Abstract

The firmness of 13 loose tomato cultivars was followed during a 2-week storage experiment using a non-destructive commercial acoustic firmness sensor. The same experiment was later repeated for a second harvest. The firmness change was modelled using a linear mixed model for repeated measurements showing a significant difference in firmness change among cultivars. Harvest had a significant effect on firmness change, with summer tomatoes being less firm at harvest, but showing a less pronounced firmness decline than autumn tomatoes. The linear mixed model parameters were used to group the different tomato cultivars according to their firmness change, their shelf life and their variance within a cultivar. Ordering of initial firmness across harvest remained more or less the same, indicating that the acoustic firmness tester was suitable for determining differences among tomato cultivars.