

IDEAS

For Food Processors



Spring 2005
Volume 4, Issue 1

A Publication of the Food Technology Extension Program
Cooperative Extension Service, New Mexico State University

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Food Product Development Laboratory

This state-of-the-art food laboratory will be used for product development, testing and training of future food technologists. This facility will also support the university's efforts to promote economic development by providing a confidential space giving processors a safe place to research and develop new food products away from their production facilities. This allows processors to focus on the every aspect of the new product from ingredient formulation, processing issues, consumer satisfaction and market placement.

Benefits of the program will include:

- New food product development
- Student research projects
- Food product testing; physical and sensory
- Food business planning
- Technical support direct to food processors
- Food safety training for food processors and students
- Research and engineering (including by-product utilization)

A study of 1998 economic data of three

southern New Mexico counties showed that food manufacturing or processing provided 1,138 people with employment and as a result added \$188 million to the region. Food manufacturing in these counties includes vegetable canning, dehydration, freezing and further processing such as chili powders. A recent survey of food processors in New Mexico indicates that the three top concerns for both large and small processors are employee training, government regulations and new product development.

Besides the benefit of increasing food production, another aspect is utilization of current by-products considered waste and an environmental hazard. For example, research performed at NMSU has shown that fiber extracted from green chile peels and seeds can be used in muffins and other bread products, providing additional fiber and nutrients. Green chile peels and seeds evaluated as feed source to dairy cattle resulted in higher feed consumption. By-product waste management is also an issue for the dairy (milk and cheese) industry, also prominent in the state.

(Continued on page 7)

Lessons Learned from FoodGard

Food processors and handlers attended a "FoodGard" training program designed to assist them in safeguarding their processing facilities against intentional or unintentional bio-security risks. The presentations of the various speakers are highlighted below and can be downloaded at: <http://spectre.nmsu.edu/dept/academic.html?i=862>.

An overview of Bio-Security Prevention/Response Challenge was given by Gen. Annette Sobel, director, Governor's Office of Homeland Security. The presentation highlighted the increase in terrorism worldwide and the fact that, in the past, food has been used to transmit infectious agents.

The threat to the critical infrastructure of the food system is real and current, according to FDA National Counterterrorism Center. Furthermore, sabotaging food and water is the easiest means of biological and chemical attack. The components of a Bio-security plan

are threat analysis, vulnerability assessment, prevention, investigation and enforcement.

A case study of scallion contamination presented by Dr. Nancy Flores, Extension Food Technology Specialist, demonstrated how unintentional contamination of produce can affect more than 500 people in a very short period time over a large regional area.

Food-borne disease and outbreaks in New Mexico was discussed by Dr. Albanese, New Mexico Department of Health, epidemiologist. The risk of getting Salmonella from beef jerky is higher than from poultry or reptiles. New Mexico participates in FoodNet and PulseNet, which are illness surveillance systems designed to pinpoint food borne illness outbreaks and identify specific bacterial serotypes involved in the outbreaks.

Dr. Margaret Ann Bock, NMSU professor of nutrition discussed the use of HACCP a Food Safety/Security System. Food processors can use the seven step HACCP

(Continued on page 7)

A Message from the Editor...

Happy spring! Most of state has received much-needed precipitation, and everyone is looking forward to a blooming summer!

Well it is finally here! We broke ground on the Food Product Development Laboratory in early December, and it now has distinct features of a food processing facility. The labora-

tory should be completed by May 2005. Please take a look at the blueprint drawing on page 7 and think about how you would like to use this facility.

Thanks again for your continued support of the Food Technology Program.

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IDEAS for Food Processors

Is a publication of the Food Technology Extension Program, Cooperative Extension Service, New Mexico State University. This newsletter is published quarterly to promote food processing and value-added food products in New Mexico.

Volume 4, Issue 1
Editor: Nancy C. Flores, Ph.D.

