

CLEANING AND SANITIZING IN FOOD PROCESSING AND HANDLING ENVIRONMENTS... SANITIZING

COURSE OUTLINE

- **"Cleaning" can often remove debris on surfaces and make them look better...but it can also leave behind harmful microorganisms.**
 - For example, if you're mopping a floor with a bucket of soapy water, you may well be removing the dirt, but you're also spreading germs across the floor's surface.
- **The "sanitizing" process is what is used to kill microorganisms after the surface has been cleared or wiped off.**
 - You can't successfully sanitize a dirty surface, so if you don't follow proper cleaning procedures, the sanitizing process will not be effective.
- **The two most common techniques that are used to sanitize both food processing as well as handling environments are "chemical sanitizing" and "heat (thermal) sanitizing".**
 - "Chemical" sanitizing uses chemical compounds to kill microorganisms, while thermal sanitizing does it by exposing a surface to high heat.
- **Not all surfaces can be sanitized the same way, because they can be made of many different materials, including...**
 - Plastic.
 - Rubber.
 - Aluminum.
 - Stainless steel.
- **You need to make sure to use the correct sanitizing method for the surface that you're working with.**
 - If you're unsure which method to use, you can refer to your facility's Standard Sanitation Operational Procedures (SSOPs) or HACCP (Hazard Analysis and Critical Control Point (HACCP) Plan).
 - These documents contain information about the sanitizing processes used in your facility, including which methods to use on the surface that you're sanitizing.
 - If you can't find the information you need there, talk to your supervisor.

- **Done correctly, sanitizing should remove almost all harmful material that is on a surface, including bacteria, bacterial spores, viruses and fungi.**
 - In fact, to meet CDC requirements, the sanitizing process must kill 99.999% of existing bacteria in under 30 seconds.
- **One effective way to sanitize equipment is with "heat (thermal) sanitizing".**
 - This type of sanitizing kills microorganisms on a surface by exposing it to high heat.
- **The most common way to perform "thermal sanitizing" is with hot water.**
 - This is because hot water is both easy to apply and inexpensive.
 - It can kill a wide variety of microorganisms, and it isn't corrosive.
 - To ensure that the water you're using kills all of the harmful microorganisms that are present, its temperature should be at least 171° F.
 - To sanitize larger equipment, you can pump hot water through it for a minimum of five minutes.
 - Smaller equipment can be sanitized by soaking it in hot water for a minimum of 30 seconds.
- **Sometimes, hot water sanitizing can be done by automated methods, such as a clean-in-place (CIP) or clean-out-of-place (COP) system.**
 - If you have this equipment available in your facility, consult your facility's SSOPs or HACCP Plan to familiarize yourself with the way it works.
- **Another thermal sanitizing method that you may need to use is "steam sanitizing".**
 - This process employs an industrial "dry steam" cleaner, which creates steam by heating water to very high temperatures.
- **One advantage of steam sanitizing is that the steam evaporates quickly, and surfaces usually dry almost immediately.**
 - You can often use the equipment or work area right after you sanitize it.
- **Since it is a somewhat automated process, steam sanitizing can save time and manpower by sanitizing smaller parts of machinery that can't be reached by other methods.**
 - So you don't have to dismantle them to perform the sanitizing process.

- **"Chemical" sanitizing is probably the most frequently used type of sanitizing in the food processing and handling industry.**
 - That's why it's important to understand the role of the sanitizing chemicals in your facility...and how and where they should be used.
- **Any chemical sanitizer that you use should be...**
 - Approved for food surfaces.
 - Low in toxicity.
 - Stable under all types of conditions.
- **There is no one chemical sanitizer that can be used for all surfaces under all conditions, so you need to know what to consider in order to select the right one for the job you're doing.**
 - Each sanitizing chemical has a specific temperature range at which it should be used, so before you choose one, you should check to see at what temperature it is most effective.
 - Some chemical sanitizers can cause certain types of surfaces to corrode quickly, so you should always make sure that you know what surfaces you can use them on.
- **Information about when and where to use a chemical sanitizer can be found...**
 - On its label.
 - On its Safety Data Sheet (SDS).
 - In your SSOPs or HACCP Plan.
 - By asking your supervisor.
- **You'll often have to add water to dilute sanitizing chemicals before they can be used.**
 - This is because many of them are sold in a form that is highly toxic.
- **"Concentration" refers to the amount of chemical that is present in a mixture of chemicals and water (a "solution").**
 - A sanitizing solution's concentration is measured in parts per million (ppm).
 - One ppm is equal to one milligram of the chemical per one liter of water.
- **Changing the concentration of a sanitizing solution will affect the way it works.**
 - A larger amount of sanitizer usually makes a solution more effective.
 - However, using too much can damage the surface that you're sanitizing, and lead to problems cleaning and sanitizing it in the future.

