



RESEARCH AND EXTENSION

Food Safety

NEWS

Reporting problems to the FDA

Consumers are a vital link in reporting adverse reactions and other product problems to the U.S. Food and Drug Administration. What does the FDA regulate? The agency is responsible for ensuring that foods are safe, wholesome and correctly labeled. It also oversees medicines, medical devices, blood products, vaccines, cosmetics, veterinary drugs, animal feeds and electronic products that emit radiation. Timely reporting allows the agency to take action quickly.

Reporting an emergency

If the situation is an emergency – foodborne illness or drug product
(continued on page 3)

On the World Wide Web

Food Safety of Jerky
(publication of FSIS)
<http://www.fsis.usda.gov/oa/pubs/jerky.htm>

Food and Drug Administration
1999 Food Code
<http://vm.cfsan.fda.gov~dms/foodcode.html>

Environmental Protection Agency
Pesticides and Food
<http://www.epa.gov/pesticides/food/>

K-State Research and Extension
Food Safety Website
www.oznet.ksu.edu/foodsafety

Food Safety CURRENT NEWS

Consumers Union reports on pesticide residues

Consumers Union recently released a report concerning pesticide residues found on food consumed in the United States. The report is based on data collected by the U.S. Department of Agriculture's Pesticide Data Program (PDP).

Data were obtained for more than 27,000 samples tested between 1994 and 1997. For each food, a Toxicity Index (TI) was computed to measure frequency of pesticide detection, residue level, and relative toxicity of those residues, yielding an index of the relative toxicity-loading of each

food. A high TI indicates a higher level of pesticide residues, residues that are more toxic, or both.

With some exceptions, residues detected by the PDP were within established U.S. limits. However, Consumers Union feels that legal limits do not define safety, and that residues on foods would expose a young child to a dose greater than that estimated for safe intake.

Consumers Union recommends that consumers consider the Toxicity Index when choosing fruits and vegetables.

The report has been highly criticized. Carl K. Winter, toxicologist from

the University of California, questions the methodology.

"This all looks very impressive and comprehensive on paper," he says, "but really has no toxicological validation."

According to Winter, relating individual acute exposures to the chronic reference dose, which corresponds to the lifetime average daily level of exposure, is a major methodological flaw. Over a lifetime, he says, there will be a few days when the reference dose is exceeded, but those should be balanced by many days with little or no exposure. In addition, body weight and food consumption patterns of a 5-year-old are not maintained for life.

The report does not prove that infants and children receive unsafe levels of exposure to various pesticides, Winter says. It simply points the finger at some foods.

– *Do You Know What You're Eating? An Analysis of U.S. Government Data on Pesticide Residues in Foods;*
http://www.consunion.org/food/do_you_know2.htm

– Email correspondence,
Dr. Carl Winter

The Environmental Protection Agency recommends the following sensible food practices:

- Wash and scrub all fresh fruits and vegetables thoroughly under running water. This will help remove bacteria and traces of chemicals from the surface of the product.
- Washing will not remove all pesticide residues. Peel fruits and vegetables, when possible, to reduce dirt, bacteria and pesticides.
- Eat a variety of foods, from a variety of sources. This will give you a better mix of nutrients and reduce your likelihood of exposure to a single pesticide.

– *Pesticides and Food, What You and Your Family Need to Know;*
<http://www.epa.gov/pesticides/food>

FAQ's

- What is jerky?

This product is a nutrient-dense meat that has been made light in weight by drying. A pound of meat or poultry weighs about four ounces after being made into jerky. Because most of the moisture is removed, it is shelf-stable (can be stored without refrigeration) making it a handy food for backpackers and others who don't have access to refrigerators.

- How can drying make meat safe?

By removing moisture in the drying process, enzymes cannot efficiently contact or react with the food. Whether these enzymes are bacterial, fungal, or naturally occurring autolytic enzymes from the raw food, preventing this enzymatic action preserves the food from biological action.

- Why is it a food safety concern to dry meat without first heating it to 160°F?

The danger in dehydrating meat and poultry without cooking it to a safe temperature first is that the appliance will not heat the meat to 160°F (a temperature at which bacteria are destroyed) before it dries. After drying, bacteria become much more heat resistant.

Within a dehydrator or low-temperature oven, evaporating moisture absorbs most of the heat. Thus, the meat itself does not begin to rise in temperature until most of the moisture has evaporated. Therefore, when the dried meat temperature finally begins to rise, the bacteria have become more heat resistant and are more likely to survive. If these surviving bacteria are pathogenic, they can cause foodborne illness to those consuming the jerky.

Food Safety RESEARCH

Researchers study pathogens in homemade jerky

For many years, consumers have made jerky in their homes for enjoyment or to save money. With the growing awareness of such pathogens as *E. coli* O157:H7, researchers questioned the safety of homemade jerky.

