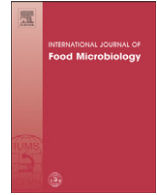




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Letter to the Editor

Rebuttal: Response to regarding letter to editor “On the modeling of inactivation kinetics by UV irradiation”

Dr. Buzrul has commented on the mathematical modeling part of the article of Unluturk et al. (2010) which has recently been published online in the *International Journal of Food Microbiology*. He criticised the parameters k , β and h obtained from Log linear model, Weibull and Hom models, respectively.

He drew attention to the inactivation rate constant k and decimal reduction time D calculated from the log linear model reported in the paper of Unluturk et al. (2010). In response to his comments, D values given in Table 5 in this paper are correct but we realized that k values indeed need to be divided by 2.303. In that manner Equation 3 (based on base-10 log) in the corresponding article must be retained as it is. Any change in k values will not affect the obtained results of this study.

He also commented on the concavity index β of the Weibull model and empirical parameter h of the Hom model. Other than the shape parameter α and the concavity index β , we also checked one more parameter, the reliable time (t_R), while applying the Weibull model. Since the standard deviations of some of the experimental data shown in Table 2 in the paper of Unluturk et al. (2010) are quite large, in order to get meaningful and logical t_R values, some of these outlier data were not included in the calculations while testing the

performance of the Weibull model. Even in that case, large deviations are observed in the shape parameter α and the concavity index β as depicted in Fig. 4 (Unluturk et al., 2010). That is why β values given in Table 3 of that corresponding paper are not the same as with the h values shown in Table 4. Therefore there are some variations in goodness of fit values designated in Table 7 (Unluturk et al., 2010). In any case, the overall result was not changed. Modified Chick–Watson (2 parameter) was a better model considering the fit of the experimental data for three strains, than that of the other three models.

Reference

- Unluturk, S., Atılgan, M.R., Baysal, A.H., Unluturk, M.S., 2010. Modeling inactivation kinetics of liquid egg white exposed to UV-C irradiation. *International Journal of Food Microbiology* 142 (3), 341–347.

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