



Food Safety CURRENT NEWS

Evaluate internal cooking temperatures

A simple method to ensure the safety of the food you consume is to cook thoroughly to the appropriate internal temperature. Foodborne pathogens, such as *E. coli* O157:H7 and *Salmonella*, can be eliminated with proper cooking.

To help determine the minimum internal temperature for food you consume, consider a few simple questions: Does the dish contain chicken, beef, fish, or pork? Does it contain ground meat? Are you serving beef or pork roast? Does your recipe include eggs? Are you warming up leftovers? When these foods are cooked to the minimal internal temperatures in Table 1, chances for foodborne illness are greatly reduced.

The United States Department of Agriculture and the U.S. Food and Drug Administration endorse the temperatures shown in Table 1 for consumers

to use at home. Lower temperatures used by foodservice operations are set in the U.S. Food Code or local regulations.

When evaluating the doneness of food, it is no longer recommended to depend on its appearance. In such foods as ground hamburger, the old rule of thumb to cook until the juices run clear is no longer dependable be-

cause of premature browning of the meat. The USDA and FDA recommend using a calibrated food thermometer to check the internal temperature of foods. By using a thermometer while cooking, you not only help to prevent foodborne illness, but will also prevent overcooking and will maintain the food's quality.

Table 1: Minimal internal cooking temperatures - home use

Food item	Consumer temperature
Fresh ground beef, veal, lamb, and pork	160°F
Beef, veal, lamb (roasts, steaks, chops)	Medium Rare: 145°F Medium: 160°F Well Done: 170°F
Ground turkey, chicken	165°F
Whole chicken, turkey	180°F
Chicken, turkey breasts and roasts	170°F
Stuffing, alone or in bird	165°F
Egg dishes	160°F
Ham (reheat fully cooked)	140°F
Ham (cook before eating)	160°F
Fresh pork (roasts, steaks, chops)	Medium: 160°F Well Done: 170°F
Leftovers	165°F

Consumer temperatures recommended by USDA and FDA

Food Safety Education Month

September marks the fifth annual National Food Safety Education Month. Theme for this year's event is "Cook it Safely - It's a Matter of Degrees." The goals are focused on reinforcing food safety education and training among restaurant and foodservice workers.

September activities emphasize education for foodservice workers and the public on proper handling and preparation of food. Promotion will center on cooking to safe temperatures as one of the most effective ways to prevent foodborne illness.

On the World Wide Web

International Food Safety Council
www.foodsafetycouncil.org

Fight BAC
www.fightbac.org

Education Foundation of the National Restaurant Association
www.edfound.org

Governmental Food Safety Gateway
www.foodsafety.gov

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

Upcoming Events

August 24-25

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

September 13-15

HACCP for Meat and Poultry Processors
Manhattan, KS
Contact: Liz Boyle
(785) 532-1247

September 16-17

Serving Safe Food
Hays, KS
Contact: Carla Morrill-Frederking
(785) 628-9430

September 17

Excellence in Food Science
Manhattan, KS
Contact: Daniel Fung
(785) 532-5654

September 21

Food Safety Update
Wichita, KS
Contact: Ted Cooper
(316) 268-8429

September 22-23

Serving Safe Food
Junction City, KS
Contact: Donna Martinson
(785) 238-4161

September 24-26

AAMP HACCP Workshop
Kansas City, MO
Contact: Liz Boyle
(785) 532-1247

October 4-5

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

November 17-18

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

September is National Food Safety Education Month



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Karen P. Penner
Extension Specialist
Food Science
Animal Sciences and Industry
kpenner@oz.oznet.ksu.edu
(785) 532-1672

Contributors

Karen P. Penner, Editor
Professor, Food Science
Animal Sciences and Industry

Melissa Webb
Food Science Graduate Student
Animal Sciences and Industry

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Cooperative Extension Service
K-State Research and Extension
Animal Sciences and Industry
216 Call Hall
Manhattan, Kansas 66506

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

FAQ's

• Why should I worry about raw fruits and vegetables causing foodborne illness?

Many organisms that cause foodborne illness can be found in soil, contaminated water, and organic fertilizers used to grow some fruits and vegetables. Produce also can be contaminated at harvest because of poor hygiene practices. To decrease the risk of foodborne illness from raw fruits and vegetables, wash produce with clean tap water before eating it. See article, right.

