

Title The impact of biological variation on postharvest behaviour: The case of dynamic temperature conditions

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Abstract

The postharvest handling chain is characterised by temperature conditions that are generally not constant throughout the chain. On top of this, postharvest research is dealing with large sources of biological variation. This paper outlines a general model approach of how to account for the propagation of biological variation when analysing experimental postharvest data gathered at dynamic temperature conditions. The proposed technique was applied to experimental data on colour change of tomatoes cv. 'Tradiro'. The previously developed multivariate stochastic approach was combined with a transformation of real time into physiological time to account for the effect of dynamic temperature conditions. The developed model has the capability to describe the complex batch behaviour showing propagation of biological variation in tomato colour as a function of time and dynamically changing temperature during postharvest storage. This makes the current approach extremely suitable for application in real life situations when evaluating and optimising a logistic handling chain.