

27 Influence of wet-aging on bloom time of beef inside rounds. M. S. Lee*, J. K. Apple, J. W. S. Yancey, J. T. Sawyer, and M. D. Wharton, *University of Arkansas, Fayetteville.*

The visual appearance of meat quality impacts a consumer's decision to purchase a product at the retail case. Consumers have indicated that color was the single most important factor influencing their meat purchase decision. There is little available information known depicting the factors affecting bloom development in vacuum-packaged subprimal cuts. Over an 18-week trial, USDA Select inside rounds (*semimembranosus*; SM) were allocated randomly to one of six aging periods (0, 7, 14, 21, 28, and 35 d) at 2°C (n = 10/aging period). Each week, aged SM were faced before two 2.54-cm-thick non-adjacent steaks were cut from each subprimal and instrumental color (L*, a*, and b*) was measured by three random scans (HunterLab MiniScan XE spectrophotometer), at 10-min intervals for the two hours after cutting. After color data collection, steaks were vacuum-packaged and frozen at -20°C before cooking and Warner-Bratzler shear force (WBSF) analysis. Steaks were thawed overnight at 2°C and then cooked to an internal temperature of 71°C in a forced-air convection oven preheated to 190.5°C. Steaks were allowed to cool to room temperature (21°C) before six 1.27-cm-diameter cores were removed parallel to the muscle fiber orientation and sheared once with a WBSF device attached to an Instron Universal testing machine. When comparing color differences, values for a*, b*, C* and ΔE (measure of total color change) changed ($P < 0.05$) between 0 to 90 min after exposure to air, but these instrumental color measures did not change over the last 30 min of the study. Steaks had the lowest ($P < 0.05$) L* values during the first 10 min, and progressively lightened thereafter, with the greatest ($P < 0.05$) L* values occurring 50 to 120 min after exposure to air. The greatest change ($P < 0.05$) in reflectance values occurred during the first 40 min after fabrication, especially in the orange and red spectra (600 to 700 nm). During the last 30 min of the experiment, the highest reflectance values ($P < 0.05$) were observed throughout the entire spectra, mainly between 600 and 700 nm. There was a negative correlation between tenderness and age, however, steaks from subprimals aged 0 d having the greatest, and steaks from subprimals aged 35 d having the lowest, WBSF values ($P = 0.06$). Not surprisingly, the largest numerical change in color (L*, a* and b*) occurred during the first 10 min after steak fabrication, and results indicated that SM color stabilized at approximately 90 min after exposure to air. However, results of this trial indicate that length of postmortem aging has little to no effect on bloom development.