



VENTURE

A New sletter for the
Small Scale F ood Entr epr eneur

Volume 3, No. 1

Spring 2001



HOT STUFFING

THINGS YOU DON'T WANT TO MISS

May 17, 2001

Commercial Preparation of Jams & Jellies for the Retail Market

CCE Office, Ballston Spa, NY
Contact: Judy Price, CCE Monroe Co.
(716-461-1000 x 252)

July 13, 2001

Good Manufacturing Practices for Acid and Acidified Foods

Food Research Laboratory, Geneva, NY
Contact: Judy Anderson (315-787-2273)

Value-Added Agricultural Product Market Development Grants for Independent Producers

These USDA grants are designed to encourage independent producers of agricultural commodities to process their raw products into higher value marketable goods. This is intended to open new markets for producers and promote economic viability for farms. For more information, call Thomas Stafford, Cooperative Marketing Division, Rural Business-Cooperative Service, USDA, at 202-690-0369 or email thomas.stafford@usda.gov or visit website <http://www.rurdev.usda.gov/rbs/coops/vadg.htm>

The second round of grant applications must be submitted by June 27, 2001 at 4 PM.

The Northeast Center For Food Entrepreneurship: A Joint Program Between Cornell's Food Venture Center and Vermont's Center for Food Science

by Olga Padilla-Zakour & Judy Anderson

If you have received a copy of *Venture* in the past, you have probably noticed that this issue has a new masthead. The NYS Food Venture Center is now in partnership with the University of Vermont Center for Food Science to create The Northeast Center for Food Entrepreneurship (NECFE). This is a 4-year, \$ 3.8 million grant program sponsored by USDA Fund for Rural America under the Cooperative State Research, Education and Extension Service. NECFE now provides comprehensive assistance to northeast food entrepreneurs located in New York , Connecticut, Massachusetts, Rhode Island, Vermont, New Hampshire and Maine.

The new center nurtures small food-processing businesses by assisting entrepreneurs in business planning, regulatory adherence, food safety, process development and food commercialization to boost their chance of long-term success. The Center also provides help with research, education and extension information on scientific, technological and general business aspects of the food-processing business. This process ensures that the latest technological advances and safety guidelines are transferred from researchers to the individual entrepreneurs and their products and then, ultimately, to the marketplace. The grant allows the addition of experts at both sites to help entrepreneurs. These experts provide one-on-one-counseling, develop educational materials, design and implement training programs, and perform applied research that addresses small scale processing challenges.

Olga Padilla-Zakour, Ph.D., Cornell Food Processing Professor, serves as NECFE's Director. Richard A. Durst, Ph.D., Cornell Food Chemistry Professor and Chair of the Food Science and Technology department, serves as the center's administrator. Catherine Donnelly, Ph.D. Food Microbiology Professor of the University of Vermont, is the Associate Director.

"Entrepreneurship is increasing in the rural and urban landscapes of the Northeast. It is a very important concept to support," says Padilla-Zakour. "By providing entrepreneurs with the right tools and continued support when starting and operating a food venture, we expect to increase their opportunities for economic sustainability and growth."

NECFE officially started in the year 2000 with the development of the two sites in New York and Vermont. A summary of major activities for the first year follows.

NECFE, continued on p. 8

ENTREPRENEUR PROFILE

Wyman Chor
Accord Foods, Ltd.

by Judy Anderson

Approximately 18 years ago, Wyman Chor immigrated to Rochester, NY, from her home in Hong Kong where most of her family still resides. The only family member here is her son Daniel Ma, a graphic imager at RIT.

Wyman started Accord Import & Export, Inc., soon after arriving in the U.S. In 1994, Wyman saw an opportunity to supply food products to the ethnic Chinese markets and began manufacturing her family's Black Bean Chili Sauce. The Chili Sauce was awarded a first place in the International Hot Sauce division at the 1996 Fiery Foods Challenge which is held yearly in New Mexico.

Black Bean Chili Sauce was followed by Oyster Flavored Sauce and Guilin Chili sauce in 1995. Chinese Chili Sauce, Garlic Chili Sauce, Red Chili Sauce, Asian Worcestershire Sauce and Sweet Vinegar were added to the line in 1999. Hoisin Sauce was introduced in early 2000. The product line expansion was encouraged by Dr. Don Downing and Dr. Yong Hang, Professors in the Department of Food Science & Technology. Dr. Hang is originally from Taiwan.



