

Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Development
Agricultural Development and Diversification Program (ADD)
Project Final Report

Contract Number: 23060

Grant Project Title: Increasing Capacity for Small Things to Happen:

Enabling Microprocessing and Marketing of Dairy Products

Amount of Funding Awarded: \$25000

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Report Date: September, 2010

Project Objectives

Wisconsin has seen a proliferation of small-scale and on-farm dairy processing operations. Some of these have been well considered and quite successful. In other cases, operators have underestimated the challenges of dairy processing and marketing. Those operators have lost their businesses and, sometimes, their farms. The Wisconsin dairy industry's excellent reputation is at risk of an embarrassing food safety problem with the proliferation of inexperienced operators. Inferior quality products, identified as coming from Wisconsin, also are a threat to our industry's reputation. This project aimed to create opportunities for small-scale, high quality dairy production.

Cedar Grove Cheese has operated since 1878 and has been blessed with continuity of knowledgeable and talented cheese makers. We also have benefited from consultation with talented guest cheese makers and training in Wisconsin institutions. For over a decade, Cedar Grove Cheese has been helping launch cheese ventures by sharing its facilities, training new cheese makers, and developing customized cheeses for dairy entrepreneurs. These experiences have made it possible for farmers to explore the cheese market and determine whether their business plans are viable. For years Cedar Grove Cheese has made customized cheese products enabling others to market them based on unique characteristics of the milk from their farms and their personal stories. In the case of Uplands Dairy, Pleasant Ridge Reserve was so successful that its owners completed their internship, surpassed their teachers and built a new cheese processing business. Unfortunately, theirs was not an easy path to imitate.

Cedar Grove Cheese realized that farmers contemplating new ventures faced many obstacles that we could help them to surmount. Foremost among these was the significant scale required to start up. Larger farms, e.g. Otter Creek Organic Farm, had enough milk volume so that we could keep their milk separate and make batches in our vats. The smallest quantity of milk we were able to work with was about 12000 pounds creating about 1200 pounds of cheese. Smaller farms would not have enough fresh milk to fill the vat. Other farmers may have been interested in selling a little cheese, for example at a farmer's market, but often lacked the time or personnel to sell those large quantities. If the volume alone was not an issue, the minimum quantities discouraged experimentation beyond the familiar products. Customers would have trouble selling or disposing of substantial quantities of unsatisfactory or uncharacteristic prototype products.

These obstacles made it difficult for smaller farms and ventures to participate in the dynamic new specialty dairy markets. The absence of appropriately-sized production facilities encouraged duplicative investments in small scale operations. The capital costs of those small facilities, combined with lack of experience, created unreasonable risk for small farmers and cheese makers and discouraged innovation.

Cedar Grove Cheese also observed that distribution of specialty cheeses in small volumes was costly and inefficient. Only products with very high price-cost margins were able to absorb the costs of sales promotion and transportation. Sales of small quantities of cheese to retail distributors in distant markets were often prohibitively expensive. We sought to find ways to share marketing channels and consolidate shipments of cheeses made in our plant. This proved to be complicated because some of our custom production partners were not anxious to highlight the fact that they were not making the cheese. In fact, some of the allure of their marketing was the cache' of their independence.

Thus, Cedar Grove Cheese set off on this project to create production space and expertise that would be available for small dairy projects. At the same time, we explored possibilities to reduce the marketing and distribution costs of companies who availed themselves of these facilities. Our goal, while covering our expenses, was to increase the number, variety and success of specialty cheese ventures in Wisconsin.

Project Experience

Cedar Grove Cheese is fortunate to be located close to a rooky farmer who is sufficiently crazy to want to milk water buffalo. Dovi was only able to get a small number of animals and water buffalo do not produce much milk compared to cows. With that small quantity of milk, it was not efficient or good for quality to pump the milk into a bulk milk tanker. So, we needed to develop procedures and equipment that would work for moving very small quantities of milk.

When we started the project, we believed that the first water buffalo milk would be available for cheese production within a very short time. We helped Dovi work with inspectors and dairy

equipment dealers to get his farm up to standards. He put in a milking parlor and small milk tank in which to cool and store his milk. Cedar Grove Cheese met with food safety personnel from the Wisconsin Department of Agriculture, Trade and Consumer Protection to review rules for transporting milk. We were aware of some operations that had mounted bulk tanks either on pickup trucks or inside vans. We visited Brenda Jensen's farm to see how she moved milk. We also met with Darlington Dairy Supply to discuss their experiences with transporting milk for their "Cheese on Wheels" project. However, the Food Safety personnel had become uncomfortable with some of the previously approved arrangements and were not willing to accept most designs as replacements for bulk milk trucks. The approved options were too expensive for the limited use and small volumes of milk that we expected to be moving.

