



HOT STUFFING:

Events you don't want to miss

November 13-15, 2002

University of Vermont, Burlington, VT

CHEESE MAKING

The first day of this 3-day workshop will teach the beginner the basics of cheesemaking, with hands-on experience in cheese manufacturing. The next 2 days will be designed for advanced cheesemakers with topics of interest including aging and problems associated with aging, along with hands-on cheesemaking opportunities.

Contact Cecilia Golnazarian at
802.656.0147 or
cgolnaza@zoo.uvm.edu

November 19, 2002

University of Vermont, Burlington, VT

RECIPE TO MARKET

If you are considering launching a specialty food business, then this workshop is for you! This one-day seminar will provide future entrepreneurs with knowledge of critical issues needing consideration before launching a food manufacturing business.

Contact Cecilia Golnazarian at
802.656.0147 or
cgolnaza@zoo.uvm.edu

December 10 & 11, 2002

University of Connecticut

SAUSAGE MAKING

Contact Cheryl Leach at 315.787.2622 or
cal35@nysaes.cornell.edu

Hot Stuffing continued on P. 6

Tomorrow's Food Trends – What's Hot in America?

by Cecilia Golnazarian, University of Vermont

In a recent study, the United States Department of Agriculture's Economic Research Service (USDA - ERS) projected the effect of population growth, age, ethnic diversity and income growth on the future food choices of consumers. They hypothesize that these choices will have implications for food processors and other food production and marketing systems.

An increase in the proportion of the population over age 45, higher incomes, higher education levels, and a growing ethnic diversity have contributed to a demand for ready-to-eat, ready-to-heat, and ready-to-cook products as well as a demand for more quality, not quantity (Davis and Stewart, 2002). Consumers will demand taste, nutritional quality, safety and convenience. They will spend more for higher valued items and new food types. Previous studies show that as U.S. incomes rise, consumers increase their spending on processed foods as well as fresh foods, and dining away from home (Blissard et al., 2002).

Changes in consumer demands will continue to drive new food product introductions and technology innovations. New food product introductions peaked in 1995 and have decreased since, but are still at a high of 9,145 new products introduced in 2000 compared to 2,689 in 1980 (Davis and Stewart, 2002). Small and medium-sized food manufacturers introduced 86 percent of new products in 2000, while large food companies introduced only 14 percent (Harris, 2002).

So what's hot in America? Modern trends indicate an increase in natural and organic foods, reduced-fat and low-fat foods, functional foods, convenience food products particularly handheld or prepackaged entrees requiring little preparation, as well as meal kits and packaged sauces. According to a study published in *Prepared Foods*, the top new product introductions in 1999 were sauces (610), pizzas and entrees (432), soups (254), seasonings (238), pasta (231) and vegetables (158) (Harris, 2002).

The Institute of Food Technologists report that convenience, freshness and sophistication are the principal trends in consumer food demand that dictate new food product lines. Convenience foods that save time on preparation and come prepackaged for cooking are popular. *Prepared Foods* reports that popular items in restaurants often dictate trends in the prepared foods industry. The ethnic flavors of Cuban/Caribbean, South American and Vietnamese foods are also a hot new trend (Ohr, 2002). Healthier lifestyles of consumers often drive them to believe that all-natural products and organic products are healthier than products containing artificial ingredients. An all-natural label is perceived as "less-processed" (Ohr, 2002). Savory, sophisticated new foods that are clean, pure, natural and safe are in demand (Harris, 2002).

"The most successful food companies in 2020 are likely to be those that tap most effectively into American's appreciation for diversity in their lives, especially the possibly insatiable desire for new and different food choices (Blissard et al., 2002)."

References

- Blissard, Noel, Biing-Hwan Lin, John Cromartie and Nicole Ballenger. 2002. America's changing appetite: food consumption and spending to 2020. *Food Review*. 25(1): 2.
Davis, David E. and Hayden Stewart. 2002. Changing consumer demands create opportunities for U.S. food system. *Food Review*. 25(1):19.
Harris, Michael. 2002. Food product introductions continue to decline in 2000. *Food Review*. 4 (1):24.
Ohr, Linda Milo. 2002. Prioritizing product development. (Formulation & Ingredient Challenges). *Prepared Foods*. 171(1):34.

