



# VENTURE

Fall 1999 • The Newsletter of The New York State Food Venture Center • Vol. 2 No. 2



## HOT STUFFING

**(THINGS YOU DON'T WANT TO MISS)**

**January 18-19, 2000**

**Small Scale Food Processors Association  
First Annual Conference**

Best Western Conference Center.

Poughkeepsie, NY

Contact: Amanda Hewitt

Phone: 315-736-3394

(see article on p. 3)

**March 21, 2000**

**Suppliers Night Food Expo**

Rochester Riverside Convention Center,

Rochester, NY

Contact: J.L. Anderson

Phone: 315-787-2273

**March 31, 2000**

**Cornell Vinification and Brewing  
Laboratory**

**Grand Opening and Annual Benefit Auction**

NYSAES and Ramada Inn Geneva Lakefront,  
Geneva, NY

Contact: Nancy Lane

Phone: 315-787-2288

**May 8-11, 2000**

**Better Process Control School**

Ramada Inn Geneva Lakefront, Geneva, NY

Contact: J.L. Anderson

Phone: 315-787-2273

**Spring 2000 (TBA)**

**Basic Techniques in Food Processing**

FVC, Food Research Laboratory, Cornell  
University/ NYSAES, Geneva, NY

Contact: J.L. Anderson

Phone: 315-787-2273

## MANUFACTURE OF LOW SUGAR/ No SUGAR JAMS AND JELLIES

By Olga Padilla-Zakour

Standard jams and jellies manufacture require 50 to 55% sugar (or other sweeteners such as corn syrup, high fructose corn syrup, high maltose corn syrup and invert sugar) and a final concentration of soluble solids of about 67%, as is explained by Professor Bourne in another article in this issue. In some cases, a product with less sugar is desired, either for health reasons (diabetes, low sugar diet) or for market positioning of the final product, i.e., an all-fruit product or a dietetic preserve. We will review the main factors for the production of these types of foods.



### LOW SUGAR JAMS AND JELLIES

A special type of pectins, called Low Methoxyl (LM) pectins, are needed to provide gel formation under low soluble solids content. LM pectins do not require sugar for gel formation (they can gel in 1% to 80% sugar solutions), are mainly temperature dependent and are not as sensitive to pH, requiring only a range of 3.2 to 3.7. The gelation is due to cross-linking through calcium ions, which are normally present in sufficient amounts in the fruit and the water used. Gel structure can be adjusted from thick, cohesive jellies, to soft, spreadable preserves with large fruit pieces by blending and adjusting concentrations of different types of LM pectins commercially available. If additional calcium is needed, it can be added as food grade calcium salts such as calcium citrate, lactate or phosphate. Ideally, the LM pectin is dissolved before the calcium is added but, in some cases, it might be necessary to have calcium salts present with the pectin at the beginning of the operation. The use of slowly or slightly soluble calcium salts (phosphates, sulfates or citrates) is then recommended because there is not enough calcium immediately available to interfere with the process of dissolving the LM pectin. The optimal level of LM pectin will depend on the type of fruit, pH, amount of solids and calcium content, but in general, pectin content between 0.5 and 1.5% is adequate.

The reduction in the amount of sugar in the final product changes the typical characteristics of a jam or jelly: total taste sensation is reduced, balance between sweetness/acidity/fruit flavor is changed, flavor and color components become less stable, color becomes less deep, and transparency is reduced. It is then generally necessary to use a relatively high fruit content and a reduced acid level to balance the flavor. In addition, gels with low soluble solids content are subject to spoilage once the container has been opened and the use of a preservative might be indicated for shelf-life extension. If no preservatives are used, the product must be hot-filled at a temperature of 185°F or higher to ensure enzyme inactivation and commercial sterility of the product, and must be kept refrigerated after opening. Small containers are normally preferred in these cases as they are consumed faster. Alternately, the filled product can be processed in boiling water bath for proper pasteurization. Typical preservatives used for low sugar preserves include sodium benzoate and/or potassium sorbate at 0.05 to 0.1% levels.

### GENERAL MANUFACTURING METHOD USING ONE KETTLE

- Add LM pectin and preservative, if any, to the water with good agitation.
- Add the other ingredients, except the calcium salts, and heat to boiling.
- Slowly add the calcium salt, previously dissolved in hot water at 180°F, with good agitation.
- Fill into small containers at 185°F or higher, immediately seal and invert for 5 minutes; proceed to cool the containers.

