

12

Cleaning and Sanitizing

Chapter Overview

Chapter 12 introduces students to cleaning and sanitizing processes in food service operations.

Learning Objectives

- 12-1** Describe how and when to clean and sanitize food contact surfaces and equipment
- 12-2** Describe how to clean and sanitize items in a dishwashing machine and three-compartment sink
- 12-3** Explain how and when to clean nonfood contact surfaces
- 12-4** Identify different types of cleaners and their uses
- 12-5** Describe different methods of sanitizing and their correct use
- 12-6** Explain the requirements for safely using and storing cleaning tools and chemicals
- 12-7** Summarize how to develop a cleaning program

Opening Case Study

1. How could the outbreak have been prevented?

The outbreak could have been prevented if the slicer had been cleaned and sanitized correctly. In general, stationary equipment, such as slicers, should be cleaned and sanitized by following these steps:

1. Unplug the equipment.
2. Take the removable parts off the equipment. Wash, rinse, and sanitize them by hand. You can also run the parts through a dishwasher, if allowed.
3. Scrape or remove food from the equipment surfaces.
4. Wash the equipment surfaces. Use a cleaning solution prepared with an approved detergent. Wash the equipment with the correct cleaning tool, such as a nylon brush or pad, or a cloth towel.
5. Rinse the equipment surfaces with clean water. Use a cloth towel or another correct tool.
6. Sanitize the equipment surfaces. Make sure the sanitizer comes in contact with each surface. The concentration of the sanitizer must meet requirements.
7. Allow all surfaces to air-dry. Put the unit back together.

Chapter Breakdown

Pages 244 to 246**12.1 Cleaning**

Resources

PowerPoint Slides 3 to 4

Reinforce and Review:

- Use the appropriate cleaner for the job. Cleaners are divided into four categories, each with a different purpose. These categories are detergents, degreasers, delimers, and abrasive cleaners. Some categories may overlap.

Key Terms

- **Cleaning:** Removing food and other types of dirt from a surface, such as a countertop or plate.
- **Detergents:** Cleaners designed to penetrate and soften dirt to help remove it from a surface.
- **Degreasers:** Detergents that contain a grease-dissolving agent.
- **Delimers:** Cleaning agents used on mineral deposits and other soils that other cleaners cannot remove, such as scale, rust, and tarnish.
- **Abrasive cleaners:** Cleaners containing a scouring agent for scrubbing off hard-to-remove dirt.

Knowledge Check Answers

1. Factors that can affect the cleaning process include:

Type and condition of the dirt

- Certain types of dirt require special cleaning methods. The condition of the dirt also affects how easily it can be removed. For example, dried or baked-on dirt will be more difficult to remove.

Water hardness

- Cleaning is more difficult in hard water. Minerals react with the detergent and decrease how effective it is. Hard water can also cause scale or lime deposits to build up on equipment. This can require the use of lime-removal cleaners.

Water temperature

- In general, the hotter the water, the better it dissolves detergent and loosens dirt.

Surface characteristics

- Different surfaces call for different cleaners. Some cleaners work well in one situation but not in another. The wrong cleaner might even damage equipment.

Agitation or pressure

- Scouring or scrubbing a surface helps remove the outer layer of dirt. This allows the cleaner to penetrate deeper.

Length of treatment

- The longer dirt on a surface is exposed to a cleaner, the easier the dirt is to remove.

2. In this situation, a degreaser would be the best choice. Degreasers are detergents that contain a grease-dissolving agent. These cleaners work well in areas where grease has been burned on, such as grill backsplashes, oven doors, and range hoods.

CLASSROOM ACTIVITY: Dirty Kitchen Gallery Walk

LO: 12-4 Identify different types of cleaners and their uses

Materials: Blank paper, sticky notes

1. Before class: Take 5–7 pieces of paper and write different descriptions of dirty kitchen equipment on each one (ex: scale on a steam table or grease on a grill backsplash).
2. Post each description in different areas so they are spread throughout the room.
3. Give each student blank 5–7 sticky notes.
4. Ask students to individually circulate to the different posts. At each one, they should recommend one of the four cleaners by writing it on a sticky note and sticking it near or on the post.
5. After sticky notes have been added to all the posts, go over each scenario together. See if most sticky notes were correct and clarify if there is any ambiguity.

Instructor notes: This can also be done as an online polling activity. Present images using your web-conferencing platform. Use the embedded polling feature or a free online polling tool to replace the sticky notes.

