

Title Kinetic modelling of the degradation of quality of osmo-dehydrofrozen tomatoes during storage

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Abstract

Tomato slices were submitted to osmotic pretreatment in a high DE maltodextrin syrup and were subsequently frozen. The objective was to evaluate the quality stabilisation of the osmo-dehydrofrozen samples during their frozen storage over a wide temperature range from -5 to -20 °C. Colour change, total lycopene content and vitamin C (l-ascorbic acid) loss were kinetically studied, and their temperature dependence was modelled by the Arrhenius equation. Dehydrofrozen samples exhibited significantly improved stability, with the rates of colour change, total lycopene and l-ascorbic acid loss being reduced by up to 64% for osmotically pretreated tomatoes, compared to the untreated samples.