Milk Quality Improvement Program

MISSION AND OBJECTIVES

The mission of the Milk Quality Improvement Program (MQIP) is to support New York State (NYS) milk producers and processors in their efforts to maintain and improve the quality of raw and processed milk and milk products and to ensure their safety and wholesomeness. The MQIP has the following specific objectives: to monitor the initial and keeping quality of commercially processed and packaged NYS fluid milk products; to evaluate factors that influence dairy product quality, including raw milk quality; and to assist dairy plants in identifying and correcting handling/processing problems affecting product quality.

The MQIP program contributes to improving financial returns to all segments of the NYS dairy industry in two important ways. First, MQIP provides access to expert technical advice for the improvement of the quality of fluid milk products to all plants, regardless of their size and financial situation. This contributes to the dairy industry as a whole, since a negative consumer experience with milk products from any one manufacturer has the potential to affect consumer buying behavior toward all milk and milk products due to their generic image. Second, the regular plant visits and audits conducted as part of the program are an important non-regulatory resource to assist processors in ensuring the safety of their products.

BACKGROUND

The New York State Dairy Promotion Order funded its first project with the Food Science Department in 1972. This project examined the quality of milk purchased by NYS public school districts. This survey, published in 1974, revealed a direct correlation between milk flavor and product consumption by school-age children, showing that children in districts receiving off-flavored products consumed 30% less milk than children in districts receiving good tasting milk. This study also identified the emerging incidence of rancid flavor defects, which were subsequently found to be widespread in the commercial supply. To address these established links between milk quality and product consumption, the NYS Dairy Promotion Order has provided support for Cornell’s ongoing research and extension efforts directed toward improvement of NYS dairy product quality. The strong history of financial support by the NYS Dairy Promotion Order for dairy foods research played a key role in the successful establishment of the Northeast Dairy Foods Research Center at Cornell University in 1988.

APPROACH

The “Voluntary” Shelf-Life (VSL) Program, so called because all participating processors have consented to allow samples to be taken by MQIP personnel at regular intervals, is the cornerstone of the MQIP. Under this program, each processing plant is visited and sampled at least two times each year. Fluid milk products produced at each plant are collected and subjected to laboratory evaluations initially and over the shelf-life of the products. Analyses include: chemical (percent butterfat and freezing point), microbiological (standard plate count and coliform count), and sensory evaluation.

In addition to the VSL Program, MQIP conducts applied research related to raw milk and finished product quality, with emphasis on microbial contamination and growth patterns and the influence of these microorganisms on milk flavor and shelf-life. The MQIP Molecular Microbiology Laboratory is instrumental in this research, providing “finger-print” identification and strain differentiation among target groups of microorganisms, such as *Bacillus* spp. and *Paenibacillus* spp. As needed molecular microbiology services are provided to the industry to target, identify and resolve quality issues that limit or degrade the shelf life of dairy products.

Provided with support from the NY State Dairy Promotion Order; Dairy Farmers dedicated to the production, manufacture & distribution of quality dairy products.
EXTENSION SERVICES
The MQIP offers a number of workshops and training courses such as hands-on workshops in laboratory and HTST testing procedures, short courses in dairy HACCP and basic dairy science and training for the sensory evaluation of dairy products. In addition, MQIP provides support for the NY State Association for Food Protection and the NY State Cheese Manufacturers’ Association annual meetings. The MQIP extension staff also work with the NY State Department of Agriculture & Markets to offer annual courses and updates that include the regional laboratory seminars, the Certified Milk Inspectors (CMI) schools and regional updates and the Processing Plant Superintendents (PPS) regional updates. Tailored training, on and off site, may be available on request.

TARGET AUDIENCE
Dairy producers, processors, regulatory personnel & other dairy professionals in NY State & the surrounding area.

FUNDING
The Milk Quality Improvement Program is supported by the New York State Dairy Promotion Order through check-off funds from milk producers in New York State.

STAFF
Project Leader:  
Martin Wiedmann  
Kathryn J. Boor

VSL Field Contact:  
Steve Murphy

MQIP Lab Manager:  
Nicole Woodcock

Microbiology & Chemistry:  
Reid Ivy  
Thomas Pope

Sensory Laboratory:  
Nancy Carey

Extension Services:  
Martin Wiedmann  
Janene Lucia  
Steve Murphy  
Rob Ralyea

Contact:  
Martin Wiedmann  
Janene Lucia  
Steve Murphy  
Rob Ralyea

Available Materials
MQIP annual reports and peer-reviewed publications are available from Janene Lucia, Stocking Hall, Department of Food Science, Cornell University, Ithaca, NY 14853 (607-255-2892). Additional informational materials can be found at the MQIP web site at:

http://foodscience.cornell.edu/cals/foodsci/extension/milk-quality-improvement-program.cfm

Provided with support from the NY State Dairy Promotion Order; Dairy Farmers dedicated to the production, manufacture & distribution of quality dairy products.