Proposed Approach to a Cheese Quality Assurance Program

As a result of Peter Dixon's two years of work with farmers on cheese risk management plan implementation sampling/monitoring, we developed protocols for food safety that farmers could easily implement on their farms.

Findings:

To maintain buyer belief in and assurance of the quality of farm made cheeses, cheese-makers need to do more than current regulations require.

While the federal/state systems in place for testing milk for total bacteria counts are adequate for assuring food safety, sampling that differentiates total bacteria counts into groups of bacteria for closer evaluation enables cheese-makers to be proactive in finding and fixing problems before they occur. For example differentiating the sample to determine presence of *Staphylococcus aureus*, as is done in the EU, and bacteria in the Coliform group alerts the cheese-maker to identify the sources of potential pathogens and take actions to prevent an accumulation that will eventually raise the total bacteria count above the regulated limit.

The environmental testing aspect of the pilot was very effective. These points of contamination are not currently regulated. For example producers were able to identify and take actions to eliminate potential pathogens in drains, floors, storage areas and added ingredients.

All the cheese-makers in the pilot program saw the benefits of self-directed actions to identify potential points of contamination in their operations (milk, environment, cheese) and the ability to verify the presence or not of contaminants through periodic testing. Many mentioned the value of consistent testing and the timely reporting of results as a means to improve their sanitary and hygienic practices, particularly in the production of milk and in the daily operations of the creamery where cheese is made, aged, packaged, and stored before delivery.

The primary barrier for the cheese-maker to doing testing was "finding the time." Improvements to cheese quality (flavor, texture, etc.) and increases in the number of successful batches were related more to assistance and education of the cheese-maker in the technical aspects of making and aging cheeses rather than from information gained from testing.

Current regulations that provide for cheese testing are not necessarily directed towards testing cheeses with the highest risk to public health. Testing by the cheese-maker was effective in preventing an unsafe product from reaching the market.

A risk reduction program should be an integrated partnership of state regulators combined with self-regulation by the cheese-maker; participation in the program should be required to obtain a license to process milk for cheese.

A program that integrates state regulation and self-monitoring to reduce the risk of an unsafe farm made cheese reaching the market may include the following:

1. HACCP plan. Can be developed by the producer using the cheese makers HACCP manual, with or with out formal certification, depending on market requirements.

2. Milk testing: Twice monthly sampling and testing of milk used for cheese production. At minimum, one sample should be differentiated; at best, both samples would be differentiated to include testing of *Staphyloccus aureus* and Coliform bacteria. As is now the typical practice, one sample would be collected by the state for testing at the state lab. This would be followed in two weeks by another collected by the cheese-maker, which would be tested at an independent, certified lab such as the Agi-Mark Central Lab in West Springfield, MA. The cost to producer @ $25/ sample for shipping and testing. Technical assistance to identify and solve any potential problem provided though VIAC, VCC or private consultants. The records of the two milk tests should be viewed by the state inspector and the producer on a monthly basis.

3. Environmental testing: A plan for environmental testing of the creamery should be developed by state regulators with the assistance of the producer. Once every two months the producer collects samples from at least four potential points of contamination for testing at the state lab. One additional sample of cheese brine should be tested. State inspector to work with producer to identify where to sample, how to sample, and what to test for. Sampling of sites in the cheesemaking and brining areas should be done when in production; sites in the aging rooms and packaging area should be sampled all year round. Technical assistance to identify and solve any potential problem provided though VIAC, VCC or private consultants.

3. Cheese testing. Monthly sampling of highest risk cheeses by the state. Inspectors will work with producers to identify the highest risk raw milk cheeses from a food safety perspective, e.g. high moisture, surface-ripened, low acid at time of consumption. To ensure that pasteurization is effective, in addition to reviewing posted pasteurization charts, inspectors will sample pasteurized cheeses aged less than 60 days to ensure that the risk of post pasteurization contamination is low. This amounts to at least two samples of cheese each month. Technical assistance to identify and solve any potential problem provided though VIAC, VCC or private consultants.

Proposal:

* These criteria would be included in cheese-maker licensing standards or in a Cheese Quality Assurance Program that cheese producers would apply to.

* Cheese Quality Assurance certifier (if state inspectors are used, they would need education and technical support) work with producers to develop HACCP plans, monitoring, sampling etc., identify cheeses that pose a high risk to public health, certify producer documentation

* Producers need education and technical support to develop HACCP (certified or not) monitoring plans, training in how to take and package samples, and interpretation of results to solve problems to avoid risks to public health.

Buyer Input: To support this work the VCC commissioned a study that assessed the perspective of cheese buyers on risk management by cheese producers.

Findings:
1. Buyers hold an inherent assumption that Vermont artisan cheese makers, by their very nature of being small, being in direct connection with retailers and distributors, and being in Vermont, have high quality standards and are following good practices. Therefore the need for a "formalized" program or bureaucratic approach is considered unnecessary. To the degree that this is a genuine compliment to the Vermont artisan cheese industry, it also represents a real threat to the Vermont brand and to individual cheese makers should a situation ever arise to challenge this assumption.

2. Good milk though cheese making and handling practices are valued, and that documentation of good practices could become the basis for a risk management program.

Recommendations:

1. By documenting adherence to principles and good practices (as contained in a implemented and monitored through testing HACCP plan) for the entire product lifecycle—from animal health, husbandry, and milk production through cheese production, all the way to shipping, handling, and distribution—in a manner which third parties can understand, and if necessary verify, Vermont cheese makers can fulfill an industry assurance to suppliers and retailers that they are receiving product at the cusp of its ark of brilliance and in perfect condition, while also creating traceability that would satisfy food safety and risk management needs.

2. Adopting a "documentation program" could expedite new vendor application processes with larger retail establishments, potentially even becoming

acceptable as an alternative to a chain's own pro forma documentation.

3. A "documentation program" that included a marketing campaign that fostered networking opportunities between cheese makers and industry decision makers in key cities, and used point of sales materials to introduce consumers to the farms and families who produce the cheese, and depicted the values adhered to in making the cheese, would resonate with consumers and decision makers, increasing sales and market share for artisan cheeses.

4. Shippers, distributors, wholesalers and retailers who need to be trained in proper handling, storing, packaging, and shipping of artisan cheese. If cheese makers wish to protect product and brand integrity they will need to take it upon themselves to train shippers, handlers, wholesalers, and retailers—all individuals and entities coming into contact with their products, about good practices and principles.

5. Within the industry and the general public there is confusion regarding what constitutes artisan scale versus commercial scale cheese production. At what size, scale, and volume would a producer be considered too large to fit the definition of artisan cheese? This is considered a significant finding because value was placed on creating formalized oversight for larger scale operations but not for smaller scale operations.

Summary:

A documentation approach to risk assumes that producers have information and training, plans, systems and monitoring in place and allows each individual producer the autonomy to document their food safety risk plan and procedures. By creating and naming a template for producers to document their risk management procedures that is easily recognizable within the industry, the documentation approach could be incorporated into a quality assurance marketing campaign focused on buyers that in turn could be used to promote products to consumers.

What do you think? Please send comments by phone, mail or e-mail to

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