Low Sugar Jams, Con't, p.2

## • ENTREPRENEUR PROFILE •

Hyacinth Thomas - Brateka Enterprise, Inc.

Hyacinth Wright Thomas worked for seven years as a program guide editor for WNET, PBS Channel 13 in New York. While on maternity leave, she decided she wanted to be able to stay home with her children, especially the new baby. After exploring numerous options, she decided to join her husband, Kosworth Thomas, in the food business. Thus in January of 1995, she created Brateka Enterprise Inc. Her goal was to manufacture and distribute Jamaican Style Barbecue sauces and other gourmet products.

The company name, Brateka, comes from Hyacinth's three children... Brad, 17, Terri, 8 and Kamiliah, 5. The brand name, Lize (pronounced Liz•EE), derives from her mother, Sylvia Elizabeth, the originator of the formula.

Sylvia Elizabeth created the unique coffee-flavored sauce while working as a cook on Long Island. She needed a smoky flavor for her barbecue sauce and the coffee provided the flavor complexities she was looking for. The resulting barbecue sauce was an instant success. Coffee was a natural choice for Sylvia Elizabeth because of the family's long association with coffee-growing in Jamaica. One of Hyacinth's fondest memories is of her grandparents picking and roasting their own coffee on the island. Brateka markets the Coffee Flavored Jamaican Style Barbecue Sauce as well as a



Hot Jamaican Style Sauce and All Purpose Jamaican Style Sauce.

Brateka was founded in 1995, and by 1996 the safety reviews and letters of approval from NYS Food Venture Center for the new

products had been issued. They have actually been marketing the sauces for about three years. From a modest beginning when the sauces were made in a basement kitchen of the Thomas home, the business has grown several-fold. A rather large order that she could not fill from her facility prompted Hyacinth to hire a co-packer to manufacture her products.



Lize Products and Brateka Enterprise, Inc., have been featured in publications such as *The New York Times*, *New York Newsday*, *New York Daily News*, *Essence Magazine* and others. In addition to being sold over the Internet (you can check out the website at: <http://www.lizebbqsauce.com/>), Lize sauces can be found in the New York area at Met Food stores, Something's Brewing at the Green Acres Mall in Valley Stream, Zabar's on Broadway, and Williams Grocery in St. Albans. At less than \$2.00 per bottle, it has been called a designer sauce without a designer price.



(Low Sugar Jams, con't.)

- If preservatives are used, then the filling temperature can be dropped to 140-160°F.

### PROBLEMS WITH LM PECTIN GELS

Syneresis (bleeding or weeping) of the gel may occur if the calcium level is too high for the pH, or if the pH is too low, i.e., about 3.1-3.2, or if both conditions are present. Bleeding can also be caused by adding the calcium solution too fast, or in a solution that is too concentrated or not hot enough, thus pre-setting the gel and resulting in poor mushy texture.

### DIETETIC (ARTIFICIALLY SWEETENED) JELLIES AND PRESERVES

The same LM pectin is used for these products but normally higher concentrations are required. A 1% level is usually adequate although 1.25-1.5% could be necessary in some cases. A calcium level of about 15-20 mg per gram of pectin is required to obtain proper gelation based on average juice and final pH of 3.5. Typical sweeteners are saccharin and its salts, which are 300-500 times sweeter than sugar, and aspartame, which is about 180 times sweeter. Sodium saccharin can be used as sweetener but, if a low-sodium product is sought, then a mixture of calcium saccharin and aspartame can be utilized. Calcium saccharin cannot be used in most cases as the sole sweetener because the amount of calcium would be too high for proper gel setting.

The guidelines described above regarding manufacture and preservatives also apply for dietetic preserves. The following table offers a general formula for a dietetic product with 6-12% soluble solids and a final pH between 3.2-3.5.

Ingredient	100 lb. Batch
Juice or fruit	50.00 lb
Water	48.00 lb
LM Pectin	1.30 lb
Citric acid	0.25 lb
Aspartame	0.20 lb
Calcium chloride	0.08 lb
Sodium benzoate	0.06 lb
Potassium sorbate	0.04 lb
Sodium saccharine	0.033 lb

### REFERENCES

- Burg, J.C. 1998. *Jammin' with fruit gels*. Food Product Design Vol. 8 (9):71-80
- Hercules, Inc. *Handbook for The Fruit Processing Industry*. Wilmington, Delaware
- Downing, D.L. 1996. Preserves (jams), jellies and related products, chapter 8. In "A Complete Course in Canning and Related Processes", 13<sup>th</sup> edition, Book III, CTI Publications, Inc., Baltimore, Maryland.