Eventually we concluded that the best solution would be to move the milk in cans. The regulations seemed simple. Temperature would be easy to maintain because of close proximity. We needed to transport the product in a closed vehicle. Department of Agriculture personnel told us that we would need to be able to measure the milk and to be able to take a sample from the combined milk supply to test for antibiotics. Milk would need to be picked up by a licensed weigher/sampler. Since the milk was coming from a single source, it was agreed initially that we could measure the milk in the bulk tank on the farm and take an antibiotic sample from that source.

In the mean time, another small operation contacted Cedar Grove Cheese about buying his milk. This farmer was embroiled in a dispute with the Department of Agriculture concerning sales of raw milk. He had lost his license and his milk market. He came to us asking whether we could make unpasteurized cheese from his milk. The milk quality was very good, and we indicated willingness to do custom manufacturing as long as the cheese was held for the requisite 60 days and passed our required tests for pathogens before being released. The farmer was told that he would need to obtain a valid license from the Department of Agriculture. Because of his distance from the plant and relatively small quantity of milk, he too wanted to transport his milk in cans. The farmer was unable or unwilling to make changes in his operation to meet the licensing requirements of the Department of Agriculture inspectors and this project never got off the ground. However, the controversy sparked a more detailed examination of the procedures Cedar Grove Cheese would be required to follow to receive milk in cans.

Several Food Safety managers visited Cedar Grove Cheese to clarify requirements for plants receiving can milk. They insisted that we install a can receiving station rather than carrying the cans to the cheese vat. This would prevent contamination of the manufacturing area. We proposed pouring milk from farm cans into clean cans and then carrying those to the batch pasteurizer. Milk needed to be commingled again at the plant and an antibiotic test taken there rather than from the bulk tank on the farm. Eventually we agreed to purchase a small farm bulk tank to be located in the milk tank room. From there the milk could be pumped or put in our cans rather than using the cans in which the milk was transported from the farms. Now that the equipment is in place, this is a more convenient system. Nonetheless, we continue to feel that the requirements and expense in the mandated procedures are excessive, inflexible and discourage innovation without adding significantly to food safety.

A small quantity of milk from the water buffalo was taken for testing and used to experiment with cheese production. With expectations that quantities of milk would be available soon, we went on a frantic search for equipment. Vats and pasteurizers were available at many small used-equipment dealers and some cheese factories. We were not yet sure what size or style of equipment was needed and were concerned that some equipment was too expensive. To provide a temporary solution, Cedar Grove Cheese rented and moved a small vat from Felix Thalhammer of Capri Cheese. The vat was deep and awkward to work with, but the rent was reasonable and it was available. Making a few vats of cow-milk cheese in the vat, we quickly realized that it would not work in the long run because its design would limit our ability to make many specialty cheeses.

Meanwhile, back on the farm, Duvi had run into a problem with the buffalo. Bands used to keep the buffalo still while they were being milked transmitted stray voltage to the animals. His buffalo refused to go into the barn. Duvi dried off all his animals and gave them time off before resuming breeding and milking.

Making use of the hiatus, Cedar Grove Cheese resumed its search for equipment that would be more flexible and appropriate for small-scale cheese projects. We purchased a small vat pasteurizer. We had sized it small, figuring that any project using more than 60 gallons of milk could be run through our plate pasteurizer. When considering the best size vat to use, we knew that we would need something bigger. The vat needed to be small enough that we could make the water buffalo cheese and small volume experiments. On the other hand, we did not want it so small that it would make regular cheese production for small farmers uneconomical.

Ultimately we chose a 400 gallon open vat that would handle a day's milk for most of our smallest farmers. Although production with this small equipment is not efficient relative to modern factories or even our existing vats, we calculated that production costs should not be prohibitive for specialty cheeses. The addition of the new equipment immediately expanded our capacity to make specialty cheeses and we proceeded to pursue projects with our farmers and other companies.

