

Cornell University
New York State Agricultural Experiment Station

VENTURE

A Newsletter for the
Small Scale Food Entrepreneur

2005 issue
Volume 7

Published by:
The Northeast Center for Food Entrepreneurship at the
New York State Food Venture Center
<http://www.nysaes.cornell.edu/necfe/>

Support Provided to Food Entrepreneurs and Processors in 2005 by the Northeast Center for Food Entrepreneurship at the New York State Food Venture Center

By Olga I. Padilla-Zakour and Sarah J. Lincoln, Cornell University

The Center was very busy in 2005 even though the federal support ended early in January. We were able to continue to provide comprehensive assistance to clients developing new food products for the marketplace with the support from the NYS Agricultural Experiment Station, Cornell University and from a grant from the USDA entitled “New York Farm Viability Institute: The Agriculture Innovation Center”.

Between January 1, 2005 and December 31, 2005, NECFE has been in contact with 1013 clients from 27 states and 3 additional countries. Of the 1013, 610 inquiries were product-related and 403 were general inquiries. NECFE had 215 clients from 12 states file for 487 scheduled process approvals. That averages to be approximately two products per client. The NECFE laboratory analyzed 390 samples for product safety and technical feasibility. Most food product prototypes were analyzed for pH and water activity to determine critical control points and food classification for federal and state compliance issues.

Throughout 2005, most of the requests for assistance came from New York totaling 165 clients that filed for 350 scheduled process approvals. In New York, the state regulations govern the production and sale of foods and therefore a large number of entrepreneurs need specialized assistance from food process authorities. NECFE also issued many scheduled processes to clients in neighboring states.

Products Evaluated and Approved for Safety per State in 2005

<i>State</i>	<i>Number of Products</i>
New York	350
Massachusetts	25
Ohio	24
Pennsylvania	21
Vermont	19
New Jersey	12
Connecticut	11
Michigan	8
Rhode Island	6
Maine	5
West Virginia	3
North Carolina	3

Type of Products Evaluated and Approved for Safety in 2005

<i>Product Category</i>	<i>Number of Products</i>
Acid	274
Acidified	145
Meats	26
Low water activity	13
Water activity controlled	7
Fish/Seafood	6
Low Acid	6
Dressings/ Flavorings	5
Beverages, Fats/Oils, and Refrigerated	5

The Center also offered a variety of training workshops throughout New York State and participated in other technical programs with specialized presentations. Similar programs will be offered in 2006 based on training needs.

Workshops Offered in 2005

“Juice HACCP Certification”, February 3-4, 2005, Geneva, NY. 20 attendees.

“NxLevel™ Tilling the Soil of Opportunity”, March 8, 9, 22, 23, April 5, 2005, Millbrook, NY. 12 attendees

“Recipe to Market”, April 2, 2005, Salem, NY 19 attendees

“Recovery of Valuable By-Products from Grape Pomace” sponsored by NYSERDA, Wine Industry Workshop, April 5, 2005, Geneva, NY, 30 attendees

“Good Manufacturing Practices for the Production of Shelf-Stable Acid and Acidified (Pickled) Foods”, Nelson Farms, April 11, 2005, Morrisville, NY, 12 attendees

“Better Process Control School”, May 2-5, 2005, Geneva, NY. 86 attendees.

“Overview of Low Acid and Acidified Canned Foods”, FDA training program for inspectors, May 18, 2005, Buffalo, NY, 30 attendees

“Commercial Preparation of Jams & Jellies for the Retail Market”, June 1, 2005, Millbrook, NY. 18 attendees.

“Overview of Low Acid and Acidified Canned Foods”, FDA training program for inspectors, June 8, 2005, Jamaica, NY, 40 attendees

Better Process Control School – Spanish, Vanee Foods, September 12-14, 2005, Chicago, IL, 8 attendees.

