

1



Sanitation and food safety for cheesemakers

Introduction

"The Food Safety, Sanitation and Personal Hygiene Training Program" for small-scale cheese producing establishments was developed by The Pennsylvania State University, Department of Food Science to provide an educational tool for the training of cheesemakers. This training program contains strategies that take into account specific characteristics of the small and very small dairy farm.

The training program includes two lessons or modules designed to provide workers in dairy farms with the knowledge, skills, and a comprehensive explanation of the food safety rules that they need to follow at work.

How to use the "The Food Safety, Sanitation and Personal Hygiene Training Program "

The training has been developed to rely on illustrations and visual aids containing simple messages. To use the kit, set the flipchart on a table top and flip through the pages.

Each page contains an illustration that corresponds to the text on the following page. This text is a script that the instructor can read to participants to explain the material that participants are looking at on the illustration. After reading, flip the page and go to the next one.

It is not necessary for the instructor to memorize all of the text. However, to make the training session more effective, it is advisable for him/her to become familiar with it and thoroughly understand it.

There also is information for the instructor (within brackets) that is intended to improve the learning experience and it should not be read to participants.

Each text page contains a small box with a visual aid showing the picture that is on the other side of the page.

Tips for improving your food safety training session

The training session has been designed not to last more than 40 minutes.

Do not train more than 10-12 employees at a time. Everyone in the session needs to be able to see the flipchart.

Tips for improving your food safety training session (cont.)

Do not rush the training session. Speak clearly and slowly while looking at the audience. Obtain the audience reactions and engage them by asking them for examples of things that happen at your company.

Become familiar with the farm's food safety rules and convey this consistent message during training.

During training, ask participants if they have any questions or comments. Go back to anything that is not clear to them, if necessary, retrain.

If applicable, food safety training must be followed by supervisory enforcement of food safety rules. It is recommended that supervisors focus on several food safety behaviors for one week following the training session.

Documenting Food Safety Training

If your training is not documented, it never happened. Your auditors and customers want to see evidence that every employee in the plant has received food safety training. Create an attendance sheet with the topic and date, have every participant sign it, then keep it in a safe place. Before adjourning, ask everyone if they have signed the attendance list.

Sanitation and Food Safety for cheesemakers

During this lesson, the instructor will describe the four steps for cleaning and sanitizing, the four elements (T.A.C.T.) to be considered during cleaning and sanitizing, and the basics of cross-contamination.

After the end of this lesson, participants will be able to:

- List the four steps for cleaning and sanitizing, in order.
- List the four elements T.A.C.T.
- Understand how cross-contamination happens and how to avoid it.

Personal hygiene and handwashing

During this lesson, the instructor will describe the importance of good personal hygiene practices. The correct procedure for handwashing, the correct use of gloves, and other personal habits to avoid will be described.

After the end of this lesson, participants will be able to:

- Describe how hands can become contaminated with microbes and transmit them to food.
- List the situations when handwashing is required.
- Demonstrate appropriate handwashing techniques.

Prepared by (2015):

Robson A. M. Machado
Graduate Student
Department of Food Science
The Pennsylvania State University
University Park, PA. 16802

Catherine N. Cutter, Ph.D.
Professor and Food Safety Extension Specialist Department
of Food Science
The Pennsylvania State University
University Park, PA. 16802
email: cnc3@psu.edu

Clarissa Silveira, David Rice, Dr. Ernest Hovingh, Gustavo Silveira, Martin Bucknavage, Minerva Rivera, and Nelson Gaydos are acknowledged for assistance with graphic design, photos, editing, and/or formatting.

Updated by (2017):

Robson A. M. Machado, PhD
Assistant Extension Professor and Food Science Specialist
University of Maine Cooperative Extension
email: robson.machado@maine.edu

The University of Maine does not discriminate on the grounds of race, color, religion, sex, sexual orientation, including transgender status and gender expression, national origin, citizenship status, age, disability, genetic information or veteran status in employment, education, and all other programs and activities. The following person has been designated to handle inquiries regarding non-discrimination policies: Director, Office of Equal Opportunity, 101 North Stevens Hall, Orono, ME 04469, 207.581.1226. eoinfo@umit.maine.edu

Reprinted with permission from Penn State Extension.

