

Abstract

A storage experiment was conducted in Can Tho, Vietnam at different temperatures (12°C, 18°C and room temperature) on 270 mango fruits (Cat Chu species). Mango firmness was assessed repeatedly on each single mango using a commercial firmness sensor. The resulting repeated measures data are characterised by the large biological variance among mangoes and the non-constant variance over storage time. A nonlinear sigmoidal firmness change was assumed. The data were modeled using the concepts of nonlinear mixed effects models. It was found that the sigmoidal firmness change assumption described the data well. Regarding the storage temperatures, it was found that at 12°C, chilling injury was induced, resulting in a significant lower shelf life of the fruits.