“Hard Cider Making – A Foundation”, December 5-7, 2005, Geneva, NY. 16 attendees

“Hard Cider Production – Building Expertise”, December 8-9, 2005, Geneva, NY, 21 attendees

Presentations by NECFE Staff in 2005

“New Food Products with Maple: How the Cornell Food Venture Center Can Help”, 10th Annual New York Maple Producers Winter Conference, January 8, 2005, Verona, NY, 30 attendees

“Help in Developing Processed Berry Products”, NYS Annual Fruit and Vegetable Conference, January 17, 2005, Syracuse, NY, 60 attendees

“Ensuring Food Safety and Innovation to Promote Economic Development in NYS”, Economic Development Colloquium, February 10, 2005, Geneva, NY, 150 attendees.

“A Model Food Entrepreneur Assistance and Education Program: The Northeast Center for Food Entrepreneurship”, Graduate Seminar for the Department of Food Science, March 29, 2005, Ithaca, NY, 60 attendees.

“Invigorating the NY Food Industry through Effective Research and Extension”, Regional Directors of the Alumni Association and the Liberty Hyde Bailey group of Cornell University, April 8, 2005, Geneva, NY, 30 attendees.

“Food Safety and Regulations”, Panel discussion at the Food Business Incubation Summit, May 14, 2005, Portland, Oregon, 35 attendees.

“MAP Technologies – Modified Atmosphere for Extended Storage of Sweet Cherries”, Sweet cherry Field Meeting, July 21, Geneva, NY, 45 attendees.

“Fruit Processing Techniques”, Cornell Food Science Class, September 27, 2005, Geneva, NY, 12 students.

“Good Agricultural Practices” and “Good Manufacturing Practices”, International Congress on Food Safety, October 14, Monterrey, Mexico, 500 attendees.

“Invigorating the NY Food Industry through Effective Research and Extension”, Cornell Alumni Meeting, October 26, 2005, Rochester, NY, 40 attendees.

“Product Development and Marketing”, NY Risk Management Workshop, November 10, 2005, East Aurora, NY, 6 attendees.

“Product Development and Marketing”, NY Risk Management Workshop, December 5, 2005, Millbrook, NY, 9 attendees.

“Product Development and Marketing”, NY Risk Management Workshop, December 6, 2005, Albany, NY, 8 attendees.

“The Technical Side of Developing a Food Venture”, Cornell Cooperative Extension Workshop on Becoming a Food Entrepreneur, November 5, 2005, Ithaca, NY, 23 attendees.

The following article is provided courtesy of “The Food Institute Report”, www.foodinstitute.com, 1 Broadway, 2nd floor, Elmwood Park, NJ 07407, phone 201-791-5570.

NEW PRODUCT ACTIVITY OUTPACING 2004

An impressive total of 9,074 new food/beverages products were tracked by MINTEL’S GLOBAL NEW PRODUCTS DATABASE in the first half of this year—up 12.2% from the comparable period in 2004. A look at the new food/beverage launches for the first half of 2005 finds pet food exhibiting the most explosive growth—up 160.1% over the comparable period last year, far surpassing any other category, according to the Food Institute’s analysis of the data gathered from Mintel’s Global New Products Database. A total of 245 new pet food products were introduced through June 2005. A trend in gourmet pet foods has surfaced as manufacturers unveil products to satisfy the increasingly sophisticated demands of pet owners. Fitting the bill is Seattle-based BLUE DOG BAKERY’S recent entry, Natural Peanut Butter Softies, a premium dog treat made with the “highest quality human-grade bakery ingredients.” The premium treats, shaped like a fig bar, feature a filling of real peanut butter and black strap molasses. Blue Dog Bakery’s Natural Peanut Butter Softies join the company’s other premium natural dog treats including Natural Cheese, Bacon and Cheese, and Grilled Chicken biscuits.

