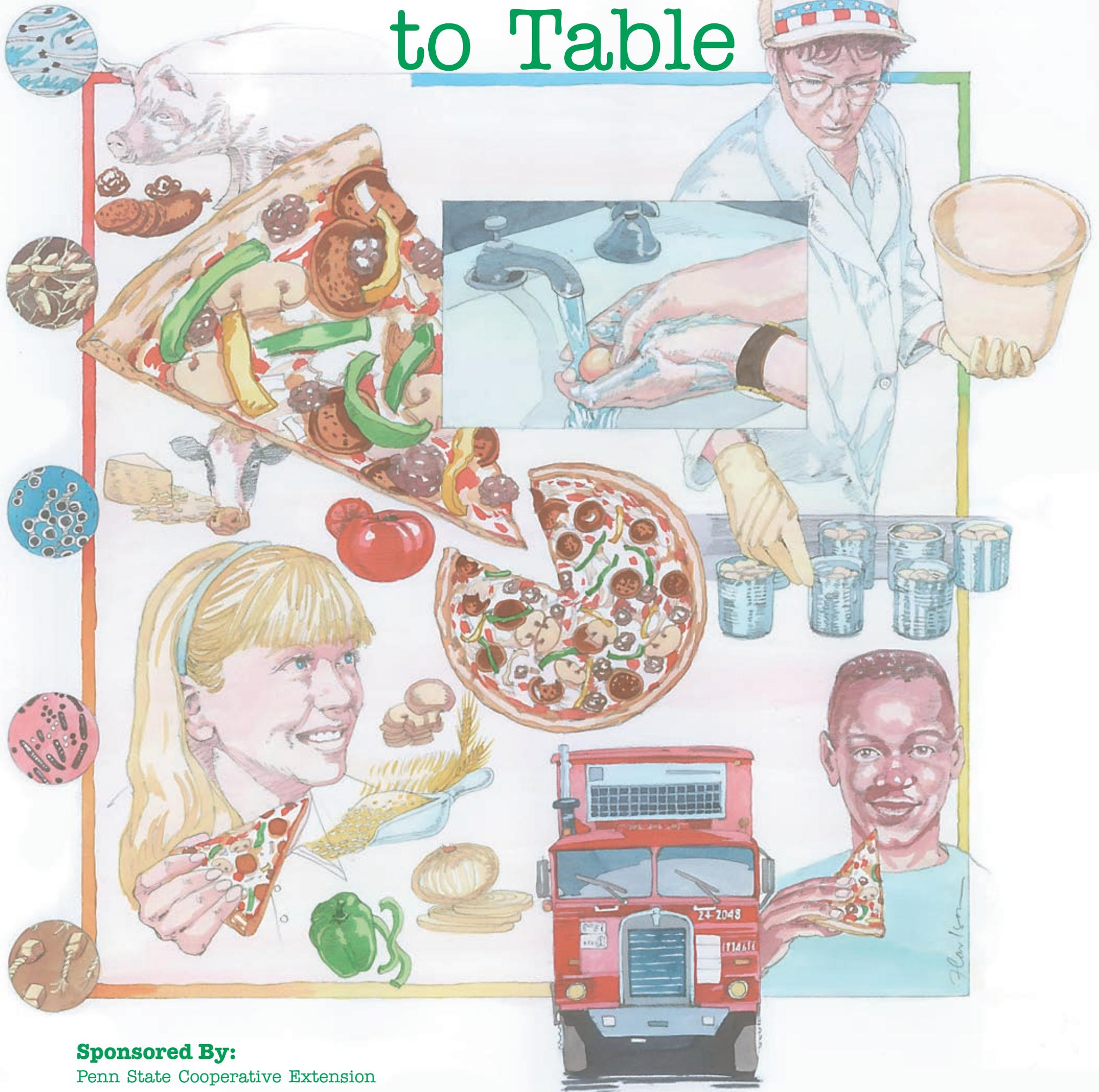


# Food Safety: From Farm to Table



## Sponsored By:

Penn State Cooperative Extension  
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## The Project

The Newspaper In Education (NIE) supplement, Food Safety: From Farm to Table, is an educational program developed in collaboration with Penn State College of Agricultural Sciences and the Pennsylvania Newspaper Publishers' Association/NIE Committee.

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## A word for teachers:

### The objectives of this educational supplement are:

- to provide students with a better understanding of the complexity of the food system, teach them how the system affects food safety; and identify student's responsibilities when buying, handling, cooking and eating foods.
- to utilize newspapers as teaching and learning tools and encourage students to become creative thinkers and readers of newspapers.

### To make this learning experience an enjoyable one for students, consider these suggestions:

- prior to introducing the sections, read through the text, noting the activities and doing any advance planning.
- familiarize yourself with the day's newspaper and the selected activities.
- give the students free reading time with newspaper and plenty of space to work.
- activities can be adapted or extended to meet classroom needs.

### The Sectors of the Food System Used in the Supplement

Before reaching the consumers, food travels through many sectors of the food chain: food production, food processing and food manufacturing, food retailing, and food service operations. Providing a safe food supply to consumers should not be the responsibility of one sector of the system. It must be the result of a commitment from all participants of the system, including the consumers.

