

ADSA Student Affiliate Division Dairy Foods

1637 Methods of inhibiting bacteriophage infections in lactococcal bacteria. M. L. Bush*¹, ¹*University of Kentucky.*

Lactococcal microorganisms are used in the fermentation and production of dairy foods such as cheese and yogurt. These fermentations are inhibited when bacteriophages, or phages, infect the culture bacteria, and cause lysis of the cells. Bacteriophages search for specific host receptor sites for attachment. Research has shown that phages attach to bacterial cell walls in locations where nutrient transport occurs, perhaps because the cell wall is thinner and more permeable. Typically, these locations are rich in carbohydrates, and multiple phages are found stuck to these sites. After the phages are initially attached to the bacteria, subsequent phage movement works the spikes deep into the cell wall so that the phage tail is irreversibly attached. Enzymes that degrade the cells' membranes have been observed at work, which may be important in triggering the release of ATP that allows the injection of phage DNA into Lactococcal cells. The phage genetic material then takes over control of the cells' actions so that more viruses can be replicated. Techniques including culture rotation, growth of phage-resistant mutants, and use of phosphate media have been used to limit phage infections. Some defined cultures have been partially protected through genetic techniques. Another technique involves introduction of peptides to growth media that compete with viable phages for cell receptor sites. Successful cheese and yogurt fermentations in the future will probably result from a combination of multiple techniques to prevent phage attachment, DNA injection, replication, and lysis of the host cell.

Key Words: Bacteriophage, Bacteria, Lactococci

1638 The organic cheese industry and where it is headed. Mandy McIsaac*, *California Polytechnic State University, San Luis Obispo, CA.*

The interest in and consumption of organic dairy products, as well as other foods continue to increase each year. In order to be considered certified organic cheese, cows must not receive any hormones or antibiotics and have to be fed organic feed. Certification also requires that the land be certified organic and the cheese plant must be environmentally safe. Organic cheese makers have been working to maintain the integrity and safety of the products while using limited resources because of organic specifications. Although the procedures for organic cheese making do not vary greatly from the production of non-organic cheese, the quality of the ingredients is perceived by consumers to be more wholesome, as many of the standards are very high for organic production. However, there has been no evidence showing that non-organic cheese is of lesser quality than organic. Many organic producers are instilling artisan cheese making practices to ensure a pure and wholesome finished product. The steps in the organic cheese making process are similar to that of non-organic cheese. However, the production of organic cheese allows these processors to establish a niche market that fulfills the needs and perceptions of the consumers. The small volume produced by most organic processors creates a unique product that tends to be appealing to its customers. Generally, these small production organic cheeses can be found in natural food stores, upscale groceries, and specialty markets.

Key Words: organic, cheese, niche market

1639 What's in a name? A closer look at the Physicians Committee for Responsible Medicine. L.L. Connelly*¹, ¹*Pennsylvania State University.*

The Physicians Committee for Responsible Medicine (PCRM) is an active group of individuals dedicated to persuading the American public into choosing a strictly vegan diet. This group has established a facade amongst the public. They are often perceived as a reputable group of physicians concerned for the preventative health of Americans. However, there is much evidence demonstrating that their campaigns are indeed illegitimate. Several animal rights and animal liberation organizations have ties to PCRM. The PCRM has implemented several tactics to convey their messages. Such tactics include exaggerations, insinuations, creating a false trust, and instilling fear into their audience. These tactics have primarily been used to steer consumers away from milk and dairy products.

The American Medical Association (AMA) agrees that the PCRM is an illegitimate group of activists that irresponsibly misinforms the public. Many of the PCRM's claims about dairy products have been disproved by scientific studies, and their techniques for unsound science have been refuted by leading experts.

Key Words: PCRM, Dairy foods

1640 All milk, all the time: Milk vending machines. R. A. Cornman*¹, ¹*Virginia Polytechnic Institute and State University.*

The dairy industry has made tremendous strides in recent years in the marketing of milk and dairy products. Milk vending machines are an important innovation to increase demand. This technology presents both challenges and opportunities to the dairy industry, to manufacturers of vending equipment, and to schools, companies, and institutions interested in using these machines. Dairy processors, schools, vending companies and others have launched pilot studies to evaluate the use of milk vending machines in school and work settings. To increase fluid milk consumption and encourage youth to choose a healthier alternative to soft drinks, schools have been the primary settings for the pilot studies. Dairy Management, Inc. conducted one such milk vending test in 2001 placing machines in middle and high schools in five regions of the country: Boston, MA; Miami, FL; Omaha, NE; Austin, TX; and Southern CA. Average weekly sales per machine were 280 units; students preferred flavored milk to white milk by a ratio of nine to one. This pilot test indicates that milk vending machines may lead to increased milk consumption. However, there are challenges involved in their operation. Important considerations include management of the machine, financing, and proper machine design and placement. Milk vending machines have tremendous potential to promote milk products and to provide consumers with cold refreshing milk at any time of the day.

Key Words: Milk vending machines

1641 Organic: Is this the future? R. Blades*¹, ¹*Louisiana State University, Baton Rouge, LA.*

As we have learned over the last few years, organic food products have really made their way into the market. These products have the ability to make an impact on everyone's life, but may be more influential to those who are health conscious. Organic is a philosophy and system of production that mirrors the natural laws of living organisms with the emphasis on the interdependence of all life. Specific to the dairy industry is organic milk, which is produced without using any antibiotics, herbicides, pesticides, insecticides, fertilizers, or hormones. For those health conscious individuals, the possible benefit of organic milk and dairy products is the reduced exposure to these substances they believe to be harmful. These organic products are expensive, so the consumer must decide if the potential advantages are worth the extra cost. In order to tell if a product is "certified organic," it must have "certified organic" stamped on the package. For a product to be considered organic, the materials and methods used throughout the entire manufacturing process must be certified through the use of a paid third party agent. Organic products have found their way into our market, and are probably here to stay.

Key Words: organic, dairy products