Farmstead First- A Dairy Processing Facility

Final Report for FNC04-513

Project Type: Farmer/Rancher
Funds awarded in 2004: $17,612.00
Projected End Date: 12/31/2006
Matching Non-Federal Funds: $28,450.00
Region: North Central
State: Nebraska
Project Coordinator:

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ShadowBrook Farm

Project Information

Summary:

PROJECT BACKGROUND
My husband, Kevin Loth, and I have owned ShadowBrook Farm since 1996. ShadowBrook Farm is a 34-acre specialty vegetable, cut flower, and herb farm within the three-mile city limit of Lincoln, NE. We now run a 30 goat, Grade A dairy.

Krista Dittman and her husband, Doug, own Branched Oak Farm in Raymond NE. They raise and direct-market pastured eggs, beef, and now, Grade A Jersey milk.

PROJECT DESCRIPTION AND RESULTS
As a business, Farmstead First has created a model dairy processing facility with a cheese production capacity that provides potential producers a starting point to develop a value-added dairy product. This pilot facility allows for testing and confirming the potential to diversify a farm economy with limited up-front financial investment.

Since receiving our grant we have done thorough facility and product development research through travel and educational opportunities and have begun operating a dairy plant open to producers, chefs, and hobbyists wanting to make cheese. Farmstead First also provides an educational venue to teach about the process of developing a farmstead cheese making business.

GOALS
The goals that we identified in our project proposal were as follows:

1. Increase our knowledge of small-scale dairy production.

October 2004 - February 2007: We completed extensive literature and internet searches to learn about other farmstead operations, as well as the history of farmstead cheese in this country and the rest of the world. We gained the most useful information from visiting, in person, other on-farm cheese facilities and talking to cheese makers/farmers about the work they do. During this period, we visited a total of nineteen farmstead cheese operations in six states, as well as two farms making cheese in the Netherlands.

July 2005 - June 2006: We worked with the UNL Food Processing Center to complete the feasibility study and market analysis for Farmstead First.

March 2005: Using the Nebraska Cooperative Development Center's assistance, we decided that rather than using a cooperative business structure we would form a LLC. Farmstead First will own the dairy processing equipment and sub-lease the space and equipment to others wanting to develop their cheese making skills.

2. Educate ourselves on farmstead cheese production by attending comprehensive courses at two reputable universities as well as attending sustainable agriculture conferences in three states that focused on grass-based dairying.

May 16-25, 2005: Continuing the educational process, Dittman attended two dairy short courses at the UW-Madison.

September 26 - October 3, 2005: Loth and Dittman attended the Cal Poly Dairy Science and Technology Basics for the Farmstead/Artisan Cheese Maker short course in San Luis Obispo, CA. Travel and tuition scholarships from the Nebraska Cooperative Development Center enabled us to take part in this very comprehensive four-day course. Topics covered in the course included, the biochemistry of milk and cheese, basic steps in cheese making, cheese tasting and evaluation, business planning, marketing, licensing and legal requirements, sanitation, a bused field trip to the Rinconada sheep dairy, and twelve hours of hands-on cheese making. This course was exactly geared towards the small on-farm operation wanting to make artisan-style cheese.

January 10-17, 2006: We traveled to Vermont with our spouses to finalize the plans for building the processing plant. We visited seven on-farm processing facilities and learned a tremendous amount of pertinent information. While in Vermont we were interviewed on a local radio station where we talked about our project and why we were visiting the state. We also attended a one-day grazing conference which covered topics in parasite control in sheep and goats, rotational grazing and dairying, and wind energy on the farm.

February 1-3, 2007: We attended the PASA (Pennsylvania Association for Sustainable Agriculture) conference in Pennsylvania where we took part in the advanced cheese-makers one day short course. Topics covered included detailed study into the selection of bacterial and fungal cheese cultures and ripening aids, advanced affinage (cheese aging), marketing, and packaging.

