NCR-SARE Farmer Rancher Grant Program

Final Report

I. PROJECT IDENTIFICATION

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Project Title: A Cooperative Small Farm Effort to Meet Local Demand for Staple Seed Crops in the Appalachian Ohio Region

- Project Number: FNC08-730
- Project Duration: 2 yrs
- Date of Report: 02/18/11

PROJECT BACKGROUND

Green Edge Gardens is a well-established 120-acre certified organic vegetable CSA/Wholesale/Retail farm that is participating in the current SARE staple food project. Its owners, Kip and Becky Rondy, have watched the staple crop plots grow and, more importantly, have seen the community's response, and they want to scale it up. They have grown a few of these crops for animal feed in the past, so they have some experience with seed-crop production and harvest.

Green Edge Gardens is a certified organic veggie farm specializing in the production of microgreens in a closed soil system needing no amendments, and year-round vegetable production in greenhouses requiring no heat in the winter.

Belly Bowl Farm has been the primary demonstration site for the current SARE staple foods project, and has hosted several public events showcasing the project and educating on the processes of staple food production.

Brandon Jaeger is the Project Leader of the 2007 SARE Individual Grant-awarded project entitled, *Growing Highly Nutritious Staple Crops Using Intensive and Sustainable Methods,* and holds a B.S. in Regional/Environmental Land Use Planning from Indiana University of PA, and has 6 seasons of organic farming experience, including an apprenticeship at Green Gulch Farm in Marin County, CA. He has completed his certification in Permaculture Design.

Brandon Jaeger had been involved in organic vegetable gardening and commercial farming for 8 seasons. Most recently (past two years), he has learned and practiced permaculture, BioIntensive, forest gardening, minimal tilling, and other sustainable practices.

King Family Farm is a 150 acre Wholesale/Retail poultry and pork operation that is preparing for organic transition. JB King is a member of OEFFA (Ohio Ecological Food and Farm Association), on the board of Directors of Innovative Farmers of Ohio, and does his best to grow

all of his own feed, so, on that farm, some of the equipment and knowledge already exist.

King Family farm uses no chemicals or hormones in raising their animals and has strived to produce as much of its feed needs as possible on farm.

PROJECT DESCRIPTION

GOALS: The objective of this project was to solve the problem of a distinct lack of locally procured staple seed crops by demonstrating small-plot commercial production, gathering agro-economic data and experience, and providing interested farmers and landowners with opportunities to be involved and to learn what we learn. We would also provide them with the knowledge we accumulate, the appropriate equipment, and the market channels to support their startup in production.

PROCESS

Crops: We started primarily with crops that were reasonable analogs to the common commodity feed crop rotation of corn, soybeans, and winter wheat, because we considered that advantageous in the effort to transition commodity farmers to organic/chemical-free production of food for regional consumption. These crops are heirloom yellow dent corn, black turtle beans, and spelt.

Toward the purposes of sustainability and farmers' being able to save their own seeds, as well as improved flavor and nutrition, we chose open-pollinated and heirloom maize crop. In the first season, King Family Farm planted 3.5 acres of Reid's Yellow Dent, a variety that we had grown in the test plot of our previous season, under project number FNC07-663, and which had been made into very popular tortillas at a local bakery, Village Bakery. This crop succumbed to the terrible moisture-related molds and the accompanying mycotoxins that made it unsuitable for human consumption.

In the second season, we added two farms from the local Amish community, and they grew 2 acres of their own heirloom yellow dent corn, which we are still selling in the form of whole corn and corn flour.

Because it is very difficult in our region, to grow hard winter wheat that holds up in baking operations, we chose spelt, because it is known to grow very well here.

In our research, we found that Black Turtle Beans are a great all-around black bean used in a wide variety of dishes (and primarily Central and South American cuisines), and were likely to grow well in our climate.

In addition to -- the big three -- we have been experimenting with amaranth, a – superfood --, easy-to-grow crop with a lot of value-adding potential. This development is in the works, but we successfully tested the production of 2 and a half acres of amaranth.