The confectionery category posted the second highest growth— up 72.4%. However, while this percentage trailed pet food, the increase in the number of confectionery introductions, at 528 entries through June 2005, was double that of pet foods. There was clearly a focus on attracting consumers with health-conscious and premium confections. Dark chocolate launches have recently been particularly plentiful, as manufacturers touted antioxidant and heart healthy claims. In October, the San Francisco-based GHIRARDELLI CHOCOLATE COMPANY increased the cocoa percentage in its Bittersweet Chocolate Baking Bar, now 60% cocoa, and in its Bittersweet Chocolate Chips, which have the highest cocoa content (60% cocoa) of any national baking chip brand. Ghirardelli also added a new Extra Bittersweet Chocolate Baking Bar with 70% cocoa. MARS INC. came out with dark chocolate M&M’s in May.

Fitness and fun confections have also been trendy. The JELLY BELLY CANDY COMPANY rolled out Sports Beans during the summer. The first-of-its-kind jelly bean is formulated to energize the body during exercise. WHITMAN’S came out with Weight Watchers 1 Point candy bars, for those watching their daily points. SHERWOOD BRANDS, INC. is entertaining kids with its Amazing Candicraft line of candy-filled pens and edible paper in flavors such as Green Apple and Blueberry. THE HERSHEY CO. is presently introducing peanut butter-filled Kisses, and limited-edition cherry cordial crème-filled Kisses will debut before year end. Coconut crème-filled Kisses will hit candy aisles in the first quarter of 2006.

On the down side is the weight control category, with new product introductions plummeting 69%. Mintel tracked only 22 launches in the weight control segment during the first half of 2005, vs. 71 entries in the comparable period a year ago. The major decrease is particularly representative of the end of the low-carb craze. Although this frenzy is history,

many of the low-carb products remain on the shelves, but with a new focus, revamped packaging, new name and in some cases reformulated. Now the emphasis is on low-sugar, high-protein contents, and even a rating on the glycemic index, reported Brand week (Oct. 24). UNILEVER’S SLIM-FAST unit, which touted “low carb diet” on its creamy chocolate drink with 20 grams of protein, now features “high protein” and 15 grams. KRAFT folded most of its CarbWell products into its South Beach Diet line, which emphasizes “good carbs” this year. KELLOGG is expected to convert its Special K Low Carb Lifestyle to Special K protein Plus in January. One company even changed its name—EAT WELL, BE WELL FOODS of Hood River, OR, was formerly CARBSENCE FOODS, manufacturing low-carb snacks, cereals and other items. The company also overhauled its packaging and unveiled a more focused product lineup of hot-cold cereals, cereal bars, all touting a “Sugar-Free” label. KELLOGG’S Kashi Go Lean highlights the glycemic index on its energy bars. KRAFT flags the GI on its Balance Trail Mix Bar.

Mintel is a global supplier of consumer, media and market research. For over thirty years, Mintel has partnered with clients to monitor competitors, understand consumers, develop new products, refine marketing efforts and discover profitable new opportunities. For more information about Mintel’s Global New Products Database, contact Meesham Neergheen at 312-932-0400 or mneerghe@mintel.com

NEW FOOD PRODUCT LAUNCHES IN THE U.S.

(Source: Mintel's Global New Products Database)

	1st Half 2005	1st Half 2004	Yr. To Yr. Change
Beverages	1,476	1,262	17.0%
Confectionery	1257	729	72.4%
Sauces & Seasonings	1082	1009	7.2%
Bakery	996	1114	-10.6%
Snacks	804	772	4.1%
Desserts & Ice Cream	514	490	4.9%
Processed Fish, Meats & Egg Products	489	507	-3.6%
Meats & Meal Centers	431	521	-17.3%
Pet Food	398	153	160.1%
Fruit & Vegetables	328	238	37.8%
Spreads	317	312	1.6%
Dairy	316	303	4.3%
Side Dishes	313	245	27.8%
Breakfast Cereals	141	121	16.5%
Soup	125	173	-27.7%
Sweetners & Sugar	36	30	20.0%
Baby Food	29	40	-27.5%
Weight Control	22	71	-69.0%
Total	9,074	8,090	12.2%