This NIE Supplement looks at food safety using a food system approach. It takes readers from the farm (food production) to the table (consumers) and looks at what each sector does or can do to enhance food safety.

This tabloid was created to provide students with a better general understanding of food safety within the system. It was not designed to include every commodity, group or organization representing the food system in Pennsylvania.

## Introduction

It was the strawberries! Who would have thought that? The strawberries looked so good. They were served in the school cafeteria. How could so many school students have gotten sick? In 1997, the Hepatitis A virus contaminated a shipment of strawberries. Forty percent of that shipment was placed in the school lunch program supervised by the United States government. How could this happen?

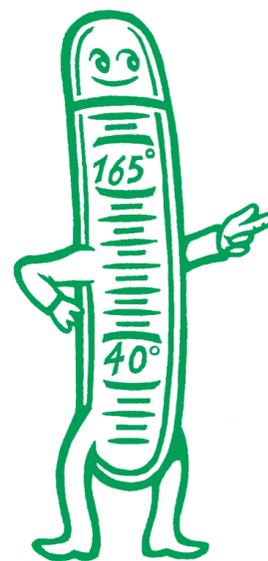
The answer: **foodborne illness** caused by a breakdown in the food safety procedures somewhere from production to consumption along our complex **food system**. That breakdown allowed a **pathogen** to contaminate the strawberries. That pathogen, the Hepatitis A virus, caused the school students to become ill.

**Bacteria** and **viruses** are part of our world. We come into contact with them every day. Some naturally inhabit the bodies of people, plants and animals. Some are present in the soil, water and air. Many are beneficial and essential for life. But some are pathogens, disease-causing organisms, which are a major cause of foodborne illness. These pathogens can **contaminate** food and water through animals, contact with infected people, sneezing, coughing, dirty hands and the environment. According to the Center for Disease Control, between 1990 and 1992, there were 81 outbreaks of foodborne illness in Pennsylvania. While deaths associated with foodborne illnesses are rare, they do occur. Disease causing organisms will always be present in our world.

## How can people who eat food protect themselves?

- Learn about the food system, pathogen contamination and the safety precautions practiced at each step of the food system to prevent illness.
- Practice the safety precautions of personal hygiene — **WASH YOUR HANDS**.
- Avoid cross contamination of food — keep meat and vegetables apart.
- Follow time and temperature rules for cooking — keep cold foods cold and hot foods hot.
- Think carefully about each sector of the food system with which you come into contact.

As you work through this supplement, you will learn about the sectors in our food system, as well as the safety practices which can keep you healthy. You will be introduced to six of the bacteria which cause foodborne illness. You will be actively involved in the learning process so you can help yourself and others avoid foodborne illness.



## Thermometer Symbol

At each sector of the food system, temperature control plays an important role in insuring food safety. As you work through this supplement, the symbol points to areas where temperature control plays a critical role.



## LONG TERM NIE ACTIVITIES

- Create a bulletin board that shows the various steps of the food system from Farm to Table. Collect newspaper stories about foods and food safety. Paste the stories on the bulletin board in the appropriate sector. Discuss each story as you post it on the bulletin board.
- Put a large map of the world on a bulletin board. Collect newspaper stories about food safety problems in different countries. Cut out each story and put it on the bulletin board around the map. Connect a string from the story to the appropriate country on the map. Discuss each story as you post it. Discuss why you think there are food safety problems in each country.
- Follow the progress of the National Food Safety Initiative as it is discussed and debated. Collect newspaper stories and opinion columns about the initiative. Make a collage of all the foods mentioned in the stories using pictures from newspaper ads.

\*Bolded words in text are found in the glossary.

## Escherichia coli including E.coli O157:H7



### What is it?

Bacteria that lives in intestinal tract of humans and animals, including cattle. Pathogenic forms produce toxins that cause disease

### Where is it found?

Raw and undercooked ground beef and other red meats, unpasteurized milk, soft cheeses, fresh fruit, vegetables and prepared foods

### Symptoms

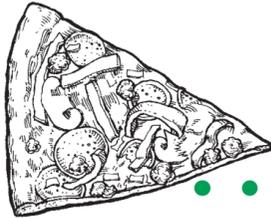
Severe abdominal pain, cramps, nausea, vomiting, diarrhea, occasional fever; some strains can cause bloody diarrhea

### Disease/Result

Enteritis, Hemolytic Uremic Syndrome, Kidney failure

## BACTERIA

## Food Production: Food Safety on the Farm



Pizza is an edible puzzle. It has different pieces that come from many places. Let's take a tour to see the origin of the pizza puzzle pieces and how they come together to make a pizza.

When you think of a pizza, what pictures come into your mind? Cows? Pigs? Fields of wheat? Vegetables? Farms? Yes, that's right. Pizza starts on the farms that give us milk, wheat, meat, vegetables and mushrooms. Farms are the origin of all the pieces of the pizza puzzle.

### Safety Points

Farms are at the beginning of the food safety system. Farmers and growers take special steps to work toward food safety. Here are some of the things responsible farmers do...