Entrepreneur Profile:

Claudia Clark - Moosewood Hollow, LLC

Claudia Clark of Plainfield, Vermont, has spent 25 years in food related positions outside of Vermont after earning a MSc in Food Science. Her products include Biscoaties™ Oatmeal Cookies and Infused Maple Syrups (Sweet Ginger, Sweet Autumn, Sweet Chai, Sweet Heat, Sweet Savory). “I have always dreamed of starting and running my own company,” she says, and to make sure she succeeded, she went back to college for a master’s degree in business. When her husband retired, they moved to Vermont and it was time to make her dream of entrepreneurship a reality.



“I am naturally curious and always wonder ‘why’ and ‘what if’ when exposed to a new experience,” says Clark. The creation of Biscoaties™ (twice-baked oatmeal cookies) was a result of exposure to the horse world. She noticed people share all types of food with their animals, from sandwiches to beer. With Biscoaties™ she was targeting both owners and their horses but ran into “a regulatory nightmare” for pet food. She quickly realized pet food approval involved too much paperwork and dollars for her start-up business. “So I’m marketing to people and what they do in the privacy of their own barns is their business,” she says. Currently a Vermont company handles distribution, targeting gift and gourmet food stores.

It wasn’t long before Claudia’s curiosity spawned another product idea for a unique line of infused maple syrups. While learning to make the golden liquid from maple sap one winter on her outdoor barbecue (yes, all “true Vermonters” make maple syrup), the former flavor chemist was intrigued by the often-heard warning that maple syrup tends to pick up “off flavors” during processing. “My natural reaction was what’s wrong with picking up flavors, if they are the right flavors,” she wondered. She started by adding herbs and spices to her syrup. Rave reviews followed from family testers at the holidays.

She knew infused syrups presented an educational challenge in addition to the usual difficulties launching a new product. “People outside of the Northeast only know maple syrup when used on pancakes,” she says. To provide assistance, unique tags hang from each bottle with cooking suggestions and recipes. Five flavors currently include a combination of rosemary, thyme and lemon; a ginger; a habanero pepper; a ginger and cardamom combination and a mix of sweet spices and vanilla.

Her website, www.infusemaple.com, has additional recipes for each flavor. She hopes retail placement will be in the infused oils and vinegars section rather than with other plain maple syrups in the breakfast section. She realizes this will not happen quickly and requires diligent work on her part.

Now that product development is finalized, Claudia is targeting high-end gift and gourmet food stores. She’ll be ahead of the game with the publication of October’s *Better Homes and Gardens* magazine where her business and products will be highlighted in the “New and Notable” products section. The magazine saw her Sweet Savory syrup at the New York Fancy Food Show last July and selected the Vermont product for inclusion in the fall-centered issue.

Claudia was asked for this article if she had any advice for the beginning

food entrepreneur. Here is what she said:

- Believe in yourself and your product.
- Have solid technical assistance; use NECFE’s resources.
- Good financial record-keeping and understand the numbers. Don’t rely on someone else to tell you what’s going on. You need to be making money and not losing money!
- Use SCORE, a public service group of retired business executives (free).
- Run the financials to be sure the business model (pricing, positioning, etc.) makes sense.
- Conduct a realistic assessment of the competition.
- Stay focused; it’s easy to get distracted.
- Know your personal strengths and weaknesses; find ways to counter-balance the weakness.
- Network with suppliers, customers, NECFE; you can frequently get “free” information/advice.

by Susan Callahan,
University of Vermont

VENTURE

Fall 2002 • Vol. 4 No.3
A Newsletter
Published by NECFE,
NYS Food Venture Center
Geneva, NY

Editors

Dr. Olga Padilla-Zakour
oip1@cornell.edu
Judy L. Anderson
jla2@cornell.edu
Phone: 315-787-2273
888-624-6785
Fax: 315-787-2284
www.nysaes.cornell.edu/necfe
Funded in part by USDA/
Fund for Rural America/ CSREES



NECFE Workshops Continue to be Successful

by Michele Cranwell, University of Vermont

From the Evaluator's Desk, NECFE continues to grow and improve, offering a wide variety of services that are helpful to people and directly lead to positive outcomes, such as starting a business, improving a product, or changing directions to work on another product. Since the development of the NECFE workshop evaluation survey in August 2001, NECFE has hosted seven workshops serving approximately 150 people. Workshop topics include: Basic Cheesemaking, Commercial Preparation for Jams and Jellies, NxLevel Business Basics, Recipe to Market, Advanced Marketing, and Value-added Specialty Meats Production (two held).