Entrepreneur's Profile: Allison Sacheli Luciano Sacheli's Onion Jelly

Franjo Farms
998 W. Swamp Rd.
Middlesex, NY 14507
Phone: 585-554-3238
<http://www.onionjelly.com>



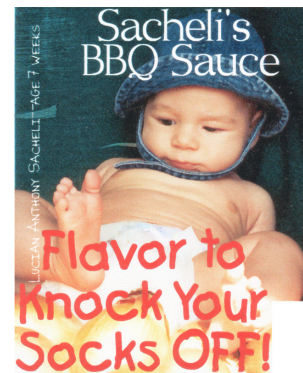
Allison Sacheli

Allison Sacheli and her husband Lucian are the 3th generation operators of FRANJO Farm growing 9 million pounds of onions a year. In 2001, while on maternity leave from her job as school psychologist after the birth of son, Lucian Anthony, Allison perfected the onion jelly creations she had developed from culled onions. With the encouragement of family and friends she took her onion jelly creations to market. In May, she attended the Better Process Control School offered by Cornell University and then began processing Luciano Sacheli's Onion Jellies in an approved commercial kitchen in a building owned by her father.

The following month, the Canandaigua Farmers' Market was re-established. It was the perfect locale to introduce her new product and get feedback from customers. Each week Allison brought baby Lucian (a very popular draw) to the Market and set up a tented booth to demonstrate the versatility of the onion jelly. By the end of the season her products were in 7 retail outlets and she was receiving orders from as far away as Chicago. (She was also expecting daughter Lydia.)

In the early days of the Market, Alison heard from customers that they did not know how to use the jelly, which led her to provide an array of samples for people to try each week at the market. She also encouraged customers to share their recipes using Onion Jelly. These recipes have been compiled into two collections of recipe books – "Cooking with Onions – Food from FRANJO Farms" and "Onion Jelly Makes Everything Good – Cooking with Sacheli's Onion Jelly". As the 2005 Farmers' Market season began, the Franjo Farms Onion jelly had expanded to 8 products and another baby (3 children in 30 months)!

Allison is a familiar face at the NYS Food Venture Center. She utilizes the Center's technical assistance for perfecting her recipes and equipment recommendations. Allison has a marketing style that has been successful in connecting with customers. She designs her own labels and has them printed locally. Featured on the labels are her family, including Lucian's grandfather, her daughter and her sons - in



*Lucian Anthony Sacheli
7 Weeks Old*

November of 2003, Lucca Sacheli joined the family.

Allison is a high-energy creative force who cultivates an artisan line of onion jellies while her husband cultivates high quality onions. She continues to sell onion jelly at the Farmers' Market and in over 35 specialty stores. Her savvy marketing style has caught the eye of many local media. Allison and her business story have been reported in numerous magazine articles in national publications and she has been interviewed on local radio programs. She has been a driving force behind the success of the Canandaigua Farmers' Market and most recently she put together a promotional calendar for the Market, which has sold over 350 copies.

The Sacheli family enjoys living in the small town of Potter, NY (pop. 1,800). For the past two years the Sachelis have sponsored the Potter Onion and Music Festival to raise money for the community's ball fields and basketball nets and the Potter Park playground. This year husband Lucian's band the Crosseyed Cat Blues Band provided entertainment and daughter Lydia was crowned as one of the 5 Onion Princesses.

By Cheryl Leach

ULTRAVIOLET AS AN ALTERNATIVE FRUIT JUICE PROCESSING METHOD TO MEET FDA SAFETY REQUIREMENTS

Noranizan Mohd Adzahan, Randy W. Worobo and Olga I. Padilla-Zakour
Cornell University, Geneva, New York

