



Welcome to Ruben Derderian & the Product Center's Bioeconomy Program!

The Product Center has recently added a new key staff member—Ruben Derderian, Associate Director for Bioeconomy Programs. Before I fill you in on Ruben's background, let me set the stage by describing what the bioeconomy means and what our new bioeconomy program will encompass.

The Product Center has worked with a number of entrepreneurs over the years in the biofuels area, including both ethanol and biodiesel enterprises. [Click Here](#)

Success Story



How Linda Hundt through hard work and a passion and love for what she is doing made her dream of owning a pie shop a reality. with her Sweetie-licious Pie Pantry [Click here for more...](#)

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What Does the Current Economic Situation Mean for the Agri-Food System?

By: Bill Knudson

It is now clear that the United States has joined Michigan in a recession. Due to the fact that food is a necessity the agri-food system will not be as adversely affected as other sectors of the economy, but it will still face difficulties as a result of the economic slowdown.

Credit is going to continue to be difficult to obtain. Despite the money set aside to assist the financial sector, banks have become more reluctant to write loans. Firms and entrepreneurs in the agri-food system will have to keep good records and develop good business plans and financial projections in order to prove they are a good credit risk. As is often the case, banks are going to be most likely to write loans to those least likely to need it.

A major consumer trend resulting from the economic slowdown is trading down. Consumers are replacing luxury items with lower price items. Consumers are becoming more price sensitive. Entrepreneurs interested in developing luxury products now will face more difficulties than in the previous few years. However, there remain opportunities for new products that are able to obtain premium prices if the product is unique and offers what consumers consider high value.

A third issue facing the agri-food sector resulting from the economic slowdown is pressure on the federal budget. It is likely that USDA funding will decline, the fact that at the time this article was written the incoming administration has yet to announce a nominee for Secretary of Agriculture is evidence that agriculture is not a high priority. Grants and other programs may see reductions in the future as the federal government struggles with budget deficits. [Return to Top](#)





Sweetie-licious[®]

PIE PANTRY

By Tom Kalchik

In this issue of Product Central, we want to introduce you to Linda Hundt, a bundle of energy who owns Sweetie-licious Pie Pantry in DeWitt, a peaceful and historic bedroom community located just north of Lansing. Linda established her business in 2002 as a home-based venture. It was based on nostalgia through comfort foods and pies, atmosphere, music and merchandise. Her business mission is expressed in her retail store – to celebrate love, tradition, and people through good food; to make our friends (customers) feel revered; to offer delicious, homemade pies, baked goods, preserves and comfort foods, specialty merchandise and cooking classes in a happy, loving and nostalgic ambience; to honor tradition by means of honoring our elderly through community service projects and contributions. In 2005 she moved into a store front in downtown DeWitt.

But Linda was not always in the pie business. She married her high school sweetheart in 1985, graduated from Michigan State University with a degree in education in 1986, worked as a substitute teacher until 1988 when she went to work for the State of Michigan. She continued to work for the State while her daughters were young. In 2002 she quit her job to pursue her life-long dream of owning a pie shop business.

It was not an easy job. Linda says one of her first hurdles was to gain confidence in herself and her ability to run a business. But she also had to accept that she could not do everything herself. She realized this as she wrote her business plan so one of the first decisions she made was to hire a business manager to help her run the pantry.

Other smaller hurdles popped up. She started the business as Sweetie Pie Pantry but then learned that another business in the South had trademarked the name for a dessert pizza. “I really wanted my own identify.”

Linda says. “I could have paid a fee to the person who owned that name and continued to use it, but I was concerned that people would identify my business with the pizza business. That was not the image I wanted. So we did a search and found that Sweetie-licious was available. We registered the name and now I am the only business in the country that can use it.”

Linda first became acquainted with the Product Center through Marilyn Thelen, an Innovation Educator in Clinton County. They met when they were working together on projects at the Clinton County Fair. “Marilyn provided me with guidance as I developed my business concept,” says Linda. “She was great at helping me network with other people who could help and guide me. She introduced me to Dianne Novak at the Product Center on campus who has been a real asset to my business development.”

Linda explains she went the local office of the Michigan Small Business Technology and Development Center for help in writing her business plan. That office provided great assistance and she continues to seek their help as she revises her plan to meet the changing needs of her growing business.

However when she needed some specific help for her food products, she turned to the Product Center. She received help identifying items for her menu, the costs of those items, and through this assistance, was able to focus her menu on the most profitable items. But her real praise is reserved for the help she received to expand her sales onto the internet. “I served all my pies fresh from the oven in my pantry, but when I wanted to expand into internet sales, I had to learn how to preserve my pies to keep them fresh through the shipping process so my customers, no matter where they are, can experience the

Sweetie-licious Pie Pantry (Continued from page 3)

nostalgia of delicious home-made pies,” she says. She found that the best way to preserve the quality of her pies through the shipping process was to freeze them. But this brought up other issues because her recipes, while they provided great fresh pies, did not necessarily give the same quality when the pies were frozen. Working with Dianne, she was introduced to various University Units to refine her recipes and research flash freezing to develop a successful frozen product.

