Inverse Method to Estimate Microbial Inactivation Kinetic Parameters in Conduction-Heated Canned Foods

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There is no standard method to estimate kinetic parameters in low-moisture, conduction-heated foods subject to temperatures above 100ºC such as vegetable pastes, candies, confectionaries, breads, and extruded grains. The purpose of this work was to present a straightforward method to calculate asymptotic CIs for kinetic parameters and the associated Y variable. Kinetic parameters for microbial inactivation in an unsteady-state conduction heated canned food were estimated using a nonlinear regression technique. The novelty of this work was that confidence bands (CBs) and prediction bands (PBs) for predicted Y (microbial survival ratio) were computed along with CIs for the parameters (using Matlab®).