

The Food Safety  
Your consumer education connection

---

# Educator

Volume 6, No. 2, 2001

## ■ Time for Chill!

We're heading for the blistering hot days of summer. What better time to think about "chill," the last of the four key food safety messages of the Fight BAC!™ campaign.

"Chill" is the theme for this year's National Food Safety Education Month<sup>SM</sup> in September. As in past years, the Food Safety and Inspection Service and the Food and Drug Administration are working together to provide educators with materials for consumers.

These reproducible consumer materials will include fact sheets and backgrounders as well as materials for kids—a game, song, and word puzzle. They will be direct mailed later this summer and available through <http://www.foodsafety.gov/september>

The National Restaurant Association is also developing a package for food service. It will be direct mailed to members and also available on the Web in July 2001. Go to: <http://www.foodsafetycouncil.org>

The "chill" message is a great one for educators. While many consumers realize they need to cook food thoroughly to kill harmful bacteria, many more DON'T realize the hazards of letting foods sit for too long at room temperature and the rules for "refrigerator food safety."



For instance, quiz yourself:

- How long do you think it would take an 8-inch stock pot of steaming chicken soup to cool to a safe temperature in your refrigerator? Would you guess 24 HOURS?
- At room temperature, how long do you think it takes dangerous bacteria to double in number? How about every 20 minutes.
- Refrigerator temperatures slow the growth of bacteria. Right? Not always. Some dangerous bacteria, especially *Listeria monocytogenes*, actually continue to multiply at refrigerator temperatures.

So, what are some good "chill" food safety rules?

- **Refrigerate perishable foods promptly!** Even steaming hot foods can go into the refrigerator. It won't hurt the refrigerator and it will keep food safe! Remember to store hot foods in shallow containers to speed cooling.
- **Get a refrigerator thermometer!** They aren't expensive and you can pick one up at your local grocery store. KNOW if your refrigerator's temperature is too cool, too warm, or just right! For consumers, the safe temperature is at or below 40 degrees F.
- **Don't jam-pack the fridge.** If you pack your refrigerator with food in every nook and cranny, the air won't circulate properly and cool quickly. So make sure there's enough room for air to circulate. Use the storage bins for fruits and vegetables or meats and cheeses. Especially in newer refrigerators, they are specifically designed to maximize the shelf life and safety of these foods. Eggs, however, are safer stored in their original containers.
- **Keep it clean.** We regularly wash almost everything in our kitchens, except our refrigerators. Spilled food on shelves is a perfect spot for dangerous bacteria to hide. Clean up spills right away. And regularly wash the refrigerator out with hot, soapy water.

(continued on page 2)

# Go BAC! and Check Out Chill

The Partnership for Food Safety Education has produced a fabulous “info-graphic” fact sheet on the “chill” message.

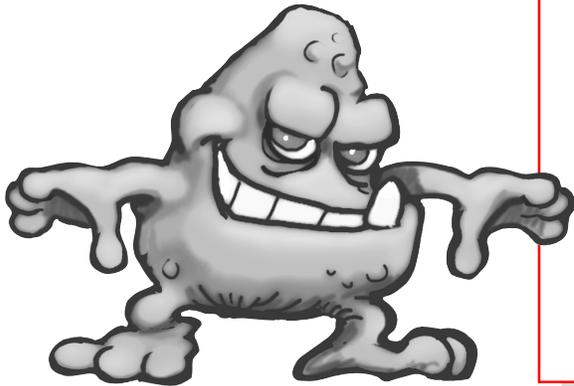
We’ve included the fact sheet as an insert to this newsletter—along with info-graphic fact sheets from the Fight BAC!™ campaign on the other three key food safety messages: “clean,” “separate,” and “cook.”

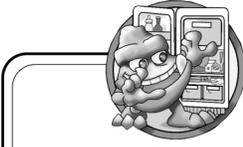
As with all BAC! materials, educators are encouraged to copy them.