The workshop evaluation survey was developed by the Center for Rural Studies at the University of Vermont, the evaluation team for NECFE, in conjunction with NECFE staff, to assess participant satisfaction as well as receive feedback on all workshops. A total of 135 workshop evaluations have been completed thus far. NECFE workshop participants continue to be very satisfied with workshops, presenters, and materials and found the workshop content useful for their business. Benefits of attending workshops included receiving hands-on experience, learning about food safety and sanitation, regulatory and licensing information, marketing, labeling, and packaging, and having the opportunity to work with experts, find out about local resources, receive referrals, and network with others.

Workshop Participant Characteristics

The workshops continue to have a wide representation from the Northeast as well as other parts of the United States and Canada: 41% of respondents were from Vermont, 29% from New York State, 9% from Massachusetts, 8% from Connecticut, 7% from Maine, 2% from New Hampshire, and 1% each from Rhode Island, Maryland, Texas and Ontario, Canada. Participant age ranged from 21-68 years old, with an average age of 47 years. Fifty-five percent of respondents were female and 45% were male. Sixty percent reported that they are currently operating a food business. Of these people, 26% said their food business provided their primary source of income and 58% said it provided a secondary source of income.

Workshop Outcomes

Participants reported various gains from attending workshops, including skill building, networking with others, and learning of resources. Skills gained that respondents indicated will be useful for their business include areas of food safety and sanitation, licensing and regulatory information, marketing, labeling, and packaging, developing recipes, and learning specific skills such as TA/pH and Value Mapping. Respondents also found it valuable to learn about resources available in their specific field, have workshop materials as at-home references, receive expert advice, establish contacts for the future, and have positive group interaction with other participants. Overall, 93% of evaluation respondents reported that the interactions and networking with others at the workshops were somewhat to very useful. More than three quarters of respondents (77%) indicated that they were referred to other services that they needed through the workshop.

Participant Business Plans after Workshops

The majority of workshop evaluation respondents, 95%, reported high satisfaction with the overall usefulness of the workshop to themselves or their business. Respondents were asked to discuss their plans for their business after having taken the workshop. Respondent comments related to planning, business development, and product improvement or development of value-added product. Depending on the stage of the respondents' current business, participants were planning to develop a business plan, start their business, invest in their business for expansion or enhancement, develop a value-added product,

improve a current product, follow up with referred services for food safety, and educate others in their community on the information they learned.

For information about upcoming NECFE workshops, please call toll free 888-624-6785 or visit the website at: <http://www.nysaes.cornell.edu/necfe/>.

For more information about the evaluation of NECFE, please contact Michele Cranwell at the Center for Rural Studies at 802-656-3012, mcranwel@zoo.uvm.edu, or visit our website at: <http://crs.uvm.edu/evaluation/evaluation.htm>.

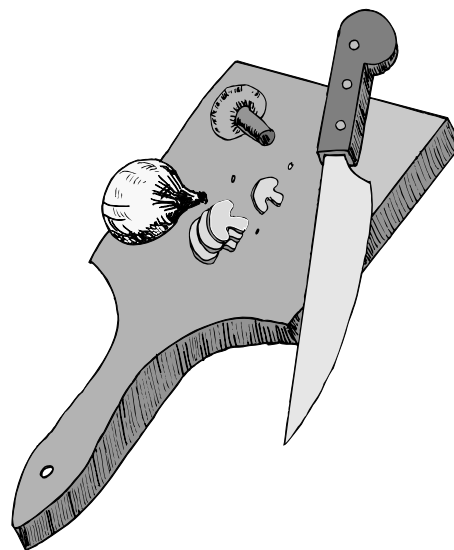
Workshop Outcomes

Skills gained

- Hands-on experience
- TA/pH
- Food safety/sanitation
- Licensing information
- Marketing
- Labeling and packaging
- Developing recipes
- Pork cutting
- Value-mapping

Networking and Resources

- Learning about resources available
- Workshop materials as references
- Expert advice
- Interactions and networking, establishing future contacts and resources
- Overall positive feedback from speakers/presenters
- Group interaction



Farmstead and Artisanal Cheesemakers in the Northeast:

Enjoying Success and Receiving Support from NECFE

by Catherine Donnelly, Cecilia Golnazarian and Jeff Roberts,
University of Vermont

One of the fastest growing and most successful sectors of the speciality food industry in the Northeast is the farmstead and artisanal cheese industry. This industry plays a critically important role in agricultural diversification and helps to promote and maintain the working landscape from which we can all derive benefits. The NECFE receives numerous requests for assistance from farmstead cheesemakers in our region, and, through our activities, we are providing valuable information and services which will help this industry to enjoy continued success. Did you know that Wisconsin, California, and Vermont are the three leading states when it comes to artisanal cheesemaking? At the 19th Annual Conference of the American Cheese Society, held August 1-3 in Washington, D.C., much of the focus was on speciality cheeses produced locally here in the Northeastern U.S.