Equipment: Brandon Jaeger did not have a modern combine or horses to pull a harvester/binder, so he researched combines, and found that an old pull-type combine would be just the right size for the 3 acre plot he was working. He put an ad in the agricultural newspaper for an Allis-

Chalmers All Crop, which was said to be the best, and received numerous responses from farmers all over the state, who had these combines in barns, in great working condition. After choosing one and hauling it home, he has been satisfied and amazed at its efficacy, although its age makes him reluctant to make the adjustments need to switch from crop to crop. He successfully harvested spelt and amaranth with it.

In the processing facility, we have a two-screen fanning mill from En-Hanced Products, Inc, in Westerville, Ohio. We went for this machine brand new, because it's a local family company, but used Clipper, Crippen, and other cleaners are out there for good prices and in good shape.

We de-hull spelt with a Forsbergs 15D impact de-huller. We found the unit, which was built in 1985, at an auction put on by Commodity Traders International (website below) in Illinois.

We have a brand new commercial stone mill from SAMAP, a company in France. Again, used units are available, but we chose this one, because, at 175 pounds, its throughput is comparable to mills that are several times its size, but more importantly, it has its own dust capture mechanism, its stone can be locked in place so that there is no danger of grinding them together if there is no grain between them, and the stones are a natural/synthetic blend that needs no dressing for long periods of time.

A forklift is essential to handling our crops, which we store and handle in 1 ton tote bags.

PEOPLE

Our work to connect farmers and the market with locally grown high nutrition staples was achieved through collaborations and networks with local non-profit Rural Action and the work they are doing in Morgan County with the Chesterhill Produce Auction. The Auction is where we met Joe Hershberger, the head of an extended farm family whose heirloom corn has been passed down for generations. The Hershbergers grew 2 acres of corn, 9 of spelt, and 2 acres of black turtle beans for us to process this year. Rural Action will also be providing assistance from staff in relationships with growers as well as in developing branding materials.

Joining The Ohio Ecological Food & Farm Association (OEFFA) and meeting with OEFFA's Grain Growers Guild led us to Chris Clinehens, a certified organic corn, soy, and wheat farmer from Logan County, who surprised us when he said he'd give growing black turtle beans -- a try -- in a seven acre field on his 250 acre farm. That promise has come to fruition, as he has recently harvested a respectable crop from that field, and is excited to expand his production, fivefold, of non-soy, open-pollinated dry beans (Black Turtle and Adzuki).

Local non-profit ACEnet is renting us the space where we are testing and refining the processing system for Spelt, Corn, Beans, and Amaranth. Ohio University's Dept of Mechanical Engineering is being funded through a grant from the Sugarbush Foundation, to develop portable threshers and de-hullers that we have begun to take to community gardens and farms to demonstrate processing small plots of staple crops, a project through which we have introduced staple crops to community gardeners, middle and high school students who are learning food entrepreneurship. This work is made possible through collaboration with local non-profit

Community Food Initiatives, which coordinates several community and youth gardens in the region. We are also working with the Athens City/County Health Department on strategies to increase awareness and access to our products by lower-wealth and lower-health members of our community.

Rory Lewandowski, Agricultural Extension Agent of Ohio State University, has provided invaluable knowledge of plants, soil, and resources. Green Edge Organic Gardens, where Brandon's work under a SARE grant help foster learning about how to grow and harvest spelt and amaranth, has continued to support us with extended use of a three acre field, a tractor, and implements.

We have developed a robust network of market partners. Through our advance purchase offer of an 8 percent discount on our products, we have raised nearly $8,000 to purchase the harvest from our farm partners. That seed money came from over forty household CSA memberships and four food businesses in the Athens and Columbus areas. These market partners and others are very excited to be working with our freshly grown and processed, high nutrition staple products, and have provided important cash flow for our operation to be able to market and supply our products to other buyers.

We have also been collaborating with partners outside of our region, in the field of staple food system improvement. We have connected with several facilities and farms in other parts of the country, who are working at identical or similar goals, and we have recently received funding from the Wallace Center's HUFED program, in part to further explore our relationships with these organizations toward the formation of a well-networked North American Staple Foods Collaborative. As recipients of this funding, we were invited to expand our network nationally, through an invitation for all grantees to attend a three-day workshop together.

