

Title Water loss in horticultural products - modelling, data analysis and theoretical considerations
Author L.M.M. Tijskens, S. Jacob, R.E. Schouten, J.P. Fernández-Trujillo, N. Dos-Santos, E. Vangdal, E. Pagán and A. Pérez Pastor
Citation ISHS Acta Horticulturae 858:465-471. 2010.
Keyword fruit; loss; analysis

Abstract

The water loss of individual fruit (melon, plum and mandarin) was analysed using the traditional diffusion based approach and a kinetic approach. Applying simple non linear regression, both approaches are the same, resulting in a quite acceptable analysis. However, by applying mixed effects non linear regression analysis, explicitly including the variation over the individuals, the kinetic approach was found to reflect the processes occurring during mass loss better than the diffusion approach. All the variation between the individuals in a batch could be attributed to the initial mass or size of the individuals. The fraction of the fruit mass that is available for transpiration is the key item in the water loss process, rather than the skin resistance and fruit area. Obtained explained parts are well over 99%.