

Cooling of Foods: Do's and Don'ts

Cooling of Potentially Hazardous Foods (PHF)

What if hot foods remain after an event?

- Improper cooling of PHF is a leading cause of foodborne illnesses
- Ensure product temperature meets the 2-stage cooling guidelines in Food Code
 - *moves from above 135° F to below 70° F within four hours and then,*
 - *to below 41° F in another two hours, try the following methods*

Cooling How To's

- Place slightly cooled pans of product on top shelf of cooler and leave loosely covered until completely cool, and *then* wrap tightly
- Don't put hot items direct from cooking into refrigeration. This action will over work the refrigeration unit.
- Position pans so air can circulate around them



Methods for Cooling

- Reduce quantity or size of product:
 - section product
 - place into shallow pans
- Use an ice bath or chill stick



Methods for Cooling

OR, Use a

- Blast chiller
- Ice as an ingredient



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Research on Cooling

- Here is what was found in one Master's thesis research study by David Olds in 2004 (major advisor J. Sneed) when he looked at cooling rates using different methods for turkey roasts. These nutrient agar plates show microbial growth that occurred. So, think about proper cooling procedures!
- The two plates in upper left corner were from a turkey roast that was quartered, sections separated with a gap between, and then placed uncovered in a walk-in cooler. It took 8 hours + 36 minutes from 135° F to below 41° F.

For the second treatment with the blast chiller, the roast was cooked, loosely covered and then placed in a blast chiller. This method took 12 hours and 36 minutes for the roast to cool from above 135° F to below 41° F. The third treatment, a roast was cooked, loosely covered and then placed in a walk-in refrigeration unit. It took 20 hours for proper cooling to occur. The fourth treatment followed a procedure often used. Three cooked roasts were placed on a sheet pan and then tightly covered with a plastic bag and placed in walk-in cooler. It took over 28 hours for these roasts to drop below 41°F.

YUCK!

Bacterial Growth from Four Turkey Cooling Treatments

