K-STATE Kansas State University

K-STATE RESEARCH AND EXTENSION

# FOCUS ON PROCESSED AGRICULTURAL PRODUCTS

VOLUME 10 ISSUE 1

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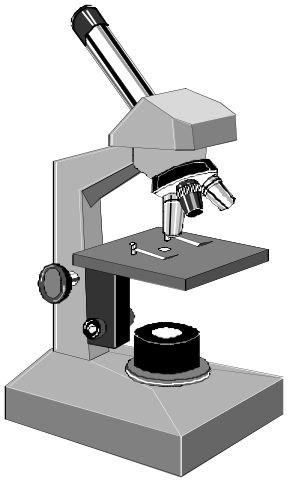
*Special points of interest:*

- **New manager for value-added food lab**
- **How will your product do on the market? Test a batch and find out**

**NEW LOCATION:**
**Dr. Fadi Aramouni and his staff are in 216 D Call Hall (785) 532-1668**

# Food lab offers free services

Do you need laboratory services for food products from your commercial kitchen? If so, you should know about the variety of lab equipment and instrumentation available at the Kansas Value-Added Food Product Development Laboratory. Among tests that can be performed are: pH (acidity), Brix (percent solids), residual oxygen (package or can), Aw (water activity), color, texture, viscosity, microbiological testing, and various chemical analyses.



Other services available include Accelerated Shelf-Life Testing, Label Review, Nutritional Analysis, and Sensory Analysis.

The accelerated shelf-life testing involves the use of special incubators that produce higher-than-normal temperature and humidity, decreasing the time it takes for a product to break down or lose quality characteristics. After incubation, testers apply a mathematical formula to approximate the product's shelf-life under normal storage conditions.

Product label review ensures compliance with state and federal regulations. Help is available through the "FROM THE LAND OF KANSAS" program and the Kansas Department of Commerce & Housing. For more information, contact their staff at (785) 296-3737.

The Nutrition Labeling and Education Act requires most food products to carry a nutrition label. Nutrition information can be obtained from available databases. In order to complete the analysis, data dealing with the formula, final yield, product weight, and final moisture content are analyzed. If final moisture content is unknown, the necessary analysis can be completed in the lab. All information submitted is kept confidential.

Nutrition information by chemical analysis is also available at the laboratory. The fee for product analysis is $70.

## Introducing Tom B. Lindquist

Extension assistant Tom B. Lindquist is the new manager of the Value Added Foods Laboratory. His office is in 216 Call Hall on the K-State campus.

For the past eight years, Lindquist was the 4-H and youth extension agent in Barton County, Kan. He and his wife, Liz – a veterinarian at the Little Apple Veterinary Clinic in Manhattan – have two children: Marissa, 5, and Codey, 16 months.

Lindquist can be reached by phone at (785) 532-1667 or e-mail: Tlindqui@oz.oznet.ksu.edu.

## *Borrow tools to test your products*

Kansas processors may borrow equipment to experiment with on-site compatibility and applications, test market production, and equipment use training. Equipment / instruments in the Product Development Laboratory include:

- 30-gallon jacketed steam kettle
- vacuum (inert gas) packager
- Hobart mixers / choppers
- walk-in refrigerator and freezer
- conventional, convection and steam ovens
- pH meter / ion selective electrodes
- water activity meter
- oxygen analyzer
- reach-in incubators
- chlorine tester
- freeze dryer
- pulper / finisher
- electronic balances
- microscopes
- tray dryer
- retorter
- kettles
- exhauster
- can seamer
- filler
- drum dryer
- sterilizer
- blancher
- lye peeler
- spray dryer
- transfer pump

The equipment may be used on a first come, first served basis. A complete list is available upon request. Arrange scheduling with Dr. Fadi Aramouni, 216 Call Hall, Kansas State University, Manhattan, KS, 66506-1600, or call (785) 532-1668.

# Preventing foodborne illness: cause and effect

At least four factors are necessary for bacterial foodborne illness to occur:

- presence of bacterial cells or spores;
- a food vehicle for the bacteria;
- conditions that allow the bacteria to survive, reproduce, or form toxin;
- a vulnerable food consumer who ingests enough of the bacterial agent to cause illness.

Theoretically, intervention at any one of these points can prevent illness. Practically speaking, it is not possible to eliminate all bacteria from the environment or to give up all foods, since any food can be a vehicle. It is also impossible to "vaccinate" all vulnerable people against illness, since any person could be vulnerable under the right conditions. Good food-handling practices remain the last, best defense against bacterial foodborne illness.

> Of all foodborne illnesses, those caused by bacteria are the most common – and the most preventable.