- They make sure animals are healthy before they bring them to the farm.
- They keep animal stalls and barns as clean and as well-ventilated as possible.
- They feed animals safe food and water.
- They check regularly to see that animals are healthy.
- They try to keep rodents, insects and wild fowl away from the animals and their food supplies.
- They use only approved pesticides on produce.
- They clean equipment, such as milking machines or egg holders, regularly.
- They store animal products such as eggs, milk, meat and produce in clean containers and at safe temperatures.
- They use clean water in **irrigation**.
- They make sure workers follow safe **hygiene** practices.

### Consumer Tips

Keeping food products safe at the farm level is a challenge. After all, cattle and other large animals can't be kept in sterile, antiseptic rooms. They live in barns and roam outdoors in pastures. Fruits, vegetables and grains grow in the soil. Dirt is a part of living and working on the farms.

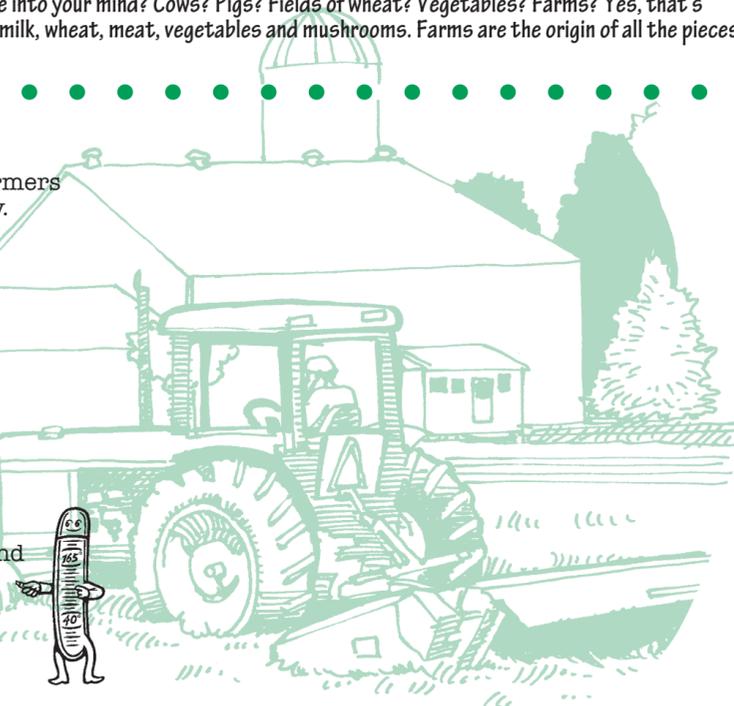
Farmers use good management techniques to keep things as clean as possible, but you have to do your part, too. Bacteria travel on food naturally. If you get food directly from a farm, be sure to clean it carefully before you eat it. Check the temperature of eggs before you buy them and buy only pasteurized milk. Raw milk can cause serious illness.

### Tidbits

Foods that are imported to the U.S. from other countries must meet U.S. health standards and must be certified as being safe.

Trucks that carry egg-laying chickens are disinfected after each trip. The chickens are kept in clean, disinfected buildings.

Fresh packaged mushrooms must be adequately ventilated and refrigerated to insure their safety. Mushrooms to be canned are exposed to heat processes that destroy all botulism spores that may be present on the mushroom.



### NIE ACTIVITIES

- Cut out pictures from the newspaper of three food items you could grow in your yard or in a window box. Paste them on a piece of paper. Next to each item write three things you could do to keep your products safe.
- Cut out pictures from the newspaper of three animals you would like to raise if you lived on a farm. Paste each one at the top of a piece of paper. Draw a picture of yourself doing something that will keep the animal healthy and clean. Write a paragraph explaining what you are doing.
- Collect stories of situations where food has not been handled safely on the farm. Underline the parts that explain the problem. Write a paragraph explaining what should have been done to prevent the problem.
- Make a bulletin board mural of a farm. Cut out pictures from the newspaper of animals or produce grown on the farm. Paste them on the mural showing the part of the farm where they are raised. On 3x5 cards, write three steps that are taken to keep each product safe. Paste the cards next to the pictures.
- Contact a local farm manager through your local cooperative extension office. Arrange to take a tour of the farm to learn the "process" of farming. Write a newspaper story about your visit.

### Clostridium botulinum



#### What is it?

Common soil bacteria that produces a deadly toxin

#### Where is it found?

Usually in improperly canned foods including meats, poultry, fish, vegetables and soups

#### Symptoms

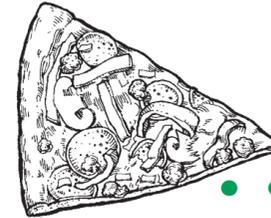
General weakness, constipation, headache, double vision, impaired speech, chewing and swallowing, and paralysis

#### Disease/Result

Botulism  
Sometimes death

## BACTERIA

## Food Processing: Food Safety in the Food Processing & Manufacturing Plant



Now that we have the ingredients, or the pizza puzzle, we have a pizza, right? Actually, the ingredients need to be processed further to make cheese, tomato sauce, sausage, pepperoni, and dough. Then the processed ingredients are put together to prepare or manufacture the pizza. Finally, the pizza can be packaged and shipped to grocery stores and restaurants around the country.