You can also access all four fact sheets through the Web site. You can download a PDF file, get the text only, or download copy suitable for a printer.

Go to: <http://www.fightbac.org/tools/brochures>

Here’s a glimpse of some of the information you’ll find on “chill”:





**The Big**



**Hit the Road!**



**CHILL**  
**Refrigerate Promptly**

Bacteria grow most rapidly in the Danger Zone — the unsafe temperatures between 40° F and 140° F — so it's key to keep foods out of this temperature range. And since cold temperatures keep most harmful bacteria from growing and multiplying . . . **be sure to refrigerate foods quickly!**



**The Top 4 Cool Rules**

1. **The Chill Factor** — Refrigerate or freeze perishables, prepared foods, and leftovers within 2 hours or less. Marinate foods in the refrigerator.
2. **The Thaw Law** — Never defrost food at room temperature. Thaw food in the refrigerator, in cold water, or in the microwave if you'll be cooking it immediately.
3. **Divide and Conquer** — Separate large amounts of leftovers into small, shallow containers for quicker cooling in the refrigerator.
4. **Avoid the Pack Attack** — Don't over-stuff the refrigerator. Cold air must circulate to keep food safe.

**'Fridge Quiz**

*Put your knowledge of proper refrigeration to the test.*

1. Should hot food be placed directly in the refrigerator? YES or NO
2. Refrigeration prevents bacterial growth. TRUE or FALSE
3. At what temperature should you set your refrigerator? \_\_\_\_ ° F

**ANSWERS:**

1. Yes, but divide large quantities of food into shallow containers for quicker cooling.

2. False. Refrigeration slows, but does not prevent the growth of harmful bacteria.

3. 40° F to discourage the growth of foodborne bacteria. Use an appliance thermometer to check the temperature of your refrigerator regularly.

**Serve & Preserve**



*When serving cold food at a buffet, picnic, or barbecue, keep these “chilling” tips in mind.*

- Cold foods should be kept at 40° F or colder.
- Keep all perishable foods chilled right up until serving time.
- Place containers of cold food on ice for serving to make sure they stay cold.
- It's particularly important to keep custards, cream pies, and cakes with whipped-cream or cream-cheese frostings refrigerated. Don't serve them if refrigeration is not possible.

(Time for Chill! ... continued from page 1)

• **Pitch, pitch, pitch.** Don't keep food too long. It's better to throw food away than to jeopardize your health. The longer you've had the food, the greater the chance that dangerous bacteria might be there.

In general: Fresh poultry and ground meat keep in the refrigerator up to 2 days; fresh meat up to 5 days;

and most leftovers will keep 3 to 4 days. Vacuum-packed meats last 2 weeks unopened; 5-7 days if opened.

There are a good number of food storage guides you can turn to, including an on-line resource from the Food Marketing Institute: <http://www.fmi.org/consumer/foodkeeper/search.htm>

You just enter the food you are interested in and the database will provide you with storage information. •

# ■ Listening to Last Year's Food Safety Education Month Supporters

In 2000, National Food Safety Education Month<sup>SM</sup> Planning Guides for Consumers were distributed to 40,000 food safety educators, including school food service and cooperative extension.

Here's what some of the folks last year had to say about the materials and how they used them:

- Marshall, Wisconsin: Gina Kalka from the Marshall Public Schools said, "I loved the setup of the folder, very easy to read and pull out the different papers to copy or cut and paste."
- Farmersville, Illinois: Principal Linda Eades reported, "Our whole school participated. We put up signs, obtained local press coverage... sponsored a coloring contest... We had newspaper photos and articles as well."
- Little Rock, Arkansas: Rosalyn Scruggs from the Little Rock School

District explained that they teamed up with cooperative extension and presented a mini food safety course reaching 238 students!