Between 1966 and 1996, the Centers for Disease Control and Prevention investigated eight foodborne illness outbreaks involving *Salmonella*, *Staphylococcus aureus*, and *E. coli* O157:H7 in beef and venison jerky.

To gather more information, county extension agents distributed a survey to people who frequently made jerky at home. No respondents reported checking the temperature in the drying chamber. They relied on the temperature settings of the dehydrators and ovens. The findings led Dr. Dennis Buege and Dr.

John Luchansky from the University of Wisconsin Food Research Institute to conduct a study to define time and temperature parameters capable of destroying *E. coli* O157:H7.

Ground and formed jerky was prepared from raw ground beef of either 5 percent or 20 percent fat content. A commercial jerky seasoning (without sodium nitrite) and a five-strain inoculum of *E. coli* O157:H7 was blended into the raw meat batter to provide approximately 10⁸ CFU/gram. Formed strips were dried in a home-style dehydrator at temperatures of 125°F, 135°F, 145°F, and 155°F for various time periods. The results showed that the lowfat jerky experienced a 5 log₁₀ reduction of *E. coli* O157:H7 in 10 hours at

125°F, eight hours at 135°F, six hours at 145°F, and four hours at 155°F. The jerky made with 20 percent fat took much longer to achieve the 5 log₁₀ reduction, most apparent at lower drying temperatures.

The study's results support the importance of following time and temperature guidelines, rather than relying on product appearance. A thermometer should be used to check dehydrator operating temperatures. Other studies have reported that acid marinades, higher salt levels, and addition of sodium nitrite decrease pathogen viability. Others suggest preheating jerky in a marinade before drying.

—Buege, D. and J. Luchansky, *Meat & Poultry* 45(2): 56-59, 1999.

FoodNet releases preliminary statistics for 1998

During 1998, the overall incidence of foodborne illnesses under surveillance declined among the 20.5 million consumers at sites studied by FoodNet.

Notable declines were shown for *Salmonella* and *Campylobacter*, and for the parasite *Cyclospora*, but the number of cases of *E. coli* O157:H7 increased.

In 1996, FoodNet began surveillance of laboratory-confirmed cases of *Campylobacter*, *Shigella*, toxin-producing *E. Coli* O157:H7, *Listeria*, *Salmonella*, *Shigella*, *Vibrio*, and

Yersinia infections in Minnesota, Oregon, and some counties in Califor-

nia and Connecticut. Data shown are from original FoodNet sites.

Table 1. Rate of selected pathogens detected by the Foodborne Disease Active Surveillance Network (FoodNet) at the five original sites by year – United States, 1996-1998.*

Organism	1996	1997	1998
<i>Campylobacter</i>	23.5	25.2	21.7
<i>Cryptosporidium</i>	&	2.7	2.5
<i>Cyclospora</i>	&	0.3	0.0
<i>E. coli</i> O157:H7	2.7	2.3	2.8
<i>Listeria</i>	0.5	0.5	0.5
<i>Salmonella</i>	14.5	13.6	12.4
<i>Shigella</i>	8.9	7.5	8.5
<i>Vibrio</i>	0.1	0.3	0.3
<i>Yersinia</i>	1.0	0.9	1.0
Total	51.2	50.3@	42.2@

* Per 100,000 population & Not reported
 @ Excludes *Cryptosporidium* and *Cyclospora*

FSIS considers irradiation issues

The Food Safety and Inspection Service is considering amendment of meat inspection regulations to allow use of ionizing radiation to treat meat, meat by-products, and other meat food products. Use of ionizing radiation will reduce or eliminate levels of foodborne pathogens, such as *E. coli* O157:H7, and will extend shelf life.

A maximum dose of 4.5 kiloGray will be established for irradiation of fresh (chilled, not frozen) meat and a maximum dose of 7.0 kiloGray for frozen meat.

The proposal also requires that establishments irradiating meat have a dosimetry system to measure absorbed radiation. The requirement ensures that each lot of treated product has received the dose defined in the process schedule or Hazard Analysis and Critical Control Point plan.

The proposed rule requires labeling of irradiated meat and meat products sold at retail establishments. For meat and meat products irradiated in their entirety, the agency proposes that package labels contain the radura symbol and a statement indicating that the product was treated by irradiation.

For unpackaged meat food products irradiated in their entirety, the agency proposes that the required logo and statement be conspicuously displayed to purchasers. Under this proposal, establishments could use irradiated meat products as ingredients in multi-ingredient products. The ingredient statement would reflect inclusion of irradiated meat products.

FSIS wants to revise regulations governing irradiation of poultry to be as consistent as possible with those covering irradiation of meat food products. The proposal would eliminate the minimum dose currently required for poultry. The agency wants to allow poultry establishments to determine the level of irradiation (subject to a maximum level) appropriate to their HACCP systems. Packaging requirements would

maximize flexibility in processing.

