Abstract

Inactivation data for *Escherichia coli* O157:H7 and *Salmonella enterica* on raspberries and strawberries resulting from treatment with gaseous ozone, aqueous ozone, or pulsed UV-light were used to construct inactivation models; a log-linear model (based on first-order kinetics) and a Weibull model were developed. Initial analysis indicated that survival curves were non-linear and that the log-linear model failed to accurately estimate the inactivations in most instances. The Weibull model more accurately estimated the inactivation and the concavity exhibited in the survival curves. Validation of the Weibull model produced correlation coefficients of 0.83–0.99 and slopes of 0.76–1.26. The results presented in this study indicated that first-order kinetics are not suitable for the estimation of microbial inactivation on berries treated with ozone or pulsed UV-light, but that the Weibull model can be successfully used to estimate the reductions of *E. coli* O157:H7 and *Salmonella enterica* on raspberries and strawberries.