



If it affects you or the meat industry, you'll read about it in the...

# AAMP LIFELINE

American Association of Meat Processors • One Meeting Place • Elizabethtown PA 17022

Tel: 717-367-1168 • Fax: 717-367-9096 • Email: aamp@aamp.com • www.aamp.com

MAY 1, 2009

JAY B. WENTHER  
EDITOR

## ***The Cooling of Bacon and Proper Supporting Documentation***

It has been brought to the attention of numerous meat processors that the use of the Food Safety and Inspection Service (FSIS) document titled *Compliance Guidelines for Cooling Heat-Treated Meat and Poultry Products (Stabilization)*, commonly referred to as Appendix B, may be inappropriate for the cooling of heat-treated, not fully-cooked meat products such as bacon. Specifically, meat processors may be using the third option of Appendix B to justify a total cooldown time of 15 hours, but that cooling option states:



*The following process may be used for the slow cooling of **ready-to-eat** meat and poultry cured with nitrite. Products cured with a minimum of 100 ppm ingoing sodium nitrite may be cooled so that the maximum internal temperature is reduced from 130 to 80 °F in 5 hours and from 80 to 45 °F in 10 hours (15 hours total cooling time).*

Due to the regulatory oversight of HACCP plans, more often than not processors are required to designate at least one critical control point (CCP) in every process. During bacon production (*i.e.*, the conversion of cured pork bellies to cured bacon slabs), the product usually only achieves maximum temperatures of 128 °F to 132 °F, with ranges depending on processor preferences, equipment, and other variables. Since the internal temperature of the product extends into the known “danger zone” of pathogen growth (*i.e.* 80 °F to 130 °F), cooling is typically addressed in this heat-treated, not fully-cooked product. Because the FSIS cooling guidelines (*i.e.*, Appendix B) are not designed for meats that are heat-treated but not fully-cooked, questions exist about the safety of a product cooled as long as 15 hours.

Fortunately, a research study was conducted and a subsequent scientific supporting document was developed that demonstrated that if smoked bacon is cooled from 120 °F to 45 °F within 15 hours, a food safety hazard from either *Clostridium perfringens* or *Staphylococcus aureus* is not likely to occur. Therefore, processors are justified in selecting a 15-hour cooling schedule as a critical limit.

Title: Validation of Bacon Processing Conditions To Verify Control of *Clostridium perfringens* and *Staphylococcus aureus*  
Authors: Peter J. Taormina and Gene W. Bartholomew  
Journal: Journal of Food Protection, Volume 68, Number 9, 2005, Pages 1831–1839

If you produce bacon, you may consider simplifying the issue by fully cooking bacon, but that thought process has its pitfalls as well. In fact, it would be illegal to utilize Appendix A and fully cook bacon slabs. According to the FSIS Standards and Labeling Policy book, it defines Cooked Bacon as a product that shall not yield more than 40 percent bacon,” which means the slab bacon is required to undergo a 60 percent shrink throughout thermal processing. Unfortunately, FSIS has not made any distinction between fully-cooked slab bacon and fully-cooked sliced bacon. Therefore, an establishment would have to shrink the bacon slab by 60% to utilize Appendix A and label the bacon fully-cooked.

It is really a fine line though...at 144 °F *trichinae* is destroyed instantaneously, but at 144 °F it only requires 5 minutes to achieve ready-to-eat (RTE) status. As with typical thermal processing, if the smokehouse shuts off once the product has achieved 144 °F (most likely 145 °F), the product’s internal temperature may continue to rise 2-3 degrees. Therefore it may reach RTE status even quicker. In the grand scheme of food safety, this point hasn’t been a food safety concern.