- Alder, Montana: Cook/Manager Janice Buck said she "made copies of all the fun things for the kids and sent materials home to parents," noting that they are a "pretty small community," with 30 students in their K-6 school.
- Grenada, Mississippi: Carolyn Hoot with cooperative extension networked with partners and managed to get radio spots aired as well as food safety bag stuffers passed out at cooperating stores, including Wal-Mart Super Center and Piggly Wiggly.
- Mauston, Wisconsin: Jennifer Froh with the county health department sent materials out to 350 day care families.

- Knoxville, Tennessee: Ken Pearson with the county health department did a full-court press—newspaper articles, TV news coverage—and a county health employee dressed up as "Bacteria Bob" appeared on a local television show for kids to teach them about "good germs and bad germs."
- Tulsa, Oklahoma: Melissa Adair with the community nutrition program not only worked with local television, she also teamed up with elementary schools, housing authorities, homeless shelters, and pregnant teen centers.
- Buenos Aires, Argentina: Dr. Cesar Augusto Lerena sent in this note reflecting the international perspective on food safety: "We are trying to apply all the programs that focus on food safety education for people who work in food industries that export to the U.S." •

# ■ The Big Four—Clean, Separate, Cook, and Chill—Tools for Educators

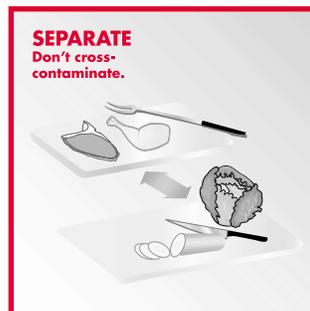
With this year's National Food Safety Education Month<sup>SM</sup> package focusing on "chill," all four key food safety messages from the Fight BAC!<sup>TM</sup> campaign have been turned into in-depth packages of training materials for consumers and food service.

## For consumers:

These consumer education resources include reproducible artwork, games, fact sheets, songs, press releases, and more. They are all available on the Web. Go to: <http://www.foodsafety.gov/september>

## For food service:

Educational materials for food services based on the four key Fight BAC!<sup>TM</sup> messages are also available. There are games and seminars that educators can use year round! They are archived at: <http://www.foodsafetycouncil.org/> •



# ■ Summer Food Safety Concerns

*Illness outbreaks and research continue to show that summer can bring more than hot sun and vacation. Educators can help consumers stay safe by tuning in to these food safety issues and resources:*

## ■ Fruits and Vegetables

Nothing says “summer” like fresh produce: tomatoes still warm from the sun, strawberries meltingly sweet, the sharp tang of arugula.

At the same time, consumers need to remember that dangerous microorganisms can be everywhere—even on our summertime vegetables.

Whether they’re grown in another country or our own back yard, our fruits and vegetables can harbor dangerous pathogens. They can become contaminated by the soil they’re grown in or water used for irrigation or rinsing.

But many resources are available for both consumers and producers to reduce risks of illness. Key tips to remember:

- The fresher the better: Avoid buying produce with wilted, moldy or slimy parts where bacteria can multiply. Only buy what you need. According to the Produce Marketing Association, most items should be used within a few days.
- Clean, clean, clean: Just before you use it, wash it all—fruits and vegetables. This includes fruits with rinds or skin. Don’t use detergent or bleach—it could be absorbed through the skin.
- Keep the other germs away! Don’t let fresh fruit or vegetables come in contact with raw meat, poultry, or seafood. This also means making sure that you thoroughly wash any plates

or knives that might have touched raw meat before you use them with produce.

- Refrigerate cut-up fruit immediately.

### Resources For Consumers:

- The Produce Marketing Association, “FAQ’s on Fresh Produce,” <http://www.aboutproduce.com/>
- Food and Drug Administration, <http://www.foodsafety.gov/~fsg/produce.html>

### Resources for Producers:

- Food and Drug Administration, “Guidance to Industry: Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables,” <http://www.cfsan.fda.gov/~dms/prodguid.html>
- Produce Marketing Association, “Guide: Food Safety for Produce Distribution,” <http://www.pma.com>

### Food Preservation

Interested in preserving some of that summer harvest? Kansas State University has posted a terrific Web page with links to preservation information and publications from around the country. The Web page also links to a new Food Preservation Database created by the Penn State Department of Food Science. Go to: <http://www.oznet.ksu.edu/extrapidresponse/Food%20Preservation.htm> •

## ■ Fairs

Public health officials, fair promoters, and consumers are all paying more attention to health hazards from fairs and petting zoos.