Nancy Flores

Extension Food Technology Specialist
Contributors: Nancy C. Flores

Calendar of Upcoming Events

Meetings & Conferences— 2005

- Mar. 10-13:** American Culinary Federation Southeastern Regional Conference. Roanoke, Va. Cont MT Cuisine at (702) 837-1543 or Michael@mtcuisine.com.
- Mar. 16-19:** National Institute of Oilseed Products Annual Convention. Las Vegas, Nev. Call (202) 785-8450 or visit www.niop.org.
- Mar. 30-31:** Rutgers University Natural Preservatives in Food Systems Symposium. Contact Daphna Havkin-Frenkel at (732) 932-9711 or danahf@aesop.rutgers.edu, or visit www.baktoflavors.com.
- April 3-5:** Institute of Food Technologists "Food Security Pertaining to Potential Intentional Contamination" Summit Conference. Chicago, Ill. Contact Jennifer MacAulay at (312) 782-8424 or jlmacaulay@ift.org.
- April 10-12:** Food Marketing Institute 2005 Advertising and Marketing Executive Conference. San Francisco, Calif. E-mail Pat Shinko at pshinko@fmi.org or Mike Burke at mburke@fmi.org or visit www.fmi.org.
- May 1-3:** Food Marketing Institute 2005 FMI Show, U.S. Food Export Showcase, United Produce Expo & Conference, Fancy Food Show, and All Things Organic. Chicago, Ill. Visit www.fmi.org.
- May 18-20:** University of Minnesota Whole Grains Health: A Global Summit. Minneapolis, Minn. Visit www.wholegrain.umn.edu/conference.
- May 19-20:** 19th Annual J.R. Brunner Protein Symposium. East Lansing, Mich. Contact John Partidge at (517) 355-7713 ext. 179 or partridge@msu.edu.
- May 18-21:** 8th Latin American Congress of Food Microbiology and Hygiene. Bogotá, Colombia. E-mail Janeth Luna at janeth.luna@utadeo.edu.co, or visit www.colmic2005.org/ingles/homeing.htm.

Workshops & Short Courses— 2005

- Mar. 17-19:** Premium Ice Cream Short Course. Univ. of Wisconsin, Madison. Contact Scott Rankin at (608) 263-2015 or visit www.cdr.wisc.edu or www.wisc.edu/foodsci.
- Mar.28-Apr.1:** Cheese Technology Short Course. Univ. of Wisconsin, Madison. Contact Bill Wendorff at (608) 263-2015 or visit www.cdr.wisc.edu or www.wisc.edu/foodsci.
- April 18-21:** Food Processors Institute Better Process Control School. West Lafayette, Ind. Contact Barbara Meyer at (765) 494-7221 or bbmeyer@purdue.edu.
- April 28-25:** Food Processors Institute Better Process Control School. University Park, Pa. Contact Debra Ellis at (814) 865-8301 or des9@psu.edu.
- May 2-5:** Food Processors Institute Better Process Control School. Geneva, N.Y. Contact Judy Anderson at (315) 787-2273 or jla2@cornell.eu.
- May 3-5:** Cultured Dairy Products Short Course. Univ. of Wisconsin, Madison. Contact Bill Wendorff at (608) 263-2015 or visit www.cdr.wisc.edu or www.wisc.edu/foodsci.
- May 10:** Cleaning & Sanitation Workshop. Univ. of Wisconsin, Madison. Contact Bill Wendorff at (608) 263-2015 or visit www.cdr.wisc.edu or www.wisc.edu/foodsci.
- May 11:** Dairy HACCP Workshop. Univ. of Wisconsin, Madison. Contact Marianne Smukowski at (608) 265-6346 or visit www.cdr.wisc.edu or www.wisc.edu/foodsci.
- May 16-19:** Purdue Univ. Dept. of Food Science 20th Annual Aseptic Processing and Packing Workshop. West Lafayette, Ind. Contact Barbara Meyer or Beth Scharf at (800) 359-2968 or bbmeyer@purdue.edu or bscharf@purdue.edu or visit www.foodsci.purdue.edu.

Food Labeling Public Workshop



Food Labeling Public Workshop
Monday, March 21 through Tuesday,
March 22, 2005
NMSU, Gerald Thomas Hall, Room 337
Las Cruces, New Mexico
Limited space. Register by March 11, 2005.

This workshop is sponsored by the Food and Drug Administration (FDA) Southwest Regional Small Business Representative Program and New Mexico State University in response to the large volume of food labeling inquiries from small-food manufacturers and start-ups originating from the area covered by the FDA Denver District Office.

FDA expects that participation in this workshop will provide the food industry with greater understanding of the regulatory and policy perspectives on food labeling and increased voluntary compliance.

Who Should Attend?

Food Processors and Manufacturers
 Print Shop Supervisors
 Distributors of Packaged Foods
 Inspectors of Packaged Foods

Workshop Goals:

The goal of this workshop is to present information that will enable manufacturers and the food industry to better comply with labeling requirements, especially in light of growing concerns about obesity and food allergens. Information presented will be based

on agency position as articulated through regulation, compliance policy guides, and information previously made available to the public.