## THE WEB SITE CORNER



### THE INTERNET MARKETING CENTER

Online Tips for Marketing on the Internet. There's even a free newsletter you can subscribe to that is sent to you online. Some of the information can be applied to regular marketing channels, too. This site markets itself pretty heavily, too. Be prepared for lots of propaganda.  
<http://www.marketingtips.com/>

### How Can You Take in 6,000 Foods Without Gaining a Pound? Download the **USDA NUTRIENT DATABASE FOR STANDARD REFERENCE.**

The database is the primary source of food composition data in the U.S. It's the only such database in the world that's free. The database has values for as many as 81 nutrients in 6,000 foods among 22 food groups. Some 8,000 visitors access the web site each month. If you want to be among them, go to:  
<http://www.nal.usda.gov/fnic/foodcomp>

### FOOD INGREDIENTS ONLINE

Searchable database of sources for ingredients and equipment; on-line auction of food processing equipment; newsletter for the food processing industry—in short, lots of information.  
<http://www.foodingredientsonline.com>

### PRODUCE ONLINE

Just what it says. An online produce market.  
[www.produceonline.com](http://www.produceonline.com)

### FDA CONSUMER MAGAZINE ONLINE

This is a great publication about the safety of foods, drugs and medical devices, aimed at the consumer.  
<http://www.fda.gov/fdac/fdacindex.html>



## FIRST ANNUAL SMALL-SCALE FOOD PROCESSORS ASSOCIATION MEETING & CONFERENCE: BUILDING COMMUNITY & PROFIT

**S**mall-scale food processors, the fastest growing segment of our food industry, are coming together in regions across New York State, the Northeast and the U.S. to support each other in marketing, supply purchasing and more. "Incubator" kitchens, large and small, are growing to help in small business start-ups.

January 18-19, 2000 will mark the formalization of an Association of Small-Scale Food Processors (jams, condiments, baked goods, meat and dairy products, etc.). The First Annual Meeting and Conference will take place at the Best Western Inn & Conference Center, 679 South Rd. (Rt. 9S) in Poughkeepsie, NY. The event will start with a tour of the Hudson Valley Foodworks, followed by a light supper of local foods prepared by Chef Henri Paul Beneviste. Moving from there to the Best Western Conference Center, the first Mentoring Orientation for interested and beginning processors will be held along with opportunities for experienced processors to network with others.

January 19 will offer many workshop choices for beginning and established processors in marketing, (Positioning in the Marketplace, Trends in Specialty Foods, Niche Markets), Business Management (Community Kitchens/ Manufacturing Facilities, Co-Packing) and Technical Regulations (Proper Sizing of Equipment, Ag & Markets Regulations, Proper Labeling). We will also discuss ways we, as an association, can have a "seat at the table" in Albany.

There will be formal and informal times to be with others in your region (chapter regions will be identical to tourism regions) as well as with others who process the same commodity.

Registration cost is \$35, which includes breakfast and lunch on January 19. The tour of Hudson Valley Foodworks is free, and supper on January 18 will be \$8. Registration should be directed to Amanda Hewitt, Coordinator of Regional Chapters, Cornell Cooperative Extension Office, Oneida County, 121 Second St., Oriskany, NY 13424 (Phone: 315-736-3394/ Fax: 315-736-2580). A draft of the Association Charter will be mailed to you upon registration.

A block of rooms will be held at the Best Western at a special price of \$59.95 until December 1. Call 1-914-462-4600, to make your own reservations.

The Association is grateful to the NE Sustainable Agriculture Research and Education for a grant in support of this conference.

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### VENTURE WINS AWARD As "BEST EDUCATIONAL RESOURCE"

*The following is a copy of the message sent to us regarding the educational recognition, September 13, 1999.*

Your website, <http://www.nysaes.cornell.edu/fst/fvc/Venture/>, has been selected as a featured site in StudyWeb as one of the best educational resources on the Web by our researchers. You will be able to view it in our Agriculture:Media:Miscellaneous section very soon. StudyWeb is one of the Internet's premier sites for educational resources for students and teachers. Since 1996, our expert reviewers have scoured the Internet to select only the finest sites to be included in StudyWeb's listing of educational links. Each site in StudyWeb includes a detailed review describing its editorial and visual merits.