© The Pennsylvania State University 2017.





Why food safety?



Before cleaning



Cleaning and sanitizing steps



Step one: pre-rinse



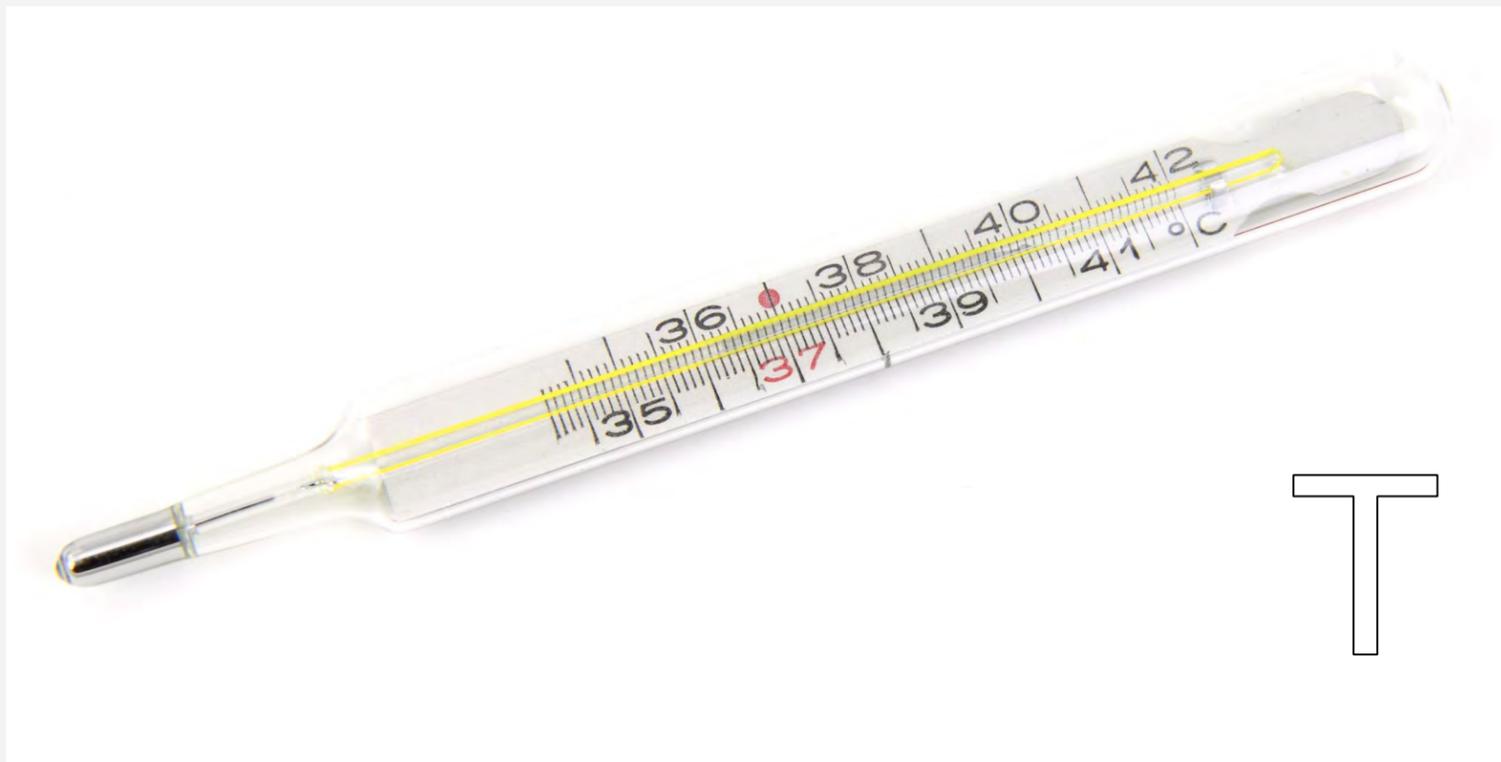
Step two: washing



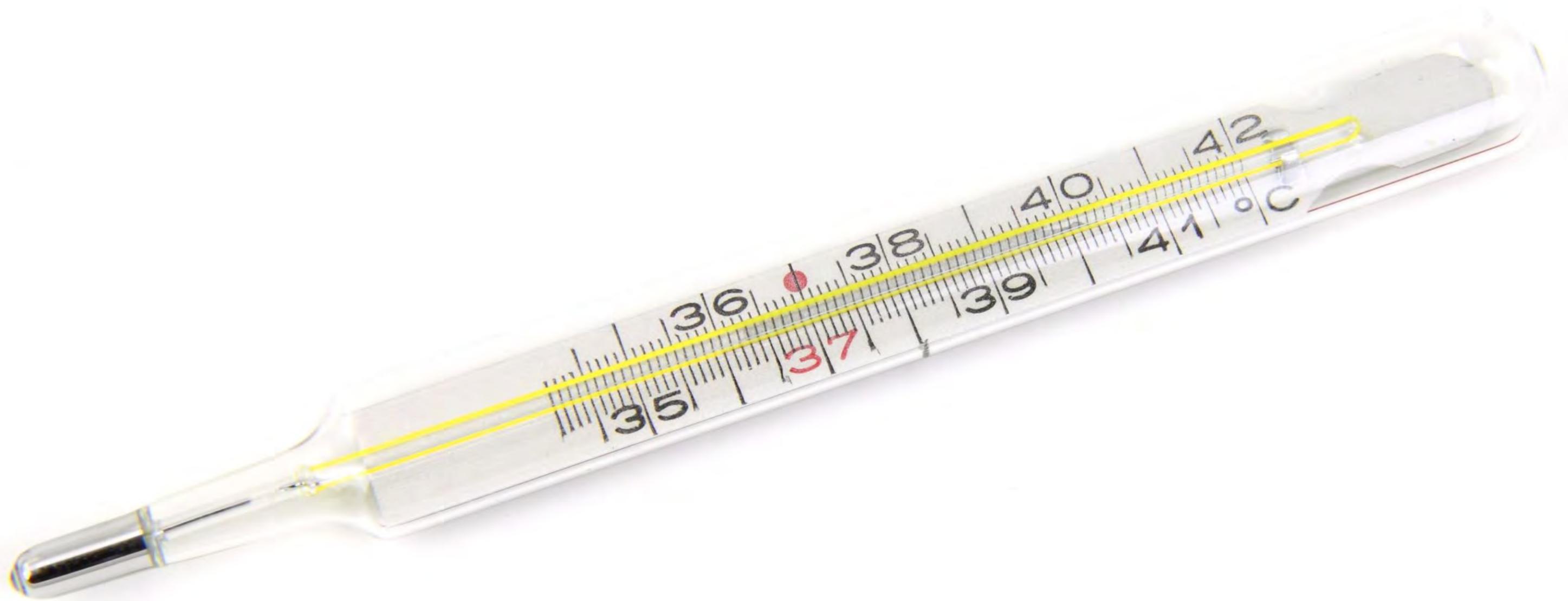
Step three: rinse



Step four: sanitize



T.A.C.T.



T = Temperature



A = Action



C = Concentration

Notes

C is for concentration. Using an accurate concentration of soap or detergent and sanitizer is extremely important. If the concentration is too low, then it is not effective. However, if the concentration is too high, it violates federal regulations, can be wasteful and expensive and can harm people.

Some soaps and detergents can be applied directly to the surface to be cleaned. If you prepare your soap or detergent, always read the label for instructions and follow them.

The proper concentration of bleach for sanitizing surfaces is one tablespoon of bleach to one gallon of water to obtain a final concentration of 200 ppm. Remember to mix thoroughly before using.