This year, the ACS received 467 entries in its Annual Cheese Competition, and Northeastern cheesemakers enjoyed spectacular success. In the fresh unripened cheese category, F. Capiello Dairy Products Inc. of Schenectady, N.Y. and Calabro Cheese Corp. of East Haven CT won second and third place honors. Hudson Valley Camembert produced by Old Chatham Shepherding Co. of Old Chatham, New York, won third place honors in the soft ripened cheese category. In the American Originals Sheeps Milk category, Autumn Oak, produced by Willow Hill Farm of Milton, Vermont, took 2nd place honors, along with Old Chatham's Mutton Button which took third place honors in this same category. Vermont Farmstead Gouda produced by the Taylor Farm of Londonderry captured third place honors in the America-made International Style category, along with Willow Hill Farm's Summertomme which captured 2nd place honors in the open sheep/mixed milk division of this same category. Cabot's Extra Sharp Wheel received 2nd place honors in the Aged Cheddar category, and Cabot's Mediterranean Cheddar and Garlic and Herb Cheddar received 1st and 3rd place honors, respectively, in the flavored Cheddar category. Cabot Vermont Cheddar also received first place honors in the aged less than nine months Cheddar category. Berkshire Blue of South Mountain Products, Lenox, MA received 1st place honors in the Blue Veined Cow's Milk category, along with Bluebonnet, produced by Westfield Farm in Hubbardston, MA which received 3rd place honors in the Blue-veined goat's milk category. Calabro's Queso Blanco received 3rd place honors in the Hispanic and Portuguese Style category. Capiello's 16 oz. Whole Milk Mozzarella took 1st place honors in the Pasta Filatotype Italian Cheese category, and Calabro's Scamorza captured 1st place honors in the Mozzarella types category. In the Feta Cheese category, Old Chatham's Feta captured 1st place honors and Bonnieview Farm's Feta, produced in Craftsbury Common, Vermont, took 3rd place honors.

Coach Dairy's Caraway Rounds received 1st place in the flavored goat's milk cheese category, and Smoked Capri produced by Westfield Farm in Hubbardston, MA, took top honors in the Smoked Goat's Milk Cheese category. In the Fresh Goat's milk flavored cheese varieties, Coach Dairy Goat Farm of Pine Plains, NY, captured 1st place honors, along with Vermont Impastata Olive and Herb Creamy Goat Cheese produced by Vermont Butter and Cheese Company. VBC's Vermont Quark, Old Chatham's Sheep's Milk Yogurt, and Willow Hill Farm's Sheep's milk yogurt were recognized winners in the cultured cheese products category. VBC's Cultured Butter received top honors in the Butter category, and Abbey Cheese from Creek Road Cheese Company, Irasburg, Vermont, won 1st place in the Aged Sheep's Milk Cheese category. Dr. Catherine Donnelly, Associate Director of the NECFE, participated as a technical judge in the 2001 and 2002 ACS Competition.

In addition to promoting the continued success of established cheesemakers here in the Northeast, the NECFE provides educational and technical assistance to farmstead and artisanal cheesemakers. We have offered a number of educational workshops for both beginner and established cheesemakers.

In October of 2000, we were proud to cosponsor the "Advanced Farmstead & Artisanal Cheesemaking Workshops" sponsored by the Value-added Dairy Opportunities Project (Regional Farm & Food Project, Albany, NY). Kathy Biss, author of "Practical Cheesemaking" (1988), shared her knowledge of the practical aspects of the manufacture of a mature, hard-pressed cheese, a blue cheese, and a surface ripened cheese, along with discussions on the scientific aspects of both processes. In November, 2001 NECFE sponsored a 3-day workshop for beginner cheesemakers (cosponsored by the University of Vermont Small Ruminant Dairy Project). Dr. Paul Kindstedt (Professor of Food Science at the University of Vermont) shared his knowledge of milk chemistry, starter cultures, aging, acidity measurements and monitoring. Peter Dixon (Dairy Foods Consultant) led the participants in the manufacture of Feta cheese, French Tomme-style cheese and cottage cheese.

Also in November 2001, NECFE, the Small Ruminant Dairy Project (University of Vermont) and the Vermont Cheese Council offered a 2-day hands-on course in advanced farmstead cheesemaking taught by Margaret Morris (Ontario, Canada). This course was offered to licensed cheesemakers wanting to learn more about starters and enzymes, and looking for specific recipes such as Danish Blue, soft-ripened, gouda and mixed milk cheeses.