For the past few years, Wyman has manufactured her products in her own facility located on Lyle Road in Rochester. She is also beginning to co-pack for other processors in order to use her new facility to its fullest capacity.

Wyman's products are sold under the brand name Tso Hin Kee. This was chosen because it is well known in Hong Kong and she felt that the many Chinese immigrants in this country would recognize it and be attracted to them.

The products are currently sold exclusively in Chinese and other ethnic grocery stores and to restaurants and food service companies. For these markets, the products are packaged in retail size (5 oz. and 8 oz.), food service size (1 gal. and 5 gal. pails) and industrial size 55 gal. drums. She is currently talking to Wegman's and hopes that her products will soon be carried by that grocery chain. In addition, a new web-site is in design to promote the product line and possibly offer internet sales. The web address will be www.accordfoods.com.

FOOD SAFETY QUESTIONS

Do you have questions about Bovine Spongiform Encephalopathy (BSE or "Mad Cow Disease") or Foot and Mouth Disease? The USDA has established two hot lines to answer your questions.

800-601-9327

301-734-9256

You can also access information through USDA's web-site.

www.USDA.gov

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Editors

Dr. Olga Padilla-Zakour

oipl@cornell.edu

Judy L. Anderson

jlal@cornell.edu

Phone: 315-787-2273

888-624-6785

Fax: 315-787-2284

www.nysaes.cornell.edu/necfe

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Acidified (Pickled) Foods

by Olga Padilla-Zakour, Ph.D., Cornell University

Acidified or “pickled” foods is food product category that is very popular with food entrepreneurs and farmers interested in value-added opportunities. Many products are traditionally processed this way, including pickles (cucumbers) and pickled vegetables, meat and eggs. The variety of products and flavors is limited only by the creativity of food processors as new formulations and presentations continuously debut in food stores to meet consumers’ new expectations and ethnic preferences.

Definition

It is important to understand the regulatory meaning of an acidified food. From the regulatory point of view, foods are classed as acid, low acid or acidified depending on the natural acidity of each product. A product’s acidity is measured based on a pH scale. If the raw or initial product has a pH above 4.6, it is considered a low acid food. If the pH is below 4.6, then the food is classified as an acid food. Acidified foods are low acid foods to which acid or acid ingredients are added to produce a final equilibrium pH of 4.6 or below. Equilibrium pH means the final pH measured in the acidified food after all the components of the food have achieved the same acidity.

The pH value of 4.6 is important because it is the limiting factor for the growth of an extremely dangerous microorganism called *Clostridium botulinum*, which produces a potent toxin that causes the lethal disease botulism. The regulations concerning acidified foods were established to assure the control and inhibition of the growth of *Clostridium botulinum* by proper acidification and pH control. This microorganism is very heat resistant and not destroyed by pasteurization or cooking temperatures at or below 212°F.

We all relate to the word “pickled” as a food item being treated with an acid, typically vinegar or lemon/lime juice. In doing pickling we extend the shelf-life of the product due to the preservative effect of the acid as well as develop or produce a sour or pickled taste in the product. In a way, we are imitating a traditional fermentation process by directly adding the acid component to the product. Any food grade acid can be used such as vinegar (acetic acid), citric acid, lactic acid, malic acid or phosphoric acid.

Regulations

If you are seriously interested in making acidified foods, you must become familiar with the acidified foods regulations described in the Code of Federal Regulation Title 21 Part 114 for FDA regulated products and Title 9 Parts 318 and 381 for USDA regulated products. It is also important to review the FDA guidelines for inspection of acidified foods manufacturers available at FDA website (www.fda.gov). In addition, any food manufacturer must obey the Good Manufacturing Practices (GMP) regulations described in Title 21 Part 110. All documents are available through NECFE for your convenience.

Strictly speaking, the regulations only cover acidified foods that are shelf stable, that is, foods that are sold without refrigeration in sealed containers. In reality, any food processor that manufactures acidified or acid foods, refrigerated or not, should follow the safety factors explained in the FDA and USDA regulations.