If you use another sanitizer, always read the label for instructions and follow them.



C = Concentration



T = Time

Notes

Finally, **T** is for time.

The amount of time that a surface is exposed to the sanitizing solution is very important for effective sanitation. Most sanitizers for food contact surfaces need a minimum of 1 minute contact time to kill the remaining microbes.

Also, sanitizer solutions lose their efficacy over time. It is important to make a fresh solution of bleach, at the correct concentration, at least once per day.



T = Time



Precautions



Review

Ready-to-eat foods / Cross-contamination



Notes

Now let's go over some important definitions related to food safety.

Ready-to-eat foods are usually products that are prepared (cooked, fermented, acidified) in advance and can be eaten as sold. In other words, they do not require any additional heating or preparation step and are eaten "as is." Examples of ready-to-eat foods include salads, deli meats, canned food, and of course, cheese.

The next definition is **cross-contamination**. Which is the transfer of harmful substances or microbes (also known as contaminants) from something DIRTY to something CLEAN.

On a dairy farm, we are concerned with the transfer of bacteria from unclean surfaces to food or food contact surfaces. One of the biggest concerns with cross-contamination occurs when contaminants from a source outside the cheesemaking room are transferred, via the cheesemaker or employees, to the cheese or food contact surfaces. Examples of cross-contamination include handling or touching animals, followed by handling cheese with the same, unclean, hands.



Ready-to-eat foods / Cross-contamination



Shoes or boots / Cross-contamination

Shoes or boots / Cross-contamination



Notes

Here are some options:

- 1.** Use a boot bath with a sanitizer.
- 2.** Have shoes that are used exclusively inside the cheesemaking room.
- 3.** Wash and sanitize your boots every time you re-enter the cheesemaking room.

A practical solution is to add a boot bath by placing a tray with sanitizer at the entrance door. Sanitizer in the tray should be made fresh every cheesemaking session and changed when visually dirty.

Having these boot baths in place when visitors tour the cheesemaking room is a good idea since they might bring microbes from other places.

If you prefer to wash your boots when entering the cheesemaking room, the same principle applies, as with cleaning equipment: remove gross contamination, use mechanical action, THEN use a sanitizer.



Shoes or boots / Cross-contamination



Clothes / Cross-contamination

Cutting and packing / Cross-contamination



Notes

When cutting cheese for packing, special care must be taken to avoid cross-contamination. The inner portions of the cheese that are isolated from the environment by the rind are exposed when cut. At this point, you are dealing with your final product, which is a ready-to-eat product. Any contamination transferred to the cheese at this step will likely reach your consumers.

Proper cleaning and sanitizing all food-contact surfaces and utensils will reduce the risk of cross-contamination.

Food contact surfaces include but are not limited to: scales; knives; cutting boards; cutting wires; vacuum packaging machine; etc.

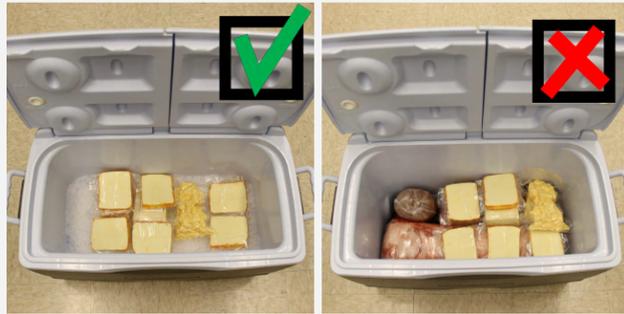
Remember it is important to use the 4 steps of cleaning and sanitizing for these food contact surfaces (pre-rinse > wash > rinse > sanitize).

You should also be wearing CLEAN, UNTORN gloves at this step to minimize contamination of the cheese.



Cutting and packing / Cross-contamination

Transporting / Cross-contamination



Notes

Transporting the cheese to sales locations offers another opportunity for cross-contamination.