Chapter Breakdown

Pages 246 to 251

12.2 Sanitizing

Resources

PowerPoint Slides 5 to 9

Reinforce and Review:

- Cleaning removes food and other dirt from a surface. Sanitizing reduces the number of pathogens on a surface to safe levels. You must clean and rinse a surface before it can be sanitized. Surfaces can be sanitized with hot water or a chemical sanitizing solution. Then the surface must be allowed to air-dry. Each sanitizing method and sanitizer chemical has specific requirements for use.
- All surfaces should be cleaned and rinsed. Food-contact surfaces must be cleaned and sanitized after every use. You should also clean and sanitize each time you begin working with a different type of food or after handling raw TCS fruits and vegetables. Also, clean and sanitize surfaces when a task is interrupted. If items are in constant use, they must be cleaned and sanitized every four hours.
- To clean and sanitize a surface, first remove any food from the surface. Then, wash and rinse the surface. Finally, sanitize the surface and let it air-dry.

Key Terms

- **Sanitizing:** Reducing the number of pathogens on a surface to safe levels.
- **Concentration:** The amount of sanitizer for a given amount of water measured in parts per million (ppm).
- **Water hardness:** The amount of minerals in water.

Knowledge Check Answers

1. When heat sanitizing items by soaking them in hot water, the water must be at least 171°F (77°C). The items must be soaked for at least 30 seconds.
2. The five steps required to properly clean and sanitize a food contact surface are:
 1. Scrape or remove food bits from the surface.
 2. Wash the surface with an approved cleaner.
 3. Rinse the surface with clean water.
 4. Sanitize the surface with the correct sanitizing solution.
 5. Allow the surface to air-dry.

Chapter Breakdown

Pages 251 to 255

12.3 Dishwashing

Resources

PowerPoint Slides 10 to 13

Reinforce and Review:

- Tableware and utensils can be washed in dishwashers or by hand in a three-compartment sink. Always follow manufacturers' instructions when using dishwashers. Make sure your machine is clean and in good working condition. Check the temperature and pressure of wash and rinse cycles daily.
- Before washing items in a three-compartment sink, clean and sanitize the sinks and drainboards. Scrape, rinse, or presoak items before washing them. Then wash them in a detergent solution and rinse them in clean water. Next, sanitize them for a specific amount of time in either hot water or a chemical sanitizing solution. Finally, they should be air-dried. Once cleaned and sanitized, tableware and equipment should be protected from contamination.

Key Terms

No keys terms for this section

Knowledge Check Answers

1. After cleaning and sanitizing, glasses and cups should be stored upside down on a clean and sanitized surface. Storing them upside down reduces the likelihood of contaminants falling into them.
2. Set up a three-compartment sink before use as follows:
 - Clean and sanitize each sink and drain board.
 - Fill the first sink with detergent and water. The water temperature must be at least 110°F (43°C). Follow the manufacturer's recommendations.
 - Fill the second sink with clean water. This is not necessary if items will be spray-rinsed instead of being dipped.
 - Fill the third sink with water and sanitizer to the correct concentration. Hot water can be used as an alternative. Follow guidelines for using sanitizers and the manufacturer's recommendations.
 - Provide a clock with a second hand.

Chapter Breakdown

Pages 255 to 258

12.4 Cleaning the Premises

Resources

PowerPoint Slides 14 to 16

Reinforce and Review:

- Wet and dry wiping cloths may be used to wipe up food spills and wipe down equipment surfaces. Wet cloths may be used for wiping equipment surfaces. They should be stored in a sanitizer solution between uses. Clean, dry wiping cloths may be used to wipe food spills from tableware.
- Operations must have procedures for cleaning vomit and diarrhea. Make sure employees are trained on these procedures and know what to do.
- Chemicals can contaminate food and equipment if the chemicals are not used or stored correctly. Use only chemicals approved for use in a foodservice operation. Before using chemicals, cover or remove items to prevent them from being contaminated. Clean and sanitize equipment and utensils after using chemicals. Store cleaning supplies and tools away from food and equipment.

Key Terms

- **Nonfood-contact surfaces:** Surfaces in an operation that do not normally come in contact with food, such as floors, walls, ceilings, and equipment exteriors.

Knowledge Check Answers

1. Restroom areas must have their own set of cleaning tools that are not used in other areas of the operation.
2. Surfaces in the operation that do not normally come in contact with food, called non-food contact surfaces, must be cleaned regularly but they do not require sanitizing. Examples of these surfaces include walls, floors, ceilings, and equipment exteriors.

Chapter Breakdown

Pages 259 to 261

12.5 Developing a Cleaning Program

Resources

PowerPoint Slides 17 to 18

Reinforce and Review:

- Create a master cleaning schedule listing all cleaning tasks. Train the staff to follow it. Monitor the cleaning program to keep it effective and supervise cleaning procedures. Adjust as needed.