### Safety points

Trucks transport the raw materials from the farm to the processing plant where they are made into a form ready to be sold or used by the consumers. Here are some of the safety steps food processors use...

- They inspect incoming ingredients for **bacteria** content and temperature when they are unloaded.
- They clean and sanitize equipment and buildings regularly.
- They control temperatures throughout all stages of the **processing**.
- They make sure workers follow good **hygiene** practices.
- They make sure the products are **microbiologically** safe before they ship them.

### Consumer Tips

Always store canned foods in a cool place. Put frozen foods into the freezer quickly after shopping.

Always wash the top of a can before opening it. The outside of a package is not free of bacteria.

Use food processors' 800 numbers to call and tell the company if something is wrong with a product.

### NIE ACTIVITIES

- Divide a sheet of paper into four rows down and two columns across. In the newspaper, find a picture of processed foods containing meat, fruit, vegetable and/or grains. Paste the pictures into the first column on the paper. In the second column, write down steps that were taken to make each food safe.
- Pick out your favorite processed snack food. Write a description of how you think it was processed – starting with the raw materials listed in the ingredient list on the package. Then describe what you think was done to make this food safe.
- Look at the food ads in the newspaper. Compare the number of processed foods and the number of manufactured food products listed. Find newspaper food pages from 20 years ago. Count the number of processed and/or manufactured food products listed in that newspaper's food pages.
- Compare recipes in the newspaper and in an old family cookbook. What processed foods show up in today's newspaper recipes that are not in the old cookbook?
- Look for newspaper stories about food companies that describe the safety measures they have taken.

### Salmonella



#### What is it?

Bacteria that inhabits the intestinal tract of animals

#### Where is it found?

Raw meats, poultry, eggs, dairy products, foods containing eggs or dairy products, vegetables and fruit

#### Symptoms

Nausea, vomiting, abdominal cramps, diarrhea, fever and constipation

#### Disease/Result

Salmonellosis

## BACTERIA

### Tidbits

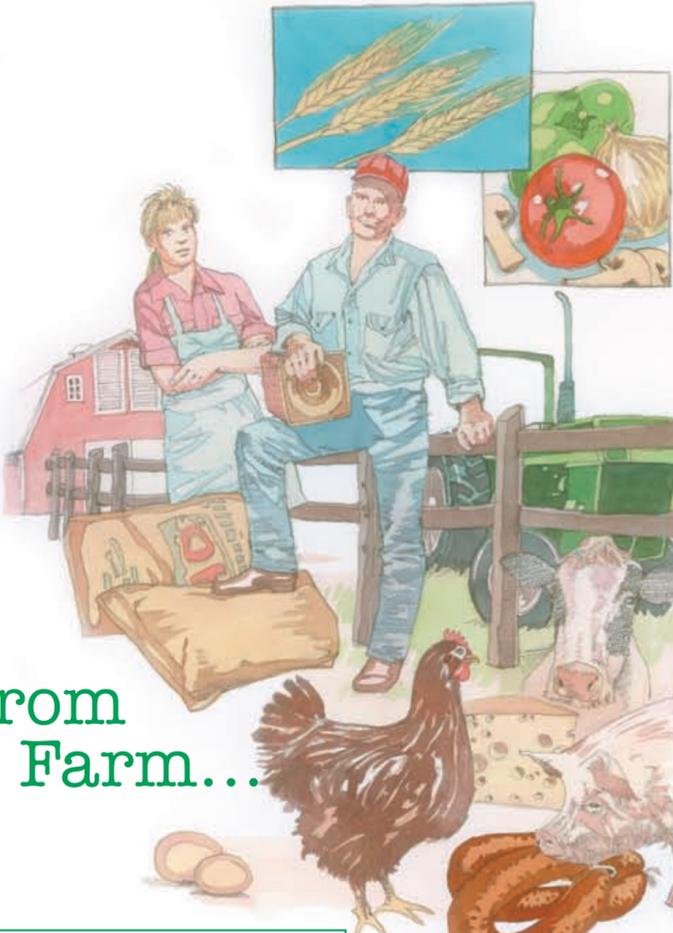
Equipment and rooms are sanitized regularly with antibacterial cleansing solutions, high temperatures, acid solutions or pressure cleaning.

Thermometers that monitor temperature throughout **processing** are checked for accuracy on a regular basis.

The temperature inside many trucks transporting foods is monitored continuously, recorded en route and checked again at the final destination.

### Trade Associations

Just as students form clubs to organize their activities, food producers, processors, retailers, and food service operators form associations to organize their industry. These groups are called trade associations. Some represent farmers and others represent food processors, grocery stores, restaurants and convenience stores. There are also organizations representing the consumers called consumer groups. Trade associations and consumer groups can vary in size. They can be small in local communities, but they can also be very large, with statewide, national and international members.



## From Farm...

**TQM (Total Quality Management)** is a management strategy that allows food producers, as well as other members in the food system, to better understand and organize their work. The objective of implementing TQM is to improve the quality and safety of the food produced.

