Wheat noodles cooked for different periods of time were stored at 5 °C, and color changes in their cross sections were quantitatively assessed by digital image analysis. The color of noodles with flattened moisture distributions whitened greatly during the early stages of chilled storage due to the retrogradation of starch, with the color change showing a significant correlation with the changes in noodle fragility. Color changes were also measured for wheat noodles and noodles containing modified starch with internal moisture distributions, and local changes within the noodles were kinetically analyzed. The addition of modified starch significantly reduced the color change in the noodle interior, where the moisture content was relatively low. Scanning calorimetric measurements indicated differences in the gelatinized state of modified starch and original wheat starch at low moisture contents, which affected the rate of color change in the interior of noodles containing modified starch.

Changes in the average gray level of the cross-sectional image of wheat noodles ) during the storage at 5 °C.ρ), and 20 min (≤), 13.8 (□cooked for 5 (