Abstract

Recently, non-destructive techniques such as the Vis / NIR spectroscopy have been used to evaluate the characteristics of maturation and quality of pears. The study aims to validate the readings by the Vis / NIR spectroscopy as a non-destructive way to assess the qualitative characteristics of pear cultivars ‘Williams’, ‘Packams’ and ‘Carrick’, produced according to Brazilian conditions. The experiment was conducted at the Pelotas Federal University, UFPel, in Pelotas / RS, and the instrument used to measure the fruit quality in a non-destructive way was the NIR-Case spectrophotometer (SACMI, Imola, Italy). To determine pears’ soluble solids (SS) and pulp firmness (PF), it was established calibration equations for each variety studied, done from the evaluations obtained by a non-destructive method (NIR-Case) and a destructive method. Further on, it was tested the performance of these readings by linear regressions. The results were significant for the soluble solids parameter obtained by the Vis / NIR spectroscopy; however, it did not achieve satisfactory results for the pear pulp firmness of these cultivars. It is concluded that the Vis / NIR spectroscopy, using linear regression, allows providing reliable estimates of pears’ quality levels, especially for soluble solids.

Keywords

Calibration, firmness, pear, soluble solids, validation.