We are very excited to announce our next hands-on workshop scheduled for November 13-15, 2002. The first day will be designed for beginners with an introduction and demonstration of the basics of cheese manufacture. The second and third day will be shared with experienced cheesemakers and beginners who have taken the first part of the workshop. The workshop will be lead by Mariano Gonzales (Fiscalini Farms, Modesto, CA) recent first place winner at the 19th Annual Conference of the American Cheese Society Annual Cheese Competition for bandage Cheddar, and Dr. Paul Kindstedt (University of Vermont), a world renowned expert in the chemistry of mozzarella, who has shared extensive technical assistance to the farmstead cheese industry.

In addition to education and technical training, the NECFE is committed to facilitating economic sector development. On November 16th, the NECFE will co-

FARMSTEAD-continued on P. 7

Consumer Food Safety Practices

by Todd M. Silk, University of Vermont

In that September 2002 was National Food Safety Education Month, several presentations and articles highlighted consumer food safety practices. Of great interest are the results from the Food and Drug Administration (FDA) and the Food Safety and Inspection Service (FSIS) 2001 Food Safety Survey (FDA, 2002a), a nationwide telephone survey of 4,482 adult consumers. Results of the survey indicate that there have been improvements in consumer food safety practices, however there is room for improvement.

In the 2001 survey, most consumers reported food-handling practices that are consistent with the four basic food safety messages that FDA and FSIS have been stressing through food safety programs since 1997 (FDA, 2002b). The four basic food safety messages are:

1. CLEAN: Hands, utensils, and food preparation services are clean and cleaned with some frequency.

2. SEPARATE: Raw and cooked/ready-to-eat foods are separated to prevent cross contamination.

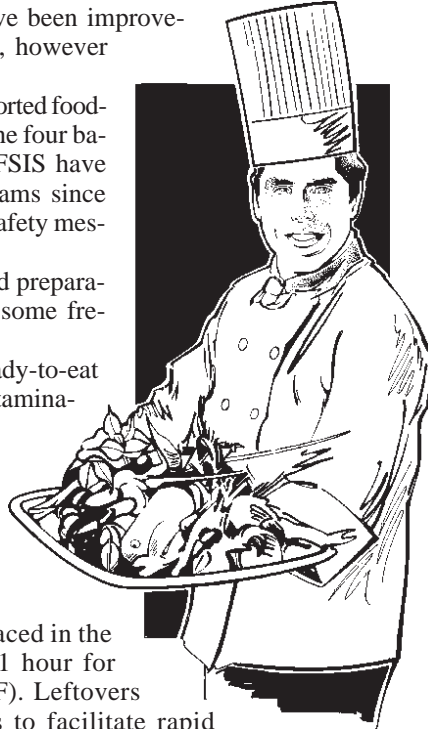
3. COOK: Foods should be cooked to appropriate internal temperatures to assure safety (i.e. ground beef should be cooked to 160°F), and food thermometers should be used to determine internal temperatures of foods.

4. CHILL: Leftovers should be placed in the refrigerator or freezer within 2 hours (1 hour for hot days with a temperature above 90°F). Leftovers should be placed in shallow containers to facilitate rapid cooling. Consumers should also make sure that the temperature of the refrigerator and freezer are < 40 and < 0°F, respectively.

Survey results indicate that many consumers do follow recommended practices for keeping hands and surfaces clean. In the 2001 survey, 82% of consumers reported that they usually wash their hands with soap after handling raw meat and poultry as compared to only 66% in 1993. In 1993, only 68% of consumers reported that they properly clean cutting boards and other surfaces after cutting raw meat and poultry, that level increased to 85% in 2001. Focus group results from household food preparers (FSIS, 2002) found that consumers admitted that they do not always wash their hands before preparing foods, such as preparing a sandwich or snack. Reported focus group findings also suggest that although consumers use techniques to prevent cross contamination when cooking, they are not as conscientious about separating raw meat and poultry from other foods when grocery shopping, and keeping such high-risk foods separated from other food products in their refrigerators (FSIS, 2002).

Since 1998, the percentage of consumers who own a food thermometer has increased from 46% to 60% in 2001. The level of consumers who use food thermometers when cooking roasts increased from 22% in 1998 to 32% in 2001 (FSIS, 2002). Only 12% of consumers use a food thermometer when cooking chicken parts. Six percent of consumers use a food thermometer when cooking hamburgers, surprisingly low considering the risks associated with consuming undercooked ground beef and that the color of cooked meat is not an accurate indication of doneness.

