



RESEARCH BRIEF PRODUCT QUALITY

BEEF RESEARCH

Determination of Volatile Aroma Compounds in Beef Using Differences in Steak Thickness and Cook Surface Temperature

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Abstract

Top loin steaks with a United States Department of Agriculture (USDA) grade of Select were cut 1.3cm, 2.5cm, or 3.8cm thick and cooked on a skillet at 177°C, 204°C, or 232°C. Aroma compounds described as fatty, tallow, and oily are highly related to the identity of beef flavor. These compounds are produced in the highest quantity when steaks are cooked either at low temperatures (177°C) or for short periods of time. Whereas, aroma compounds described as roasted, nutty, or fruity are developed from browning the surface of the steak as a result of cooking at high skillet surface temperatures (232°C) or for long periods of time, as would be seen cooking thick steaks (3.8cm). This study shows that the amount of specific aroma compounds can be predicted (r^2 values up to 0.62) from measured cooking times and temperatures. It may be possible to develop beef steak flavor by recommending steak thickness and cooking temperatures.

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