These sites can present special health hazards, especially because of the presence of farm animals. In

addition, fairs are frequently dealing with untrained or volunteer workers, temporary cooking and sanitation facilities as well as lots of animals around—including accompanying flies and rodents.

### Reducing Risks From Animals:

Outbreak investigations as well as case control studies from the Centers for Disease Control and Prevention (CDC) confirm there can be numerous modes of transmission for *E. coli* O157:H7.

According to CDC’s FoodNet Coordinator Malinda Kennedy, most illnesses have been associated with contaminated food or drink, such as undercooked ground beef or raw uncooked produce. These products have usually been contaminated with animal feces containing *E. coli* O157:H7.

Not surprisingly then, contact with farm animals—such as calves—can significantly increase the risk of illness from *E. coli* O157:H7, according to Kennedy. This fecal bacteria can be present on the animal’s skin or even on railings of the pen. When you touch those surfaces, your hands can become contaminated. When your hand goes to your mouth, you could be ingesting enough bacteria to make you sick.

On April 6, 2001, the CDC’s *Morbidity and Mortality Weekly Report (MMWR)* published results of the first outbreaks in the U.S. confirming that *E. coli* O157:H7 can be directly transmitted from farm animals to humans. These outbreaks, occurring in 2000, also emphasized the special risks of illness faced by young children. In one of the outbreaks, the median age of those who became ill was 4 years old (median meaning half above and half below).

The article is titled “Outbreaks of *Escherichia coli* O157:H7 Infections

Among Children Associated With Farm Visits.” Go to: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5015a5.htm>

To deal with these types of hazards, many health officials are devoting more time to checking fairs and petting zoos. They are also inspecting water supplies which can become contaminated with runoff from farm animals.

Consumers need to take precautions as well. While petting zoos are terrific fun for the kids, they can spell trouble when a hand that just petted a calf goes into a child’s mouth.

To help reduce risks of illness, the *MMWR* article includes the following advice (go to the article for the complete list of recommendations):

- Petting zoos and farms open to the public should inform visitors about the risks of illness from farm animals.
- Food and beverages should be prepared, served and eaten only in “animal-free” areas.
- Handwashing stations should be available including running water, soap, and disposable towels. Handwashing stations should be available in the petting zoo areas as well as the “animal-free” areas where food is served and eaten.
- People at high risk for infections should observe “heightened precautions” and “weigh the risks for contact with farm animals.” People at risk include children under 5, the elderly, pregnant women and people with weakened immune systems.

A 1997 FoodNet case control study also found a link between exposure to farm animals and illness from *E. coli* O157:H7. Go to: [http://www.cdc.gov/foodnet/pub/iceid/1998/kassenborg\\_h.htm](http://www.cdc.gov/foodnet/pub/iceid/1998/kassenborg_h.htm)

### **Food Safety at Fairs:**

In addition to washing hands—and eating only in “animal-free” areas—

---

## ***...contact with farm animals—such as calves—can significantly increase the risk of illness from *E. coli* O157:H7...***

---

consumers need to remember that food safety at fairs revolves around “hot,” “cold,” and “clean.” Food that’s supposed to be hot should be steaming hot. Cold foods should be cold, and if facilities don’t look clean, don’t eat there.

Finally, check out this new publication. It’s an important resource for volunteer cooks at fairs: *Cooking for Groups: A Volunteer’s Guide to Food Safety*, produced by the Food Safety and Inspection Service, <http://www.fsis.usda.gov/OA/pubs/cfg/cfg.htm> •

---

## **Safe Grilling**

For many people, there’s nothing better than a steak, chicken or fish cooked out over the grill. Smoke wafting up, that nice charred outside.

