Title Development of user-friendly software for design of modified atmosphere packaging for fresh and fresh-cut produce

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Abstract

There is a wealth of published information on modified atmosphere packaging (MAP) but a lack of systematic treatment of the data in order to develop knowledge management systems that can provide information to users on which films to use for particular purposes and targets. This paper reports the development of user-friendly software for MAP design of fresh and fresh-cut produce. The software can select suitable packaging materials and define the amount of product to be packed or the area of the film that should be available for gas exchange. Two databases have been built in the software, which include recommended gas composition for 38 products, 75 respiration rate models, and permeability data for 27 polymeric films. This software was successfully tested for some products and an example for mango and Galega kale is described.

Industrial relevance

The PACKinMAP software selects the best possible film type for the given type of fresh or fresh cut fruit/vegetable. A manufacturer can type in a specific food product, such as a golden delicious apple, and the software will tell him the ideal type of packaging material according to the supplier or the retailer's needs. The software has also been found to simulate the package for any type of real-life distribution temperature history thus testing the ability of the package to withstand abuse.