Processing Requirements

Prior to starting the production of acidified foods, the processor must register the establishment or processing facility with FDA. The specific products and procedures used to manufacture the final products, called “schedule processes” must also be filed with FDA. In addition, the processor must complete a training program called the “Better Process Control School” or equivalent before engaging in commercial production. This program is offered annually in May by Cornell University and at different dates by other schools. Most likely the processor will need

the assistance of a “Process Authority” to develop or verify the schedule process and to help with the filing and documentation requirements. NECFE has several Process Authorities that will work with you during this stage.

Acidified foods must be properly acidified to a pH below 4.6, but, in practice this value is usually 4.2 or below for safety reasons. The regulations also require a thermal process or heating step to kill all the pathogens and any other spoilage microorganisms that could grow during the shelf-life of the product. To assure quick and proper acidification, the food is normally cooked or heated with the acid before being filled into the final container. The pH is checked, controlled and documented prior to filling and closing. The heating or pasteurization step or process must be done either by hot-filling the product or by the boiling water bath process. The heating temperature and time are critical factors that must be monitored, controlled and documented. The final equilibrium pH is checked and documented after the product has received the heating step. Any other critical safety factors must be monitored, checked and documented as specified by the schedule process.

To measure the pH, the processor must use a pH meter with a two decimal place accuracy if the final pH is 4.0 or above. A pH meter is the best method to measure pH and is recommended for all products and values. If the pH is below 4.0, other methods can be used such as pH paper or a pH meter with one decimal place. For more on pH measurement, contact NECFE and request the relevant fact sheets.

Containers for acidified foods should be such that a hermetic seal is obtained. The best containers are cans and glass jars/bottles with metal caps lined with a compound called plastisol. With these closures, a good vacuum is obtained. Vacuum is a good indicator of a hermetic seal and helps to keep a quality product. ❖

Reference:

Code of Federal Regulations. Title 21 part 114. Office of the Federal Register, National Archives and Records Administration. 2000.

The 12 Biggest Mistakes Entrepreneurs Make

By Paul E. Adams

Small business author and entrepreneur

Starting a new business is risky. Eight out every 10 businesses fail. Failure touches many: employees who lose their jobs, suppliers of goods and services who extended credit, investors who hoped to make a profit, and of course, the most dramatically affected—the entrepreneur.

Many former owners of failed businesses struggle for years in debt to suppliers, lenders and the Internal Revenue Service. Many will have lost not only their businesses, but also their homes and personal possessions as well as their savings.

Perhaps, even more upsetting to the failed entrepreneur will be the possible disruption of a marriage, the loss of self-confidence, and the general sense of failure as an individual.

If you are going to beat these odds and be successful, you need to know the 12 major reasons that cause so many to fail.

Not understanding yourself.

You will bring your personality to your new business. If you are a procrastinator, you may place your business in jeopardy through neglect. Procrastination may be a fear of failure. Like many, you may think, “If I can’t do it perfectly, I won’t attempt it at all.”

If you are disorganized in life, your business will be disorganized. Poor personal habits will become poor business habits. Wherever we go, we take ourselves, with all our baggage.

To avoid failing, start by understanding yourself. Question yourself as to why you are going into business. What are your motives? Are your goals rational plans or emotional dreams? Be honest with yourself and carefully think about your answers.

Being too emotional.

Being your own boss requires self-discipline. If you are impulsive, it can be risky for your business. You may act without thought or concern for the present or future.

Not being a hard worker.

Some less-than-successful entrepreneurs are actually lazy. They go into business because they do not want to work very hard. They believe that as an owner they may issue orders, bark commands and wait for success.

Employees are quick to learn—lazy entrepreneurs create a less-than-enthusiastic work force.

Not being organized.

Are you running your business or is it running you? If the every day running of your business is crisis management, something is very wrong.

You will not stay in business long if you manage with chaos and confusion. Your success is going to hinge on your ability to remain organized, regardless of the financial and emotional pressures your business places on you.

Do you work hard or smart? There are those who work hard, but accomplish little. They are always pressed for time, always busy, always frustrated and ineffective. They confuse hard work with productive work. Working smart is knowing what is important and how to do it most efficiently.

Lacking action leadership.

Leadership in a new business is not like that of a mature organization. It demands a sense of urgency and an action style of management, quite different from the process style of established companies.

As most start-ups initially lose money, stopping the outflow of cash requires definitive action such as acquiring customers, increasing sales, developing products and collecting money. Time is critical. The longer the losses continue, the closer you are to bankruptcy. Start-ups mandate action—not discussion. Can you make things happen?