Hold that picture. Zoom in on the “nice charred outside.” It looks good, but is it good for you?

For more than 10 years now, scientists have been studying the link between mutagens that can be formed in charred meats and cancer—including colon cancer, lung cancer and even breast cancer.

According to one of the country’s primary researchers in the field, Dr. Rashmi Sinha of the National Cancer

Institute, “Something is going on with grilled meats. There’s a clear relationship between very high temperatures and the risk of cancer-causing agents.”

Is this just another “hassle” for hazard-weary consumers? Not really. It’s *easy* to keep meat safe from dangerous charring.

Dr. Sinha’s advice includes:

- Cook foods in the center of the grill and move coals to the side. That helps prevent fat from meat from dripping on the coals and causing flare-ups. “Flare-ups are the problem,” according to Dr. Sinha. “The more caramelized the meat—the blackened the outside—the greater the risk.”

- Precook meat in the microwave immediately before placing it on the grill. “This helps release some of the juices that contain the precursors of mutagens,” said Dr. Sinha.

- Cut charred portions off the meat.

“It’s important to help consumers understand how to cook without undercooking or overcooking,” Dr. Sinha added. That’s one more reason to use a food thermometer—food is safely cooked without being overcooked. (See the “Thermy™ campaign: <http://www.fsis.usda.gov/thermy>)

To get *all* the food safety tips on grilling, check out this fact sheet produced by the Food Safety and Inspection Service:

“Barbecue Food Safety Facts,” [http://www.fsis.usda.gov/oa/pubs/facts\\_barbecue.htm](http://www.fsis.usda.gov/oa/pubs/facts_barbecue.htm)

Of special interest to health professionals—In November 2001, Dr. Sinha is coordinating a conference on cancer-causing agents and meat to be held in Washington, DC. For more information, check the Web site:

<http://www.palladianpartners.com/amineconference> •

# ■ Food Net Follow-Up: For the Year 2000, No Dramatic Changes

*FoodNet is an active foodborne illness surveillance system operating in sentinel sites throughout the U.S. It is a collaborative project among the sites, the Centers for Disease Control and Prevention (CDC), the Food Safety and Inspection Service, and the Food and Drug Administration.*

*To help readers access information being produced by FoodNet, The Food Safety Educator periodically highlights FoodNet findings.*

According to preliminary data from FoodNet for the year 2000, *Campylobacter* continues to be the leading cause of bacterial foodborne disease in sentinel site areas, followed by *Salmonella*, *Shigella*, and *E.coli* O157:H7.

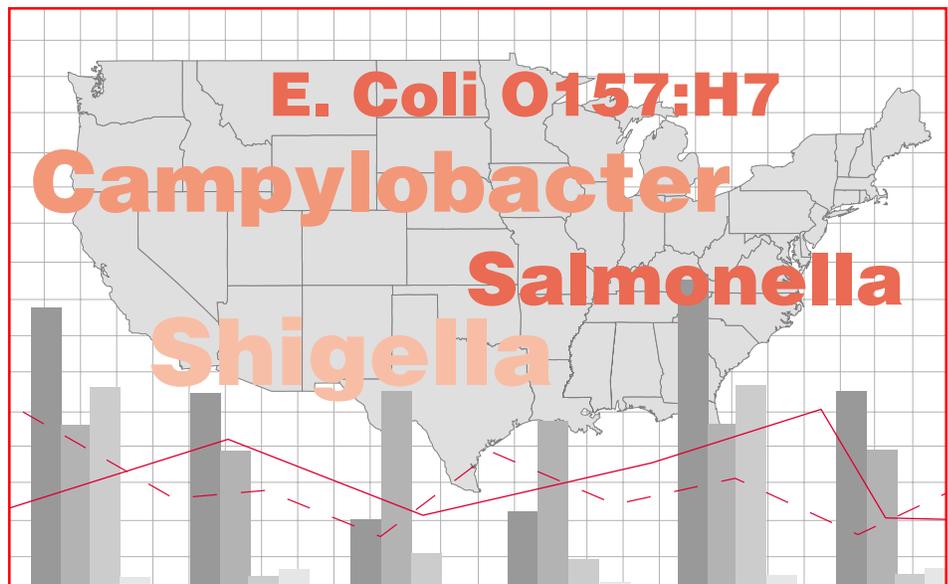
At the same time, the data also show substantial regional and year-to-year variations.