• Why does it seem there are more cases of foodborne illness in the summer months?

The bacteria that cause foodborne illness are present throughout the environment. During the warmer months of the year, these microorganisms grow faster and have the moisture they need to reproduce. In addition, people take part in more outside activities and cook outside at picnics, barbecues or on camping trips.

• What do I need to know about grilling food safety?

– Completely thaw meat or poultry before grilling for even cooking.

– Don't use the same platter and utensils for raw and cooked food. Bacteria in the raw meat or juices will contaminate cooked meat.

– Cook food to a safe internal temperature and doneness.

– Keep meat hot until served, and refrigerate leftovers immediately.

– For more information on safe grilling, contact the Meat and Poultry Hotline at 1 (800) 535-4555 or visit the FSIS website at www.fsis.usda.gov/

Food Safety RESEARCH

Vegetable washing eliminates organisms

More and more raw fruits and vegetables are being consumed as our society moves toward a healthier style of living, but raw vegetables may carry several types of organisms that cause human illness. Contaminated lettuce caused outbreaks of shigellosis in Norway, Sweden, and in the United Kingdom in 1994. An outbreak of cyclosporiasis in the United States was linked to raspberries imported from Guatemala.

What can be done to prevent foodborne illness from fresh fruits and vegetables? At the production level, proper use of composted manure and properly treated irrigation and spray waters can minimize risk of contamination. Good hygiene practices during production and transport are key components of producing safe foods. The highest level of hygiene must be practiced in produce handling from the field to the consumer.

Several processing treatments can be applied. Chlorine dioxide is effective, is less affected by pH and organic matter, and does not react with ammonia to form chloramines. Iodine compounds are often used to sanitize processing equipment and surfaces, but may stain equipment,

limiting use as a direct-contact disinfectant.

Trisodium phosphate has been shown to inactivate *Salmonella* on tomato surfaces, but research done on shredded lettuce showed little to no reduction of *Listeria monocytogenes*. Quaternary ammonium compounds could have an application for direct surface disinfection for fruits and vegetables that would be peeled.

Organic acids, naturally present in fruits and vegetables, have been successfully used to disinfect beef, lamb, pork and poultry carcasses. Applying acetic acid to salad greens has shown to decrease *Yersinia enterocolitica*. Using a combination of lactic acid and chlorine to kill *Listeria monocytogenes* on shredded lettuce was successful in one study.

Hydrogen peroxide vapor treatments were very effective in reducing microbial numbers on various fruits and nuts. Dipping freshly-cut green bell peppers, cucumber, zucchini, cantaloupe and honeydew melon in hydrogen peroxide solution had no adverse effects on appearance, flavor or texture, but it induced browning of shredded lettuce.

Only a few studies have considered what consumers can do at home to reduce

the potential of foodborne illness from raw fruits and vegetables. Research by Dianne Peters at the University of Nebraska evaluated the effects of full-strength vinegar (5 percent to 5.5 percent) and hydrogen peroxide on pre-cut lettuce on *E. coli* O157:H7. Preliminary results showed that full-strength white vinegar reduced the level of *E. coli* O157:H7. Hydrogen peroxide 3 percent was the next most effective, followed by a solution of two tablespoons of household bleach mixed with one gallon of water.

The study led to the following washing procedure for safer lettuce: Soak lettuce leaves in vinegar five minutes, stirring occasionally. Rinse with clean tap water if vinegar flavor is not desired. Remove excess liquid. Wash only what you need immediately; washing earlier could give remaining bacteria time to grow.

The USDA and FDA recommend simply washing all fruits and vegetables with clean tap water before cooking or consuming raw.

—Beuchat, Larry. *Surface decontamination of fruits and vegetable eaten raw; a review*. Available at www.who.int/fsf/new.htm

—Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln (IANR). *Preliminary Study: Vinegar Washing Reduces Risk of E. coli O157:H7 in Lettuce*.

Thermometers vary with purpose

Several types of thermometers are available at grocery or hardware stores. The most common is the bimetallic stemmed thermometer. The metal stem is inserted into the food and the temperature read from the dial. Digital thermometers are also available, but are slightly more expensive.

T-Sticks

A new product, T-Sticks, is being marketed as a disposable hamburger thermometer. The T-Stick, inserted into a patty, shows if it has reached 160°F. Once used, if the patty has not reached 160°F, the T-Stick should be disposed of to prevent cross-contamination. T-Sticks are not yet widely available.