Failing to ask for the business.

If you have any fear about selling, get over it if you want your business to survive. Much of your success will depend on your sales skills. Don’t fall for

the myth that sales persons are born, not made. Sales skills can be learned through practice and positive thinking.

Believing bigger is better.

We equate bigness with success, but growth and success are not the same. Establishing growth as your major goal can lead you into bankruptcy.

Is there a relationship between “bigness” and your emotional needs? What are you attempting to prove? If you are truly honest with yourself, you may not like the answers. However, self-examination is a lot cheaper than bankruptcy.

Having poor money skills.

It is strange that people who have difficulty balancing their household checkbook or managing their personal finances believe they can manage a business. To survive in business, an owner needs an understanding of the fundamentals of money management.

Having too much money.

It may surprise you, but you can fail if you have too much money. An abundance of funds may give you a sense of false security so you do not feel any urgent need to make your business profitable. It may allow you to overspend and expand too soon. Too much money can quickly become too much inventory. If you have plenty of working capital, you may be tempted to be generous with credit terms to your customers to get their business.

Having too little money.

Money is the most important asset a start-up business has. You will fail if you run out of money. Any unpaid bill can cause problems; not paying your employees, your telephone bill, your electric bill, your taxes or your landlord can put you out of business.

Employees will quit; they don’t extend credit. Try to operate your business without electricity. If your office is dark, and your computers are off, you are, in effect, closed.

Starting a new business too late in life.

If you are debating taking the plunge and going into business with a sound and fiscally conservative proposal, do it. But don’t risk everything unless you are in your 20s or 30s. If you do fail at those ages, don’t worry, you’ll have time to recover and even try it again.

The gray area for starting a risky business occurs when you are in your 40s. However, if you are age 50 or so, time is definitely against you if you fail. You may not recover your financial health. To my middle-aged and senior friends, I say, be cautious, careful, and conservative. Old age and poverty are not an enjoyable lifestyle.

Quitting too soon.

Too many business owners quit too soon. Yet, when should you quit? It is a difficult personal decision. My rule of thumb is if you are not investing any more of your money or risking any additional personal assets, stay until you are forced out. When that time arrives, if it does, the decision has been made for you. If you are not forced to shut your doors, you will have survived.

I do not know of any entrepreneur who has been lucky enough not to suffer problems and setbacks. Unless you are the exception, you will encounter difficulties as well. Try not to listen to the demons in your head at those moments.

Have faith. Make sure the reasons you went into business are still valid. Believe you will be in business a very long time. Avoid any belief that you will fail.

Big problems broken into small pieces look different. Realize that as your business gradually got into trouble, it may gradually get out of trouble.

Have faith in your ability to overcome the problems and push your troubled business to survival—one problem and one day at a time. ❖

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A Brief Look at Kosher and Halal Foods

Some of the world's largest food manufacturers, Nestlé, Baskin-Robbins, and Campbell Soup, are addressing the demand for foods adhering to the Islamic dietary code. In order to be considered Halal, acceptable for consumption by Muslims, foods must be inspected by a certifying agency like the Islamic Food and Nutrition Council of America, Chicago, IL. If you are considering entering this market, here is a brief description of the similarities and differences between Kosher (Jewish dietary laws) and Halal foods.

Kosher & Halal Food Processing Requirements

	Kosher*	Halal**
Pork	Prohibited	Prohibited
Ruminants & Poultry	Slaughtered by a Jew	Slaughtered by a Muslim
Blessing	Blessing before entering the slaughtering area. Not on each animal	Blessing on each animal while slaughtering.
Slaughtering by Hand	Mandatory	Preferred
Mechanical Slaughtering	Not allowed	Poultry yes, not mammals
Stunning	Not allowed	Allowed
Restrictions	Usually only front quarters Soaking and salting required	Whole carcass No salting
Blood	Prohibited	Prohibited
Gelatin from:		
Skin & Bones	From kosher animals	From Halal animals
Dry Bones	Maybe	Halal bones only
Fish	Kosher fish only	Any fish
Pork	Allowed by liberal Orthodox rabbis	Not allowed
Enzymes from:		
Microbial	Accepted	Accepted
Biotech-derived	Accepted	Accepted
Animal	Kosher slaughtered	Accepted sometimes
Porcine	No	Generally not accepted
Addition of cheese culture	Must be added by Jew	No restriction
Alcohol	Permitted (depending on source)	Not permitted
Fish	With scales only	Most accept all fish, some only fish with scales
Seafood	Not permitted	Varying degree of acceptance
Combining meat and dairy	Not permitted	No such restrictions
Sanitation of equipment	Cleaning: idle period required. Kosherization/ ritual cleaning	Thorough cleaning No idle period required.
Special occasion	Additional restrictions during Passover	Same rules all year

