



B.C. DAIRY TALK

Editor: Annette Moore

Dairy Farmers of Canada Canadian Dairy Farm Milk & Meat Quality Assurance Program

By: Annette Moore, Dairy Commodity Specialist, BCMAFF

Impact of Consumer Concerns

Food processing companies are seeing the devastation that consumer concerns can have on their market. No commodity can remain immune: BSE scares in beef in Britain; dioxin worries in chicken from Europe; E.coli contamination in meat processed in Vancouver; and Staph contamination of milk in Japan.

The Japanese milk contamination led to 14,000 people becoming ill and the closure of all 20 of the company's plants with only 10 recently back on line. The company has sought over \$280 million emergency credit to cope.

In the US, the 2nd largest food retailer, Albertson's Inc, has responded to consumer demands by insisting all of its produce suppliers provide independent third party verification that they are using the federal government's Good Agricultural Practices program. Similarly in Canada, Safeway is asking all its produce producers to adopt quality assurance (QA) programs for lettuce and peppers. It is expected that this will expand to other commodities.

Responding to retailer and processor demands, the Canadian Pork Council, Canadian Shell Egg Producers, and the Chicken Farmers of Canada are only a few of the 12 commodities that have begun to implement QA programs. Dairy is no exception with dairy processors around the world responding to the demand by beginning their own on-farm QA programs: U.S. (California), Australia, and New Zealand. Dairy processors here in Canada are making inquiries into the Dairy Farmers of Canada (DFC) QA program. Some are already showing their support by promoting a HACCP approach now (Coast Mountain Dairy Ltd). DFC see the demand as not if it will happen across Canada, but when — and they are encouraging dairy producers to be ready. To be ready, dairy producers will be encouraged to get involved in the "Canadian Dairy Farm Milk & Meat Quality Assurance Program (CDFMMQA)" that will be offered to producers starting next year.

Quality Assurance Programs

Most managers, whether they are from a processing plant or a farm, recognize a quality product when they see one and already have many quality controls in their operation to achieve it. The Cana-

dian dairy industry is no different, but without a QA program to verify a prevention program is in place, it is difficult to prove it. The goal of DFC's QA program is to provide that proof.

Why Now?

One of the biggest factors encouraging the food industry to adopt these programs is the shift in public attitude and awareness about their food. Consumer awareness and expectations of safety have increased along with the ability to detect and link food safety problems to a particular processor, farmer or activity. There is every reason to believe these trends will continue.

Furthermore, changes in negligence laws may also make it easier for consumers to sue for damages. One of the best defenses against a product liability suit or a media attack on your industry or farm is the proof that your farm, plant or industry has and supports a quality assurance program.

Producers of food, whether it be those that work on-farm or at the processing plant, have a moral and legal obligation (due diligence) to ensure that their products are safe and free of hazards. Sanitation and safety are every person's responsibility — right to and including the person who milks and feeds the cows or picks and packages produce.

Advantages of Quality Assurance Programs

The adoption of processor level QA programs was shown in the United States to increase gross profit margins by an average of 17 percent. Financial performance in terms of earnings, productivity, growth, liquidity, and net worth were above average for their industries. Indications from farm trials are now coming in and suggest similar benefits.

Benefits seen by food processors:

- Supply of quality product (e.g. milk) is more consistent
- End product is of better quality
- Plant productivity and efficiency is improved

- Competitive advantage over competitors
- Plant is able to respond to customer demands for quality assurances better
- Quality assurance is provided for export trade
- Less product is wasted
- Employee morale increases, while absenteeism and turnover reduces

Benefits experienced by producers:

- Creates a strong viable market through consumer confidence in the finished products
- Provides a better quality product consistently
- Eliminates the occurrence of rejected product
- Reduces quality failure costs
- Increases gains from any quality incentive payments
- Achieves better control over management factors
- Standardizes daily routines
- Saves time

What are QA Programs?

Quality Assurance programs, such as the one developed for DFC, are based on the HACCP principles and are systems that work on the principle that "*prevention is better than the cure*". HACCP, pronounced "ha-sip", is the acronym for the quality assurance program, called Hazard Analysis Critical Control Point.

What is HACCP?

The HACCP approach is a "tool" that was originally developed in the 1960's by a team at the Pillsbury Company as a method of assuring the safety of foods for the U.S. space program. While HACCP was developed to control the microbiological safety of foods, it can be used to control the full range of physical, chemical, and biological factors that may affect the safety of a food product. HACCP is a systems approach designed to concentrate attention on the steps associated with the production and handling of food. Its biggest advantage is its simplicity and adaptability to various operations.