RESULTS

Two farms from the local Amish community grew 2 acres of their own heirloom yellow dent corn, which we are still selling in the form of whole corn and corn flour. Most recently, we have begun working with a tortilla factory in Toledo, to provide tortillas and tortilla chips made from our corn. We expect this to be a great opportunity, since it gets our crops to a ready-to-eat state. We will probably increase our heirloom corn production to 8 to 10 acres this year.

In the first year, we grew about an acre and a half of spelt, and thus far in the second year, we have used about 5 acres' worth from local Amish farmers. They purchased and planted Oberkulmer spelt, a variety that is very good for baking flour, instead of the variety of spelt that they usually grow for feed. We are marketing spelt berries as a grain to be cooked like rice or barley, and spelt flour to be used like whole wheat flour. A local pizzeria has advertised their new locally grown and ground spelt crust pizza and it has been rather successful; they buy 50 to 100 pounds of spelt flour per week. We are working with local bakers to develop artisan bread, pasta, tortillas, and muffin/pancake/pizza mixes from our spelt flour.

During our search for 2009 corn that was saleable for human consumption, we made contact in the late winter, with Chris Clinehens, a member of the OEFFA grain chapter and a farmer of 250

organic acres, which he has transitioned over the past 14 years. After a phone call, he was interested enough in seeing our facility to deliver a sample of his corn crop to us, which we then ground as a demonstration of the mill to tours from the Innovative Farmers of Ohio. We asked him to grow black turtle beans. At first cautious, he took a few beans home with plans to plant them in his garden in 2010, to see how they look. Within a month, he had cooked and tasted our beans, and discussed with us the local market for black beans, and decided to grow 6.5 acres.

It turned out that Chris' corn was just over the FDA limit for mycotoxins, but he has become fully involved in the project. Two days ago, he combined his 6 acres of Black Turtle Beans, for a total yield of 10,600 pounds, a better-than-average yield. He said that the Agricultural Services office -- looked like raccoons in headlights --, when he registered the field in this crop this spring, and finally found it in the –vegetable-- section of the book, determining that he would not receive his government subsidies for that acreage. This is clearly an indication that policy change must be affected if we are to have truly sustainable, regional-scale staple food systems that can at least compete fairly with the current subsidized model, but nonetheless, we have begun delivering to households, restaurants, and food processors in Athens, West Virginia, and Columbus, over 3 thousand pounds of his beans, already paid for by over fifty early adopter customers so that we can pay him and our other growers good prices up front for their crops, and another 4 thousand pounds are already contracted by a local restaurant, where the procurers and workers are consistently praising our work and our products. This farmer is making plans to plant 23 acres in Black Turtle beans and 10 acres in Adzuki beans in 2011, and we interpret that as a very clear sign of success in enrolling new farmers and more acreage into this agricultural enterprise.

A local restaurant that is committed to local ingredient purchasing, Casa Nueva, uses 6,000 pounds of black beans per year, and a veggie burger company in Columbus, Lunaburger, purchased 1200 pounds of black beans for making their burgers. Of all of our products, it seems that the beans are the most distinct from their commodity counterparts. Consumers and restaurants rave regularly about the quickness of cooking and full flavor, which we believe result from the freshness of our crop. We are planning to expand our bean operation next year, to include pintos and adzukis, and to double or triple the black bean production. We had a crop failure with the adzukis in 2010, and we learned that they need a great deal of cultivation attention just after emergence.

Direction and Focus for the Future: There are three primary goals for the next year:
1. To continue to develop an effective and cost-efficient processing facility with a focus on assessing the scale on all levels: acreage, production, number of workers, business structure, and identifying principles that foster collaboration among partners, customers, and the community at large,
2. To develop and apply innovative market strategies to meet the nutritional staple food needs of traditionally underserved sectors of our community, and
3. To network a wider geography around building regional staple foods systems to connect resources throughout Central Appalachia and start connecting regional mills and beaneries to one another to create learning clusters that would launch into action at a national gathering in 2012.
As we enter the national arena, we want to find resources to better understand and communicate

to the public current agricultural policy as it affects the world's staple food systems—the legacy of Get Big or Get Out started by Earl Butts, the US Secretary of Agriculture in the 70s—subsidies and who benefits, multi national corporate interest in US agriculture, the crisis in US health and its connection to the food most of us eat, and the diminishing access to healthy food for 10 percent of US citizens.