Prepared Foods (October, 1999)

*Source: Dr. J.M. Regenstein, the Cornell Kosher Food Initiative of the Institute of Food Science, Cornell University, Ithaca, NY; e-mail: jmr9@cornell.edu

**Source: Dr. M.M. Chaudry, Islamic Food and Nutrition Council of America, Chicago, IL; e-mail: mchaudry@ifanca.org

FOOD SAFETY AND YOU

Listeria monocytogenes: A Foodborne Pathogen

By Dawn Norton, Ph.D., and Randy Worobo, Ph.D.,
Cornell University



One of the foodborne pathogens of major concern to consumers and the food industry is the bacterium *Listeria monocytogenes*. Common to the environment and a variety of food products, this organism is responsible for nearly one-fourth of the foodborne disease-related deaths linked to known pathogens each year. This organism can cause serious, sometimes fatal diseases in animals and humans with clinical complications including spontaneous abortion, meningitis and encephalitis. The majority of human listeriosis cases occur in pregnant women, newborn children, the elderly and people living with weakened immune systems (including those with HIV infections or chronic disease and patients receiving chemotherapy). This bacterium also causes a flu-like illness in healthy adults. *L. monocytogenes* has been implicated in at least eleven human foodborne epidemics worldwide with 20%-40% of the cases resulting in death. In 1985, a California outbreak linked to Mexican-style soft cheese produced with improperly pasteurized milk resulted in 142 cases, 48 deaths and the attention of the public and regulatory agencies. More recently, the 1998-1999 multi-state listeriosis outbreak, caused by consumption of contaminated hot dogs and delimeats, resulted in over 100 cases, 21 deaths, a \$70 million product recall and increased regulatory activity.

Current regulations. The FDA has established a zero tolerance for *L. monocytogenes* in Ready-to-Eat (RTE) foods in response to the severity of listeriosis and to the association of this organism with a variety of foods often consumed without cooking. Under the FDA ruling, this organism must not be present in food products that can be consumed out of the package with no further processing. In conjunction with the USDA Food Safety Inspection Service (FSIS), the FDA has conducted a risk assessment for *L. monocytogenes* in ready-to-eat (RTE) foods in order to conduct science based review of current regulatory programs and evaluate the risk of listeriosis associated with a variety of ready-to-eat foods (a draft is available through <http://www.cfsan.fda.gov>). Notably, regulatory agencies also plan to expand the range of RTE meat/poultry products to be monitored and to increase the regularity of end product testing.

Important growth characteristics. The growth characteristics of *L. monocytogenes* make it challenging for the food industry to control. This organism is common in the environment (including food processing environments, retail establishments and in the home), and can live for long time periods in soil, water, sewage, vegetation and silage dust. Importantly, refrigeration does not prevent the growth of *L. monocytogenes*. The upper temperature limit for growth is 45°C. While this organism has a lower water activity (a_w) limit for growth of 0.90, growth potential should be considered in foods with a_w values of above 0.85. There is also potential for growth in foods with pH values above 4.6. This organism has been found in a variety of foods including milk, cheese, ice cream, raw vegetables, raw and cooked poultry, raw and cooked meat products, fermented sausages and raw and cooked seafood. *L. monocytogenes* can also form biofilms in drains and on equipment surfaces, which can then serve as reservoirs for product contamination.

Strategies for control of *L. monocytogenes* in foods. Some foods, including ice cream/frozen dairy products, aged cheeses, fruit, goat/sheep/feta cheeses and raw seafood are regarded as low risk foods due to inherent characteristics. In addition,

products with a_w values at or below 0.85 (dried or high sugar/ salt products) or pH values of 4.6 or below (acid or acidified foods) are not regarded as potentially hazardous foods. If your food is **not** in one of the above categories, the following control strategies should be employed:

Minimize potential for growth in raw materials: Holding materials under proper storage conditions is essential. Refrigeration will slow the growth of *L. monocytogenes* in many foods.