## To Table!



## Inspection & Regulation

## The Pizza Puzzle

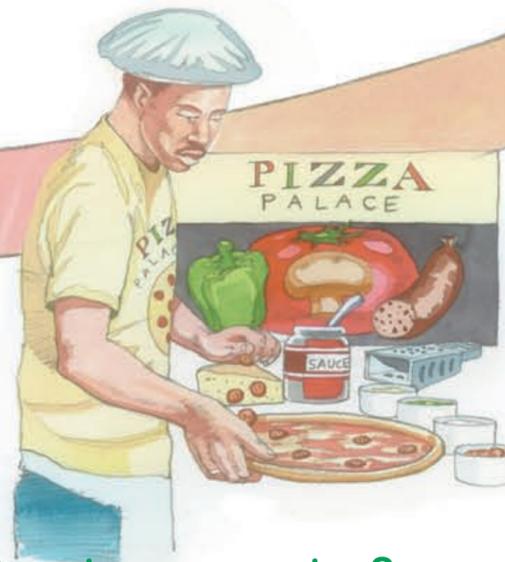


Read the Safe Handling Instructions label before opening a package.

Check "sell by" dates when you select foods. Choose the food with longest time until "sell by."



## Restaurant & Institutional

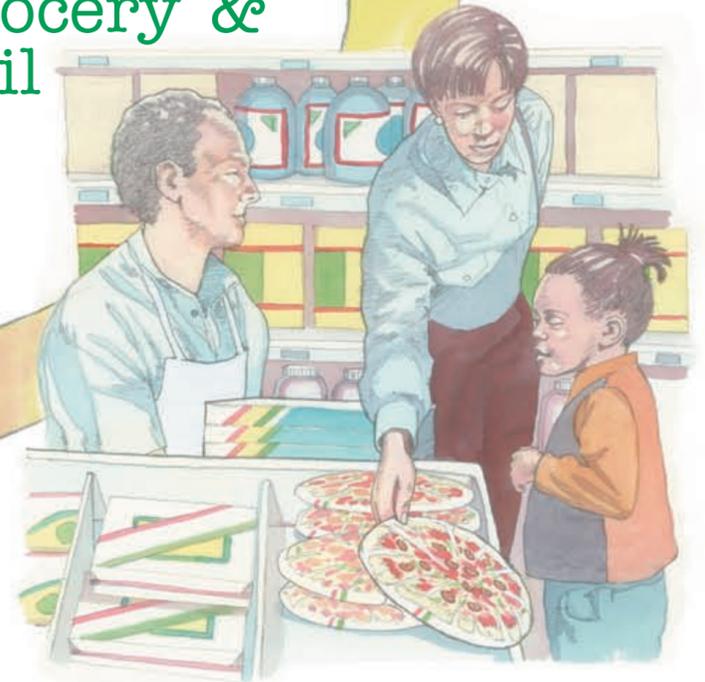


## Manufacturing, Processing & Transport



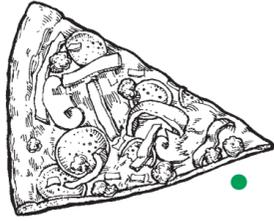
**HACCP (Hazard Analysis Critical Control Points)** is a process control system that identifies where potential contamination can occur (the critical control points or CCPs). HACCP strictly manages and monitors these points to ensure that the process is controlled and to produce the safest product. HACCP was first used in the 1960s by the Pillsbury Company to produce safe foods for astronauts in the space program.

## Grocery & Retail



HACCP is a "continuous self-inspection" process requiring the development of a plan to prepare safe food, giving inspectors a "snapshot" of conditions at the moment of inspection.

## Food Retailing...Food Safety at the Grocery Store



Grocery stores sell pizza in many different forms: kits for you to make pizza yourself; frozen ingredients for you to assemble and packaged whole pizzas as well as individual ingredients like flour and yeast. All of these variations give you the pieces to complete the pizza puzzle.

### Safety Points

Grocery stores and food markets use special procedures to sell safe foods to their customers. Here are some of the steps they take...

- They develop relationships with and depend upon reliable suppliers.
- They maintain foods at appropriate temperatures.
- They monitor frozen food and refrigerator display cases for consistent temperatures.
- They rotate stock regularly so foods are moved off the shelf by their sell dates.
- They clean and sterilize all surfaces that hold food.
- They make sure employees follow safe **hygiene** practices.
- They put Safe Handling Instructions labels on packages.



### Consumer Tips

Take food home and refrigerate it immediately after shopping.

Check the cleanliness of the refrigerated section of your supermarket.

Wipe the outside of containers you place in your refrigerator. This helps control the bacteria count on the outside of the container.

Bring abused food to the attention of the store manager.

### Tidbits

Many foods are kept in separate refrigerated storage areas: eggs/milk, meats/poultry, deli foods and produce to prevent **cross contamination**.

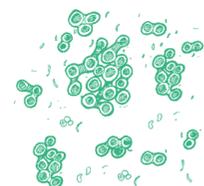
Food items are stored away from non-food items.

In many stores, an alarm sounds in the office if the temperature in a frozen food or refrigerated display case rises above a safe level.