Topics to be discussed at the workshop include:

- Mandatory label elements
- Nutrition labeling requirements
- Health and nutrition claims
- FDA's allergen declaration policy
- Special labeling issues
- Label design

PRESENTERS:

Nancy C. Flores, Ph.D.
 Extension Food Technology Program

M. Ann Bock, Ph.D.,
 Human Nutrition and Food Science
 New Mexico State University

Cecelia Garcia,
 Northern New Mexico Community College

David Arvelo
 FDA Southwest Regional Small Business Representative

John B. Foret
 Former Senior Specialist
 FDA CFSAN Office of Food Labeling

Nancy Flores



Special Events Coming Up Soon....

FIERY FOODS

It's show time at the 17th Annual National Fiery Foods & Barbecue Show at the Albuquerque Convention Center. March 11-13, 2005. This unique show attracts attendees from around the globe and more than 10,000 general public attendance. Exhibitors provide samples of hundreds of fiery foods and barbeque products. Visit <http://www.fiery-foods.com/ffshow/index.html> for more details.

IFT FOOD EXPO® EXHIBITOR PROSPECTUS

Food Expo® 2005 in Morial Convention Center, New Orleans, Louisiana. New 3-Day Show Format. July 17-19, 2005. IFT Food Expo Means Business. IFT delivers the people you want to do business with. Reach thousands of potential buyers and decision-makers...all in one place...one time...only at the IFT Food Expo®. Visit [www.ift.org.cms](http://www.ift.org/cms) for more details.

HELP LINES



NMSU EXTENSION

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 (505) 646-3516

COUNTY/CITY AGENCIES

Albuquerque Environmental
 Health Department
 (505) 768-2642

STATE AGENCIES

**New Mexico Agriculture
 Department**
 Las Cruces, NM
 (505) 646-3007

**New Mexico Health
 Department**
 Scientific Lab Division
 Pauline Gutierrez
 Albuquerque, NM
 (505) 841-2500

**New Mexico Environment
 Department Food Specialists**
 Albuquerque, NM
 (505) 841-9452

District I
 (505) 841-9450
 Albuquerque (counties served:
 San Juan, McKinley, Sandoval,
 Cibola, Torrance and Bernalillo)

District II
Anita Roy (505) 425-6764
 Las Vegas (counties served:
 Santa Fe, Los Alamos, Taos,
 Rio Arriba, Union, San Miguel,
 Mora, Harding, Colfax and part
 of Guadalupe)

District III
 (505) 524-6300
 Las Cruces, (counties
 served:
 Catron, Grant, Sierra, Hidalgo, Luna,
 Doña Ana, and Otero)

District IV
 (505) 624-6046
 Roswell (counties served: Curry,
 DeBaca, Roosevelt, Chaves, Lea,
 Quay, Eddy and Lincoln)

New Mexico Livestock Board
 Meat Inspection Division
 Arthur P. Marquez
 Program Manager
 Albuquerque, NM
 (505) 250-6115

FEDERAL AGENCIES

**United States Department
 of Agriculture (USDA), Dist. 15**
 Boulder, CO
 (303) 497-5411
 www.usda.gov

**Animal and Plant Health
 Inspection Service**
 Plant Protection & Quarantine
 (505) 527-6985

Meat and Poultry Hotline
 (800) 535-4555

**Food and Drug
 Administration (FDA)**
Devine Koontz
 Food and Drug Administration
 (FDA), Public Affairs Specialist
 Denver, CO
 (303) 236-3020
David Arvelo
 Small Business Office
 Southwest Region, FDA
 Dallas, TX
 (214) 253-4952
Cynthia Jim
 Consumer Safety Officer, FDA
 Albuquerque, NM
 (505) 248-7377

Seafood Hotline
 (800) FDA-4010

ASSOCIATIONS

**New Mexico Specialty Foods Asso-
 ciation (NMSFA)**
 Anna Shawver
 (505) 332-2000

Better Process Control Schools Food Labeling Workshops

Food Labeling Public Workshop
March 21-22, 2005

New Mexico State University
Las Cruces, NM 88003

Location: Gerald Thomas Hall

Contact: Gloria Hernandez

Tel: (505) 646-2198; *Fax:* (505) 646-1889

http://spectre.nmsu.edu/dept/welcome.html? t=homeec

Better Process Control School SPANISH

March 29-April 1, 2005:

New Mexico State University
Las Cruces, NM 88003

Location: Corbett Center

Contact: Gloria Hernandez

Tel: (505) 646-2198; *Fax:* (505) 646-1889

http://spectre.nmsu.edu/dept/docs/homeec/ escuela.htm

Better Process Control School ENGLISH

May 17-20, 2005

New Mexico State University
Las Cruces, NM 88003

Location: Corbett Center

Contact: Gloria Hernandez

Tel: (505) 646-2198; *Fax:* (505) 646-1889

Food Labeling Public Workshop

August 1-2, 2005

Northern New Mexico Community College
Espanola, NM 87532

Location: Johnson Controls

Commercial Kitchen

Contact: Cecelia Garcia

Tel: (505) 753-8952

ACIDIFIED Foods Process School

August 3-5, 2005

Northern New Mexico Community College
Espanola, NM 87532

Location: Johnson Controls

Commercial Kitchen

Contact: Cecelia Garcia

Tel: (505) 753-8952

For more information on other dates and locations available, visit the

web site: www.fpi-food.org/courseschedule.cfm

Product Development and Process Design

Summary

Developing new, value-added food products is time-consuming and expensive, which also requires taking risks. There are various types of product development that allow for a product to grow over time. Initially there is new product development followed later by repositioning, reformulating, and line extension. For each stage of development, certain considerations must be made such as screening, feasibility, costing, prototyping/test marketing and commercialization of a marketable product.

Key Issues

Value-added food products are raw or pre-processed commodities whose value has been increased through the addition of ingredients or processes that make them more attractive to the buyer and/or more readily usable by the consumer.

The failure rate for new value-added products is as high as 90 percent. The average time spent on developing new food products is about two years. Larger companies rely on a product development team that includes food scientists, food engineers and marketing experts.

Smaller companies can develop a network of experts and resources that can serve as a virtual product development team. Food product development involves more than just coming up with a winning prototype recipe. It also includes those steps or processes by which the product will be made for commercial sale. New Mexico State University, through the food technology program, offers specialized services to private food businesses to assist with product development.

Stages of Product Development:

Screening the food product concept:

Who, What, Why, Where

- Who will use the product?
- What is the competition?
- Where will it be sold?
- What will the price be?
- Who will buy it?
- Why will they buy, and will they buy it again?

Feasibility involves regulatory issues, technology and money. Food manufactured that does not cross state line is regulated by New Mexico Department of Environment. Foods that are distributed across state lines come under FDA or USDA jurisdiction. Potential food processors will also need to consider issues of ingredient sourcing, facility location and design, packaging and processing equipment, and distribution strategies.

Costing is another significant part of the feasibility process. Costing takes into account the cost of ingredients and packaging or "cost of goods sold" (COGS), as well as the labor required to produce the product. A detailed cost analysis is crucial BEFORE beginning commercial manufacturing.

Prototyping is the product development stage that precedes commercial production. Preferably, a new business can find a licensed facility where the recipe can be scaled up to a larger size, before purchasing new equipment or investing in a production space. Incubator kitchens, and the NMSU Food Product Development Laboratory, are two affordable locations where recipes can be tweaked and adjusted. Documentation of all processing steps and controls is critical at this stage.

Test marketing, an integral part of the prototyping stage, involves in-store demonstrations, test marketing at a local Farmer's Market and more intensive consumer testing at a sensory laboratory (NMSU Food Product Development Laboratory). Processors should stay in touch with store managers and evaluate how well the product is selling. Questionnaires and focus groups are both good ways to monitor consumers' reactions to the product.

Commercialization involves the full-scale production of the final formulation, with end-design packaging. Two options exist at this point: 1) self production, or 2) co-packing. Co-packing is a contractual agreement between a certified food processor and a business owner, whereby the developed product is manufactured according to formula for the buyer. Many food entrepreneurs use co-packers so that their energies and time can be freed to focus on marketing, business planning, and continued product development.