If you are unfamiliar with StudyWeb, please check us out at: <http://www.studyweb.com/> Inclusion in StudyWeb will increase your exposure and attract new visitors to your site: our reviews have been featured on Webcrawler Select, The Lycos Top 5%, Education World and many others, and StudyWeb updates are provided to media and educational resources around the world.

We invite you to display the prestigious 'StudyWeb Excellence Award' icon, which is only offered to sites included in the StudyWeb directory. It is available at: <http://www.studyweb.com/about/swaward.htm>

Thanks — and again, congratulations!  
Sincerely, The StudyWeb Editing Team

# THE SCIENCE & TECHNOLOGY OF MAKING PRESERVES

by Malcom C. Bourne, Ph.D.  
Professor Emeritus, Cornell University

Jams, jellies, marmalades and conserves are made by boiling together fruit and sugar to give a high solids product. The methods and formulations used vary widely. Many edible products such as peppers, herbs, and even edible flowers are made into jams and jellies. This article will concentrate on what are considered standard formulation fruit products.

## Definitions

- Jam – a product that contains both soluble and insoluble fruit constituents.
- Conserve or preserve – large pieces of fruit are present.
- Marmalade – are made from citrus fruits and contains some peel.
- Jelly – is made from filtered fruit juice, no pieces of fruit or insoluble solids present.

## Grades

In the U.S. jams and jelly products are graded as follows:

- Fancy – 50 parts fruit to 50 parts sugar
- Standard – 45 parts fruit to 55 parts sugar
- Imitation – 35 parts fruit to 65 parts sugar

The essential ingredients of a preserve are:

- 1) Sugar
- 2) Fruit
- 3) Pectin
- 4) Acid

## Sugar

The final sugar content must be 65% to 69%.

The high sugar content:

- 1) suppresses microbial growth
- 2) sweetens the product
- 3) helps set the pectin
- 4) makes the product glisten

Some sugar comes from the fruit, most is from added sugar (for example)

45 lb. Fruit @ 10% = 4.5 lb. sugar  
55 lb. Sugar @ 100% = 55 lb. sugar  
Total = 59.5 lb. sugar

The sugar content is expressed as percent soluble solids or °Brix. The two terms are equivalent. It is usually measured with a refractometer. (Good refractometers can be purchased for under \$150.)

The finished product should contain some non-crystallizing sugar such as glucose and or fructose to prevent the growth of sucrose crystals in

the preserve during storage or after opening. In the U.S., a portion of corn syrup is often used to replace some of the sucrose. In countries where cane sugar is cheap, some of the sucrose is “inverted” (hydrolyzed into a mixture of glucose and fructose) and a portion of “invert sugar” replaces some of the sucrose. If the fruit contains enough acid, sufficient inversion will occur during normal boiling to prevent sucrose crystallization in the finished product.

The solubility of pure sucrose is 66% at 70°F.

pH of Mixture	
—	3.6 – no gel
—	3.4 – weak gel
—	3.2
—	3.0 – good firm gel
—	2.8
—	2.6 – weak gel – syneresis may occur
—	2.4 – no gel

°Brix of Mixture	
—	70 – crystallization may occur
—	68 – good texture of jelly
—	66
—	65 – legal minimum
—	64
—	62 – weak gel
—	60 – no gel, viscous liquid

## Pectin

Fruits contain pectin—usually about 1%. The quantity of pectin is not so important as the setting quality of the pectin. Some fruits such as citrus and apple are rich in good quality pectin and make good gels. Other fruits such as strawberry and raspberry have poor quality pectin and pectin must be added to obtain a satisfactory gel.

Commercial pectins are manufactured from citrus peel or apple pomace and are sold in the form of a dry powder. The pectin grade is the number of pounds of sugar that 1 pound of pectin will set to a gel with correct sugar content and pH level.

The most common commercial pectins are 100 grade, 150 grade and 200 grade.

For home use, pectin powder is blended with acid and sugar and sold in small packets (dry form) or bottles (liquid form). Each packet or bottle is sufficient to make one kitchen-sized batch of preserve or jelly.

For viscous jams, the pectin content is not important because the insoluble solids impart a thick consistency. However, these products require a high fruit content, typically 50 lb. sugar to 50 lb. fruit.

## Acid

The acid “cuts” the sweetness of the sugar and achieves the pH necessary to set the pectin.