### NIE ACTIVITIES

- Find pictures of foods in the newspaper. Paste them on a piece of paper. Next to each one, explain how the food is packaged. Then write a sentence describing the special care that was taken to keep the food safe.
- Look at the food ads in the newspaper. Circle the foods listed in the ads that are refrigerated. Visit the supermarket and look for sell-by dates on these refrigerated foods. Record the sell-by date of several foods and the date you found them in the grocery store. How many days are there between the two dates? Explain how this keeps food safe.
- Look at the food section in the newspaper. Collect any articles about safety tips to use in the supermarket. Put the articles in a classroom scrapbook.

### Staphylococcus



#### What is it?

Bacteria that inhabits nasal passages and skin; produces toxin that causes illness

#### Where is it found?

Moist meat dishes, meat salads, sliced meats, milk, cream-filled pastry and prepared salads

#### Symptoms

Nausea, vomiting, diarrhea, severe abdominal cramps, headache, weakness, chills and fever

#### Disease/Result

Staphylococcus Intoxication

## BACTERIA

## Food Service Operations & Restaurant: Food Safety Dining Out



Restaurants can buy frozen pizzas to reheat or they can make pizzas from scratch. Pizza purchased at fairs, carnivals, and sport arenas already have the pizza puzzle pieces assembled and are heated for you to eat. Pizza also travels on airplanes and boats. It's served in hospitals, school cafeterias, fast food restaurants and convenience stores.

### Safety Points

Many people are involved with the food you eat when you dine out. Delivery people, cooks, servers, bus persons, dishwashers, managers and cleaning agencies all have a part in keeping food safe. In fact, most cases of bacterial foodborne illness originate at restaurants, catered dinners, or other places where we eat food prepared by others in large quantities. It is important to be vigilant when you eat out. Food service owners practice food safety in several ways...

- They store food properly before use in cooking.
- They cook foods to appropriate temperatures.
- They keep cold food cold and hot food hot prior to serving customers.
- They see that workers handling money do not handle food.
- They routinely scrub and sanitize counter tops, equipment and floors.
- They dispose of garbage properly and keep dumpster areas clean.
- They make sure that employees follow rules of sanitation and proper food handling.
- They make sure employees wash hands with soap and water after using the toilet.



### Consumer Tips

Check the general cleanliness of the restaurant tables or food service areas. Complain if areas are not clean.

Check that employees making ready-prepared foods (sandwiches) wear gloves as they prepare your food.

Inspect the salad or buffet bar. If it appears dirty and unkempt — complain and go elsewhere.

Watch your fellow eaters at the salad and buffet bar. They should be using utensils, not their hands to get food; they should use a clean plate. Don't let this go — point it out to the management.

Test the temperature of the food served to you. If food that is supposed to be hot is cold, ask for a new serving.

Take special notice of color of cooked chicken and hamburgers. Chicken should be white and hamburgers should be brown.

### NIE ACTIVITIES

- Clip a picture of a restaurant. Now clip pictures of food that might be served at a restaurant. Paste them on a piece of paper. List safe food handling procedures restaurant employees should follow in preparing the food.
- Locate newspaper articles dealing with government regulations about handling food in restaurants, or contaminated food found in restaurants.
- Restaurants are just one location where food contamination can be found. Find pictures in the newspaper of other places where food is prepared and sold.
- Find a restaurant with a "wash hands" sign. Ask the restaurant owner to tell you why the sign was put up. Discuss the law, the benefits of washing hands and write a report.

### Tidbits

3 Symptoms a healthy person suffers when infected by contaminated food: diarrhea; nausea and stomach ache.

3 groups of people more likely to become seriously ill or die from foodborne illness: very young; very old and people with weakened immune systems.

3 main reasons for high bacterial count in restaurant foods: food handlers with contaminated hands; food storage at unsafe temperatures; and dirty utensils.

### Listeria monocytogenes



#### What is it?

Bacteria found in water, soil, sewage and moist cool locations; humans, sheep, goats and cows can pass it on

#### Where is it found?

Water, unpasteurized milk, cheese, vegetables (coleslaw), sometimes raw meat, fish and poultry; grows under refrigeration

#### Symptoms

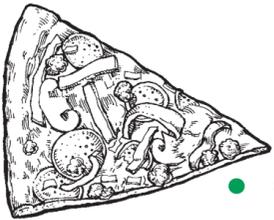
Nausea, vomiting, headache, delirium, coma, collapse, shock, lesions on vital organs

#### Disease/Result

Listeriosis  
Meningitis: especially dangerous for the elderly, very young and pregnant women. In newborns, retardation and death

## BACTERIA

## Consumers...Food Safety at Home



Pizzas you eat at home can come ready-made from the grocery store or a pizza delivery store or you can make them from scratch. Grocery and pizza delivery stores give you the finished puzzle. Making your own pizza allows you to put the puzzle together yourself! In either case, your pizza puzzle is now ready to eat. Enjoy!

### Safety Points

Improved inspection systems cannot replace good **sanitation** and safe food handling in the home. When everyone has done their best to ensure food safety, there is still a risk. Healthy eating is your responsibility! You can prevent food poisoning. Here's how...