Some types of thermometers should not be used to evaluate the internal temperature of

food: Glass thermometers containing mercury should not be used with food. Use deep-fry and candy-making thermometers only at high cooking temperatures.

Calibration

After buying a thermometer, check to see if it reads the proper temperature. There are two ways to calibrate a thermometer, the ice point method and the boiling point method.

For the ice point method, fill a large glass with crushed ice. Add tap water until the glass is full, then stir well. Place the thermometer stem into the ice water mixture so 1/2 to 2 inches of the tip is submerged. Do not let the stem or probe touch the sides or bottom of the glass. Wait at least 30 seconds or until the indicator stops moving. With the thermometer stem or probe still in the ice water mixture, use a

wrench to turn the adjusting nut until the thermometer reads 32°F. To calibrate a digital thermometer, press the reset button.

For the boiling point method, bring tap water to a boil in a deep pan. Put the thermometer stem into the boiling water so the sensing area (1/2 to 2 inches of the tip) is submerged. Do not let the stem or probe touch the pan's bottom or sides. Wait at least 30 seconds or until indicator stops moving. With the thermometer stem or probe still in the water, use a wrench to turn the adjusting nut until the thermometer reads 212°F. To adjust a digital thermometer, press the reset button.

(If you live at a higher altitude, adjust the boiling temperature accordingly.)

—Cooking It Safe-It's a Matter of Degrees, *calibrating thermometers and taking temperatures properly*. http://www.restaurant.org/nfsen/cook_it_safely/pdf/calibrating_thermometers.pdf

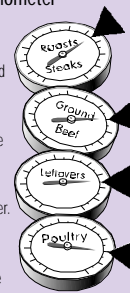
—Cooking It Safe-It's a Matter of Degrees, *types of thermometers and their uses* http://www.restaurant.org/nfsen/cook_it_safely/pdf/thermometers.pdf

—Cooking It Safe-It's a Matter of Degrees, *proper minimum internal cooking temperature*. http://www.restaurant.org/nfsen/cook_it_safely/pdf/internal_temps.pdf

—Alaska Department of Environmental Conservation *Environmental Sanitation and Food Safety: Safe Food Temperatures and Thermometers*. <http://www.state.ak.us/dec/del/sanitat/Append/safetemp.htm>
—Food Safety and Inspection Service: *Use a Meat Thermometer*. <http://www.fsis.usda.gov/oa/pubs/citthermo.htm>

Figure 1: When using a food thermometer

- Always use a calibrated thermometer.
- Only use thermometers intended to be used in foods. Do not use human thermometers to measure internal cooking temperatures.
- Insert thermometer into thickest part of the food being measured.
- After each use, wash the stem of the thermometer thoroughly in hot, soapy water.
- Never use a bimetallic stemmed food thermometer as an appliance thermometer for ovens or microwaves. This will damage the thermometer by melting the dial.



Take proper measures

When using a food thermometer, the sensing area must be completely immersed in the deepest area of the food.

For poultry, insert it into the inner thigh area near the breast of the bird, but not touching the bone. For red meat, roasts, steaks, or chops, insert into the center of the thickest part, away from bone, fat and gristle.

For ground meat and poultry, place the thermometer in the thickest part of the meat loaf, or sideways into thin items, such as patties. For casseroles and egg dishes, insert into the center or thickest part of the dish.

New egg safety steps

Fresh shell eggs may contain a bacteria, *Salmonella enteritidis*, that can cause foodborne illness, leading the USDA, FSIS and FDA to announce new measures.

If adopted, FDA's proposed instructions will require a statement on each carton: "Eggs may contain harmful bacteria known to cause serious illness, especially in children, the elderly, and persons with weakened immune systems. For your protection: Keep eggs refrigerated, cook eggs until yolks are firm, and cook foods containing eggs thoroughly."

The proposal also requires that all egg products packed for consumers be refrigerated at 45°F or less.

The proposal is on display in the Federal Register. Comments and recommendations will be accepted for 75 days from July 7, 1999.

—U.S. Department of Health and Human Services: *New Egg Safety Steps Announced, Safe Handling Labels and Refrigeration Will be Required (1999)*. <http://www.cfsan.fda.gov/~lrd/hnseggs.html>