Focus on Food Safety

Food Safety and Lodging Program

Kansas Department of Agriculture



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Focus on Food Safety

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Food Safety & Lodging Program

The Kansas Department of Agriculture promotes public safety by regulating the production and sale of food products in Kansas.

The Food Safety and Lodging program is responsible for food safety inspections of food establishments, food processors and lodging establishments. Food establishments are operations that provide food directly to the end consumer, with or without charge.



1320 Research Park Drive Manhattan, Kansas 66502 (785) 564-6767 agriculture.ks.gov

Introduction

The food service industry has changed significantly over the past few years and with change, comes challenges. Today's informed consumer spends more money dining outside the home than ever before. With this emphasis on dining out, the food service industry is under more pressure to cater to the public's demand for a greater variety of high-quality food that has been prepared and cooked safely.

Preparing high-quality, safe food begins with well-trained and knowledgeable food service workers. This handbook is designed to help you focus on the items critical to safely preparing, cooking, holding and storing food. It identifies and discusses the basics to help prevent foodborne illnesses.

Food safety and sanitation is not a part-time job. It is the daily responsibility of those who prepare, handle, cook and serve food. It is imperative a cooperative partnership between industry and health officials be maintained to support the common goal of preventing foodborne illnesses.

Fact Sheets Available Upon Request							
#	Title	#	Title				
1	Advisory - Boil Water	17	FBI Pathogen Fact Sheets - Hepatitis A				
2	Advisory - Consumer		and Foodhandlers				
3	Baking and Cooling Pies	18	FBI Pathogen Fact Sheets - Norwalk Virus				
4	No Bare-Hand Contact	19	FBI Pathogen Fact Sheets - Salmonella				
5	Clean Plate Sign	20	FBI Pathogen Fact Sheets - Shigellosis				
6	Cooling	21	FDA Registration				
7	Corrective Actions	22	Focus on Food Safety Manual				
8	Date Marking	23	Food Code				
9	Did you Wash'em Flier	24	Hand Sink Sign				
10	Did you Wash'em Sign/Sticker	25	Hand Washing Fact Sheet				
11	Employee Handwashing	26	Hot/Cold Holding Sign				
12	Farmers' Markets	27	Hot/Cold Holding Fact Sheet				
13	FBI Pathogen Fact Sheets - Listeriosis	28	Ice Bath Cooling				
14	FBI Pathogen Fact Sheets - Campylobacter	29	Labeling				
15	FBI Pathogen Fact Sheets - E. coli	30	Licensing Food Establishments				
16	FBI Pathogen Fact Sheets - Hepatitis A	31	Log - Cooling				
		32	Log - Food and Equipment				

For additional information, please call (785) 564-6767, email KDA.FSL@ks.gov or visit www.agriculture.ks.gov. Seminars in food safety are available.