We met with John Jaeggi and Dean Sommer from the University of Wisconsin Center for Dairy Research to discuss plans for specialty cheese production. They provided us with advice on vat design, pasteurization and business agreements with clients. They indicated that their facility is in need of expansion and that they were often operating at capacity. Some people who come to them are not able to afford the standard rates. They thought they would have opportunities to steer interested individuals our way. We talked about the inefficiency of our vat pasteurizer in terms of water usage, time and labor. John indicated that clients should be encouraged to provide more milk than is needed for the vat so that we could use our HTST plate pasteurizer whenever possible and have extra milk if needed to flush the lines. He reflected that the extra milk cost was a small relative to the value of the research and production. This was an interesting and useful insight.

In addition to the Center for Dairy Research, we contacted the Wisconsin Milk Marketing Board and the Dairy Business Innovation Center to inform them of our expanding capabilities for product development and custom production. These contacts led to an influx of business opportunities. Working with DBIC, we hosted a seminar on making cheese from sheep milk. Guest experts were Ivan Larcher from France and Mateo Kehler from Jasper Hill Cheese in Vermont. About 15 cheesemakers and others attended their presentation. They discussed the production of European-style surface ripened cheeses and used the new vat to produce two specific types, which were then aged in our facility.

Bob Wills also began presenting information about our new business opportunities to farm and community groups. These meetings included a presentation in Reedsburg organized by the Worm Farm Institute and Southwest Technical Institute agriculture students in Elroy. We also worked with a web designer to develop new product marketing. Audiences showed considerable interest in the new opportunities that were offered.

These contacts resulted in business referrals. Cedar Grove Cheese initially accepted a few diverse projects. We selected these projects to represent a variety of relationships and products. We extended a relationship we have long enjoyed with Willi Lehner of Bleu Mont dairy and he produced some new experimental cheeses. We produced a smoked Gouda for a farmer patron that the family is selling at farmer's markets. We made four test batches of a new cheese for Koepke farms that they will sell under the name LaBelle. We eventually did get water buffalo milk and began production of Mozzarella and fresh Mozzarella in brine. We made several developmental batches of a sheep cheese based on Spanish Ossau-Irati. We attempted to work with a group of Amish goat milk producers whose weekend milk was being destroyed when pickups were scheduled for Sundays. Unfortunately the primary plant for those farmers was unwilling to allow the farmers to have cheese made from the milk even though the products would not compete with the plant's products. We also are beginning development of new cheeses for specific clients based on Alpine, Portugese, Syrian, German, French and Hispanic styles for a variety of customers.

The new projects required an additional experienced cheese maker. We hired back a former employee and then added part time assistants as the volume of work increased. Eventually we also added an experienced cheese maker from out of state to provide help with production and to coordinate paperwork and scheduling of projects as described more fully below.

Lessons Learned

Cedar Grove Cheese has been quite fortunate in its initial forays into custom cheese production. Our partners have been patient, understanding and cooperative. But, as we faced an increasing number and variety of projects, it became clear that we needed to have a more systematic approach. Foremost, visits to the customers as well as meetings at the cheese factory are desirable. Those interactions provide insight into the customers' opportunities, capabilities to successfully complete the project and attitudes. The following questions were an attempt to begin that process. They have been gradually developing and will undoubtedly require refinement as our experience grows.

Cedar Grove Custom Manufacturing Check List

1. What is the customer's objective?
 - a. Increase milk value
 - b. Provide specific dairy product to market
 - c. Have signature product representing their farm/business
 - d. Transition into manufacturing or explore that option
2. Does the customer know what product they want?
 - a. Is the product unique? To market? To Cedar Grove?
 - b. Does customer know formulation?
 - c. Does Cedar Grove Cheese know how to make?
 - d. What research and experimentation will be required?
 - e. What is the estimated cost of product development?
 - f. Who will pay for product development cost?
3. Will the customer expect exclusive right to the formula?
 - a. In a specific geographic area
 - b. For a specific time period
 - c. Will this require protection of intellectual property rights? Patent? Trademark?
 - d. Will these rights be owned by customer or Cedar Grove Cheese?
 - e. Do any of these agreements or others raise antitrust concerns?
4. Will the customer provide milk?
 - a. Does the milk or its source have unique characteristics that have marketing or production value?
 - b. Will milk sourcing have challenges? Is it seasonal?
 - c. If a Custom Make Agreement is involved for a part of farm milk supply, will the primary plant approve the project?
5. Will the product require Cedar Grove Cheese to increase inventory?
 - a. Processing ingredients?
 - b. Equipment?
 - c. Forms?
 - d. Storage or packaging materials?
 - e. Special supervision or certification?
6. What is the desired timeline? Is it reasonable?
7. What are the expected processing costs?
 - a. Time
 - b. Ingredients
 - c. Milk
 - d. Yield
8. Will billing be on a process basis or on pounds of cheese?