Fruits supply some acid. Frequently an addition of fruit acid is needed to bring the pH into the correct range for gel formation and for flavor purposes. Acid is essential for tropical fruits such as ripe papaya, mango and fig which are very low in acid content. The most common acids are citric, malic, fumaric, tartaric and lactic. Use the cheapest fruit acid available.

A pH range of 2.8 to 3.3 is needed to set the gel depending on the nature of the pectin.

The most common cause of gel failure is insufficient acid, followed by inadequate soluble solids. (See inset).

## GENERAL PROCEDURE FOR MAKING PRESERVES AND JELLIES

- 1) Prepare fruit—sort, wash, peel, chop or slice as needed.
- 2) Cook fruit—If making jelly, strain to remove solids; if using dry pectin, add it to cooking fruit and simmer 1-2 minutes to dissolve.
- 3) Add sugar, cook and stir to dissolve.
- 4) Boil vigorously until desired °Brix is reached

## Chemical Analysis of a Typical Preserve

Soluble solids	66 to 69%
Water	31 to 34%
Titrateable acidity	0.3 to 1.1%
Crude Pectin (alcohol precipitate)	0.5 to 1.5%
Ash	0.1 to 0.5%

(67-69%). The end point may be determined by:

- instructions on the pectin package
- use of a refractometer (most accurate)
- use of a thermometer (219°-220°F)

- 5) When the end point is reached, turn off the heat and remove the scum.
- 6) Fill into containers while hot (above 180°F), seal and invert to sterilize lids. After a minimum of two minutes in the inverted position,

**“The ideal fruit jelly will quiver, not flow, when removed from its mold; a product with texture so tender that it cuts easily with a spoon, and yet so firm that the angles so produced retain their shape; a clear product that is neither syrupy, gummy, sticky nor tough; neither is it brittle and yet it will break, and does this with a distinct beautiful cleavage which leaves sparkling characteristic faces.”**  
(Goldthwaite, 1911)

containers may be cooled by immersion in gradually cooling water. Most glass can withstand a thermal shock of approximately 60°F without breaking. It is advisable to temper (warm) the containers before filling with hot preserves.

## Boiling Preserves

Boiling of the sugar-fruit mixture causes a number of changes that range from essential to undesirable.

### Essential

1. Increases the solids content by boiling out some of the water in the fruit.
2. Destroys enzymes in the fruit and microorganisms on the fruit.
3. Allows the sugar to penetrate into the tissue of the fruit more readily.

### Desirable

4. Inverts some of the sugar to help prevent crystallization during storage.  
Sucrose + heat, acid = glucose + fructose  
(crystallizes easily) (crystallizes with difficulty)

### Undesirable

5. Volatilizes fruity aromas
6. Darkens color (carmelization)  
Sugar solutions + heat = caramel  
(black color, strong flavor)
7. Degrades pectin

## Summary

The best quality preserves are made when the mixture is brought to a boil as quickly as possible, boiled as vigorously as possible until the desired solids content is reached, then filled, sealed, and cooled as quickly as possible.

## References

Rauch. *Jam Manufacture*, Leonard Hill, London, 1965

Cruess. *Commercial Fruit and Vegetable Products*, 4<sup>th</sup> Ed., McGraw Hill, London, 1958 pp. 426-462

## SLICES



“Questions Keep Sprouting About Sprouts,” notes the January/February issue of the Food and Drug Administration’s (FDA) Consumer magazine (see the Website corner for more info).

In a section titled “How to Eat Sprouts Safely,” FDA reminds consumers:

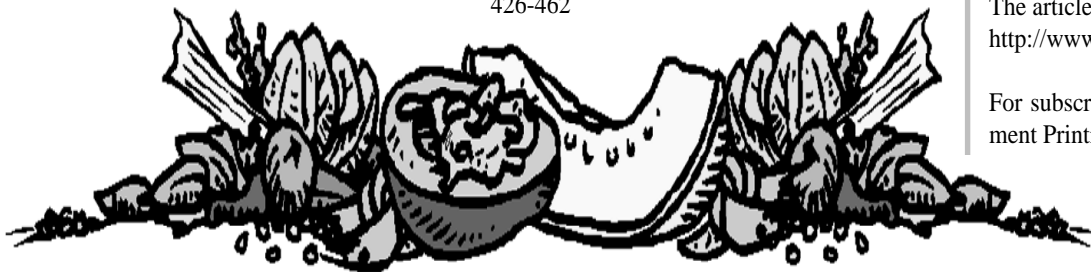
If you belong to one of the groups at high risk for foodborne diseases—children, the elderly, and people with compromised immune systems—*avoid raw alfalfa sprouts*.