Identifying Common Foodborne Illnesses

Causative Pathogen	Incubation Time	Length of Illness	Common Symptoms	Foods Involved/ Sources	Prevention
Bacillus cereus	1 -16 hours	6 - 24 hours	nausea, vomiting, cramping, diarrhea	rice and rice dishes, vegetables, sauces	Cook to proper temp. Reheat quickly. Cool foods rapidly.
Campylobacter	2 - 5 days	1 - 4 days	cramping, fever, diarrhea, nausea, headache, vomiting	unpasteurized dairy, poultry and meats, infected food handler	Thoroughly cook all foods. Use only pasteurized dairy products. Proper hand washing.
Clostridium perfringens	8 - 24 hours	24 - 36 hours	abdominal cramping, diarrhea, nausea	meats, poultry, gravy, beans, stews, foods cooked slowly	Cook and reheat foods to proper temp. Cook in small batches. Cool foods rapidly.
Shiga Toxin-Producing E. coli	12 -72 hours	1 - 4 days	diarrhea- often bloody, severe cramping, nausea, vomiting, fever	raw and undercooked ground meats (esp. ground beef)	Thoroughly cook ground meats. Avoid cross- contamination.
Hepatitis A	10 - 50 days	1 - 2 weeks; Severe cases may last several months	mild or no symptoms, then sudden onset of fever, general discomfort, fatigue, headache, nausea, loss of appetite, vomiting, abdominal pain and jaundice after several days	water, ice, shellfish, salads, cold cuts, sandwiches, fruits, fruit juices, milk, milk products, vegetables, and food that will not receive further heat treatment	Obtain shellfish from approved sources. Prevent cross-contamination from hands. Ensure food handlers practice good hand washing and no bare hand contact.
Listeria monocytogenes	1 day - 3 weeks	Indefinite, depends on treatment, severe	nausea, vomiting, fever, chills, headache, meningitis, miscarriages	unpasteurized dairy, cheese, vegetables, seafood, poultry	Use only pasteurized dairy products. Cook properly. Hold refrigerated for limited time.
Norovirus	24 - 48 hours. Virus	1 - 2 days	cramping, diarrhea, nausea, vomiting, headache, fever	raw fruit, raw vegetables, prepared salads, raw shellfish	Thoroughly cook foods. Wash hands. Use certified shellfish. No bare hand contact.
(Staph) Staphylococcus aureus	1 - 7 hours	1 - 2 days	onset abrupt and often severe, nausea, vomiting, cramping, sometimes diarrhea	ready-to-eat goods, i.e. sandwiches, salads, ham and other meats, potato salads, custards, warmed- over foods; often from infected foodhandlers-cuts, throat, nose and acne	Practice good hand washing and hygiene. Avoid contamination. Reduce bare hand contact with foods. Exclude foodhandlers with cuts and lesions. Rapidly cool foods.
Salmonella	6 - 72 hours	1 - 3 days	abdominal cramping, headache, nausea, diarrhea, fever, sometimes vomiting	undercooked or raw meats, poultry and shell eggs, poultry and egg salads, egg custards and sauces, protein foods, pets and infected handlers	Avoid cross-contamination. Cool and refrigerate foods immediately. Cook meats/ poultry thoroughly. Practice good hand washing.
Shigella	12 hours - 7 days	4 - 7 days, depends on treatment	diarrhea - often bloody, cramping, fever, nausea, sometimes vomiting	ready-to-eat foods associated with bare hand contact (salads, sandwiches, etc.) Source: humans (feces) and flies	Practice good hand washing after using toilet. Use approved water and foods. Control flies. No bare hand contact.

Food Safety Risk Factors

Risk factors are those practices or procedures that pose the greatest potential for foodborne illness. Risk factors are determined by the Centers for Disease Control and Prevention and the U.S. Food and Drug Administration.



Food Source:

- Food from unapproved or uninspected source
- Unsound condition of food, adulterated food
- Shellfish records not maintained properly

Inadequate Cooking:

- Improper cooking temperatures
- Improper reheating temperatures

Improper Holding:

- Unsafe cooking
- Lack of date marking
- Improper cold/hot holding temperatures

Contamination:

- Raw meats not separated from ready-to-eat foods
- Species not separated such as beef, fish, etc.
- Equipment not properly cleaned and sanitized

Poor Personal Hygiene:

- Lack of appropriate hand washing
- Bare-hand contact with ready-to-eat foods
- Ill food workers
- Employees eating, drinking or using tobacco outside of designated areas
- Inadequate hand sink
- Lack of soap or paper towels

Environmental Contamination:

- Improperly storing, labeling or using chemicals
- Presence of insects or rodents
- Lack of potable water
- Improper sewage disposal

Be on the Lookout for Foodborne Illness

"Looking Clean" is not enough to prevent foodborne illness

Foodborne illness is real and effects thousands of people every day. Each year, there are 48 million cases of foodborne illnesses in the United States, resulting in 128,000 hospitalizations and 3,000 deaths.
Foodborne illness costs the United States \$77 billion each year.

Make sure to be on the lookout for foodborne illnesses!