Despite these variations, however, the general magnitude of illness and rate of illness caused by different pathogens have remained fairly constant. According to FoodNet Coordinator Malinda Kennedy, there are no dramatic ups or downs.”

The data for 2000, along with comparisons to surveillance data from past years, appeared in the April 6, 2001, *Morbidity and Mortality Weekly Report (MMWR)*, published by CDC.

In assessing the data, Kennedy said it’s important for people to take into account the dramatically different rates of illness from site to site.

For instance, the incidence of laboratory-diagnosed campylobacteriosis ranged from 6.6 per 100,000 population in Tennessee to 38.2 in California.



“This leads us to caution in interpreting the data,” Kennedy said. “Because of the variations from site to site, it’s difficult to draw conclusions for the whole.”

“The variations in data from site to site are both a challenge and an opportunity,” said Kennedy. “It gives us an opportunity to target sites with high rates of illness and an opportunity to learn from sites with low rates.”

In looking at foodborne illness trends over time, Kennedy explained that currently FoodNet only examines trends from the five original sites in order to keep the surveillance base constant.

That’s because the number of sites and people under surveillance has approximately doubled since FoodNet began in 1996. In 2001, FoodNet sentinel sites cover more than 30 million people; the original 5 sentinel sites covered 14 million people.

As time goes by, the data regarding trends will be drawn from the entire population under surveillance.

The *MMWR* article also notes that the reasons for changes in foodborne illness are complex because foodborne pathogens are transmitted by a variety of food and nonfood routes.

For example, although foods of animal origin are the major source of *Salmonella* and *E. coli* O157:H7, transmission through fresh produce and direct contact with animals has been increasingly recognized.

In assessing the data, FoodNet researchers concluded that the expanded surveillance system will be useful in monitoring progress toward our national health objectives to reduce infections from foodborne pathogens.

To read the article, go to: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5013a1.htm> •

## ■ New Access to Consumer Research

As educators, we're always trying to find out what people are doing—how are they handling food, where do they get their food safety information? Research into consumer behavior is becoming more and more accessible via the Web.

The U.S. Department of Agriculture's Economic Research Service (ERS) has created a new Web site focusing just on consumers and food safety.

This Web site—<http://www.ers.usda.gov/briefing/consumerfoodsafety/>—is one of the richest sources of information concerning research into consumers and food safety behavior. It includes a variety of research reports published by ERS as well as links to other organizations and agencies and their research. As the Web site notes:



“These findings help food safety educators design and target food safety messages.”

The site's “table of contents”:

- consumer concerns,
- consumption and risk,
- preparation and handling,
- information sources,
- modeling behavior change, and
- purchasing safety.

Also of interest for consumer researchers: Check out the consumer research Web page produced by the Food Safety and Inspection Service: <http://www.fsis.usda.gov/oa/research/research.htm> •

Here's an example of one of the fascinating pieces of information on the ERS site: “Awareness of Risks Changing How Hamburgers Are Cooked,” *FoodReview*, Vol. 23, Issue 2, May 2000—

**“More Americans are eating their hamburgers more thoroughly cooked,** partly due to greater awareness of the health risks of eating undercooked meat. **The change in behavior means \$7.4 million lower medical costs and productivity losses annually due to *E. coli* O157:H7** infection alone, as well as other foodborne illnesses associated with rare and medium rare hamburger.” Go to: <http://www.ers.usda.gov/publications/foodreview/may2000/may2000g.pdf>

## ■ A New Web Site for Schools

Newly created by the National Coalition for Food Safe Schools, this portal school food safety Web site—<http://www.foodsafeschools.org>—provides a one-stop gateway to a wealth of Web-based school food safety information. The site—coming on-line in late May—specifically targets information to a wide variety of people, including:

- school administrators,
- food service professionals,
- school nurses,
- teachers and students,
- parents,
- health agencies, and
- cooperative extension.