- You should cover your mouth when you sneeze or cough, and always wash your hands before eating and preparing food.
- Take as much as you want to eat or drink from a container; don't eat from the serving bowl or drink from the carton.
- Thaw frozen foods in the refrigerator, not at room temperature.
- Wash counters & cutting boards with warm soapy water before and after each use. Use one cutting board for meats and a separate cutting board for other foods.
- Wash knives before and after use on EACH different food; be careful with knives.
- Cook foods thoroughly (burger centers should be brown and chicken should be white); check internal temperatures with a meat thermometer.
- Put cooked meat on a clean plate, not the plate the raw meat was on.
- Avoid eating raw or undercooked food from animal sources, never use raw eggs in uncooked recipes.
- Store cooked foods in small, shallow containers and refrigerate quickly.
- Don't feed pets from your plate or let them lick your utensils while you are eating.

### Tidbits

Each year an estimated 20 million food poisonings occur in the home.

3 rules of food safety: Keep it clean. Keep it cold. Keep it hot. And don't you dare eat what's not.

To sanitize your work area use 3/4 cup regular chlorine bleach in one gallon water.

Don't hesitate, refrigerate! When in doubt, throw it out!

## DA NGEROUS DINNER?

Read the following and find the food safety violations.

Scene: Committee meeting for school dinner and dance

Student #1: "I'm a great shopper. I know our budget is tight, so I stretched our dollars by buying from the dented and slightly damaged canned food selection in the supermarket."

Student #2: "You're not the only smart shopper. I got six cartons of eggs at half price just because several eggs in each carton were cracked. It doesn't matter to us because I'm going to use them right away to make eggnog."

Student #3: "Space is a definite problem, but we've figured out a solution. After the dinner at six, we'll just cover the leftovers with big tablecloths until the midnight supper."

Student #4: "I know you were worried since I've been sneezing and coughing my head off for three days that I wouldn't be able to help, but I won't let you down, even if I don't feel better till then."

-(adapted from <http://vm.cfsan.fda.gov/~dms/lesson5.html>)

## NIE ACTIVITIES

- Clip local newspaper stories that report on health and food safety issues. Post these articles over a two month period. Summarize what you found.
- Look for news articles about foods containing food safety tips. Share with classmates.
- Review your newspaper archives for reports of foodborne illness in your area.
- Clip a recipe from the newspaper. Rewrite it putting in all food safety rules from purchase of items until finish.
- Review the Safe Handling Instructions labels on meat products with members of your family.

### Shigella



#### What is it?

Bacteria found in water and soil and transferred by flies and humans

#### Where is it found?

Contaminated water, raw produce, moist prepared foods such as potato, tuna and macaroni salads

#### Symptoms

Diarrhea, cramps, chills, vomiting and often a fever

#### Disease/Result

Shigellosis

## BACTERIA

## Glossary & Food Safety Resources

### Glossary

#### Agriculture

The science, art and business of cultivating the soil, producing crops and raising livestock (farming)

#### Antiseptic

A substance that inhibits the growth and reproduction of disease-causing microorganisms

#### Bacteria

Unicellular microorganisms, some of which can cause disease in plants or animals

#### Contaminate

To make impure or unclean by contact or mixture

#### Gross contamination

The transfer of harmful microorganisms from one item of food to another by means of a nonfood-contact surface (human hands, utensils, equipment) or directly from a raw food to a cooked one

#### Food manufacturing

To combine fresh or processed ingredients and subject those ingredients to physical treatments in order to transform them into a food product (example: combining canned or fresh mushrooms, cheese, dough and tomato sauce into a pizza)

#### Food processing

To transform an agricultural material into something of increased value (example: a tomato processed into tomato sauce)

#### Food System

The sum total of the many processes by which the food we eat is produced, processed, manufactured, marketed, consumed, metabolized and its end products disposed of

#### Foodborne illness

An illness caused by biological, chemical or physical hazards carried on or in foods

#### Hygiene

Conditions and practices that serve to promote or preserve health

#### Initiative

The power or ability to begin or to follow through energetically with a plan or task. The power or right to introduce a new legislative measure

#### Irrigation

To supply (dry land) with water by means of ditches, pipes or streams

#### Microbiology

The branch of biology that deals with microorganisms and their effects on other living organisms

#### Microorganism

An organism of microscopic or submicroscopic size, especially a bacterium or protozoan

#### Parasite

An organism that grows, feeds and is sheltered on or in a different organism while contributing nothing to the survival of its host

#### Pasteurized

The act or process of heating a beverage or other food, such as milk or beer, to a specific temperature for a specific period of time in order to kill microorganisms that could cause disease, spoilage or undesired fermentation

#### Pathogen

An agent that causes disease, especially a living microorganism such as a bacterium or fungus

#### Perishable

Subject to decay, spoilage or destruction

#### Preventative measure

Intended or used to prevent or hinder; acting as an obstacle

#### Processing

A series of operations performed in the making or treatment of a product

#### Sanitation

Formulation and application of measures designed to protect public health

#### Sterile

Free from live bacteria or other microorganisms

#### Sustainable agriculture

Working with nature instead of against it, i.e.: rotating crops and compost applications

#### Viruses

Any of various simple submicroscopic parasites of plants, animals and bacteria that often cause disease