Her experience with the Product Center was “capped” off with a capstone course in the School of Packaging. A capstone course is an opportunity for students to demonstrate that they have achieved the goals for learning established by the University and their major department. It requires the application of the learning from the other courses the students have taken in their major and fosters interdisciplinary partnerships among university departments and helps cultivate industry alliances and cooperation.

For Linda, the capstone course provided her and students in the School of Packaging, the opportunity to investigate optimal packaging options for shipping her frozen pies across the country. After a semester of work, included actually shipping frozen pies through commercial carriers to test the effectiveness of various container options, Linda has a container that will meet her needs, complete with a list of material suppliers and costs.

Linda has some specific advice for anyone contemplating starting a business. First, promote your business and promote yourself. Linda entered – and won – several national baking competitions, including –

- Three first place awards in the National Pie Championships, Orlando FL (Apr. 2008)
- One first place in the National Pie Championships, Orlando FL (Apr.2007)
- Silver medal in the Great Lakes Regional Chefs Competition (Feb.2007)
- Most Creative Dessert in the Girl Scouts Capital Council (Mar.2007)
- Best Display in the Girl Scouts Capital Council (Mar.2006)

“These awards helped validate my work, the quality of my products, and my reputation. They have been a real marketing tool.” she says. Linda also participates in charitable events to help give her business recognition in the local community.

“Make sure you are passionate and love what you are doing. It is a ton of work and it is not just about making money. You really have to believe in yourself and your concept.

“Do your homework. Write a business plan. Understand everything you possibly can about the business you are getting into. And be creative – make your business really stand out. Figure out how you can differentiate yourself from everything else that is out there.”

“It is like having a baby. No sleep. Worry. And lots of work. But if you love what you are doing, it is all worth it.”

You can learn more about Linda Hundt and her Sweetie-licious Pie Pantry at www.sweetie-licious.com/.

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My Food Product & Food Safety- What I need to know for Product launch!

By Dianne K. Novak, RD, MS

Food-borne illness and food poisoning are on the rise and many factors come into play for the final cause of why someone got sick. People get sick from eating in restaurants as well as, when they are preparing their own food. Food recalls and media alerts are not unusual these days, from the well-known fresh tomato/pepper and spinach incident to commercially processed foods. The FDA web-site keeps a running register for those of you who might be interested to the frequency of these events. <http://www.cfsan.fda.gov/~news/whatsnew.html>

Food safety is a very important issue which needs evaluation before product launch and during the time when that favorite kitchen recipe changes to a commercial product for consumer sales. The bottom line is you want to ensure the way you are making your product, will not cause harm to the person who will purchase and consume it. Of course, conditions which exist after the product is purchased is not your ultimate responsibility, but the condition of the product when purchased is. Luckily, the concern for food safety is also the priority of other entities connected with the launch of your product, relating to the regulatory aspect and the product's licensing. This is where FDA, USDA and MDA can help and direct you.

Food safety is also the outcome of a number of important procedures and policies that are product specific.

Second factor is the product's recipe/formula or plainly stated, the ingredient(s) in which your product is composed of (this is also directional for their type of processing and licensing).

Thirdly, is the product's storage, after being processing or manufactured. Think of storage as similar to a grocery shopping experience... Where will the shopper find your product on the supermarket shelf? Grocery aisles, refrigerated dairy, meat case, produce department or frozen?

Food processing and manufacturing is the procedure in which food is produced commercially to ensure safe, wholesome and quality foods. A variety of food processing techniques are available to produce foods, but one technique is usually selected over another to ensure its food safety. The overall goal of food processing is to obtain a commercially sterile product or a level of food safety which will not produce human harm. If the goal of the product's storage is the grocery aisle (often referred to as shelf-stable), then commercial canning is the technique required. If the product will be refrigerated, proper food handling, tamper-resistant package, expiration



Food Product & Food Safety (Continued from page 5)

date are most critical and if applicable, cooking directions. If the product will be frozen, then packaging and cooking instructions are important.

To determine what is your product's Food Safety Plan, an analysis by a food safety expert is required. This initial review will include the evaluation of the ingredients, storage and if (commercially) canned, the product's pH. Food safety experts have expertise that are specific to food products (juices/beverages, meat, dairy, egg, commercially canned foods, etc.) and their corresponding protocols to protect against common food-borne dangers including botulism, salmonella, listeriosis, e coli, to name a few. To learn more of how to get in touch with a Food Safety expert, for your product's Food Safety Plan, contact your Innovation Counselor. They can assist you connecting with Specialized Services at the MSU Product Center for assistance with your product's food safety, one of the several important components for a successful product launch!