Foodborne Illness Agents:

- · Biological hazards: bacteria, viruses, parasites, yeast and molds
- Physical hazards: glass, toothpicks, fingernails and jewelry
- Chemical hazards: cleaners, sanitizers, pesticides and medications
- Naturally occuring chemical hazards: fish toxins and plant toxins

Foodborne Illness Sources:

- Humans/foodworkers: contaminated hands, illness
- Foods: contaminated food, time and temperature abuse

Foodborne Illness Symptoms:

- Common symptoms (onset 12 36 hours): diarrhea, cramping, nausea, vomiting, low-grade fever and body aches
- Rare symptoms: system shutdown, kidney failure, coma, death

Sick Foodworkers

Restriction

Restricted employees cannot work with food or equipment. They can perform tasks such as bussing tables, taking out the trash, etc.

Symptoms:

- Diarrhea
- Vomiting
- Fever
- Jaundice (yellowish pigmentation of the skin)
- Sore throat with fever
- Infected wound (i.e. cut, lesion or boil)
- Contact with "Confirmed Big 5" listed below

Exclusion

Excluded employees are not allowed to be present in the facility.

Big 5:

- Salmonella Typhi
- Shigella
- Shiga Toxin-Producing E coli
- Hepatitis A
- Norovirus

Potentially Hazardous Foods

Time/Temperature Control for Safety (TCS)

Potentially hazardous foods are any food or food ingredient that requires time/temperature control for safety (TCS) to limit pathogenic microorganism growth or toxin formation.

Meat & Dairy:

Cooked or raw animal (protein) products, such as meats, poultry, dairy, milk, cheese, fish or seafood





Starch:

Heat-treated vegetables and starches, such as cooked rice, beans, potatoes and pasta

Other:

Tofu, raw seed sprouts, cut melons, cooked tomatoes, garlic in oil, raw cut tomatoes, cut leafy greens, etc.

Is There a Microbe in Your Soup?

Necessary Conditions for Microbial Growth



Time and Temperature Principal:

- Holding time and temperature is critical
- Temperature DANGER ZONE is from 41° F to 135° F, the range in which rapid growth occurs
- Potentially hazardous foods, foods requiring time and temperature control for safety (TCS), should not be exposed to the danger zone for more than four hours total, including time spent in preparation, cooling and reheating

Microorganisms Need Favorable Conditions to Grow

Monitoring Potentially Hazardous Foods' Temperatures

Use and Care of Temperature-Taking Devices To prevent foodborne illness, monitor potentially hazardous foods' (TCS) temperatures

Cleaning:

- Use a clean, sanitized thermometer
- Single-use alcohol wipe or other approved sanitizer may be used

Taking Temperatures:

- Use a metal stem thermometer, digital thermometer, or thermocouple unit
- Place the probe in the center or thickest part of the food, between the fold of the flexible packaged food or between packages of food; do not puncture the packaging
- Allow time for the thermometer to register and record the temperature
- Use a thin tip thermometer for thinner foods

Calibrating Metal Stem Thermometers:

- Calibrate themometers frequently
- Insert sensing area into a cup of ice slush
- Allow indicator to stabilize
- Adjust calibration nut to $32\degree$ F
- Digital thermometer and thermocouple units can be checked for accuracy using this method



Practice Good Hygiene

Good hygiene is the responsibility of the foodworker and management

- Wash hands only in the hand sink not in the dishwashing, food preparation or mop sinks
- Ill employees can cause foodborne illness. Norovirus and other highly pathogenic organisms can be easily spread by ill food handlers person-to-person (via the fecal-oral route) or through contaminated airborne droplets, food, water and environmental surfaces. Enforce a strict sick leave policy or reassign duties
- Eat, drink or use any form of tobacco *only* in designated areas away from food preparation
- Do not use common cloth towels or aprons for hand wiping
- Do not touch ready-to-eat food with bare-hands
- Wear nails short, clean and unpolished
- Restrict rings to plain bands
- Cover open cuts and burns with finger cots, bandages or single-use gloves
- Follow single-use glove guidelines



Food Safety is in Your Hands

Handwashing is important in preventing foodborne illness

Improper handwashing or no handwashing causes 33 percent of all foodborne illnesses

Food workers and management:

- Wash hands FREQUENTLY and EFFECTIVELY.
 - Rub hands for 10 15 seconds with adequate soap and warm water
 - Use a paper towel or air dryer to dry
- Keep hand sinks accessible AT ALL TIMES
- Wash hands at APPROPRIATE TIMES

Wash Hands After



No Bare-Hand Contact

Bare-hand contact with ready-to-eat food is prohibited.