If you are a healthy adult, follow these tips:

- Buy only sprouts kept at refrigerator temperature. Select crisp-looking sprouts with the buds attached. Avoid musty-smelling, dark, or slimy-looking sprouts.
- Refrigerate sprouts at home. The refrigerator should be set at no higher than 40° F (4° C).
- Wash hands with warm water and soap for at least 20 seconds before and after handling raw foods.
- Rinse sprouts thoroughly with water before use. Rinsing can help remove surface dirt. Do not use soap or other detergents.

The article is available on the web site:  
<http://www.fda.gov/fdac/default.html>

For subscription information, call the Government Printing Office at 202/512-1800.



## FVC CLIENT SURVEY

### FINAL CALL.....

If you haven’t yet returned the survey, please do so today. We need your input! (Call the FVC if you have misplaced the survey and would like another.)

Our thanks to all of you who have responded to date. The response was greater than we anticipated.

The survey was designed to find out which of our programs have been the most beneficial to you as processors, and what other assistance you would be interested in. This data will allow us to approach the NYS Legislature and other funding agencies with specific facts and numbers on the state of the specialty food manufacturing industry in NY and what types of assistance the industry needs. The information provided by the survey

will be compiled as statistical data and individual information will be confidential. In the next issue of *Venture*, we will summarize the data we collected.

The FVC really appreciates your help on this project.

# FOOD SAFETY AND YOU

Dr. Randy W. Worobo  
Assistant Professor of Food Microbiology  
CORNELL University  
New York State Agriculture Experiment Station  
Geneva, NY 14456  
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## FVC WORKSHOPS

The one-day workshops offered by the FVC this spring are now history. We feel they were quite successful judging by the comments of those who attended.

On April 9, eleven people gathered in the Food Research Laboratory lunchroom to begin absorbing new information on Basic Food Processing Techniques. Dr. Olga Padilla-Zakour lectured for about an hour on the “whys” and “wherefores” of food plant sanitation, basic microbiology and food chemistry. After a coffee break, everyone moved to the pilot plant to begin the hands-on portion of the class. With everyone participating, apples were mashed and pressed into cider, part of which was pasteurized by the conventional heat method and the rest by Ultra Violet (UV) technology. More apples were peeled, cored, sliced, dipped in a honey solution and air dried to make a healthful snack food. Finally, a vegetable medley was prepared, acidified and hot filled into glass containers using more of the pilot plant’s processing equipment and a recipe hastily adapted from a cookbook. Everyone seemed to love the flavor and texture of the product and the jars quickly disappeared as did the cider and apple slices when the “students” were told they could be taken home.

June 4 was the date of the Packaging Options for the Small-Scale Food Manufacturer workshop. Thirteen attendees gathered in the Conference Room in the Food Research Laboratory to listen to lectures ranging from an introduction to packaging, glass and plastic containers and closures, regulations governing the use of vacuum and modified atmospheres in packaging, labeling regulations and the technology of printing labels as well as demonstrations on proper hot-filling techniques and modified atmospheres in flexible packaging.

The final workshop dealt with marketing products through the Internet. Eleven people listened to experts explain various technologies and services connected with Internet marketing as well as presentations on insurance for a food processing business and proper packaging and shipping techniques. These

## ***Escherichia coli* O157:H7 aka *E. coli* O157:H7**

As the previous issue described, *E. coli* is a normal inhabitant of the intestines of humans and animals. Normally, *E. coli* serves a useful function in suppressing the growth of harmful bacteria as well as synthesizing some vitamins for the body. However, a small number of *E. coli* are capable of causing illness. There are four classes of enterovirulent *E. coli* that cause gastroenteritis with *E. coli* O157:H7 being contained within the enterohemorrhagic group (EHEC).

It is estimated that as few as 10 organisms may be sufficient to cause foodborne illness. The symptoms associated with the disease include severe cramping and diarrhea that begins watery and becomes grossly bloody (hemorrhagic colitis). Vomiting and a low-grade fever may occur. The illness can result in some complications, particularly with the very young and the elderly. The complications include Hemolytic Uremic Syndrome (HUS) which is characterized by kidney failure and hemolytic anemia (anemia due to decreased life span of red blood cells). From 0 to 15% of people stricken with hemorrhagic colitis develop HUS. In elderly people, additional complications such as fever and neurologic symptoms can occur and can lead to a mortality rate in the elderly as high as 50%.

