Abstract

NIR spectroscopy was used to assess textural parameters (maximum shear force and cutting energy) in intact green asparagus. At the same time, two commercially available spectrophotometers, which differ primarily in terms of measurement principles, were evaluated: a scanning monochromator (SM) of 400–2500 nm and a combination of diode array and scanning monochromator (DASM) of 350–2500 nm. A total of 468 green asparagus spears cv. 'UC-157' were used to obtain calibration models based on reference data and NIR spectral data. Both instruments provided good precision for maximum shear force, with r^2 values between 0.55 and 0.67 and standard error of cross-validation (SECV) ranging from 7.81 to 8.43 N, and also for cutting energy ($r^2 = 0.60$–0.74; SECV = 0.06–0.07 J). The results obtained suggest that NIR spectroscopy is a promising technology for predicting intact green asparagus quality in terms of texture. They also show that the two spectrophotometers tested provided a similar degree of accuracy for texture measurements in intact green asparagus.