A ready-to-eat food is any food that can be consumed without further preparation

When handling ready-to-eat foods, food service workers may use:

- Deli tissue
- Spatulas
- Tongs
- Forks
- Dispensing equipment
- Single-use gloves



Single-Use Glove Guidelines:

- Gloves do not replace the need for good hand washing practices
- Wash hands before putting gloves on
- Put gloves on only when you are ready to handle ready-to-eat foods, then discard the gloves
- If you are interrupted during food preparation, remove gloves
- Use clean gloves when you resume food preparation
- Dispose of gloves as soon as you remove them
- Single-use gloves should not be used around heat or hot fats
- Gloves are susceptible to contamination, so discard when soiled or damaged
- Fabric or reusable gloves may not be used with ready-to-eat food
- Avoid single-use gloves made of natural rubber latex

Use separate cutting boards for raw meats and cooked or ready-to-eat foods

- No bare-hand contact with ready-to-eat food or ice
- Use proper utensils or single-use gloves
- Practice good handwashing and hygiene
- Store raw meat, raw poultry and raw shell eggs **BELOW** cooked or ready-to-eat foods in the cooler
- Clean and sanitize all utensils and surfaces that touch food:
 - After each use
 - When changing product
 - Between meat species
 - Frequently when preparing large amounts
 - Between raw and cooked meats or ready-to-eat foods