With the most recent *E. coli* O157:H7 water outbreak in Washington County, N.Y., *E. coli* O157:H7 has gained much more attention and notoriety as an important foodborne pathogen. Isolates of *E. coli* O157:H7 were first implicated as causative agents of foodborne illness in 1982. The first major outbreaks with *E. coli* O157:H7 linked as the causative agent involved undercooked hamburgers. Since these first outbreaks, foodborne illnesses associated with *E. coli* O157:H7 have involved undercooked ground beef, raw milk, dry cured salami, lettuce, produce from manure-fertilized garden, potatoes, radish and alfalfa sprouts, yogurt, sandwiches and water. Acid foods that were once thought to be of low risk can no longer be considered safe because of the acid-tolerant properties of this bacterium. Acid foods that have already been associated with *E. coli* O157:H7 outbreaks include apple cider and mayonnaise or mayonnaise-based dressings and sauces.

Preventative measures to reduce the risk of acquiring an *E. coli* O157:H7 infection you can do the following:

1. Cook ground beef and venison to a minimum of 160°F.
2. Drink only pasteurized milk and apple cider/juice.
3. Thoroughly wash produce before eating.
4. Do not use fresh manure from ruminants (cows, sheep, goats etc.) to fertilize gardens. Rather use adequately composted manure or allow a long enough holding time between fresh manure application and harvesting.
5. Wash hands after changing diapers or providing care to individuals suffering from diarrhea.
6. Wash hands thoroughly after handling animals.
7. Avoid swimming in lakes or standing water bodies that are used by cattle.
8. Only drink water that has been properly treated to eliminate pathogens.

For additional information, visit the FDA Bad Bug Book at the following website:  
<http://vm.cfsan.fda.gov/~mow/chap15.html>

two lectures proved to be especially popular and informative for everyone attending.

The FVC would like to thank Tareq Al-Ati, a graduate student at Cornell University, Don Whitehead of NYS Department of Agriculture and Markets, Albany, George Ide of Burch Bottle and Packaging Inc., Watervliet, and William Cox of Markttec Products Inc., Batavia, for their expertise and assistance at the Packaging Workshop. For the Internet Marketing Workshop, we would like to thank John Zakour of Cornell University/NYSAES, Mary Bartolotta-Knipple of TeAta Internet Providers, Geneva, Donna Daugherty of Riedman Insurance, Geneva, Jackie Olsen of the National Bank of Geneva, Shane Kenyon of Riverwalk Communications, Geneva and Steve High owner of Mailboxes Etc. in Geneva.

The information packages that were given to the Packaging and Marketing workshop attendees are available to those who were unable to attend at a cost of \$25. each. Please contact Judy Anderson at 315-787-2273 for Master Card or VISA orders, or send a check made out to NYSAES to Food Science & Technology, Cornell University/NYSAES, W. North St., Geneva, NY 14456-0462, Attention J.L. Anderson.

The Basic Techniques in Food Processing workshop will be offered again in the spring of 2000. Other workshops are in the planning stages and will be announced in the next issue of *Venture*. Keep watch of the HOT STUFFING section for coming events.



# BUSINESS BYTES



## EFFECTIVE, LOW-COST ADVERTISING

Every business, needs to advertise its products or services at some time in order to grow and become more profitable. Advertising is usually expensive and should be carefully planned so that it is cost effective. Some points to consider in order to produce effective advertising for your business:

- **Design a business logo.** And use it on everything! Make sure it's eye-catching and attractive. It should also look like it belongs to your products, not something out of "the blue."
- **Keep it simple.** People have short memories. Also, every element of every ad should support the headline message.
- **Develop a likeable style** that has personality and stick with it (at least one year is a good rule of thumb.)
- **Make it look professional.** If you've got the necessary talent, that's great; if not, find someone who does. Cheap, childish ads give the wrong impression of your product.
- **Be credible.** Don't advertise your product as something it's not.
- **Be truthful.** There are stringent laws regarding deceptive or false advertising.
- **Make sure any information necessary for sales is easily available.** That includes location, phone number, hours, methods of payment accepted.
- **It is commonly accepted** that at least 50% of all advertising is a waste of money. Unless you can figure out which 50% you're wasting, it's probably best to spend your entire budget or you risk eliminating the part that works.
- **Target your audience.** Evaluate your sales to decide who is buying your product and advertise where that group is most likely to see the ads.