Focus group findings (FSIS, 2002) indicate that many consumers are not familiar with the two-hour rule for cooling foods. The 2001 consumer survey supports this finding with only 26% of consumers reporting that they refrigerated large amounts of leftovers within 2 hours and used shallow containers to allow rapid cooling (FSIS, 2002). Focus group results also suggest that many consumers use unsafe practices to defrost meat and poultry (defrosting meat at room temperature) (FSIS, 2002).



Frozen meats should be defrosted at refrigeration temperatures.

A 2001 survey conducted by the American Dietetic Association and ConAgra Foods Foundation (ADA/ConAgra, 2001) found that 67% of consumers did not own a refrigerator thermometer and 60% did not know the proper temperature for maintaining refrigerators. Twenty-nine percent of participants in a Utah State University study had refrigerator temperatures higher than 40°F, with 7% higher than 45°F (FSIS, 2002).

Consumers are becoming increasingly aware of foodborne pathogens, high-risk foods, and high-risk populations (FSIS, 2002).

In detail: The percentage of consumers who correctly think that microbes are linked with causing serious food safety issues increased from 36% in 1993 to 53% in 2001. In 2001, 93% and 88% of consumers were aware that *Salmonella* and *E. coli* are foodborne pathogens. Awareness of *Listeria*, although increased, from 14% in 1998 to 31% in 2001, remains relatively low. Surprisingly, awareness of *Campylobacter*, the leading cause of bacterial diarrhea in the United States, is estimated to cause 2–4 million cases of illness per year (FDA/CFSAN, 2002) was recognized by only 8% of surveyed consumers in 2001.

Although increases in food safety knowledge and use of better practices to assure safety have been noted, there is much room for improvement. Estimates are that there are 76 million cases of foodborne illness annually in the United States. With increased consumer education and strengthening food safety programs it is likely that further advances in food safety practices will be noted in the next FDA/FSIS food safety survey.

For further details on the 2001 Food Safety Survey and supporting information, please read the following references.

References:

American Dietetic Association (ADA) and ConAgra Foods Foundation (ConAgra). 2001. Home Food Safety Refrigeration Survey. <http://www/homefoodsafety.org>.

Food Safety and Inspection Service (FSIS). 2002. PR/HACCP RULE EVALUATION REPORT Changes in

FOOD SAFETY-continued on P. 6

Consumer Knowledge, Behavior, and Confidence Since the 1996 PR/HACCP Final Rule. <http://www.fsis.usda.gov/oa/research/HACCPimpacts.html>.

U.S. Food and Drug Administration (FDA). 2002a. Food Safety Survey: Summary of Major Trends in Food Handling Practices and Consumption of Potentially Risky Foods. <http://www.cfsan.fda.gov/~dms/fssurvey.html>.

U.S. Food and Drug Administration (FDA). 2002b. Research Shows Improvements in Safe Food Handling by Consumers. <http://www.fda.gov/bbs/topics/NEWS/2002/NEW00838.html>.

U.S. Food and Drug Administration/Center for Food Safety and Applied Nutrition (FDA/CFSAN). 2002. Foodborne Pathogenic Microorganisms and Natural Toxins Handbook. *Campylobacter jejuni*. <http://www.cfsan.fda.gov/~mow/chap4.html>.

HOT STUFFING continued from P. 1

LOOKING AHEAD

December 12, 2002
Cornell University
SANITATION IN FOOD PROCESSING

Contact Sarah Lincoln at 315.787.2274 or sjl38@nysaes.cornell.edu

January 7-8, 21-22
February 4-5, 2003
NxLEVEL™ TRAINING:

TILLING THE SOIL OF OPPORTUNITY
BUSINESS TRAINING FOR
AGRICULTURAL AND
VALUE-ADDED ENTERPRISES.

Cheryl Leach: 315-787-2622
Cal35@cornell.edu

January 2003
Augusta, Maine
RECIPE TO MARKET

Spring 2003
New York State Capital District Area
RECIPE TO MARKET

Spring 2003
FOOD SAFETY & SANITATION

Recipe Scaling from Stove Top to Kettle

by Brian Norder, Vermont Food Venture Center

Many food entrepreneurs start their food businesses with recipes developed or refined in their home kitchens. Often these recipes are formatted in units such as teaspoons, tablespoons, cups, pinches or dashes. While traditional, these units do not lend themselves for effective recipe scaling and must be converted into commercial format by the producer.