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Driving Forces & Resources for Local Food System Initiatives

By Getachew Adatekassa

Interest in local and regional food systems has shown a significant increase in the past few years. A number of socio-economic factors including environmental concerns, nutrition and wellbeing, regional economic development, farmland preservation and demand for niche and ethnic food products are the major driving forces shaping developments in local and regional food systems.

Growth and sustainability of these systems are influenced by biophysical and ecological conditions, number of farming operations and market infrastructure. Between 1982 and 2002, Michigan's farmland declined by 7%. At the same time, the average age of farmers increased from 50 to 54 years. A recent grower survey by the Product Center in Southeast Michigan shows the same trend. About 74% of the surveyed growers were age 50 and above. This trend has an impact on Michigan communities interested in promoting and fostering local and regional food systems.

Building viable local and regional food systems in Michigan thus requires retaining and expanding existing farms, and supporting a new generation of farmers that diversify food production and continue farming. Regions that can identify their niche and unique local and regional potentials, and maintain proper inventory records of their agri-food resources could develop products, technologies, markets and industrial clusters that enhance and strengthen their regional economies.

Regional efforts centered around the development and strengthening of agri-food entrepreneurial activities and product innovations will help in developing sustainable food systems. This strategy will contribute to increasing and diversifying local food production, and developing high-value niche products that meet local and regional demand. Creating appropriate market infrastructure and supply chains for local and regional food products is also one of the critical factors that affect developments of local food systems. Both the conventional supply chain (wholesalers, processors, food service outlets, and retailers) and alternative supply chains (e.g., farmers' markets, community supported agriculture initiatives, and institutional buyers) can play a significant role in developing local and regional food systems. Cooperatives or other forms of collaborations and networks can provide local food product distribution and retailing options.

Michigan's communities can partner with and have access to the Product Center's agri-food entrepreneurial development services, resources and a network of expertise to support their efforts. The Product Center MarketMaker web site (<http://www.mimarketmaker.msu.edu/>) lists key supply chain actors within the state's food sector including producers, wholesalers, processors, retailers, restaurants, wineries and farmers' markets. This market resource can be used to create linkages between potential buyers and sellers of food products in a given region. [Return to top](#)

Come on Down The Price is Right

By Matt Birbeck

Setting the right price for your product or service is a delicate situation. You must find a price that will reflect your production costs as well as the value your customers place on your product.

Step1

Consider your production costs. These costs consist of both the fixed and variable expenses to manufacture or offer your product or service. Fixed costs include rent, salaries, and property taxes - any expense that doesn't change often. Variable costs fluctuate depending on the amount of goods produced or services provided. They include raw materials, hourly wages and sales commissions.

Step2

Analyze your market. How much are customers willing to pay for your product? Conduct market research to test your pricing strategy. See what competitors are charging. You may price your product higher than the norm if you offer better service than your competitors.

Step3

Evaluate your product's uniqueness. See how closely your product resembles a competing product. Consumers will be reluctant to pay higher prices for your product if they can pay less for a competing brand.



Step4

Determine your product's price elasticity. Your product's elasticity is determined by whether price changes result in changes in demand. For example, if slight changes in price results in significant changes in demand; your product is considered to be elastic. However, if there is little change in demand even with significant price changes, your product is inelastic. The greater the price elasticity, the closer you should price your products to your competitors' products.

Step5

Set a price. Take all these factors into consideration before making a decision

Come on Down - (Continued from page 8)

Tips & Warnings

- Ask trade or business associations for information on typical pricing strategies or average profit margins in your industry.
- Use your pricing scheme to create a product image. If you price much lower than competitors, consumers may think that your product is priced less because it is inferior.
- Beware of undercharging. Lowering your price far below that of competitors will create the wrong image for your product. Small businesses cannot afford to undercharge because they often cannot produce enough units to qualify for volume discounts. Therefore, their take of each sale is slim.
- Vary your pricing. You may change your pricing, depending on your goals. For example, you might charge a lower introductory price for a short period of time to attract a large number of new customers.
- If in doubt, price on the high side. It's always easier to discount prices than to raise them.

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Overview: Food Product Stabilization

By Janice Harte, MS, PhD
and Eric Birmingham

As a food entrepreneur there could be several reasons why you may want to alter your home or food service recipe and produce a commercialized, stabilized food product. Your objective may be to make the product shelf stable, refrigerated or even frozen. Perhaps you have a solution of fluids such as a dressing that separates upon standing (oil and water). Or you may want to improve the texture of your product or extend its shelf life. Depending upon the ingredients and nature of the product, the challenge to stabilize it could be affected by a single or multiple ingredients. Your original product has your expected characteristics and attributes. This is referred to as the “gold standard.” The goal is to duplicate this ideal product as closely as possible using commercial ingredients and processing techniques.