DISCUSSION

As for recommendations to other farmers interested in setting up a staple crop production system and processing facility, the first item that stands out is the importance of surveying your market first, particularly your wholesale buyers. Who is using how much of what kinds of beans, and how much more would they be willing to pay for fresh, locally produced beans, for example? Beans are fairly easy to grow, and have a relatively simple post-harvest processing schedule. Wholesale accounts are very important in the beginning, if you want to make the processing facility a stand-alone, solvent business, because it will take a while before you have your system set up to be able to efficiently package your products into small retail bags. Although a presence at retail outlets, and particularly farmers markets, is important for outreach, publicity, and customer education about not only your business, but also about the production and processing needs of staple foods and the difference between staple foods produced locally, fresh, and from heirloom varieties and the global staple foods production model of the last 50 years.

Developing recipes, tasting them out at public venues, and offering samples of your products to food preparation and retail business will help you acquire wholesale accounts, and developing cooperative relationships with other farmers in your region will help you be able to fill those accounts. Having a brand or a logo, however simple, and offering to provide restaurant that buy your products with signage for in-house display of your brand and the denotation that your staple food products are locally produced and processed, can generate energy and interest around your products and will make you more sought after. Wherever possible, find opportunities to contract out the value-adding and co-packing of your raw products. For example, is there a bakery near you that makes and sells pasta? They could use your flour, not only in their own pasta, but to make a line of pasta for you to brand and sell. The same goes with breads, crackers, muffins, pie crusts. Maybe there is a tortilla factory near you that would make tortillas and chips from your corn, so that you can market chips made from locally grown corn. Education, promotion, collaboration, and awareness of your region's staple food habits make a beneficial combination.

About the processing facility, efficiency is of the utmost priority for being competitive and profitable. It is good to have enough overhead space (we found that 20 feet is minimal, and more would be better), to place your machinery up high and take advantage of gravity to move materials through processing and into bags, after getting it up to the top with a bucket elevator (not screw augers, which damage edible grains and beans, and take up more horizontal space). Crop storage is also critical. If you do not have grain bins, a barn full of large tote bags that hold a ton or more in grains can do the trick, as can gravity wagons and the bins, barns, and gravity wagons of your partner farms. However, NONE of your storage options will work out if your crop is not SUFFICIENTLY DRY. This can be a big barrier. Skill and luck both factor in during production and harvest in the quest for good dry down, and having a grain dryer, whether commercial or homemade can really save your crop. See this design:

(http://www.mofga.org/Publications/MaineOrganicFarmerGardener/Summer2009/GrainDryer/tabid/1204/Default.aspx)

Most of these recommendations come from the assumption that the reader, like ourselves, wants to operate at a significant enough volume that you can start to compete with and replace the unjust and unsustainable global, corporate staple food system of yesterday. There are certainly examples of farmers growing small plots of beans and grains, processing them by bucketing them into small fanning machines in a barn, and selling them at farmers market stands next to their kale and carrots, but we don't have a great deal of advice for that path, since it is not the one we have chosen.

Used machinery can be found. These machines were well-built, so they are often still in great working condition, as long as they have been taken care of. One source for machinery that we have found very helpful is http://www.commoditytraders.biz. Equipment auctions are very useful, as are agricultural newspapers in which you can place want ads for machinery.

Because we were able to combine the funding support of this farmer rancher grant with several other grants, and also to use this and other grants to leverage even more funding throughout the course of the past two years, we have been able to do far more toward achieving our goal and solving the identified problem than we had imagined we would in such a short time.