The National Coalition is a group of more than 25 organizations including federal agencies and other cooperators. Information on the Coalition can also be accessed through the new Web site. •

## ■ Food Safety at the Turn of the Century—the 1990's

Caught up in the details of everyday life, sometimes we miss—or forget—the big picture.

Looking back at the past decade, there were major changes in terms of food safety—and food safety education.

Check out this article published by the USDA's Economic Research Service: “Food Safety Efforts Accelerate in the 1990's,” *FoodReview*, Vol. 23, Issue 3, May 2000.

Starting with the 1993 *E. coli* O157:H7 outbreak, the article covers events including:

- major initiatives to modernize inspection of meat and poultry;

- the National Food Safety Initiative, a multi-agency effort to promote food safety;
- new regulations for seafood and juices;
- the creation of FoodNet surveillance; and
- new educational efforts, including the Fight BAC!™ campaign produced by the Partnership for Food Safety Education and the Thermy™ campaign designed to encourage the use of food thermometers created by the USDA's Food Safety and Inspection Service.

To read the article, go to: <http://www.ers.usda.gov/publications/foodreview/septdec00/> •

# How To Keep in Touch With Food Safety Education Information

## The Food Safety Educator

This free quarterly newsletter reports on new food safety educational programs and materials as well as emerging science concerning food safety risks. It is distributed to nearly 10,000 educators throughout the country, including public health offices, extension educators, industry, and consumer groups.

To subscribe: provide your full name, organization name, & mailing address.

- Write to: USDA/FSIS/Food Safety Education, Room 2944-South Building, 1400 Independence Ave., SW, Washington, DC 20250-3700
- Or fax your request to: (202) 720-9063
- Or e-mail your request to: [fsis.outreach@usda.gov](mailto:fsis.outreach@usda.gov)
- The newsletter is also available on the FSIS Web site: <http://www.fsis.usda.gov/oa/educator/educator.htm>



The *Food Safety Educator* is produced by the Food Safety Education Staff, Food Safety and Inspection Service, U.S. Department of Agriculture

**Please feel free to e-mail comments or suggestions—[fsis.outreach@usda.gov](mailto:fsis.outreach@usda.gov)**

The United States Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal employment opportunity provider and employer.

## On the Web

- USDA/Food Safety and Inspection Service  
<http://www.fsis.usda.gov>
- Thermy™ Web page  
<http://www.fsis.usda.gov/thermy>
- FightBAC!™  
<http://www.fightbac.org>
- Gateway to Government Food Safety Information  
<http://www.foodsafety.gov>
- FDA/Center for Food Safety and Applied Nutrition  
<http://www.cfsan.fda.gov>
- USDA/FDA Foodborne Illness Education Information Center  
<http://www.nal.usda.gov/fnic/foodborne>
- Centers for Disease Control and Prevention  
<http://www.cdc.gov/foodsafety>

## Other Resources

**EdNet**—a monthly electronic newsletter for food safety educators. To subscribe, send an e-mail message to: [Listserv@foodsafety.gov](mailto:Listserv@foodsafety.gov) Send the message: Subscribe EDNET-L firstname lastname

**foodsafe**—an online electronic discussion group. To join, go to: <http://www.nal.usda.gov/fnic/foodborne>

**Toll-free**—USDA's Meat and Poultry Hotline 1-800-535-4555, for the hearing-impaired (TTY) 1-800-256-7072

Food and Drug Administration's Outreach and Information Center 1-888-SAFEFOOD