Incorporate a listericidal processing step: Unless present in very high initial numbers, this organism will not survive commercial pasteurization treatments. A thermal processing step (product internal temperature of 165°F) is sufficient for destruction of *L. monocytogenes* and ionizing irradiation has been shown to be effective for meat and poultry products. While some preservatives inhibit or slow the growth of *L. monocytogenes* in foods, it is recommended that they not be used as a sole control measure.

Prevent environmental contamination after pathogen destruction step: Use a rigorous cleaning and sanitation program. Strict adherence to Good Manufacturing Practices and Sanitary Standard Operating Procedures will greatly reduce the risk of product contamination. Chemical sanitizers including sodium hypochlorite, iodine, peroxide and quaternary ammonium compounds (quats) are all effective as is steam. Rotation of sanitizers will help to minimize biofilm formation on equipment surfaces. A program monitoring the presence of *Listeria* in the processing environment will provide verification of the effectiveness of your cleaning and sanitation program.

Finally, routine screening of final products will help to verify that your control and prevention strategies are effective for minimizing the risk of *L. monocytogenes* contamination in your final product. ❖

Fermented and Dried Meats Workshop Successfully Completed

by Cheryl Leach & Elizabeth Keller, Cornell University

GENEVA, NY: The latest in a series of hands-on workshops, "Good Manufacturing Practices for Fermented Meats (sausage) and Dried Meats (jerky)," was held at the Meats Facility in Morrison Hall, Cornell University, on December 8, 2000. The program was sponsored by the Northeast Center for Food Entrepreneurship (NECFE), Cornell Cooperative Extension, the Cornell Department of Food Science & Technology, the Cornell Department of Animal Science, and the NYS Department of Agriculture and Markets. The 18 participants included small-scale processors of specialty meats and farmers interested in the small-scale meat manufacturing business.

Denny Shaw of the Department of Animal Science, Cornell University, was the instructor for the morning session. Topics included: definitions of fermented sausage and dried meat products according to standards of identity; Good Manufacturing Practices for the production of both meat product types; microbial concerns regarding meat processing; and critical control points including pH, water activity, and temperature. Casing issues were addressed and the use of starter cultures for accurate, safe, fermentation was emphasized.

Assisting in the instruction were Larry Decker, of the New York State Department of Agriculture and Markets, and Olga Padilla-Zakour, director of NECFE, Cornell University. Decker provided valuable insight on the regulatory aspects of fermented sausage and dried meat production. He and Padilla-Zakour fielded questions from participants, helping to clarify regulatory and food safety concerns, as well as explaining key terms and procedures associated with the processing of fermented sausages

and dried meat products.

The afternoon session was filled with hands-on demonstrations of fermented sausage and jerky production. Shaw covered mixing, grinding, casing choice and stuffing for a pepperoni-type sausage. Low-cost alternatives for small processors were addressed and, where equipment was available, demonstrated. Participants were invited to try their skill with the hand-operated sausage-stuffing machine. Shaw also took participants through the steps involved in making a marinated beef jerky, including slicing and drying.

Padilla-Zakour demonstrated the use of a water activity meter and a pH meter on meat products. The measurements were discussed from both food quality and food safety perspectives. Decker added information on proper food handling and kitchen requirements, and clarified labeling regulations pertaining to the use of liquid and natural smokes. ❖



Northeast Cider Producers Discuss New HACCP Regulations at Cornell

by Linda McCandless, Cornell University

GENEVA, NY: Even though most orchards were still under a foot of snow at the time, the Northeast Center for Food Entrepreneurship (NECFE) helped cider producers plan for the 2001 season. Over 50 producers attended Cornell's Third Annual Apple Cider Workshop on the "Implications and Implementation of the New HACCP Rule," at the New York State Agricultural Experiment Station in Geneva, on Friday, March 16. Some of them attended at the University of Vermont (UVM), where, for the first time, the workshop was broadcast by live remote video.

"If interest in food safety and the new regulations are high enough, we will hold another workshop late summer," said Olga Padilla-Zakour, NECFE director. Padilla-Zakour organized the conference with Cornell microbiologist Randy Worobo, who has been instrumental in the development of UV processing for fruit juice.

