



FOOD SAFETY:

Whatcom County Master Food Preservers & Safety Advisors
1000 N. Forest Street, Suite 201 * Bellingham WA 98225 * 360/676-6736
<http://whatcom.wsu.edu>

Cooked-to-Brown Burgers May Not Tell the Truth

People who cook ground beef burgers on gas grills could have a food safety problem if they rely on color - rather than a meat thermometer - to determine if the meat is adequately cooked, according to the Agricultural Research Service scientists.

That's because how the meat is handled before cooking can make it look like it's been cooked adequately when it really hasn't been, according to the scientists in ARS's Food Technology and Safety laboratory in Beltsville, MD. The research provided information to USDA's Food Safety Inspection Service to suggest guidelines for safe food temperatures.

The ARS scientists, Bradford Berry and Marnie Bigner-George, cooked ground beef patties on a gas grill and used a thermometer to determine when the burgers reached temperatures of 135, 151 and 160 degrees F. They also cooked burgers until the meat color turned brown without using a thermometer. The researchers purchased the ground beef from the supermarket. Some was shaped into patties and cooked immediately, some was shaped into patties and frozen; and some was frozen in its bulk form.

The scientists found that a burger with a brown center is not necessarily cooked and safe to eat. Premature browning was not evident in frozen patties that were thawed and then cooked. However, beef that was frozen in bulk, thawed, formed into patties, and immediately cooked showed brown color at unsafe temperatures.

As expected, the longer the burger was cooked, the less pink the center portion. But burgers removed from the grill with pink centers continued to brown for several minutes. Ground beef cooked to 135 degrees F and allowed to sit for about four minutes looked the same as a burger cooked to 160 degrees F.

The research indicated the necessity and confirms the current advice of using a meat thermometer when cooking meat. One hundred sixty degrees F, the temperature at which *Escherichia coli* is killed, is considered the threshold for safe consumption of ground beef.

Scientific contact Bradford W. Berry, ARS Food Technology and Safety, Beltsville, MD, phone 9301) 504-8994, FAX (301) 504-8438, bberry@lpsi.barc.usda.gov