Fresh juice producers used to rely on acidity (pH<4), refrigeration, and chemical preservatives to preserve their juices. Unfortunately, microorganisms in the juice were able to adapt to these conditions and became more resistant in order to survive. A number of outbreaks in the 1990’s were associated with the consumption of fresh apple and orange juices. As a result of these outbreaks, there has been increased concern about the safety of these juices. The FDA issued a final rule in 2001 entitled “Hazard Analysis and Critical Control Point (HACCP); Procedures for the Safe and Sanitary Processing and Importing of Juice” (21 CFR Part 120). The rule requires processors and importers of juices to establish a HACCP plan to minimize the risk of juice contamination with biological, chemical or physical hazards. Any company producing 100% juice or juice puree used in manufacture of juices and beverages is required to comply with this regulation. The law requires the juice (before bottling or after bottling) to be treated with a process that achieves at least a 100,000 fold decrease in the number of pertinent pathogen(s) likely to occur in the juice. This requirement is known as the 5-log reduction performance standard. The pertinent pathogen refers to the most heat resistant microorganism of public health concern that may occur in the juice. For apple juice or apple cider, the pertinent microorganisms are *Escherichia coli* O157:H7 and *Cryptosporidium parvum*. For orange juice, the most likely risk comes from *Salmonella spp.* Other juices might need to reduce pathogens such as *Listeria monocytogenes*.

Outbreaks related to unpasteurized juices will keep on happening unless producers take action to reduce the risks by treating their juices. In July 25, 2005, New York State Governor George Pataki signed a bill into law that requires cider to be pasteurized either by heating raw juice or exposing it to ultraviolet (UV) light. Starting in January 2006, New York State will no longer allow raw cider sales. Both thermal pasteurization and UV treatment have been approved by the FDA. For apple juice or cider at pH values of 4.0 or less, the current recommendations for thermal processes to achieve a 5-log reduction of pertinent microorganisms based upon a conservative evaluation of the available scientific data, are shown in Table 1.

Table 1. FDA recommendations for thermal processes to achieve a 5-log reduction of pertinent microorganisms in acidic fruit juices

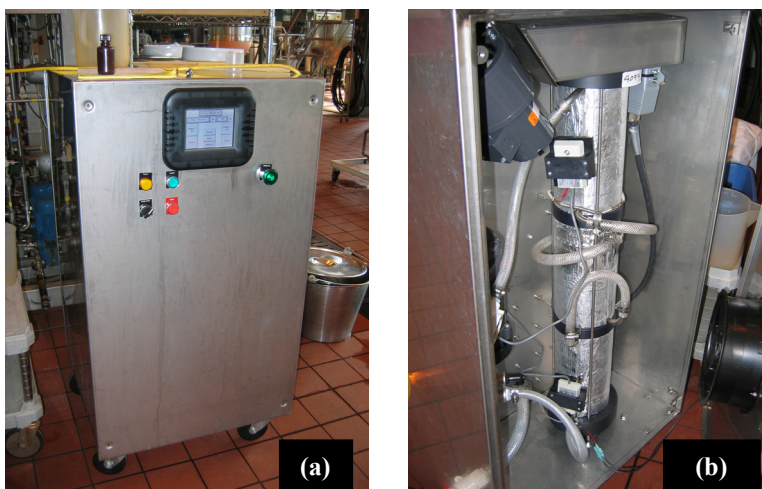
Temperature (°F)	Time (seconds)
160*	6*
165	2.8
170	1.3
175	0.6
180	0.3

* recommended treatment conditions in New York State

Citrus processors have the option of treating the surface of the fruit prior to juice extraction because it is unlikely that the pathogens will enter intact sound fruit under existing industry processing practices. However, a recent outbreak due to contaminated orange juice produced under the surface decontamination treatment conditions, could result in subsequent regulatory changes. Proper monitoring, verification, and validation procedures are necessary to ensure that the HACCP plan is effective.

