

EFFECT OF AGING TIME, METHOD AND TEMPERATURE ON BEEF QUALITY INDICATORS

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Abstract

The meat business must produce consistently high-quality meat in order to satisfy consumers and improve consumption frequency. Due mostly to its somewhat larger connective tissue composition, beef's sensory palatability features (e.g., increased muscle tissue hardness) have certain unfavorable traits (e.g., greater hardness). To reach the maximum degree of quality and consumer satisfaction, the meat business, and specifically the beef sector, has developed many procedures, including aging processes. The primary goal of this research was to examine the effects of varying the age procedure (wet vs dry), the duration of aging (1, 10, or 15 days), the aging temperature (2, 4°C), on cuts of beef. Beef carcasses or primal cuts are hung and matured for a certain period of time in a room controlled between 0 and 4 degrees Celsius and 75 and 80% relative humidity for dry aging. For wet aging, beef is vacuum-sealed in special bags designed to preserve its internal humidity. The pH of beef samples increased significantly ($p < 0.001$) during the period of storage, with wet aging causing more significant results than dry aging. Dry aging and a higher temperature (4 °C) both contributed to a significant increase in refrigeration losses over time ($p < 0.01$). Regarding the color parameters, L^* , a^* , and b^* values decreased over time in dry-aged beef ($p < 0.001$), whereas in wet-aged beef, the lightness increased in the first 10 days and a^* values diminished. The three variation factors had a substantial effect ($p < 0.001$) on the approximate composition (method, time, and temperature). In the case of dry aging, the water content decreased at a more pronounced rate over time, whereas the fat content increased with the loss of water content.

Key words: wet-aging, dry-aging, beef, storage conditions, color, pH.