

Comments from the Inspector

On Cooling Foods

Food Safety Team, USAF School of Aerospace Medicine

Did you know that improper cooling of foods is one of the most common causes of foodborne illness? This is because some microorganisms can survive cooking temperatures; and if these microorganisms are exposed to unsafe time and temperature conditions during the cooling process, they can grow and multiply to dangerous levels. This is why monitoring the temperature of foods during the cooling process is a critical step to prevent foodborne illnesses.

The Food Code stipulates that during the cooling process, potentially hazardous foods must be cooled from 140° to 70°F in 2 hours and from 70° to 41°F in an additional 4 hours. It is important that the temperature of the food reaches 70° in two hours because bacterial growth is very fast between 70° to 120°F.

Even though we can not avoid having foods in the danger zone (between 41° and 140°F) for a short time as they are cooling, there are several things that we can do to ensure that heat is removed from foods fast enough to minimize microbial growth. The Food Code recommends the following methods for reducing the cooling time:

1. Place the food in shallow pans. Filling pans no deeper than 3 inches is a good place to start, but you must take the temperature of the food periodically to make sure it is cooling properly.
2. Separate foods into smaller containers. This includes slicing large meats into smaller pieces.
3. Use “rapid cooling equipment.” An example of this type of equipment is a refrigerator commercially designed to lower the temperature of the food fast by using very low temperatures and high rates of air circulation. If rapid cooling equipment is not available in your facility, you may want to consider cooling foods in the freezer instead of the refrigerator and transferring these foods to the refrigerator when they reach 41°F.
4. Stir the food every few minutes while it is cooling.
5. Place the container of hot food inside a larger container with ice.
6. Use containers that facilitate heat transfer. Foods cool faster in metal containers than in plastic containers. You can also leave these containers partially uncovered to facilitate the cooling process. If you do this, make sure that there is nothing stored above any uncovered container that could contaminate the food. When the food is cooled, be sure to cover it completely to prevent contamination during storage.
7. For some foods, such as soups, you may want to consider adding ice to the food itself to accelerate the cooling process. If you use this method, make sure that the ice is made from potable water.

You may also consider combining two or more cooling methods simultaneously. For example, place the container of hot food in an ice water bath and stir the food to facilitate the cooling process. Whatever method you use to cool food, the most important thing to remember is that you must always check the temperature of the food to ensure that it reaches 70° in two hours and 41° within 4 additional hours.

For more information, contact your base Public Health Office at 6-1225. You can also contact the USAF School of Aerospace Medicine Food Safety Team, Brooks AFB, TX, at (210) 536-2058, DSN 240-2058, or E-mail: diaz@usafsam.brooks.af.mil