Effective advertising grabs your attention! It interrupts your flow and makes you stop whatever you are doing to read, look or listen. It is also memorable, credible and unique. Good advertising strategy also uses frequency to drum its message home and make it memorable.

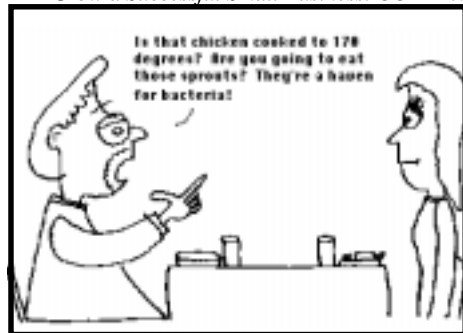
- **The three most important rules** of advertising are frequency, frequency, frequency. Remember (rule #2): your potential customers have short memories.

### Low-Cost and No-Cost Advertising

- **Business cards.** Put your logo on them and hand them out everywhere!
- **Flyers** can be created very inexpensively on your own computer or by a local printer. Hand them out everywhere and get other local merchants to put them on counters or in their racks.
- **Brochures** are classier versions of flyers. Glossy, three-fold paper stock and quality artwork or photos make memorable advertising.
- **Inserts** are commonly found in local newspapers and reach thousands of potential customers. Check with local ad agencies or newspapers to get more details on how to do it and how much it will cost.
- **Print** your name, logo and other pertinent info on bags, boxes, mailing labels, etc.

### Use every opportunity to get your business identity in the public eye.

Information from *Advertising Ideas on a Small Budget* by Susan Jacksack, J.D., *Start, Run & Grow a Successful Small Business*. CCH Inc.



WHY MICROBIOLOGISTS HARDLY EVER GET A SECOND DINNER DATE.

## NEWS FROM THE FOOD VENTURE CENTER

### DR. PADILLA-ZAKOUR PROMOTED

**D**r. Olga Padilla-Zakour has been promoted to Assistant Professor of Food Processing, effective July 1. In her new position, she will devote about a third of her time to research while continuing to direct the NYS Food Venture Center, which is an extension-related assignment.

Dr. Padilla-Zakour's research will focus on applied food science and technology issues vital to manufacturers in New York State. "I will be concentrating on technologies for value-added products, such as membrane processing for juices and food-based products, as well as those that address the safety of specialty food products" she says.

"Since joining the Food Science & Technology Department in 1997, Olga has demonstrated an exceptional ability to work with food entrepreneurs and existing companies and to provide the outreach needed to bring new food products and processes to the marketplace," says Dr. Richard Durst, chair of the Food Science and Technology Department. "Her promotion to assistant professor recognizes her expertise in food science, her extension activities, and her potential as a research scientist. This new position will give her the opportunity to pursue these avenues of career development to the fullest. Knowing Olga, I have no doubt that, with her expertise, enthusiasm and dedication, she will meet the challenges of this new position, and she will be as successful in her research efforts as she was in her extension activities."

Under Dr. Padilla-Zakour's leadership, the Food Venture Center has helped launch 60 to 80 food related ventures each year and extended its educational outreach efforts. The Center has established a web site and a quarterly newsletter (available in hard copy or electronically), which provides regular updates to the Cornell Cooperative Extension, interested companies and a growing network of fledgling food processors.

"The newsletter is our effort to provide continuing education in the area of food science and technology," Padilla-Zakour says. "Most start-up entrepreneurs do not have much experience or background in food science."

The Food Venture Center also has added workshops on basic processing techniques, food packaging and Internet marketing for entrepreneurs to complement its Better Process Control School, held annually to help keep established food processors apprised of FDA requirements.

*P. Blakeslee*

## NOTICE:

•A Reminder: When sending new formulas to the FVC for approval, please give the ingredient amounts in weights (grams, ounces, pounds), not volumes (cups, teaspoons, etc). It is always to your advantage to weigh ingredients yourself since your volume measurements may not match the standard lists we use. That could cause significant changes to your recipe if you try to scale up the amounts later.



Can't find a particular ingredient? Need help locating a co-packer?  
Call the FVC at 315-787-2273. We may be able to help.



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