Containers used for transportation, if not clean, can contaminate the cheese.

Another chance for contamination occurs when the same container is used for both cheese and raw products, such as meats or produce. Even frozen meat can still be a source of contamination. Therefore, fresh or frozen meat **should not** be placed in the same cooler as cheese.

The ice used in the coolers should be made from potable water and frozen meat or other foods should not be used in place of ice.



Transporting / Cross-contamination



Cleaning and sanitizing the cheese vat



Frequency



Flash review



Break

2

Personal
hygiene and
handwashing



Personal hygiene

Handwashing



Notes

First, can you tell me what personal hygiene is and why it is important?
[Let participants answer]

Personal hygiene refers to our habits of cleanliness. Our clothes, hair, hands - everything! One of the most important personal hygiene practices is hand washing.

Can you tell me what the basic steps for handwashing are? [Let participants answer]
There is a method for appropriate handwashing.

Step 1: Wet your hands and arms with warm water.

Step 2: Apply soap.

Step 3: Lather and scrub your hands and arms for about 10-15 seconds. Do not forget the areas under your nails and between your fingers, and use a small brush as necessary.

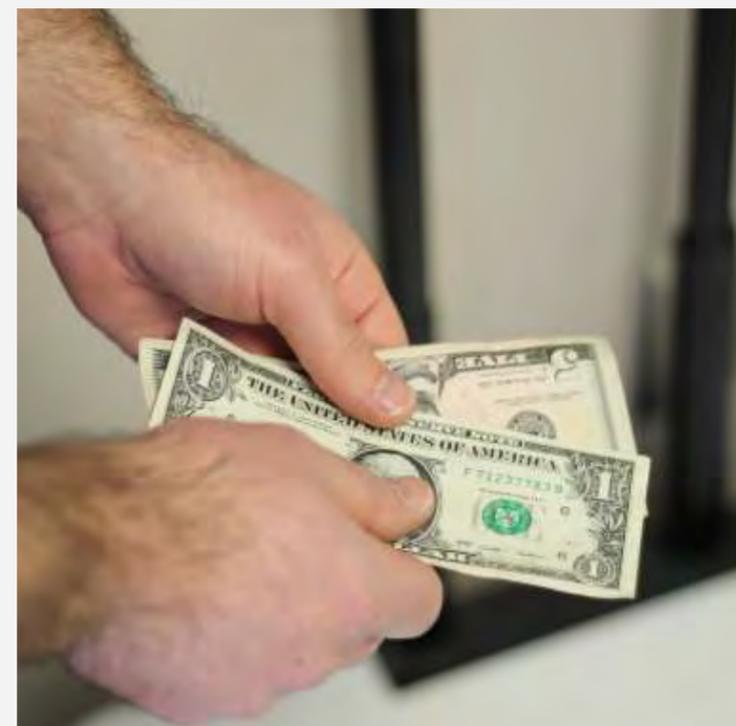
Step 4: Rinse thoroughly with warm water.

Step 5: Dry your hands using a clean paper towel or an approved drying method.

Step 6: When handling any ready to eat food, including the packing of cheese, be sure to wear gloves.