Incorrect

Correct

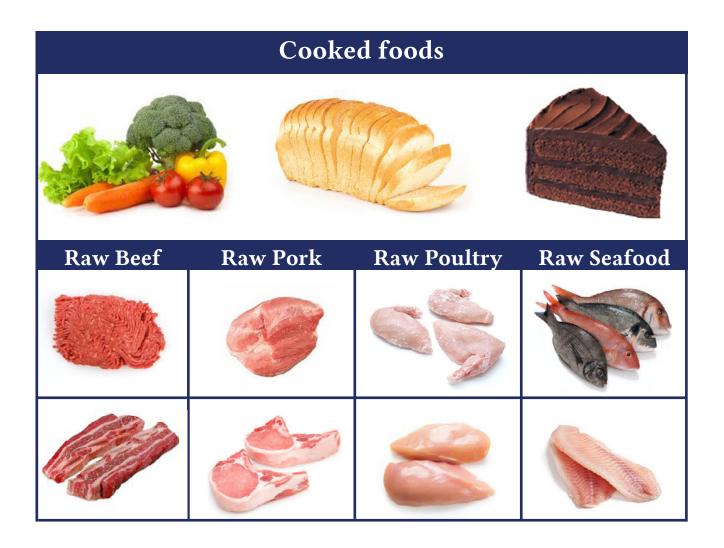




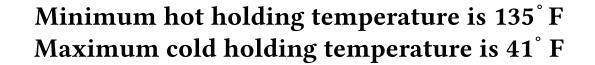
Avoid the Risk

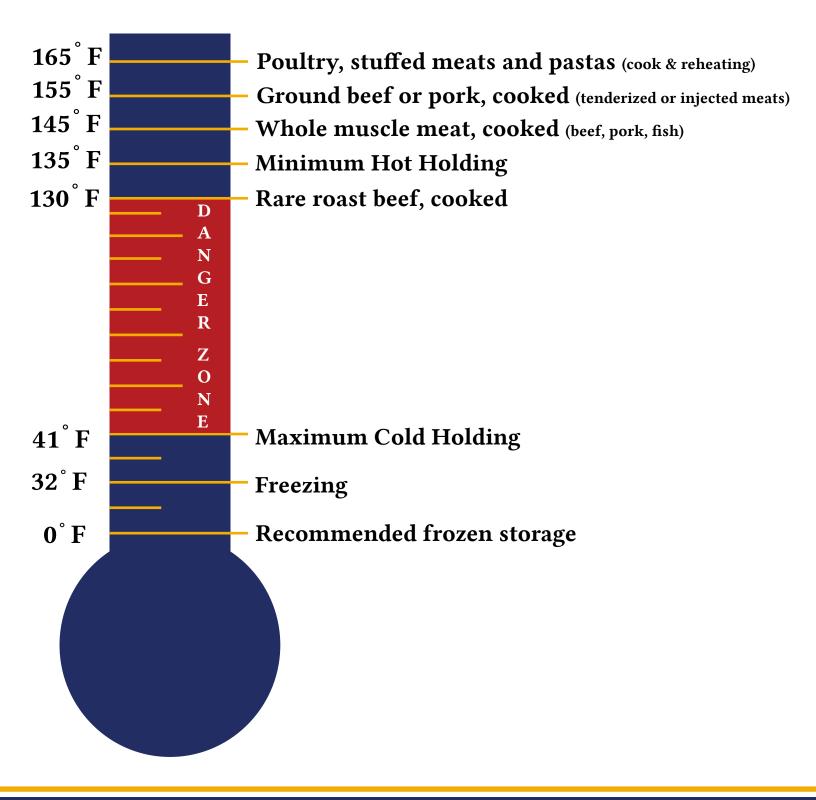
Store food properly to avoid cross contamination

- Storing food properly in your walk-in cooler will prevent cross contamination that can lead to foodborne illness
- Store cooked, ready-to-eat foods above raw animal foods
- Separate raw animal foods by type, such as beef, fish, lamb, pork and poultry
- Use the "silo" method



Food Preparation Critical Temperatures





Consuming raw or undercooked foods may increase the risk of foodborne illness

Each establishment serving raw or undercooked foods needs an advisory to inform consumers of the significantly increased health risks associated with consuming raw or undercooked foods, which includes:

- Hamburgers
- Fish
- Pork
- Egg

- Lamb
- Poultry
- Shellfish
- Milk (raw or unpasteurized)

The advisory must include a **DISCLOSURE** and a **REMINDER**

DISCLOSURE must include:

1. A description of the animal-derived foods, such as "oysters on the half shell (raw oysters)," "raw-egg Caeser salad," and "hamburgers (can be cooked to order)"; or

2. Identification of the animal-derived foods by asterisking them to a footnote that states that the items are served raw or undercooked, or contain/may contain raw or undercooked ingredients. **REMINDER** must include asterisking the animal-derived foods requiring disclosure to a footnote that states:

1. Regarding the safety of these items, written information is available upon request;

2. Consuming raw or undercooked meats, poultry, seafood, shellfish or eggs may increase your risk of foodborne illness; or

3. Consuming raw or undercooked meats, poultry, seafood, shellfish or eggs may increase your risk of foodborne illness, especially if you have certain medical conditions.

The statement or notice must identify the risky foods and advise the consumer of the risk.

Visit agriculture.ks.gov/consumeradvisory for template ideas



Wall Plaque

Table Tent

Cream along with a butter cookie **All meals include Bakery Presh Break coffee, decaffeinated coffee, iced tea, or water by raw or undercooked meals, poultry, seafood, or water is of foodborne illness, especially if you have cortou

Menu

Four Ways to Thaw Food Safely

Never thaw foods at room temperature

The thawed portions on the outside will support bacterial growth and can result in an unsafe product



During the cooking process, continuous cooking with no interruption



Under refrigeration at 41° F or less



By microwaving as the first step in a continuous cooking process



Completely submerge in cold (70° F or less) running water for two hours or less

Hold all potentially hazardous foods (TCS) at the proper temperature

Hot foods - 135° F or above Cold foods - 41° F or below

Know the requirements:

- Take food temperatures every 2 -3 hours
 - If food is in the temperature danger zone, take immediate corrective action -