9. Is the product to be aged, stored and handled after manufacture?
 - a. Will the product be made from unpasteurized milk?
 - b. Who will pay for storage, aging, affinage?
 - c. Where will this be done?
 - d. How and when will product be transported?
10. Will the process have problematic impacts on plant or wastes?
 - a. Do the milk of ingredients involve genetically modified organisms? Chemical treatments or other things non-compatible with organic or kosher certification?
 - b. Is whey entering waste stream or sold?
 - c. Does the product use whole milk, skim milk or fat enhanced milk.
 - d. Are there high levels of salt or other wastes that may impact water treatment?
11. Who will own and market finished product?
 - a. Farmer
 - b. Cedar Grove
 - c. Third party
12. Will customer be comfortable with non-disclosure and/or non-compete agreements if appropriate?
13. Will product be exclusively marketed by customer or will Cedar Grove Cheese be able to include it in list of available products?
14. Does customer seem to have viable marketing and business plan and capacity?
15. Will customer be able to pay bills. Are special financial arrangements needed?
16. Will customer acknowledge or highlight Cedar Grove Cheese role in process?
 - a. On label?
 - b. In promotional materials?
 - c. In publicity?
 - d. In contest entries and awards?
17. Do we have the capacity to handle this project?
 - a. Knowledge and experience or ability to get it?
 - b. Space and time for startup
 - c. Space and time if successful/ ability to grow
 - d. Scheduling, billing, communications and record keeping
 - e. Ability to work successfully with particular client

As suggested by the check list, we need to evaluate both the feasibility and desirability of each project. We need to examine our capabilities, the likelihood of success and what Cedar Grove Cheese will gain from the project. Perhaps in contrast to the University Center for Dairy Research where ability to pay for research and timing are most critical, potential projects at

Cedar Grove Cheese need to be examined as a group and choices made based on their contribution to the overall success of our company. We will avoid projects that appear to compete too much with existing projects. We also will give preference to projects which enable Cedar Grove Cheese to gain more knowledge about cheese manufacturing techniques. Other preferred projects will be those with potential to contribute to our overall reputation through publicity and successful contest results. We seek projects that will stand out from the crowd.

Cedar Grove Cheese generally operates under the principle that legal documents are only as good as the relationship between the parties to the agreement. We feel that the check list helps make sure that we clarify the expectations of the party. Who will own the trade names? Who will own the formulations? Who will cover the costs and uses of prototype? These are all important decisions and the clarification of expectations will help us avoid future problems. We have been very fortunate to develop our experience with this new venture along with kind and patient partners. In only one situation have we had a dispute and that was a minor one. We have now hired a person whose job is to document and coordinate these projects to avoid future problems.

The choices of projects may change over time. Some projects are designed to be short-lived, with the customer eventually taking over production. Other projects may eventually become less attractive compared to other uses of our space. In entering custom production relationships, both Cedar Grove Cheese and their potential customer need to consider the feasibility of phasing out the project or transferring it to another facility if necessary. Our commitment is to not leave a customer stranded once they have begun marketing. This may lead us to turn down projects that do not appear to have long-term attractiveness even though they are feasible at the time.

Another aspect of the project was to examine opportunities for improving small customer's market access. Several meetings were held with distributors and retailers to try to understand better the hurdles that these products face. The following extended quote summarizes information obtained from one of our key distributors, William Rock of Rock Cheese Company in Madison:

“These products differ from standard varieties such as Colby, Monterey Jack, and Cheddar in several important ways. The specialty cheeses are less well known, less popular from a volume standpoint and are often seasonal.

Limited knowledge about products is an impediment to sales. All of the traditional marketing methods can be used to inform customers. Realistically, deli programs are better suited than dairy programs since staff can create product interest by providing samples and one-to-one information.

I think it is unrealistic to expect the popularity of specialty cheese to ever be close to that of standard varieties. As with other commodities, e.g. wine, the limited nature and greater production expense of specialty cheese will result in higher price points and the unique taste will appeal to certain consumers.

Several specialty cheeses are seasonal in nature. Dairy cases tend to be filled with the same products each week. Again, delis are the preferred sales location. Delis benefit from interesting new offerings. The fact that customers know about the limited production can aid in product sales.

