

Fruit Respiration Model in Freshness Keeping Package

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The fruit is aging because of the carbon dioxide that catalyzes the ethylene formation so that the carbon dioxide has to be controlled appropriately. This work tries to find a proper mathematical model that can predict the proper gas concentration to preserve the freshness of the fruit in the package. Since the permeability of the gas roles important function in the respiration it is vital to find the packaging film that has ability to adjust the gas concentration in the package.

To proof the model profit the packing powder were made and the powder are included in the low density polyethylene polymer. With this one the packaging film has been prepared. In the film pouch the fruit pear are kept and the carbon dioxide and oxygen concentrations are traced along with time. The parameters governing the model equations are estimated by a optimization method. Experimental results compared with the theoretical model showed that the model developed here will be adequate to predicting the fruit' respiration in a packaging pouch.