### Web Links

Pennsylvania Newspaper Publishers' Association (links to newspapers)  
[www.pnpa.com/](http://www.pnpa.com/)  
Food Safety Supplement  
<http://vs247.cas.psu.edu/foodsafe/nie.htm>

Centers for Disease Control and Prevention (CDC)  
[www.cdc.gov/](http://www.cdc.gov/)

Commonwealth of Pennsylvania, Department of Agriculture  
Bureau of Food Safety and Laboratory Services  
[www.pda.state.pa.us/PA\\_Exec/Agriculture/food\\_safety.htm](http://www.pda.state.pa.us/PA_Exec/Agriculture/food_safety.htm)

Commonwealth of Pennsylvania, Department of Education  
[www.cas.psu.edu/pde.html](http://www.cas.psu.edu/pde.html)

Commonwealth of Pennsylvania, Department of Health  
[www.state.pa.us/PA\\_Exec/Health/overview.html](http://www.state.pa.us/PA_Exec/Health/overview.html)

Enhancing the Safety of Pennsylvania Foods Project  
<http://vs247.cas.psu.edu/foodsafe/foodsafe.htm>

Food Safety at Penn State Home Page  
[www.cas.psu.edu/docs/CASDEPT/VET/food.html](http://www.cas.psu.edu/docs/CASDEPT/VET/food.html)

FDA: Center for Food Safety and Applied Nutrition  
<http://vm.cfsan.fda.gov/list.html>

FDA Food Code 1997  
<http://vm.cfsan.fda.gov/~dms/fc-intro.html>

Industry Council on Food Safety  
[www.restaurant.org/educate/industry.htm](http://www.restaurant.org/educate/industry.htm)

National Agricultural Library/Food and Nutrition Information Center  
[www.nal.usda.gov/fnic/](http://www.nal.usda.gov/fnic/)

The National Food Safety Initiative  
<http://vm.cfsan.fda.gov/~dms/fs-toc.html>

Penn State, College of Agricultural Sciences Home Page  
[www.cas.psu.edu/](http://www.cas.psu.edu/)

Penn State Department of Food Science Home Page  
[www.cas.psu.edu/docs/CASDEPT/FOOD/index.html](http://www.cas.psu.edu/docs/CASDEPT/FOOD/index.html)

Penn State Department of Veterinary Science Home Page  
[www.cas.psu.edu/docs/CASDEPT/VET/vet.html](http://www.cas.psu.edu/docs/CASDEPT/VET/vet.html)

Penn State Integrated Pest Management Program  
[www.cas.psu.edu/docs/CASDEPT/IPM/index.html](http://www.cas.psu.edu/docs/CASDEPT/IPM/index.html)

Penn State Total Quality Management on Dairy Farms  
<http://cac.psu.edu/~lis3/tqm.html>

Poultry Hotsites  
[www.psu.edu/dept/poultry/hotsites.htm](http://www.psu.edu/dept/poultry/hotsites.htm)

US Department of Agriculture, Food Safety & Inspection Service  
[www.usda.gov/agency/fsis/consedu.htm](http://www.usda.gov/agency/fsis/consedu.htm)

US Environmental Protection Agency Drinking Water Activities  
[www.epa.gov/ogwdw/kids/](http://www.epa.gov/ogwdw/kids/)

USDA/FDA Foodborne Illness Education Information Center  
[www.nal.usda.gov/fnic/foodborne/foodborn.html](http://www.nal.usda.gov/fnic/foodborne/foodborn.html)

### Other Educational Programs

- **Bacterial Contamination of Food** (Middle School)  
Dr. J. Lynne Brown, Penn State University (814) 863-3973
- **Community as Classroom: Teacher's Guide for Conducting a Participatory Community Appraisal**  
Dr. Audrey Maretzki (814) 863-4751
- **Food Systems: Youth Making a Difference** (High School)  
Dr. Audrey Maretzki (814) 863-4751
- **Good Manufacturing Practices: Personal Hygiene and Practices in Food Manufacturing** (video); **Sources and Control of Contamination During Processing** (video)  
Media Sales, Penn State Continuing & Distance Education (814) 863-3102 or Dr. Arnold S. Roseman, Penn State Berks Campus (610) 640-4529
- **Keeping Food Safe**  
Mary Alice Gettings, M.S., R.D., Beaver County Cooperative Extension (412) 774-3003
- USDA/Food Safety and Inspection Service: Consumer Education Programs (202)690-0351  
Media Inquiries (202)720-9113

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Pennsylvania Department of Health

Pennsylvania Poultry Federation

Pennsylvania Egg Quality Assurance Program

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US Department of Agriculture: Food Safety and Inspection Service

US Department of Agriculture: Economics Research Service

US Department of Health and Human Services, Centers for Disease Control and Prevention

US Food and Drug Administration

## Hot Lines and Phone numbers

- Commonwealth of Pennsylvania, Department of Agriculture Bureau of Food Safety and Laboratory Services  
**(717) 772-8353**
- Commonwealth of Pennsylvania, Department of Health  
**1 (800) 692-7254**
- FDA Food Information and Seafood Hotline  
**1 (800) FDA-4010**
- USDA Meat and Poultry Hotline  
**1 (800) 535-4555**

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