8113, St. Paul, MN 55108.

•**18-20, 1990 International Dairy Show** will be held in Anaheim, CA. For more information call Tracy Stroud at (202)296-4250.

•**22-25, The Science of Ice Cream Manufacturing** will be held on the Davis campus of the University of California, Davis, CA. Sponsored by University Extension. Registration fee is \$475 and includes all instruction, course handbook, 3 lunches and 1 dinner. For enrollment information and a course agenda, call Jim Lapsley at (916)757-8692.

NOVEMBER

- 4-7, National Fisheries Institute** will hold its 45th annual convention at the new Marriott Marquis, San Francisco, CA. For more information contact Pat McCoy, convention coordinator (703)524-8881.
- 5-8, UCD/FDA Better Process Control School**, Costa Mesa, CA. Contact Sharon Munowitch, University Extension, University of California, Davis, CA 95616. (916)757-8899.
- 6-8, International Cheese Technology Exposition** will be held in Milwaukee, Wisconsin. For further information contact: USCMA/WEMA, P.O. Box 2133, Madison, WI 53701 (608)255-2027.
- 12-14, 1990 Food Industry Environmental Conference**, sponsored by the Environmental Sciences and Technology Division, Georgia Tech Research Institute will be held at the Hyatt Regency, Downtown, Atlanta, GA. The Conference is being conducted by the Education Extension Services, Georgia Institute of Technology. For more information contact Edd Valentine or Chuck Ross, Environmental Sciences and Technology Division, Georgia Tech Research Institute, Room 040 O'Keefe Building, Atlanta, GA 30334 (404)894-3412 FAX (404)894-8281.
- 14-15, Alabama Dairy & Food Conference** to be held at the Howard Johnson Motor Lodge in Birmingham. For more information contact Tom McCaskey at (205)844-1518.
- 27-19, Biotech USA '90 presents PharmBiotech, AgBiotech, BioLab and BioBusiness** at the Ramada Renaissance Techworld, Washington, DC.
- 28, Ontario Food Protection Association Annual Meeting**, will be held at the Airport Hilton Hotel, Toronto, Ontario. The title of the all-day symposium is "FOOD PROTECTION: HOT TOPICS FOR THE '90's". For more information, please contact program convenors: Garth Sundeen (416)239-8411 or FAX (416)239-2416 or Patrick Kwan (416)671-5080 or FAX (416)671-5176.

DECEMBER

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

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

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

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

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

1991

January

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

February

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

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

March

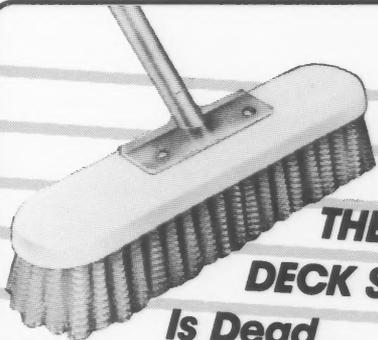
•**25-29, Mid-West Workshop in Milk and Food Sanitation**, The Ohio State University, Department of Food Science & Technology, 2121 Fyffe Road, Columbus, OH 43210-1097. For more information Dr. David Dzurec (614)292-7723. Department of Food Science & Technology (916)752-2191.

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

October

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

To insure that your meeting time is published, send announcements at least 90 days in advance to: IAMFES, 502 E. Lincoln Way, Ames, IA 50010-6666.



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On My Mind . . .



*Steven K. Halstead
IAMFES Executive Manager*

The frustration of trying to communicate with a person speaking a foreign language really came home to me the other day. There I was, doing my best to make myself understood, but getting no where. It seemed like we were using the same words, but they had very different meanings. I was speaking English. The other guy was speaking accounting.

If you think that accounting isn't a foreign language, try getting an accountant (who, generally speaking, are the only ones to speak in this tongue) to explain why an annual audit written in "accrual" (a major dialect) is different than one written in "cash basis" (the language of the uneducated, logical accountants). My conclusion is that the difference defies explanation, so the accountant makes up words, terms and phrases to cover this up.

The point in case came as we looked at the financial statement for our fiscal year which ended June 30. The year-to-date reports through the first eleven months showed that we were about \$9,000 in the red using the accrual basis, but about \$25,000 in the black on a cash basis. As this was the end of my first year, I was very much interested in finishing in the black (President Case did speak of other things, but not often!). But, more than anything I wanted to be able to understand the difference. I mean, \$34,000 is not a figure to sneeze at!

It is not simply a matter of one method being correct and the other being wrong. They are both right under the rules by which one arrives at the final figure. Often times, it is a matter of choice.

Most families and family businesses use the cash basis. You take in "x" amount of money and you spend "y" amount. At the end of the year (tax time?), you have some left over ($x > y$) or you don't ($x < y$). What could be more simple or logical?

Most other businesses use the accrual basis. Because income is dependent on what you expend to generate the income, accrual is nice because it more closely matches the income with the expenses.

An example of this might be if you spend money in March to produce something you sold in July. Under the accrual system, you would not show the expense until you had the off-setting income.

A not-for-profit organization is neither a family nor a business. It's neither fish nor fowl. The cash basis doesn't work particularly well in that we have expenses which generate income at some later point in time, but we also have income which cannot be directly matched to expenses. In short, there simply is not an accounting method which truly meets the needs of the non-profit group.

Non-profits are such a small part of the total America economy that it is not worth the effort required to come up with system designed just for them. Non-profits include state, federal, and county governments as well as such other groups as the American Cancer Society; Lions, International; The Boy Scouts of America and IAMFES. A rather sizeable number of these groups do not use "generally accepted accounting practices" for the very reasons outlined above. At the political level, the "out of power party" loves to point out that "in power party" "doesn't even use generally accepted accounting practices - no wonder the budget is in such bad shape."

Of course, you never hear that from accountants - they know.

By the way, we did end the year in the black by over \$8,000 even under the accrual method! Not being one to look a gift horse in the mouth, I accepted the accountants' figures. I didn't even question where we made up the \$17,000 in one month!

I don't think I'll ask my college-educated daughter to explain it. Not only would we have the father-daughter language problem, we'd have another one. You see, she's an accountant and I just don't speak her language!

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