The ability to sell specialty cheese is a function of the relationship of the wholesaler/broker/manufacturer with the deli manager. Trust is built over years of personal contact with the deli manager. Knowledge of local market conditions and “what has worked in the past” are key elements of a successful selling strategy.”

Mr. Rock’s insights were echoed by other specialty cheese retailers including Fromagination and Larry’s Brown Deer Market. Those retailers are approached by many people trying to get access to consumers and support for new products. Relationships and history guide many of their choices. This becomes a significant barrier to farmers and small companies seeking a market for their new products. Retail and deli space is limited and the market for specialty cheeses is becoming increasingly crowded. Also, as noted in part, specialty cheeses tend to be more seasonal and more variable in quality due to changes in the milk and feed. These differences are best handled by marketing channels with potential for personal communication and/or intensive information.

While most of these new products are in their infancy and some are still undergoing fine-tuning of their formulations, Cedar Grove Cheese has been working on several efforts to create and support distribution efforts of specialty cheeses made in our facility but marketed under other brands.

Farmers, such as Koepke's and Goodman's, have been successful in selling cheese at local farmers markets, festivals, cheese tastings and small retail stores. These efforts enable the farmers to get feedback from consumers and adjust the products accordingly. They also accommodate a little more quality variability during the development stage. We have also had some success test marketing the water buffalo cheeses with restaurants, small retailers and a specialty wholesaler.

Cedar Grove Cheese has added some of the specialty cheeses to its list of products available to distributors and retailers. In the past year we have sold only about 500 pounds of specialty cheeses through these channels, but we are seeing increasing interest. We also have made specialty cheeses available through mail order. As news of specialty varieties spreads, we are selling more products in that channel. We are in the process of adding some of these cheeses to our web listing and are creating e-marketing materials related to new product development. We are working with a new computer-based marketer who is putting together a cheese of the month club program that will include custom manufactured specialty cheeses in most months alongside Cedar Grove Cheese branded products. This program is coordinating with introductory cheese sampling opportunities at the Flower Shoppe in Spring Green and Quivey's Grove in Verona to increase visibility. We are also moving a significant volume of specialty products through our store at the cheese factory.

As noted earlier, the choice of how much affiliation a customer chooses to have with Cedar Grove Cheese varies widely. Some customers have chosen to give very little attention to who produces their cheese. Others have highlighted the processor and our Wisconsin Master Cheese Maker with an expectation that it supports the value of their product. The jury is out on which approach is most successful. Probably success will vary with product and projected market. Visible affiliation is most useful where the farmer or other customer has no expectation of producing cheese and does not want to maintain the option of shifting to another cheese manufacturer in the future.

So far, because many products are still being developed and marketing materials are still being finalized by customers, Cedar Grove Cheese has not pursued an intensive effort to coordinate marketing efforts. We expect, however, that shortly the opportunity will present itself to market a wide assortment of interesting and unique dairy products. Since these products are very different from each other as well as from Cedar Grove's traditional products, we expect that they will not compete with each other very much. The array of products will lend itself to

joint marketing and distribution providing significant cost savings. However, some customers may prefer to rely on their own sales in order to take advantage of their own stories and personality.

In summary, the first objective of Cedar Grove Cheese under this grant was to establish capacity for small-scale production of dairy products. With that capacity, we invited other cheese makers to make cheese in small batches. State agencies and the University of Wisconsin Center for Dairy Research referred contacts to us. We arranged new product development with patrons, other farms and customers. Several unique cheeses have been developed and are being marketed. Others are in various stages of exploration. Batch sizes with the new equipment have ranged from under 100 to about 600 pounds of cheese. The new facility appears to have successfully created a new niche in the marketplace by providing affordable small-scale production capacity and expertise. It has also supplemented the University research program by enabling cheese makers to explore new manufacturing techniques and customers to develop new products. Cedar Grove Cheese has improved its capacity as a research center, a custom-production source and an incubator.

The second objective was to improve marketing and sales opportunities for small volume products. We have explored internet, direct marketing, working with distributors and coordinating with retailers. We also are exploring opportunities with specialty restaurants. As more products reach maturity, we believe that these efforts will pay off in expanded opportunities for our clients.

This report has described Cedar Grove Cheese's experience with small-scale custom cheese production. We have analyzed the hurdles and opportunities that this project has addressed. We expect that the approach will be easily replicated by other cheese manufacturers in Wisconsin. The result will be more opportunities for small farmers to market products at lower cost and with less potential disruption to existing specialty cheese markets.