Key Terms

No key terms for this section

Knowledge Check Answers

1. The first step in developing a cleaning program is identifying cleaning needs throughout the entire operation. This includes reviewing the facility to identify all surfaces, tools, and equipment that need to be cleaned.
2. A master cleaning schedule should include:
 - What should be cleaned
 - Who should clean it
 - When it should be cleaned
 - How it should be cleaned

End of Chapter

Page 263**Discussion Questions****1. When should food-contact surfaces be cleaned and sanitized?**

Food-contact surfaces must be cleaned and sanitized at the following times:

- After they are used
- Before working with a different type of food
- After handling different raw TCS fruits and vegetables
- Any time there is an interruption during a task and the items being used may have been contaminated
- After four hours if items are in constant use

2. What are the minimum temperatures required to sanitize dishes in a high-temperature dishwashing machine?

In a high-temperature dishwashing machine, the temperature of the final sanitizing rinse must be at least 180°F (82°C). For stationary-rack, single-temperature machines, it must be at least 165°F (74°C). The dishwasher must have a built-in thermometer that checks water temperature at the manifold. This is where the water sprays into the tank.

3. What are the steps that should be taken (in order) when cleaning and sanitizing items in a three-compartment sink?

These are the steps that must be taken when cleaning and sanitizing items in a three-compartment sink:

1. Scrape items before washing them. If necessary, rinse or soak items.
2. Wash items in the first sink. Use a brush, cloth towel, or nylon scrub pad to loosen dirt. Change the water and detergent when the suds are gone or the water is dirty.
3. Rinse items in the second sink. Spray the items with water or dip them in it. Make sure to remove all traces of food and detergent from the items being rinsed. If dipping the items, change the rinse water when it becomes dirty or full of suds.
4. Sanitize items in the third sink. Change the sanitizing solution when the temperature of the water or the sanitizer concentration falls below requirements. Never rinse items after sanitizing them. This could contaminate their surfaces. The only exception to this rule applies to dishwashing machines that can safely rinse items after they have been sanitized.
5. Air-dry items on a clean and sanitized surface. Place items upside down so they will drain. Never use a towel to dry items, as it could contaminate them.

4. How should clean and sanitized tableware, utensils, and equipment be stored?

Clean and sanitized tableware, utensils, and equipment should be stored in the following way:

- Store tableware and utensils at least six inches (15 centimeters) off the floor. Protect them from dirt and moisture.
- Clean and sanitize drawers and shelves before storing clean items.
- Store glasses and cups upside down on a clean and sanitized shelf or rack. Store flatware and utensils with handles up so staff can then pick them up without touching food-contact surfaces.
- Clean and sanitize trays and carts used to carry clean tableware and utensils. Check them daily, and clean as often as needed.
- Keep the food-contact surfaces of stationary equipment covered until ready for use.

5. What factors affect the effectiveness of a sanitizer?

Several factors affect the effectiveness of a sanitizer. The most critical include concentration, water temperature, contact time, water hardness, and pH.

Pages 263 to 264

Apply Your Knowledge

Nicole's Dilemma

1. What did Nicole do wrong?

Nicole made these mistakes:

- She did not clean and sanitize the cart for clean tableware.
- She did not rinse, scrape, or soak the dirty dishes before putting them into the dish rack.
- She overloaded the dish rack.
- She did not clean the heavy mineral deposits from the machine before starting the day.

The New Manager

1. Should Isaiah suggest any changes to the storage room, tools, or chemicals? If yes, what changes should he suggest?

Yes. Isaiah should suggest these changes for the storage area:

- Fix the hot water.
- Install hooks for hanging up the mops and brooms.

2. Did Sabrina do anything wrong? If yes, what should she have done instead?

Yes. Sabrina should have washed, rinsed, and sanitized the cutting board at these times:

- Before cutting the melons
- After cutting the melons and before chopping the spinach

- After chopping the spinach and before butterflying the pork chops
- After butterflying the pork chops

3. What steps should Isaiah take to make sure everyone follows the master cleaning schedule?

Isaiah should take these steps to make sure everyone follows the master cleaning schedule:

- Train the staff on the cleaning and sanitizing tasks.
- Supervise daily cleaning routines.
- Check all cleaning tasks against the master cleaning schedule daily.
- Change the master schedule as needed for any changes in the menu, procedures, or equipment.
- Ask staff during meetings for input on the program.

Pages 264 to 265

Study Questions

1. C. In sanitizing solution
2. D. At least 30 seconds
3. A. Every 4 hours
4. A. Test the solution with a sanitizer kit
5. C. Clean and sanitize the sinks and drainboards
6. C. In a curbed floor drain
7. A. With handles facing up
8. B. Remove food from the surface, wash, rinse, sanitize, and air-dry.
9. A. Label the working container with its contents
10. C. What should be cleaned, when, by whom, and how