3. Gain experience in cheese making by renting space at the UNL (University of Nebraska-Lincoln) Food Processing Center and to work with faculty on recipe development and production.

May - September 2006: We worked directly with Laurie Keeler and Nirav Pandya at the UNL Food Processing Center to produce our own cheeses weekly. We sold our cheeses at both the Lincoln and Omaha farmers' markets as well as to specialty grocery stores and restaurants in our area. We received great reception from our customers. We contracted with the UNL Food processing Center's microbiology laboratory, working directly with Jayne Stratton, to conduct microbial testing of our cheese to assure product safety. We have also completed "from product to profit" and have had our labels reviewed and promotional write-ups completed though working with Jill Gifford.

4. Examine which type of processing plant would be most beneficial for the cooperative producer model we are trying to achieve, looking at both a stationary verses a mobile plant as options.

January 15, 2005: The decision was made to build a stationary processing facility (used by multiple producers) rather than a mobile facility, and to initially produce

only cheese. This minimized our initial equipment needs and allowed us to keep our start-up costs with-in budget. On determining whether to build a mobile processing facility verses a stationary processing facility, we came to the conclusion that the pasture-based, seasonal farmstead model that we have been studying, poses a potential problem for the mobile processing facility concept. Producers would need to use the facility at the same time, during the same short grazing season. Also, most cheese takes more than twenty four hours of processing, (making, draining, pressing, and aging) which would create a scheduling problem.

October 2006: Completion of a stationary, state licensed processing facility at Branched Oak Farm on the Dittman property. This has allowed the processing of cheese by more than one producer at a time. Producers transport their milk to the processing facility. We have considered appropriate equipment needs for many different cheeses and the potential for overlap of processing occurring on a given day. For example, a vat-pasteurizer for the production of fresh cheeses can also be used as a cheese vat to make aged raw milk cheeses. To date we have three producers using the facility weekly, and another three producers who have expressed an interest in using our facility in the start up of their own cheese production.

5. Hosting Farmstead First cheese-making workshops and offering on-site educational experiences

November 2005: We hosted, in collaboration with the UNL Food Processing Center and The Nebraska Sustainable Agriculture Society, a cheese making workshop. Larry and Linda Faillace, owners of Three Shepherds' Farm near Warren, Vermont taught a three-day hands-on cheese making workshop at the UNL dairy plant that covered the making of hard, semi-hard, soft-ripened cheeses, quark, and yogurt. Tuition of $375 for the fifteen participants of the course also included a locally produced meal, a tour of Jisa's farmstead cheese facility near Valparaiso, NE, and a wine and cheese tasting event at James Arthur Vineyard attended by over seventy people.

October - November 2006: We hosted three, one-day cheese making courses at the Farmstead First facility. The first class was taught by a visiting Dutch cheese maker and focused on the production of farmstead Gouda. The other two classes were taught by Loth and Dittman and were focused on the production of Gouda and goats milk Chévre.

6. Making available to producers and the community-at-large the research and information that we have compiled by creating a Farmstead First web site

March 2007: Began the construction of the Farmstead First web site to be completed by the summer of 2007 at www.farmsteadfirst.com where we plan to advertise our facility to a target audience of producers, chef and restaurant owners, and food connoisseurs.

WHAT DID WE LEARN?

The main barriers that we identified to a farmer/producer starting an on-farm cheese processing facility is a lack of appropriate models in our state, and high infrastructural investment necessary to build a dairy processing plant. In the state of Nebraska, over the last twenty years, most small to medium sized cheese processing companies have gone out of business, along with many of the small and medium-sized dairies. The decline of these businesses is obviously related to the inability to compete for market share in the current industrial model of agriculture. What we have experienced is that the land grant Universities are still in large part stuck thinking in the scale of industrial agriculture. Through our own research of looking at appropriate scale for on-farm cheese production we see a very different picture. We see a range of production using the milk from one herd of animals

usually grass based, to make an artisan product. These cheeses are made in small batches with lots of hand work and usually are sold for a premium price. In the last three years we have visited twenty-one of these farmstead cheese facilities in seven states as well as in the Netherlands. Here is an over view of what we have learned:

