Title	Ca2+ and Fe2+ influence on the osmotic dehydration kinetics of apple slices (var. Granny Smith)
Author	C. Barrera, N. Betoret and P. Fito
Citation	Journal of Food Engineering Volume 65, Issue 1, November 2004, Pages 9-14
Keyword	Calcium and iron fortification; Vacuum impregnation; Functional foods

Abstract

Calcium and iron fortification of vegetables by applying vacuum impregnation is an alternative in developing functional foods. The interaction between these components and plant tissue may induce changes to enriched foods behaviour during its processing. In this paper, the effect of Ca and Fe ions incorporation in the structural matrix of apple (var. Granny Smith) slices on its behaviour during the osmotic dehydration process at 30 °C has been studied according to the model suggested by Fito and Chiralt [Food Engineering 2000, 1996, p. 231]. Low concentrations of minerals employed seemed not to affect net changes of mass, water and solutes of impregnated samples. Only calcium capability to strengthen cell structures seemed to diminish effective diffusivity values. The loss of Ca and Fe ions that takes place, even when an isotonic solution is used, has to be taken into account when preparing the impregnating solution, mainly when a specific concentration of minerals in the final product is required.