Handwashing



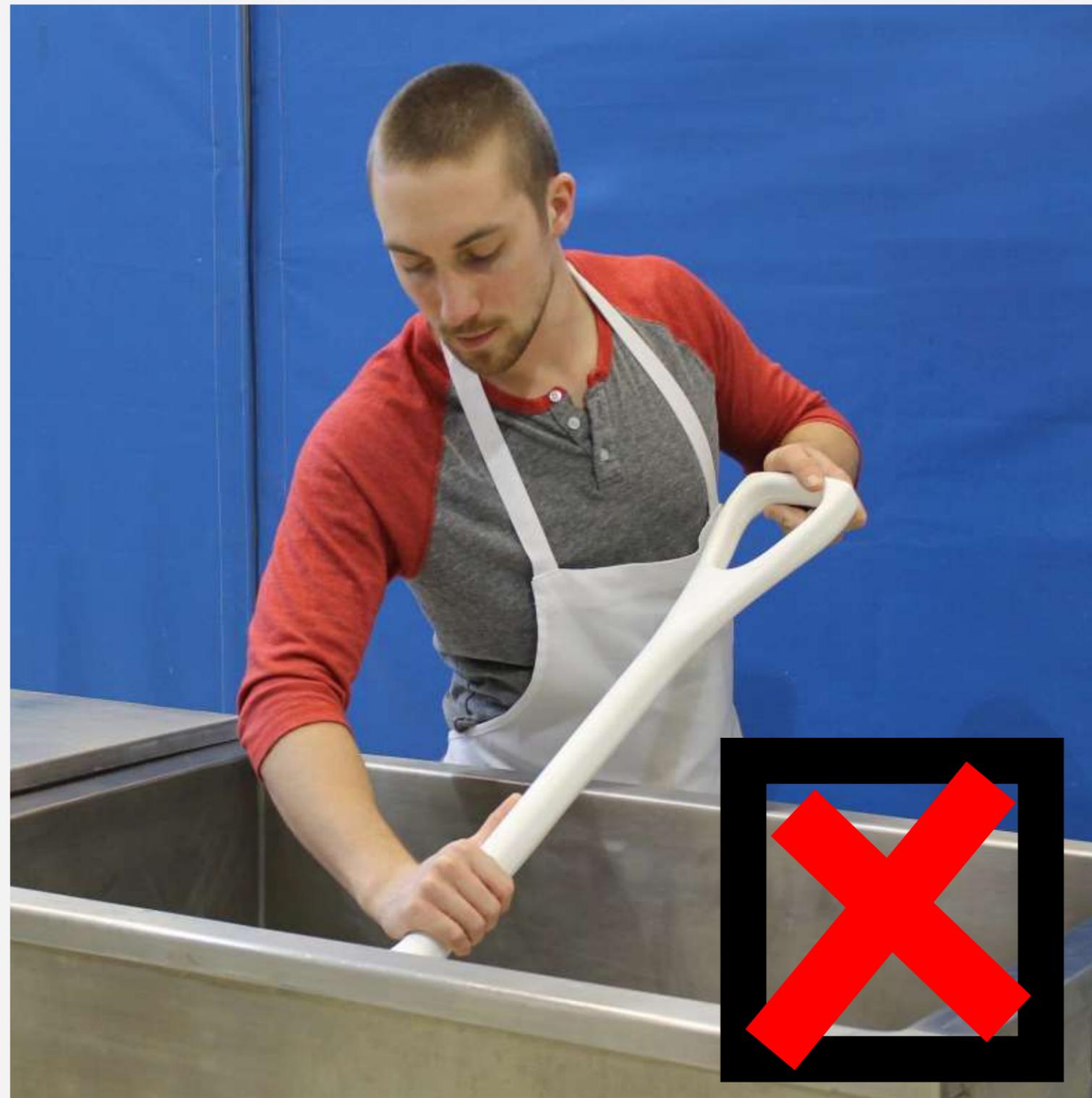
When should I wash my hands?



Hands and arms sanitizing



Handwashing: Activity



Hairnet and beard net: Correct / Incorrect



Eating

Leaving the cheesemaking room



Notes

Each time you enter the cheesemaking room, there is a chance that you will carry contamination from the outside. You can minimize the risk of cross-contamination by:

- 1.** Not leaving the cheesemaking room during a cheesemaking session; if you must leave, minimize the number of times.
- 2.** Sanitizing your boots before reentering the cheesemaking room; or changing to a pair of shoes or boots designated for the preparation areas.
- 3.** Washing your hands before returning to work, and sanitizing your hands and arms when necessary.
- 4.** Leaving your apron in the work area. If you are going to re-use your apron, be sure that it does not become contaminated by falling on the floor, by touching 'dirty' surfaces, etc.