The standard of measurement for food formulas is weight. For the home cook, the idea of pounds of water (or kilograms of water if using metric) may sound foreign but several steps in starting of expanding a food business require formulas or recipes written by weight. Ingredient statements on labels need to list the ingredients in descending order by weight, food scientists performing a process review analyze the formulas in terms of percentage by weight and FDA and state filings for scheduled process require this unit of measurement also.

The most important piece of equipment in scaling is a quality digital scale, which can be used at shared-use kitchens or pilot plants available for public use. Alternatively, one can be purchased for between \$100 and \$200 for light to medium duty units. The scale should have a minimum capacity of four pounds, work in either English or metric units, and have a readability in a maximum of one gram increments.

We need to address the issue of English versus metric measurement. Only a very rudimentary understanding of metrics is needed to work in that format and, as you proceed, the benefits become obvious. Let's assume that you use small amounts of several spices in your home recipe, say half-teaspoons. A half-teaspoon of pepper will likely be too light to move a scale from 0 to 1 ounce while it could register a few grams in metric format. Accuracy as the recipe is expanded will be greater using the smaller metric units.

The math involved in multiplying the recipe will be easier also with metric. The first step in scaling-up your recipe is to prepare it in the size and method as you currently do with the added step of weighing and documenting all ingredients. If your recipe calls for a half-cup of water, you will weigh the empty half-cup measure, reset the scale to zero and weigh it again with the water in it. Repeat this for all ingredients, prepare the batch and make sure it tastes the way you want it to.

This is the stage where possible product variations should be explored to maximize efficiency when making large batches. Can dehydrated garlic or onions replace fresh without compromising taste to a noticeable degree? Can Individually Quick Frozen (IQF) fruits work in the old family jam recipe as opposed to fresh-picked? Is a hot pepper mash or puree preferable to stemming and chopping fresh peppers for the salsa recipe? Allow friends and family to be the judge in blind taste tests so that they can give an objective opinion.

After determining the final form of raw ingredients to be used, re-write the recipe with ingredients listed in descending order by weight. Add the total weights to obtain a batch weight then divide the weight of each ingredient by the total to calculate the percentage of each individual item. The following example from "Small Scale Food Entrepreneurship: A Technical Guide for Food Ventures," page 45 illustrates the process.

The next step in the process is production of a test batch to determine how well the recipe responds to being multiplied. The size of the scaled-up test batch can be driven by a number of variables including the size of "normal" production and equipment capacity. While this number may be 30, 50, 90 gallons or more, it is advisable to start with a much smaller test batch of perhaps 10 gallons. This could translate to a weight of 80 to 100 pounds depending on the weight of the ingredients

Batching is accomplished by using the "percentage by weight" calculation from the example above. If the intended batch size is 85 pounds, then, for calculation purposes, multiply the percentage of the total of each ingredient by 85 pounds.

For example:

- Ketchup 85# x 53.99% = 45.8#
- Lime juice 85# x 12.78% = 11.03#
- Vinegar (5% acidity) 85# x 12.54% = 10.66#
- And so forth.

A batch of this size allows you to test your scaling in enough volume to provide a valid sample while not placing an entire kettle of product at risk. It also can highlight potential problems with equipment or processes that were not apparent on the stovetop. Some ingredients, spices, hot peppers, ginger, garlic and other savory components may not behave in a linear fashion when multiplied.

You may start with less than the full amount of these type foods; say 75% of that called for in the scaling math to see if that amount provides the desired flavor. If not, you can always continue to add until you obtain the right flavor. (Once they are in there, you can't take them out!)

Carefully document all changes and revise the weights and percentages accordingly. Once you are satisfied that this scale-up is the product you want, the product is ready to be sent to a process authority for testing and formula review. The process authority will test the product for appropriate control factors- pH, water activity, moisture, and make scheduled process recommendations. If the food is determined to be a low-acid or acidified food, then that scheduled process needs to be filed with the US Food and Drug Administration (FDA.). Other products may have specific filing requirements as determined by state or local jurisdictions.

Under most circumstances the recipe is now ready to be fully scaled-up to the final commercial batch size needed. Even then, there may be some unexpected results—the time it takes to fill a larger batch may result in excessive evaporation and may need compensation by adding liquid, spicing may need further adjusting, or the longer cook time needed for larger batches may affect the behavior of certain ingredients such as pectin for preserves.

In all likelihood, you will make several changes to your initial procedures as you continue to grow and areas of improvement become apparent. Any changes to the approved formula for low acid and acidified foods must be, by law, approved by the process authority. Review of deviations for all food formulas is recommended.