REHEAT, QUICK CHILL, or DISCARD

- Stir foods frequently to distribute temperature
- Do not add fresh food to old
- "First In, First Out"
- Trained food employees must monitor self-service food bars
 - Require customers to use clean plates and bowls for return trips to the food bar
 - Post signs
- Protect food from contamination
 - Provide proper serving utensils and sneeze guards

Hot Holding



Cold Holding



Safely Hold Hot and Cold Foods

Proper holding temperatures must be maintained during display, storage and transportation



Cold foods must be maintained at an internal temperature of 41°F or below:

- Date mark foods appropriately
- Cover foods after completely cooled
- Cover foods to maintain cold holding temperature

Hot foods must be maintained at an internal temperature of 135°F or higher:

- Use proper equipment for hot holding
- Stir frequently to distribute the temperature
- Covered foods maintain temperature longer

Date Marking

"When in doubt, throw it out!"

Must be date marked if it is:

- Prepared on-site, or commercially processed, after the original container is opened and held under refrigeration
- Potentially hazardous (TCS)
- Ready-to-eat
- Held for more than 24 hours



Mark the date by which food is to be consumed or discarded:

- Food can be held for seven days in adequate refrigeration (41° F or less)
- Day of preparation or day commercially processed food is opened counts as "day one"

If potentially hazardous, ready-to-eat food is frozen:

• Mark that it must be consumed within 24 hours of removal from freezer

OR

• When food is removed from the freezer, mark with a "consume by" date that is seven days minus the length of time food was refrigerated before being frozen

Cool Foods Quickly and Safely

Improper cooling is a leading cause of foodborne illness

Cooked potentially hazardous foods (TCS) need to move quickly through the temperature danger zone to limit microbial growth:

- Two-stage cooling is required
- 135° F to 41° F in six hours and must reach 70° F within the first two hours
- Food prepared using ingredients normally stored at room temperature must cool to 41° F in four hours or less



Hints:

- Add ice directly to the product as an ingredient
- Use rapid chill refrigeration equipment that encourages quick cooling
- Never try to cool foods in plastic containers because plastic is an insulator

• Never allow foods to cool at room temperature because bacteria can grow

Cooling Methods

Shallow metal pans - 2" to 4" deep:

- Leave pan partially uncovered
- Refrigerate immediately
- DO NOT stack hot pans; allow for air flow

Ice bath - must use ice and water:

- Fill a clean sink or large pan with ice and fill spaces with cold water
- Divide product into 1 gallon, or smaller, containers
- Immerse product pan, in ice bath until product is level with ice
- Agitate/stir every 10 minutes using an ice paddle, spoon or similar mixing device
- Drain water and replenish ice as it melts
- Use a clean, sanitized thermometer to monitor the temperature of food
- After the food has cooled to 41° F, refrigerate it immediately

Small portions - reduce the quantity/volume:

- Divide food into smaller pans
- Separate food into smaller or thinner portions (2" depth for thick foods; 4" for thick liquids)
- Cut or slice portions of meat no larger than 4" or 4 pounds

Do not mix new/fresh food with leftover items

Key elements:

- Reheat previously cooled foods to an internal temperature of 165° F or above
- Rapid reheating is required (2 hours or less from 41° F to 165° F)
- Stir foods frequently to distribute the heat
- Measure the internal temperature with a thermometer
- After reaching 165° F, the food must be held at 135° F or above

Reheating Methods:

- Direct heat (stove top) is best. One may also use steam cookers, ovens and microwaves if reheating achieves 165° F within two hours
- Reheating in steam tables and crock pots is unsafe and not recommended



Cleaning and Sanitizing

Making 100 ppm Chlorine Solution is as easy as 1-2-3!