The HACCP Principles

The basic steps in designing and implementing a HACCP based QA program, using the HACCP components within the Canadian Dairy Farm Milk and Meat Quality Assurance program as an example, are:

- **Hazard Analysis.** The hazards associated with the production, distribution, sale, and consumption of a product are determined, and the relative risks and consequences of each hazard are assessed for that particular operation (e.g. livestock medicine residues, pesticide residues, microbes and their by-products, broken wire/needles, etc).
- **Identify Critical Control Points (CCPs) within the process.** CCPs are those steps where a loss of control would result in an unacceptable risk to the consumer. For example: high farm holding tank temperature causes bacterial growth; incorrect administration of antibiotics leads to antibiotic residues; poor sanitation can result in E.coli contamination in the plant. The minimum required CCPs identified by Dairy Farmer's of Canada are:
 1. Antibiotic residues (milk & meat)
 2. Milk cooling & storage temperature
 3. Equipment sanitation
 4. Water quality
 5. Broken needles
- **Establish CCP criteria.** The means of testing the adequacy of control at each CCP, using physical, chemical, microbiological, sensory or other means, must be established. Some example CCPs: milk temperature in farm holding tanks; water quality tests; antibiotic residue tests; observation of sanitation methods.
- **Monitor CCPs.** Each CCP must be monitored to ensure adequate control is maintained. Records must be kept to allow for the investigation and correction of any problems. For documentation of the CCP-milk cooling and temperature, tank temperatures are recorded at the start of every milking by either manually recording them or by using an automatic temperature chart recorder.

- **Set protocols for corrective actions.** The manager or owner should establish contingency plans that outline the steps needed if a CCP is found to be out of control. An example scenario: the manager is away or the owner suddenly becomes ill. Tank temperatures are fluctuating widely. Written instructions tell whomever is left in charge who should be contacted and what steps should be taken to correct it.
- **Verify.** Verification testing is used to assess the effectiveness of the QA program. Testing will determine how well the procedures meet the desired outcome, and if any hazards appear that may not have been anticipated by the initial hazard analysis (e.g. current standard official SPC, SCC, antibiotic residue test results).
- **Establish a record keeping system.** As time, memories and promises tend to slip, records provide a reliable, clear and concise source of information (e.g. livestock medication treatment record sheets) to any staff member, at any time.

Implementing QA Programs

Developing and implementing a QA program requires an understanding of basic sanitation and management principles. It also requires an understanding of the hazards associated with the raw materials, ingredients, and processes used on the farm. The basic steps in any QA program actually boil down to:

- **write what you do** in your daily procedures,
- **do what you write** through the implementation and education of staff and family daily tasks,
- **prove it** by documenting, monitoring and verifying what you are doing during all procedures on your farm, and,
- **improve it** by regularly updating and reviewing your plan on an annual basis.

Progress to Date on the Dairy QA Program

Investigative efforts by DFC, producer and industry groups, and federal and provincial governments across Canada began in 1996. By 1997, DFC recognized the need for the industry to get involved and gathered a group of experts from across the Canadian dairy industry to begin writing the model for the "Canadian Dairy Farm Milk & Meat Quality Assurance Program".

To insure the program is practical and user friendly with minimal expense to producers, all the resource material and testing protocol has been and continues to be field tested:

- ✓ All written material (reference material and sample records) has been reviewed at several stages during the writing process by industry and producers from across Canada.
- ✓ Practical application of recording bulk tank temperatures manually versus using automatic recording chart thermometers was piloted for one year on 3 farms in Ontario.
- ✓ A 6 month on-farm pre-pilot trial on 10-15 BC farms to test resource material and program training begins here in BC this fall.

Future Direction of Dairy QA

Target launch date (to all dairy producers) of the Canadian Dairy Farm Milk & Meat Quality Assurance Program is anticipated to begin in the fall of 2001. The program will be voluntary to start - possibly mandatory over the long term, but will depend on consumer, retail and processor demands. To date, 19 dairy processing plants in Canada have certified HACCP programs in place and another 55 are in process. Consumers are ultimately driving the process.

Summary

Many dairy producers are doing On-Farm QA now and this program will not be any more difficult than what they are doing already. Every effort is being made to make this as user friendly and cost effective as possible. Most producers will find that this QA program simply fine tunes requirements that are all ready in place on the farm. It's not "if" QA programs will be demanded, but rather "when". This program will help assure consumer confidence in our dairy products and will help maintain the long-term health of the industry.

BCMAFF Staff	Title	Phone
Food Safety & Quality Branch, Regulatory Team		
Dr. Merv Wetzstein	Manager	604-556-3013
Roger Pannett	Dairy Inspector, Fraser Valley	
Debra Sand	Operations Coordinator	604-556-3014
Lynette Hare	Data Coordinator	604-556-3093
Industry Competitiveness Branch		
Ron Barker	Dairy Commodity Adviser	604-556-3087