The advantages lie primarily in the experience of satisfaction from working on something that is praised, over and over again, by people throughout the state and even country, as something that they strongly feel is needed, not to mention from the simple act of working with some unusual crops and unfamiliar post-harvest processes, and then seeing them enjoyed by hundreds or more people in our community. Satisfaction also comes from seeing other people get involved in whatever way they can: recipe developers, new farmers, Business and Mechanical Engineering students at the local University, etc. It truly does take a community. Finally, the business of processing, value-adding, and marketing staple food crops grown in the region by small family farms is beginning to look like it can be a successful, profitable business, and the advantages of that ring loud and clear in the hard economic times we are experiencing.

PROJECT IMPACTS

Most of the beneficial impacts of this work are probably at least a few years down the road. We have started the process of recapturing a very large sector of the food value-chain market, within our own region. This has obvious economic impacts to farmers in the region, future employees of the processing business, and opportunities for new businesses to form around the momentum of locally produced, fresh staple foods.

We have seen countless smiles and wonder on the faces of adults and children upon seeing, touching, and learning about staple crops, the farmers who grow them, and the machines that process them, and have heard countless praises from a wide variety of customers, for the superior flavor and texture of these beans, grains, and flours. When we partnered with local non-profit Community Food Initiatives' Youth Entrepreneurship At Hope (YEAH), selling our products to a group of children from subsidized housing, at bulk rates, along with bags, labels, and training in

labeling, bagging, marketing, AND cooking the products, we could see light bulbs go off and connections being made, as they sold the products at the farmers market and described the delicious cornbread that customers can make. We have had around 55 Ohio University and Hocking College students volunteer or attain accredited internships, helping us in production, processing, selling, promotion, and business planning, and they have been very inspired by what we are doing. These are the roots of opportunities for tremendous community and economic improvement.

Several of our farmers would normally have used some chemical fertilizer application. The acreage they have been growing as a partnership with us has been chemical-free, resulting in obvious benefits to the soil and watershed. As we grow and give more and more farmers opportunity to profitably grow crops without chemicals, and as we inspire more and more young people to get into sustainable agriculture and food processing, we are adding to the list of people working to improve the sustainability of our community here in Southeastern Ohio, and elsewhere in the country or world.

OUTREACH

In 2009, our project was featured twice in one local newspaper, The Athens News- on April 13th, we had a story which was referred to by a photo inset and caption on the front page, and on August 24th, our story was full front page photo, a feature length story, with another embedded picture, and a side panel detailing the nutritional and historical characteristics of some of the crops we are working with.

On the 25th of February, 2010, the other local newspaper, The Athens Messenger, featured us in a front page story, complete with the image of our current product label and a photo of breads that a local baker has been making with our flour; since then, we have been featured in numerous local news stories

We wrote an article that was published in the May-June 2009, issue of the local Sierra Club Chapter newsletter.

Our project was featured in the annual report of the local organization, Rural Action, which has helped with outreach and as a fiscal partner for bringing in funding.

We coordinated a visit, on May 26th, to Green Edge Gardens, King Family Farm, and ACEnet (now the site of our facility), by Steve Bosserman, who is working on a USDA Specialty Crop Research grant to support the cultivation of cohesive regional food systems in Michigan, Ohio, and Pennsylvania, and Steve Faivre, who once worked within John Deere as an engineer, and is now working for a private consulting firm that serves John Deere. Faivre was there to take in information about our project and about other small farm operations in our region, and he provided a great deal of advice and machine design ideas. It was primarily his influence that caused us to choose the flexible crop handling system we have (bulk bags instead of bins)

We wrote a feature length story that was published in the spring 2010 issue of the Permaculture Activist (released in February). It occupied six pages and included five photographs. The Utne

Reader, a national -- readers digest -- of progressive journalism, picked up on the article and wrote about us on their website, and then, in the November/December issue, we were included in the Utne Reader's cover story -- 25 Visionaries that are Changing Your World. Here's the cover picture: http://www.utne.com/multimedia/image-gallery.aspx?id=2147488348
And here's the article: http://www.utne.com/Politics/Utne-Reader-Visionaries-Michelle-Ajamian-Brandon-Jaeger-Staple-Foods.aspx

We attended the Central Appalachian Network's (CAN) annual conference, -- Growing Healthy Food Systems from the Ground Up -- in the spring of 2009, representing our project, and meeting many people from the central Appalachian region who are interested in our work. In the spring of 2010, we attended the Conference again, with presence on a panel discussing local food processing.