Most of the farms we visited made raw milk cheeses that were aged a minimum of sixty days as is mandated by federal guidelines. Because dairy processing equipment is very expensive these farmstead producers were able to save an average of $14,000-$20,000 by not purchasing a vat pasteurizer. These facilities were very simple, consisting of a food grade building, with washable walls, ceilings and floors, hand washing sink, two compartment sink, stainless cheese vat, stainless tables, and shelving. Often these facilities heated their cheese vat with an on-demand hot water heater rather than a boiler. A walk-in cooler or a root-cellar type cave was used for aging the cheeses and usually there was an area for packaging cheese. Of the farmstead cheese producers we visited, start-up costs, not including the shell of the building, was in the range of $25,000 -$150,000. Some of the facilities had plans to expand their afinage (cheese aging) and were planning extensive construction of underground cheese aging caves with price tags in the range of $50,000-$150,000.These figures are rough averages; however, it is helpful to keep in mind that start up costs for on-farm fluid milk bottling is in the range of $600,000 which makes small-scale cheese production seem much more reasonable.

In the construction and set-up of our own facility we opted for the ability to pasteurize. This enables us to make a wider range of cheeses, such as fresh, soft-ripened cheeses. We purchased a duel-pasteurizer-cheese vat from the Netherlands. With all equipment for legal pasteurization the price of our vat delivered was approximately $23,000. This increased our start-up cost significantly. However, because Farmstead First is an education and outreach facility, we wanted to keep our options to the types of products we could produce as open as possible. Our total start-up costs for our facility to date, not including the building, are in the range of $70,000. Another cost that should not be overlooked is the set up of a licensed milking parlor. For cheese production, at least manufacture grade is required (grade B). However, not much, if any, added expense is incurred to becoming grade A, which is what we opted for.

PROJECT IMPACTS

We feel it is imperative to establish an on-going relationship with local and state officials, (dairy inspectors and health departments), as well as working with resources available (the UNL Food Processing Center), who together with the producers, can promote safe, healthy, and local food.

We are looking forward to growing our own competition as we share what we have learned about start-up costs, market feasibility, and sourcing of equipment with other potential producers.

By establishing a model for a successful dairy processing facility, we hope to demonstrate the financial feasibility of creating alternative products and markets. We want to create value for our families, encouraging other producers to engage in small-scale dairy enterprises, and continue modeling sustainable agricultural practices for our children, our neighbors, and our communities.

OUTREACH

• November 2005: Three-day cheese making course at UNL with visiting cheese makers from Three Shepherds dairy, warren Vermont. Fifteen attended from four states.
• November 2005: Wine and cheese tasting event at James Author Winery with over seventy people in attendance..
• February 2006: Offered a workshop in cooperation with the Nebraska Cooperative

Development Center for The Nebraska Sustainable Agriculture Society Annual Conference held February 3, 2006 in Nebraska City. The title of our workshop was Woman in Agriculture: From grass to cheese, two women tell the story of developing a farmstead dairy business.
• October-November 2006: Hosted three, one-day cheese making courses at our own facility with a total of twenty participants.
• March 2007: Began the construction of the Farmstead First web site.
• Future: We plan to write a manual for potential producers on small-scale, on-farm cheese processing facilities and their cost of construction, as well as appropriate equipment sourcing.
• Future: We are interested in writing articles pertaining to our project for inclusions in sustainable Ag publications in the near future.

PROGRAM EVALUATION
We feel very fortunate to have been awarded a producer grant and feel that it has been very beneficial and in large part added to the success of our project. The SARE program has been very helpful and easy to work with. We would gladly recommend the program to other producers. The grant writing process gave structure and a time table to work towards, which is very helpful in a busy farming season.

Research

Participation Summary