Leaving the cheesemaking room

Use of gloves



Notes

A recommendation in the FDA's Food Code is to wear gloves, in addition to hand-washing, in order to protect the food you are handling.

However, it is important to realize that gloves do NOT replace proper handwashing. It is also important to properly wash your hands before putting on gloves.

Also, make sure the gloves fit well. Gloves that are too big can tear easily or get caught in equipment.

Your hands must be clean in the case a glove rips, and your bare hands accidentally come in contact with the food or food contact surfaces to reduce the risk of contamination. So, wash your hands before putting on gloves.

This step also will prevent contamination of the gloves from your hands, when putting on the gloves.



Use of gloves

Gloves: Incorrect / Correct



Notes

Glove use is beneficial to protecting the safety of your food if used correctly.

First, it is important to know that gloves are used to protect food from contamination and not for protecting your hands.

You should wear gloves on both hands as demonstrated in the left photo. Do not wear only one glove, as demonstrated in the right photo.

You should use gloves when cutting and packing cheese and when cutting samples at a farmers' market or another retail setting.

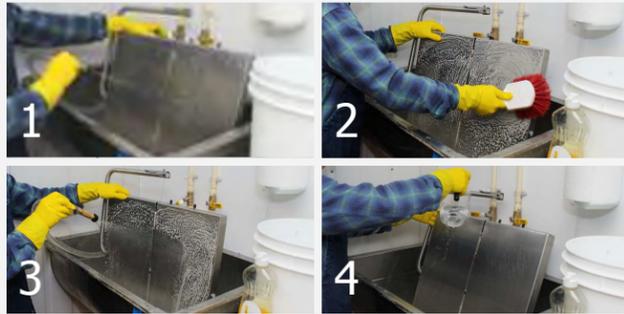


Gloves: Correct / Incorrect



Changing gloves

Review: Steps for cleaning



Notes

Recap: Let's review the information one more time.

How many steps are needed to clean and sanitize a food contact surface properly?
[Let participants answer.]

There are four steps for cleaning and sanitizing food contact surfaces. Let's go through them together.

The first step is to pre-rinse. First, you wet the surface to help loosen the soil on the surface that is being cleaned.

Washing is the second step in the process. This step is performed with soap and warm water to remove food or soil from the surface.

The third step is to rinse the food contact surface. This step washes the soap from the surface as well as any remaining food particles.

At this point, the food surface should appear completely clean to the naked eye, as is demonstrated in the photograph.

The final step is sanitizing the food contact surface. It is important that this step is completed after all food is removed and the surface is clean. This step reduces the number of microbes present in a surface to safe levels.

The order is important! **Remember:** you must first clean and then sanitize.



Review: Steps for cleaning



Review: Handwashing



extension.umaine.edu

The University of Maine does not discriminate on the grounds of race, color, religion, sex, sexual orientation, including transgender status and gender expression, national origin, citizenship status, age, disability, genetic information or veteran status in employment, education, and all other programs and activities. The following person has been designated to handle inquiries regarding non-discrimination policies: Director, Office of Equal Opportunity, 101 North Stevens Hall, Orono, ME 04469, 207.581.1226. eoinfo@umit.maine.edu

Prepared by (2015):

Robson A. M. Machado
Graduate Student
Department of Food Science
The Pennsylvania State University
University Park, PA. 16802

Catherine N. Cutter, Ph.D.
Professor and Food Safety Extension Specialist Department
of Food Science
The Pennsylvania State University
University Park, PA. 16802
email: cnc3@psu.edu

Clarissa Silveira, David Rice, Dr. Ernest Hovingh, Gustavo Silveira, Martin Bucknavage, Minerva Rivera, and Nelson Gaydos are acknowledged for assistance with graphic design, photos, editing, and/or formatting.

Updated by (2017):

Robson A. M. Machado, PhD
Assistant Extension Professor and Food Science Specialist
University of Maine Cooperative Extension
email: robson.machado@maine.edu

Reprinted with permission from Penn State Extension.

© The Pennsylvania State University 2017.