In many cases a specific ingredient or a combination of ingredients can be used to create a unique texture, structure and/or functional characteristics in the food product. This could be something as common as thickening a sauce (or gravy), or more functional as stabilizing a mixture of oil and water (emulsion) or suspending solid particulates. The typical ingredients used to stabilizing a food product can be categorized as: food gums, food starches, or emulsifiers. Sometimes a single ingredient can be replaced or added to a formula to achieve the desired attribute(s), but often it requires a combination of ingredients balanced in a very precise ratio.

Many different food gums are classified as carbohydrates. They can be used in food products to increase thickness or viscosity, suspend solid mater, improve mouth feel and/or texture, or stabilize emulsions to prevent water separation after freezing. The significant properties of a food gum that makes it useful as a stabilizer are: ability to be solubilized in water, an ability to form gels, and/or the capacity to increase the thickness of a solution (1). Depending on the food gum that is chosen for the application, some can be naturally derived as in the case of gum arabic or pectin. Some are modified, either chemically or enzymatically, such as modified corn starch or xanthan gum.

This is the introduction to a short series of articles that will focus on three of the main food stabilizer classifications: (1) food gums, (2) modified starches and (3) emulsifiers. The articles will provide a description of some of the commonly used ingredients and factors that can affect the selection of an ingredient for a formulation.

References:

1. Damodaran, S., Fennema, O., and Parkin, K. Fennema's Food Chemistry, Fourth Ed. CRC Press. Boca Raton, FL. 2008. Pgs. 1144.
2. Christen, G. & Smith, J. Food Chemistry: Principles and Applications. Science Technology System. West Sacramento, CA. 2000. Pgs. 454. [Return to top](#)

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We have also contributed to the analysis and policy efforts of the state's Renewable Fuels Commission, and more broadly MSU's campus wide emphasis on the bioeconomy. All of these past projects have resulted in the formation of a new major program within the Product Center focused on the bioeconomy. This new program is funded largely by MSU's Office of Biobased Technology along with partner funding from MSU Extension.

For us, the bioeconomy represents an emerging alternative to the petroleum-based economy that we currently have. Bioeconomy products include biofuels, biomaterials (e.g., degradable plastics from corn starch), fine chemicals extracted from plant materials, and biobased pharmaceuticals. The bioeconomy is based on replacing petrochemical inputs with biobased or biomass inputs across a broad array of commercial and industrial products. Because of the emphasis on alternatives to petroleum, the bioeconomy umbrella can also cover other alternative energy products such as methane digesters, wind power and solar energy.

Our traditional strength in the Product Center has been focused on agriculture, food and natural resources businesses. Many of these have been based on product and service innovations that have limited reliance on intellectual property, formal venture capital, and large operating scale. Most bioeconomy ventures will likely require all these features as well as serve markets that are very different from the traditional food and agriculture markets that we know so well. As a result, we did a thorough search for a new Associate Director who could bring this added expertise on high technology and large scale ventures into the Product Center.

Ruben Derderian was the successful candidate, and he has a wealth of experience that suits our needs and our potential bioeconomy clients very well. He has served as President or Vice-President of five firms in the medical devices market. In his last position as CEO, he led 650 professionals across 5 divisions with a 12-member executive team. He delivered a threefold increase in firm revenues over 8 years with 15% average annual earnings growth. Ruben has crafted strategic direction for R&D, product engineering, manufacturing and marketing as well as orchestrated operations, project and capital funding. He knows how to evaluate markets and market opportunities and then turn the evaluation into venture success. Besides all this background and expertise, he is also a great guy to get to know and work with. His coaching style is demanding yet supportive. Over the last four years, he served in a consulting capacity with various ventures helping them to plan and implement their start-up and expansion operations.

It is with great pleasure that I welcome Ruben to our staff. I also encourage any of our readers that have a venture idea within the bioeconomy space or know those who do to contact Ruben to see if he can be of service.

The Product Center's new emphasis on the bioeconomy in no way detracts from our traditional program in food, agriculture and natural resources. Tom Kalcik who has been Associate Director of the Product Center since its creation continues to lead our existing program. He and his staff remain ready to service your venture needs. [Return to top](#)

Schedule of Upcoming Events

- March 10-11, 2009 Better Process Control School - Acidified Foods
<http://fshn.msu.edu>
- February 24, 25, 27 or March 13, 2009 Call 989-758-2500 for more information
Energizing Your Future: Opportunities in Michigan Bioeconomy

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Acknowledgements

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