Abstract

Using colour change of tomato fruit (*Lycopersicon esculentum* Mill.) as a case study, a probabilistic kinetic approach is developed to interpret postharvest batch behaviour combining kinetic models describing colour change as a function of time and temperature with the concept of biological age modelled by a random variable. Tomatoes from three cultivars ('Quest', 'Style' and 'Tradiro') were stored at 3 storage temperatures (12, 15 and 18 °C). Data from these experiments were used to develop a probabilistic kinetic model approach predicting the propagation of biological variation during postharvest.

An independent validation experiment on 'Tradiro' tomato stored at 18 °C showed that the developed approach is able to accurately predict propagation of biological variation during the harvest period postharvest (R_{adj}^2=0.96) based on just the initial colour distribution measured at harvest.