If the treatment includes the use of a source of radiation, e.g., UV irradiation, pulsed light, FDA approval of the means of treatment for the control of microorganisms is required. Both UV radiation and pulsed light have been approved by FDA for the control of microorganisms, and the regulations specifying the conditions under which they may be safely used are at 21 CFR 179.39 (UV radiation) and 21 CFR 179.41 (Pulsed light)¹. UV systems for treating juice have recently begun to be commercialized. FDA approval in 2000 of UV radiation to treat juice to reduce pathogens requires that the radiation be provided by low pressure mercury lamps emitting 90% of the emission at a wavelength of 253.7 nm and that during the treatment, the juice undergoes turbulent flow through tubes with a minimum Reynolds number of 2,200¹. More information is available at the FDA website: <http://www.cfsan.fda.gov/~dms/juicgu10.html>

Small-scale juice producers may have difficulty in buying specialized equipment such as a thermal pasteurization unit. Furthermore, the unit requires technical expertise and personnel training for proper handling and maintenance, making it more suitable for larger operations. Now that UV treatment is approved, cost or training is less of a problem for small-scale juice producers. The *CiderSure* 3500 UV processing unit (Figures 1a and 1b) is a reliable UV system that is commercially available and has been used by cider producers for over 6 years. It has low initial investment, does not involve or need chemical preservatives and requires only minimal technical skill for handling and maintenance. In addition, it does not require high power and building redesign². At a dose of 14 mJ/cm², it was proven effective in reducing pathogen levels to at least a 100,000 fold in juices and ciders³. Furthermore, UV processing is simple and heat production during treatment is negligible. Therefore, a cooling step is not necessary after treatment. This makes the process relatively economical compared to thermal pasteurization.



Figures 1. (a) The *CiderSure* 3500 UV processing system (b) Components of the UV system

Cider is a type of beverage that has its own niche of customers. Some cider producers feared that through processing, changes would take place and negatively alter the color, flavor and taste of their product, therefore losing their customers. This is another reason as to why UV treatment can be an alternative processing method to thermal pasteurization. UV processing does not use or produce heat. As a result, heat sensitive flavor compounds in juices and ciders remain ‘untouched’ and sensory characteristics as well as color of UV treated juices are not affected⁴. This is considered an advantage, as consumers now demand products that are minimally processed and have ‘close to fresh’ properties. However, since the juice or cider is minimally processed, it is important to refrigerate the product because it is not shelf stable.

UV treatment is also capable of retaining nutrients that are heat sensitive such as vitamins C and Bs. Among all water soluble vitamins, vitamin C (ascorbic acid) is the most sensitive to UV light. Although the treatment reduced ascorbic acid content, the loss did not exceed those in thermally pasteurized juices⁵.

Thermal and non-thermal processing methods are tools to help produce safer products. No matter which processing technology is used, the initial microbial load in the raw juice must not be too high. Good manufacturing practices such as good sanitation and hygiene, and not using dropped fruit are still highly recommended. Minimal exposure to processes will help in the retention of more nutrients while still producing safe juices for consumption. All juice producers, regardless of their business scale, are responsible to ensure consistent production of safe juices. With the use of appropriate technologies for smaller cider operations, factors such as equipment cost, skill and training become much more manageable. Hence, the importance of UV technology as an effective tool in processing juice.

¹ FDA/Center for Food Safety & Applied Nutrition. Accessed on November 28, 2005. Last updated by March 2, 2004. <http://www.cfsan.fda.gov/~dms/juicgu10.html>

² Majchrowicz, A. 1999. Innovative technologies could improve food safety. *Food Safety*. **22**: 16-20

³ Worobo, R.W., Churey, J.J., Padilla-Zakour, O. 1998. Apple cider: treatment options to comply with new regulations. *J. Assoc. Food Drug Office*, 62(4), 19-26.

⁴ Tandon, K., Worobo, R.W., Churey, J.J., Padilla-Zakour, O.I. (2002). Storage quality of Pasteurized and UV treated apple cider. *J. Food Proc. Preservation* **27**: 21-35 Food and Nutrition Press, Inc. Trumbull, Connecticut

⁵ N. Mohd Adzahan, R. W. Worobo, and O. I. Padilla-Zakour. Ultraviolet dose and absorption capacity of water soluble vitamins in model solutions and apple juice. Nonthermal Processing Division Meeting and Workshop 2005, Wyndmoor, PA