- **Every sanitizing chemical has a specific "range of concentration" at which it is most effective.**
 - Any concentration outside this range could negatively affect the way the sanitizer works.
- **To obtain information about the recommended concentration of a sanitizing chemical, you can...**
 - Check the label of the sanitizing products that you're using.
 - Look at the chemical's Safety Data Sheet (SDS).
 - Refer to your facility's SSOPs, or the HACCP Plan.
 - Test your solution (if there are testing procedures in place at your facility).
 - Ask your supervisor for help.
- **An unclean surface can't be sanitized, so before you begin a sanitizing job, you should do a quick check to make sure that the surface you're working with has been thoroughly cleaned, and is completely dry.**
 - Look in, around, and under equipment to make sure there isn't any soil remaining on its surface.
 - Smell the area (if it has a sour or musty odor, the surface isn't clean).
 - Feel the surface for grease or grit that might be left over after cleaning, and spot clean the area as needed.
 - Check for detergent residue, and if you find any, rinse the surface with water.
 - Make sure to wait until the surface is completely dry before you sanitize...
 - Water that is left on a surface can dilute a chemical, which could affect how it works.
- **There is no one sanitizing method that can be used for all surfaces under all conditions.**
 - You need to know what to consider in order to select the right one.
- **"Clean-in-place" (CIP) systems can be used to flush cleaning, rinsing and sanitizing solutions through larger pieces of equipment such as tanks, pipes and pumps.**
 - These systems are fully automated and do not require moving or taking the equipment apart, which saves time and manpower.

- **Clean-out-of-place (COP) systems are used to clean and sanitize small pieces of equipment, such as fittings, hoses and utensils.**
 - COPs are partially automated, but unlike CIPs, you need to dismantle the equipment and bring it to a designated area to be cleaned and sanitized.
 - The sanitizing process is performed by soaking equipment in specially designed tanks that are filled with a chemical sanitizing solution.
 - COPs can also sanitize equipment by filling up the tanks with hot water, but usually, a chemical compound is used.
- **If your facility uses CIPs, COPs or any other machinery to sanitize equipment, you need to be familiar with how it works.**
 - If you have any questions, consult your SSOPs or HACCP Plan, or your supervisor.
- **When equipment can't be cleaned and sanitized using automated systems, you'll need to sanitize it using manual methods.**
 - This means that sanitizing is carried out by employees.
- **One of the ways that you can manually sanitize both equipment and surfaces is to apply hot water.**
 - The water should be hot enough that you need to wear gloves (at least 171° F), so that the microorganisms are being exposed to temperatures that are high enough to kill them.
- **Another way to perform the sanitizing process is by using sanitizing chemicals.**
 - This method is not only used to sanitize equipment, but also on general work areas and surfaces, such as floors, counters and walls.
 - A chemical sanitizing spray is usually the most efficient way to sanitize, because the spray can be applied to a large area in a short amount of time.
 - If you have any questions about which chemical you should use to sanitize, you can refer to your SSOPs or HACCP Plan, or check with your manager or supervisor.
- **There is no sanitizer that will instantly get rid of microorganisms.**
 - Typically, the longer you expose the surface to a sanitizer, the more effective the sanitizing process becomes.
 - At a minimum, a sanitizer should reside on a surface no less than 30 seconds before you wipe it off.
 - Be sure to check the label of the sanitizer you're using to determine its recommended contact time.

- **Once a sanitizer has been on the surface for the recommended amount of time, you can wipe it down with a dry, lint-free towel... but it's usually better to allow the surface to air dry if possible.**
 - If the towel that you use to dry it isn't clean, it can recontaminate the surface that you just worked so hard to sanitize.

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- **After you clean a piece of equipment or work surface, it should be sanitized to remove the harmful microorganisms that remain.**
- **You can sanitize most equipment and work areas using heat (thermal) or chemical methods.**
- **Before you choose a chemical sanitizer, you should determine the temperature of the environment, the corrosiveness of the chemical, as well as the concentration of the sanitizing solution that you should be using.**
- **You cannot successfully sanitize a surface if it is not clean and dry, so make sure any that you work on have undergone cleaning and are not damp.**
- **If you have any questions about using sanitizers chemicals, your SSOPs or HACCP Plan can be good sources of information.**
- **By using proper sanitizing procedures with the equipment and surfaces in your work area, you will be doing your part to keep your customers safe from foodborne illnesses...every day!**