### Preventing the preventable

The most common errors in foodborne illness outbreaks include leaving foods at room temperature too long and / or refrigerating foods in large, deep containers that cool too slowly.

In outbreaks associated with meat and poultry, common food-handling errors include leaving cooked foods at room temperature too long, undercooking, or failure to reheat cooked foods thoroughly. In many outbreaks, more than one of those errors could be made, compounding the risks that lead to foodborne illness.

### Food vehicles in outbreaks

Under the right conditions, almost any food can be a vehicle for microbiological agents that cause illness. A 1977-1984 study of foodborne illness outbreaks in which the food vehicle was successfully identified found that the most frequently implicated foods were: seafood (raw clams); meat (roast beef, ham); poultry (turkey, chicken); salads (potato, chicken); Chinese food (fried rice); and Mexican-style food (beans, meat).

High protein foods of animal origin – meat, poultry, fish and shellfish, dairy, and egg products – are particularly likely to be the food vehicles for bacterial outbreaks. The U.S. Department of Agriculture's Food Safety and Inspection Service (FSIS) is concerned about educating food handlers to use practices that will prevent bacterial foodborne illness. However, improperly handled vegetables – potatoes, onions, pinto beans, tofu, and coleslaw – also have been confirmed as vehicles in recent outbreaks of bacterial foodborne illness.

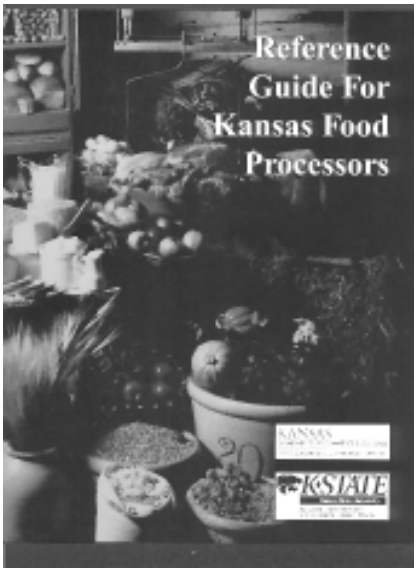
### Wash your hands

Practice good personal hygiene and kitchen sanitation to prevent possible recontamination of cooked food by bacteria. Thoroughly wash hands with soap, and use a fingernail brush.

*– FSIS Facts, Preventable Foodborne Illness, FSIS - 34, May 1989*

# Free reference guides in stock

We now have a good supply of the "Reference Guide For Kansas Food Processors." This three-ring notebook is the product of a joint effort between the Kansas Department of Commerce & Housing and K-State Research and Extension.




The information provides a fingertip reference that will help answer the day-to-day questions encountered by food processors. The book also provides a list of Kansas companies that can supply processors' ingredient and equipment needs, with the goal of promoting these and all Kansas companies when possible.

Chapters in the food processors' manual will be updated periodically, and additional information will be included in the updates. To receive a free copy, call (785) 532-1667, or (785) 532-2863.

# Produce a test-market batch of product

If a client wishes to arrange to produce a test-market size batch of a product, the Food Systems staff cooperates with other departments on the K-State campus in the use of facilities.

Facilities available include the Thermal Processing Laboratory, the Meats Laboratory, the Extrusion Laboratory, the Dairy Plant, and the Baking Science Laboratory.

In most cases, clients must meet requirements for product quality and acceptability. Clients are asked to provide ingredients and packaging materials. Clients participate in production of the test batch to help them fully understand this important step of getting the product from the development stage to the marketplace.

## Lab assists small companies by keeping test fees low

Start-up companies that lack the funding required to test and develop their products may find the Kansas Value-Added Food Product Development Laboratory helpful.

The lab does not compete with other diagnostic laboratories. Its purpose is to help small businesses that often cannot afford the fees charged by private laboratories. Fees that are charged partially cover the cost of materials used in the testing. The balance is covered by funds from K-State Research and Extension and the Kansas Department of Commerce & Housing.

# *Food processor short course*

A short course for food processors is being planned for May at Kansas State University, but we need your help in scheduling it. Please let us know which weekend would be best for you to attend.

The course will include sessions on product development, market trends, quality control, and labeling. In addition, we are seeking feedback on courses participants might request as being most useful.

The short course will begin on a Friday afternoon and continue through Saturday evening.

For more information, call Tom B. Lindquist, (785) 532-1667.

Call soon! We look forward to working with you in planning a great 1999 Food Processors Short Course.

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*FOCUS: On Processed Agricultural Products* is published for Kansas agricultural processors to promote quality and value-added food products.



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