Adapted from: www.Acenet.com/Food_Ventures_Product_Development_Product_Design.htm

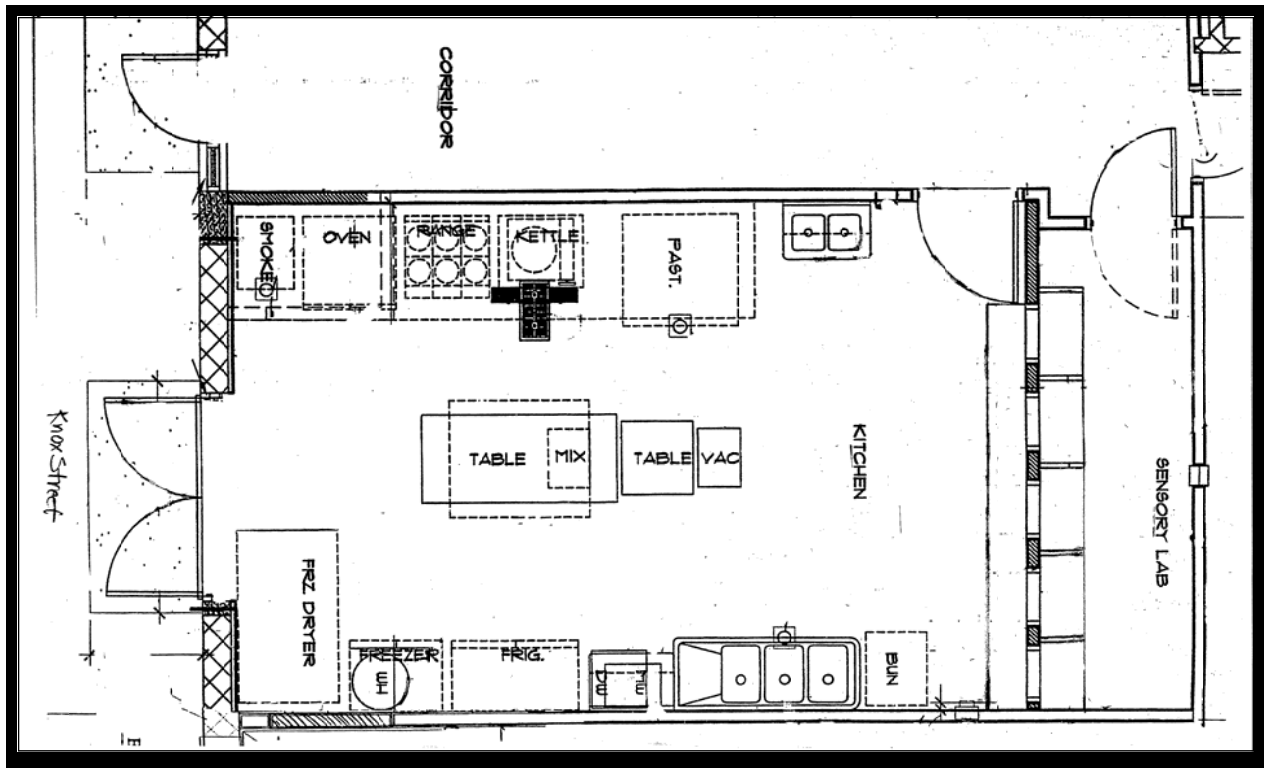
NMSU—CAHE Food Product Development Laboratory continued....

The NMSU Food Technology program continues to serve food processors throughout the state by providing one-on-one consultations, workshops and Food and Drug Administration (FDA) required certification training for

acidified and low acid food processors. The food product development laboratory will provide assistance to grow the food industry in New Mexico.

Nancy Flores

Floor plan shown below



Lessons learned from FoodGard, continued...

system to assess the risks involved in their process. Food Safety Inspection Service and FDA Food Security Guidelines for Processors/Distributor presented by Lorie Stoller, environmental specialist Albuquerque Health Department, outlined specific steps that can be taken to protect food processing facilities.

Physical security and breach detection, presented by Randy Erwin, UNM Health Science Center showed the importance of intrusion detection and proper response to alarm systems.

The "FoodGard" training was broadcast live via

Centra (Internet-based system) on Jan. 13, 2005. Each County Extension Office in New Mexico hosted this event, which reached 160 participants state-wide and Louisiana and Maryland. The following organizations also sponsored this training:

- New Mexico Specialty Foods Association
- Federal Bureau of Investigation
- New Mexico US Attorneys' Office
- New Mexico Cooperative Extension Service
- New Mexico Department of Agriculture
- New Mexico Department of Environment

Nancy Flores

New ideas?

Address Change/Corrections? Suggestions/Comments? Subscription?

Name: _____

Address: _____

Comments/Suggestions: _____

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If you would like to contribute articles for this newsletter or have any comments, suggestions or address changes, please send all correspondence to:

**Ideas for Food Processors
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