The public is invited to submit comments on the proposal. FSIS requests comments on specific issues, such as labeling claims for *E. coli* O157:H7-free meat, as well as ingredient labeling of products that have irradiated meat as part of the product formulation.

Comments must be received on or before April 26. Submit one original and two copies of written comments to FSIS Docket #97-076P, U.S. Department of Agriculture, Food Safety and Inspection Service, Room 102, Cotton Annex, 300 12th St. SW, Washington, DC 20250-3700.

– *USDA Issues Meat and Poultry Irradiation Proposal*;
<http://www.fsis.usda.gov/oa/background/irradprop.htm>
– *Proposed Rule on Irradiation of Meat and Meat Products can be found at*:
<http://www.fsis.usda.gov/OA/fr/99-4401.htm>

Jerky food safety tips

- Always wash hands thoroughly with soap and water before and after working with meat products.
- Use clean equipment and utensils.
- Keep meat and poultry refrigerated at 40°F or slightly below. Use or freeze ground beef and poultry within two days and whole red meats within three to five days.
- Defrost meat in the refrigerator.
- Don't save marinade to re-use.
- Steam or roast meat and poultry to 160°F as measured with a meat thermometer before dehydrating it.
- Dry meats in a food dehydrator with an adjustable dial that will maintain a temperature of at least 110°-140°F.

– *USDA Meat and Poultry Hotline Recommendations for Homemade Jerky*. For additional food safety information on meat, poultry or eggs, call the Hotline at 1 (800) 535-4555 weekdays, 9 a.m. to 3 p.m. CDT.

Reporting

(continued from page 1)
tampering – call the main emergency number, (301) 443-1240, or report emergencies to your area FDA Consumer Complaint Coordinator. In Kansas, call (913) 752-2440.

Nonemergency reports

If the situation doesn't require immediate action, report it to the appropriate Consumer Complaint Coordinator or FDA office. For food-related problems, call the FDA Food and Seafood Information Line, 1 (800) 332-4010. For meat or poultry problems call the USDA Hot Line, 1 (800) 535-4555.

FDA does not handle

- Restaurant food or sanitation: Call the local or state health department.
 - Accidental poisonings: Contact a poison control center or hospital.
 - Pesticides, air or water pollution: Call the Environmental Protection Agency.
 - Alcoholic beverages: Contact the Department of Treasury's Bureau of Alcohol, Tobacco and Firearms.
 - Hazardous chemicals in the work place: Call the Department of Labor's Occupational Safety and Health Administration.
 - Dispensing and sales practices of pharmacies: Contact the State Board of Pharmacy.
 - Medical practices: Contact the State Certification Board.
- For general questions about FDA regulations that do not involve problem products or adverse reactions, call 1 (800) 532-4440.

– *How to Report Adverse Reactions and Other Problems with Products Regulated by FDA*:
<http://www.fda.gov/opacom/backgrounders/problems.html>

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K-State, County Extension Councils, Extension Districts,
and U.S. Department of Agriculture Cooperating

All educational programs and materials are available
without discrimination on the basis of race, color,
religion, national origin, sex, age, or disability.

Upcoming Events

April 12-13

Serving Safe Food
Wichita, KS
Contact: Teresa Lang (316) 722-7721

April 12 & 19

Serving Safe Food
Emporia, KS
Contact: Angela Cichocki
(316) 341-3220

April 13

Food Safety Training
& Education Alliance
Satellite Video Teleconference
1:00 - 3:00 pm CDT
Contact: Susan Conley
(301) 405-5421

April 14, 21, 28 and May 5 & 12

Serving Safe Food
Salina, KS
Contact: Sherrie Mahoney
(785) 826-6645

May 12-13

Serving Safe Food
Overland Park, KS
Contact: Nada Thoden
(913) 764-6300

May 18 & 20

Serving Safe Food
Leavenworth, KS
Contact: Denise Sullivan
(913) 684-0475

May 21-23

HACCP Shortcourse
Manhattan, KS
Contact: Liz Boyle
(785) 532-1247

May 26-27

Serving Safe Food
Lawrence, KS
Contact: Susan Krumm
(785) 843-7058

June 2

HACCP Foodservice
Overland Park, KS
Contact: Karen Penner
(785) 532-1672

June 3

HACCP Foodservice
Topeka, KS
Contact: Karen Penner
(785) 532-1672

June 15-16

Serving Safe Food
Topeka, KS
Contact: Cindy Evans
(785) 232-0062

June 16

HACCP Foodservice
Salina, KS
Contact: Karen Penner
(785) 532-1672

June 22-23

Serving Safe Food
Garden City, KS
Contact: Linda Walter
(316) 272-3670

June 24

HACCP Foodservice
Wichita, KS
Contact: Karen Penner
(785) 532-1672

June 29-30

Serving Safe Food
Ottawa, KS
Contact: Rebecca Dillard
(785) 229-3520