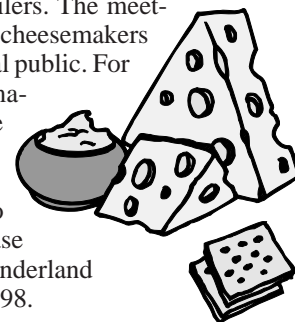
PRODUCT		
Measured pH = 3.60		
DATE		
COMPANY NAME	Critical Factors ¹	
John Doe	(Must keep records)	
Main St.	Maximum pH =4.0	
Anywhere, NY 10000	Fill Temp = 190°F	
Phone/ Fax	Vacuum = visual check	
INGREDIENTS ²	WEIGHT ³ (lbs.)	% BY WEIGHT ⁴
Ketchup	9.00	53.99%
Lime Juice	2.13	12.78%
Vinegar (5% Acidity) ⁵	2.09	12.54%
Peanuts, ground	2.00	12.00%
Dark Brown Sugar	0.59	3.54%
Scallion, fresh	0.33	1.98%
Garlic, fresh, sliced	0.25	1.50%
Chili Powder	0.19	1.14%
Parsley, dried	0.09	0.54%
TOTALS	16.67	100.00%
PROCEDURE: ⁶		
1) Blend ingredients.		
2) Cook sauce to desired consistency.		
3) Check pH to be sure it is 4.0 or below.		
4) Fill into clean, 16oz. glass containers at 190°F or higher, seal and invert.		
5) Label: “Refrigerate After Opening.”		
6) Check pH after equilibration or before shipping to be sure it is 4.0 or below.		

FARMSTEAD continued from P. 4

sponsor a conference at Shelburne Farms entitled “Milk – From Commodity to Cheese: Cheesemaking in the Future of Vermont Agriculture.” This one-day program coincides with the 2002 Vermont Cheese Week. Combining formal presentations with tasting workshops, the program celebrates the extraordinary accomplishments and national leadership of Vermont cheesemakers.

Equally important, it presents the challenges and opportunities for further growth and diversification. Cheesemakers are concerned with product development, capital investment, food safety, diversified farm operations, marketing, and regulatory issues. As new businesses open, questions of pricing, quality, and product consistency have emerged. How do we provide research, education, and technical services to individuals and the overall industry? Where does the state’s traditional dairy industry fit into this picture of value-added production?

The target audience includes state and federal policy makers, regional and national media, representatives from economic development, travel and tourism, and land conservation agencies and organizations, and local retailers. The meeting is open to cheesemakers and the general public. For further information, please call Jeff Roberts at 802-223-0248. To registrar, please call Hilary Sunderland at 802-985-8498.



Shared-Use COMMERCIAL KITCHEN STUDY

If you are interested or currently involved in small scale food processing please read the following announcement!!

Yellow Wood Associates of St. Albans, Vermont, in cooperation with the Southern Tier East Regional Planning Development Board (STERPDB), Tioga County, NY, and other partners, is seeking willing individuals to participate in a survey that will assess the demand for a shared-use commercial kitchen in southern New York and northern Pennsylvania.

What is a shared-use commercial kitchen and why should I care?

A shared-use commercial kitchen is a commercially licensed food processing facility that is used by local food entrepreneurs to start or expand their food-related businesses. In addition to providing the space and equipment to produce value-added food products, these facilities often provide valuable training in food safety, marketing and small business development.

Who would use a shared-use commercial kitchen?

Potential users of a facility include home-based food processors, community organizations (e.g. Meals on Wheels), restaurants, caterers and other businesses seeking to produce a product, expand production or develop a new product.

How can I be involved?

If you are interested in any way in potentially using a shared-use commercial kitchen, please follow the directions below:

✉ to request receipt of a survey by mail or fax, please call 1-802-524-6141 or email your contact information to yellowwood@yellowwood.org

✉ to access the survey online, please visit our site at:

<http://www.yellowwood.org/kitchen.htm> (beginning 10/21/02)

The study area for this project includes parts of eight counties in New York (Broome, Chenango, Cortland, Chemung, Cayuga, Schuyler, Tioga, and Tompkins) and four counties in Pennsylvania (Bradford, Susquehanna, Sullivan, Wyoming).



NYSAES/Cornell University
630 West North Street
Geneva, NY 14456

**BULK RATE
U.S. POSTAGE
PAID
PERMIT NO. 75
GENEVA, NY 14456-0462**

www.nysaes.cornell.edu/necfe