

Title: Prevention of Pinking and Off-Odor in Irradiated Pork Loin –
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Abstract: The lipid oxidation, color, volatiles, and sensory evaluation of double-packaged pork loin were determined to establish a modified packaging method to improve the quality of irradiated pork loin. Vacuum-packaged irradiated samples produced large amounts of sulfur-volatiles (dimethyl sulfide and dimethyl disulfide) responsible for irradiation off-odor during storage, whereas lipid oxidation was promoted under aerobic conditions. Exposing irradiated pork to aerobic conditions for 1 to 3 d during the 10-d storage was effective in controlling both lipid oxidation and irradiation off-odor regardless of packaging sequence (double-packaging model). Sensory panelists recognized irradiation odor from all irradiated meat regardless of packaging methods, but double packaging significantly reduced the intensity of irradiation odor. The production of carbon monoxide-heme pigments responsible for the increased redness by irradiation was not effectively controlled by double packaging alone. This indicated that double packaging was effective in controlling off-odor but was not good enough to control color changes in irradiated pork.

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