1 oz. bleach to 3 gal. water

Manual warewashing steps:

- 1. Wash:
 - Clean and sanitize sinks and drain boards
 - Pre-soak/pre-rinse all eating utensils and equipment
 - Use hot (at least 110° F), soapy water
- 2. Rinse:
 - Use clean, hot (at least 110° F) water
- 3. Sanitize:
 - Use 50 200 ppm chlorine; or 200 ppm quaternary ammonia (mix with 75° F water)
 - Use appropriate immersion time

 10 seconds cholrine; 30 seconds
 quaternary ammonia
 Always follow manufacturers-use directions
 - Air dry utensils and equipment
 - Use appropriate test strips to check concentraton
- 4. Air Dry do not stack wet items

Mechanical Dishmachines:

pre-rinse before loading any machine

High Temperature:

- 1. Wash temperature:
 - 150° F for single-tank, stationary rack, dual temperature machine
 - 160° F for single-tank, conveyor machine
- 2. Hot water sanitization:
 - 180° F at manifold
 - 160° F at plate level

Low Temperature:

- 1. Chemical sanitization required
- 2. Water temperatures according to manufacturer
- 3. Chemicals must be auto-dispensed into final rinse water; check at least daily
- 4. Must have a visual or audible low sanitizer indicator



Keep your facility safe and pest free

Insect and Rodent Control:

Insects and rodents carry disease and can contaminate food and food-contact surfaces. Take steps to minimize their presence:

- Protect outer openings by keeping outer doors closed, repair screens, maintain tightfitting doors and openings, use air curtains
- Eliminate harborage conditions
- Use appropriate pest control methods

Toxic Materials

These items can be poisonous or toxic if ingested:

- Detergents
- Sanitizers
- Polishes and cleaners
- Insecticides
- Rodenticides
- First aid supplies and personal medications

Storing, labeling and using:

- Store separately from foods and foodcontact surfaces
- Never store above foods or food-contact surfaces
- Label all chemical containers
- Use only approved chemicals in food areas



Corrective Actions

Food Safety is YOUR Responsibility

Risk Factor	Corrective Action		
Avoid source/sound condition:Food from unapproved source/unsound condition	 Discard/reject/return 		
 Hand washing: Food handling employee not washing hands at appropriate time 	 Instruct employee when and where to wash hands 		
 Cold holding: Potentially hazardous food held above 41° F MORE than 4 hours Potentially hazardous food held above 41° F LESS than 4 hours 	DiscardUse immediately or cool rapidly		
Cooking: • Potentially hazardous food is undercooked	 Continue cooking to proper temperature See page 15 - Critical temperature 		
 Hot holding: Potentially hazardous food held below 135° F MORE than 4 hours Potentially hazardous food held below 135° F LESS than 4 hours 	 Discard Rapidly reheat to 165° F in LESS than 2 hours or discard 		
 Two-stage cooling process Potentially hazardous food cooled from 135° F to 70° F in MORE than 2 hours Potentially hazardous food cooled from 135° F to 41° F in MORE than 6 hours total 	 Discard (room temperature foods must be cooled to 41° F or less in no more than 4 hours) 		
 Reheating: Potentially hazardous food is not reheated to 165° F in 2 hours 	• Discard		

Who to Contact

Kansas Department of Agriculture

Food Safety and Lodging Program 1320 Research Park Drive Manhattan, Kansas 66502

Telephone: (785) 564-6767 Fax: (785) 564-6779 Email: KDA.FSL@ks.gov

When to Contact

- Prior to opening food operations
- For plan review prior to construction or remodeling
- For licensing or inspection inquiry
- To report:
 - Change of ownership
 - Change of location
 - Natural disasters involving food
 - Power outages of 2 hours or more
 - Transportation accident involving food
 - Food establishment complaint
 - Foodborne illness outbreak
 - Other circumstances that may endanger public health
- To request an educational seminar

Helpful Websites

Kansas Department of Agriculture:

Food Safety and Lodging Program www.agriculture.ks.gov/fsl Focus on Food Safety www.agriculture.ks.gov/fsleducation Restaurant Inspection Search www.agriculture.ks.gov/fslinspections

Kansas Department of Health and Environment:

www.kdheks.gov/health

United States Food and Drug Administration:

www.fda.gov

United States Department of Agriculture:

www.usda.gov

Centers for Disease Control and Prevention:

www.cdc.gov

National Restaurant Association:

www.restaurant.org

Kansas Restaurant and Hospitality Association:

www.krha.org



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