

July 2, 1976

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Scientists Seek Cooking Process Understanding

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consumer radio briefs

By carefully controlling and measuring cooking conditions, University of Minnesota food scientists are trying to better understand and interpret the exact relationship of cooking processes to consumer acceptability of the cooked product.

Joan Gordon and Eugenia A. Davis reported on their research Thursday (July 1) at the American Home Economics Association annual meeting in Minneapolis.

Gordon and Davis will investigate how the nutritional quality and acceptability of meat is affected by atmospheric and humidity variations, heating rates, cooking rates, water release and movement, mineral distribution, and vitamin degradation and cellular transformations. They hope to be able to recommend improvements to home food preparation methods and processing methods based on a thorough understanding of the processes involved.

Using a special oven which precisely controls the temperature, air-flow rate, and the humidity in the oven's chamber, the researchers can measure the release of water. Meat releases water at varying rates as it cooks and this in turn may be related to the quality of the cooked meat. As meat cooks, its protein changes. This contributes to toughness in some cuts of meat.

Besides trying to learn the relationship between cooking method and meat quality, the food scientists hope to find out about how the treatment of meat in slaughter and storage relates to the meat's final cooked quality.

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