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Effect of Drying Temperature on Color Change of Green Banana Flour under Infrared Radiation Heating

The objective of this study was to investigate the effects of three drying temperatures (55, 60, and 65 °C) on the quality attributes of green banana flour (color change) and process variables (drying time, rate of drying). The banana was used in ripeness stage 2 (green with a trace of yellow). Experiments were conducted using far-infrared power of 3000 watts. The drying process reduced the moisture content down to between 10 and 12 % d.b. The lightness (*L*) and yellowness/blueness (*b*) decreased with the increase in temperature from 83.40 ± 0.39 to 82.44 ± 0.76 and 17.70 ± 0.52 to 10.24 ± 0.85 , respectively. However, the redness/greenness (*a*^{*}) value increased from 0.32 ± 0.15 to 0.50 ± 0.53 . The lowest total color change (ΔE) was obtained at a drying air temperature of 65 °C, then 60 °C, and finally 55 °C with a drying time of 210, 300, and 330 minutes, respectively. Thus, drying temperature and drying time had a great effect on the total color change of dried banana flour. Drying at the temperature of 65°C provided a browner product color than the other drying temperatures, as manifested by the lowest lightness and hue values. The changes in hue angle values were not significant ($P < 0.05$) compared to drying temperatures.

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