"The workshop covered in detail the new FDA rule for apple cider production and subsequent implications to the industry," said Padilla-Zakour. "We demonstrated the two methods to achieve 5-log reduction of the pathogen in cider pathogens: thermal pasteurization and UV processing." Documentation, verification and validation programs were also discussed, as well as implementation steps to comply with the regulations.

Apple cider safety has been an issue for cider producers since 1996, when a Colorado infant died after ingesting unpasteurized juice that had been contaminated with *E. coli* 0157:H7.

"The Food and Drug Administration (FDA) has issued new safety regulations for juice producers that require them to implement a HACCP (Hazard Analysis and Critical Control Point) Plan that insures a 5-log reduction of the organism by January 2002 for large juice operations, including cider," said Worobo. "At this time,

the only methods approved by the FDA for cider are thermal pasteurization and UV processing."

Cider treated by either of these methods that satisfies the 5-log reduction requirement, means the cider can be sold without the warning label advising consumers of the potential risks associated with consuming unpasteurized cider. Every year, the NYS Department of Agriculture and Markets conducts inspections of cider facilities to make sure producers comply with safety regulations.

Paul Brown, of Cold Hollow Cider Mill, in Waterbury Center, Vermont, produces just under 1 million gallons of cider a year, and distributes it to markets all over the Northeast. "The presentation was very well thought out. Using the manual from the conference, it will be very easy for us to create a training program for our staff," he said. Cold Hollow has used thermal pasteurization for their apple cider since 1997. "Most of our standards are self-imposed," said Brown. "Vermont does not yet have the same inspection system employed by Ag & Markets in New York." ❖

First Year Accomplishments

Consistent with the plans for the first year of the Northeast Center for Food Entrepreneurship (NECFE), we have completed the hiring of qualified personnel for the two center sites, Cornell University and at the University of Vermont. In order to provide comprehensive assistance to food entrepreneurs, we have experts in food safety, processing authorities, outreach and research, business and marketing, processing specialists, an evaluation coordinator and administrative support. We are in the process of equipping the center to extend our communications, processing and product evaluation capabilities.

We have developed three databases that compile entrepreneurial assistance offered at other locations, marketing resources for small-scale processors, and food industry resources. The databases are continuously updated and used by the center's personnel to provide answers and referrals, ranging from local business resources to small quantity bottle suppliers, depending on the clients' needs. A fourth database was developed to track clients' needs, the nature of assistance provided and follow-up actions. Each database creates reports to facilitate information transfer and for evaluation purposes.

NECFE specialists wrote 17 new and 6 updated short guides on regulatory requirements, food safety concerns, strategies, risks and rewards of small-scale processing. The guides are being distributed to interested farmers, processors, extension educators and other parties free of charge.

NECFE sponsored four different workshops with a total of 179 attendees on topics such as Good Manufacturing Practices for the Production of Apple Cider, Low-acid and Acidified Foods, Dried Products, Fermented and Dried Meats.

NECFE specialists responded to over 300 inquiries for assistance with production and marketing of their products. We worked with 101 clients who needed safety evaluations (schedule processes) of 372 products and processes for commercial production. The products evaluated included dressings, sauces, marinades, acidified (pickled) foods, confections, seafood, low-acid foods, meat products, beverages, fruit and vegetable products, baked goods and dairy products. In total, the NECFE laboratory analyzed 452 samples of food prototypes to address their safety and technological feasibility. Other areas of assistance included development of HACCP programs, labeling regulations, and access to our pilot plants to manufacture batches of products for market trials, and to demonstrate small-scale equipment.

NECFE provided assistance to 69 entrepreneurs on business development, product commercialization, business plans, financial consultation and sales/marketing. Our staff hosted, facilitated and attended numerous tours, meetings, conferences and trade shows to promote NECFE, and to create partnerships and linkages with agencies, institutions, organized groups, individuals and regulatory concerns in the Northeast.

To make access to NECFE easier, a website (www.nysaes.cornell.edu/necfe) was created to promote NECFE's activities, to provide basic business and food processing information, and links to pertinent sites. Also, a toll-free number was installed to facilitate communications and access to NECFE: 1-888-624-6785. ❖

THE WEBSITE

NYS Department of Agriculture & Markets

www.agmkt.state.ny.us

The Food Allergy Association – product alerts, tips, new research, etc. on food allergies.
<http://www.foodallergy.org>

The Vegetarian Pages – vegetarian events, nutrition, recipes, etc.
<http://www.veg.org/veg>



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