In mid-October, 2009 we were invited to give one of the three keynote presentations at the third annual Stinner Summit, facilitated by OSU's Agro-Ecosystems Management Program (AMP). Beforehand, representatives from AMP came to Green Edge Gardens, King Family Farm, and our still mostly empty facility, and made a video of interviews and scenery that was displayed at the Summit.

Brandon Jaeger was one of three presenters at the Community Food Initiatives (CFI) Benefit Dinner, and we made samples of foods made from the crops we are promoting, which were included in the bread baskets and desserts for the evening.

The staple food project has been represented at multiple local, regional, and national meetings, including the Athens Food Policy Council, the Ohio Food Policy Council, and the Leopold Center's Communities of Practice Workshop (SARE funded) in Iowa. Our project was also the demonstration subject of a Leopold Center conference call on branding.

We have been attending the OEFFA Grain Growers Chapter Meetings discussing opportunities for collaboration.

We have had a great deal of involvement from students at OU, conducting various administrative and event planning tasks:

- A PhD candidate in organizational communication who grew up on a farm in Illinois, and is working on her dissertation about farm values.
- A masters student in Environmental studies
- An undergraduate botany student
- An undergraduate Economics student who spoke about our project in a public speaking class and answered questions for his fellow classmates.

We have presented at numerous Ohio University classes, in Mechanical Engineering, English, Biology, and Business.

On July 30th, 2009 more than fifty people from the region attended a meeting of the Appalachian Staple Food Collaborative (formed subsequent to the start of the project being reported on

herein), to inform interested parties about the work of the Collaborative, as well as to facilitate breakout sessions in which attendees contributed to forming the next steps for the Collaborative. Participants ate from many tables of a wide array of foods produced from the crops we are focusing on, and several dishes had been prepared by local food business collaborators. Participants also filled out surveys about how they would like to be involved in the Collaborative, as well as which products they would be most interested in purchasing.

We repeated the event in August of 2010, and the 55 attendees raved about the food. Just after eating, and before we began to present on our work, we were interrupted by a freak tornado that blew through, destroying the building next door, creating leaks in our building, and dropping a tree onto the vehicle of one of our guests. A good time was had by all, and our community's bonding around staple foods was galvanized.

In September of 2010, we visited a nearby demonstration farm, The Good Earth Farm, and presented to a children's school program there. We were accompanied by a graduate student in Mechanical Engineering, who has developed a portable threshing machine, and we engaged the children in several methods of threshing amaranth, which they had grown.

Brandon Jaeger was recently featured in a TV interview on Ohio University's *Newswatch.*

On March 2, we will be on a panel at the Ohio Farm Bureau's Conference – Bringing it to the Table – in Columbus, Ohio.

We have two Open Mill Hours each week, at which customers and curious community members can come to the mill and see what it's all about, and we recently hosted 30 OU Business students and four of their professors, and talked about the burgeoning local foods market phenomenon.

Our website is asfc.weebly.com

The Project has web presence on Facebook (Appalachian Staple Foods Collaborative- 190 members, including students, farmers, businesses, non-profits, and locavores), www.ohiofoodshed.org, http://localfoodsystems.org/, http://localfoodcleveland.ning.com/groups?page=2 (34 members), the NCR-SARE Field Blog, as well as several youtube videos, including some featured in an expose on our project by a local pizzeria/bakery, and an interview with us about our work by one of our funders, The Athens Foundation. Here is page one of google's search results on Appalachian Staple Foods Collaborative.
We have made contact with similar projects in other regions of the continent. We have been in mutually beneficial communication with the following enterprises:

Farmer Ground Flour, in New York State

The Southern Willamette Valley Bean and Grain Project in Washington State

We have also been made aware of the following similar work:

Sunroot Gardens, in Portland

British Columbia Grain CSA