Abstract:

Rapid and non-destructive measurement of fruit firmness would be of great help in quality assessment and sorting, and in shelf-life prediction of fruit. Using multivariate statistical methods the potential of measuring the vibration response with a laser vibrometer was explored in plums. Phase shifts at statistically selected frequencies were highly correlated to postharvest storage time (r=0.92), plum weight (r=0.99), plum length (r=0.97) and plum width (r=0.96). The prediction errors were 0.92 days, 0.76 g, 0.67 mm, 0.69 mm, respectively. This study on a limited number of fruits demonstrates the power of multivariate statistical procedures to extract information from vibration spectra.