Title Multiscale modelling of gas and moisture transport

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Abstract

The design of controlled and modified atmosphere storage systems for fruit and vegetables requires knowledge about gas and moisture transport processes in the storage facility or the package. Mathematical models based on reaction-diffusion kinetics have been used successfully for this purpose. However, they involve apparent material parameters which have to be measured again for every product and which cannot be considered as physical parameters. Further, they do not explain small scale phenomena which are at the basis of storage atmosphere related disorders. Multiscale modelling is a new modelling paradigm to describe phenomena for which different spatial scales are relevant. In this paper the multiscale modelling paradigm is introduced in postharvest technology. The concept is illustrated by means of some examples.