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Thermal inactivation of *Byssoschlamys nivea* in pineapple juice combined with preliminary high pressure treatments

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INTRODUCTION

Byssoschlamys nivea is a thermal resistant filamentous fungi and potential micotoxin producer. Recent studies have verified the presence of ascospores of such microorganism in samples of pineapple nectars and juices. Although the majority of filamentous fungi have limited heat resistance and are easily destroyed by heat, *Byssoschlamys nivea* ascospores have shown great thermal resistance. The aim of this work was to evaluate the application of linear and Weibull models on thermal inactivation (70, 80 and 90°C) of *Byssoschlamys nivea* ascospores in pineapple juice after pretreatment with high pressure (550MPa or 650MPa during 15min).

MATERIALS & METHODS

For the preliminary high pressure treatment applied to the inoculated pineapple juice previously to thermal treatment the following conditions were used: 550 e 650MPa for 15 minutes. Initial temperature of high pressure treatment was set at 20 °C. Samples inoculated with the mould were inserted in sterilized polyethylene bags and pressurized. After on, the sample were transferred to sterile eppendorf tubes and immersed in thermostatic baths, adjusted to the following temperatures: 70, 80 e 90°C for 0, 5, 10, 15, 20 e 25 minutes. Following the thermal treatment, tubes containing samples were immediately cooled down in ice bath and aseptically opened. Serial dilution and pour plating were then carried out, using double concentrated Malt Extract Agar added with rose bengal (0,25%), followed by homogenization. After mixture solidification, the plates were inoculated at 30°C for 7 days. Analyses were done in duplicate.

RESULTS & DISCUSSION

Survival curves of *B. nivea* ascospores at 70°C after either pressure treatment and at 80°C after 550MPa for 15 minutes fitted well in both linear and Weibull models (Table 1). For the other treatments, the Weibull model showed better fit. At 90°C the Weibull model also showed a better adjustment for ascospores inactivation (control) without previously high pressure treatment, presenting a larger R² and a smaller RMSE. In the others controls treatments (70 and 80°C without previously high pressure treatment), it was verified the activation of *B. nivea* ascospores, avoiding the models adjustment. Table 2 shows the resulting parameters for Linear model (D-value) and for Weibull (b e n) for each treatment applied to the mould.

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Modeling of growth and ochratoxin A production of *Aspergillus carbonarius* and evaluation in food matrices: Effect of (gel) microstructure, water activity, and temperature (MFS877) Pp1885

A.E. Kapetanidou^a, A. Abavi^a, S. Yanniotis^b, E.H. Drosinos^a, P.N. Skandamis^a

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V. Ozolina^a, D. Kunkulberga^a, B. Cieslak^b, M. Obiedzinski^b

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