Sucrose shows a protective effect over *Byssochlamys fulva* ascospores during ohmic heating inactivation

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The validation and industrial implementation of ohmic heating technology is dependent on the existence of data reporting the efficiency of the process for microbial inactivation and its advantages regarding other technologies. Byssochlamys fulva ascospores are recognized for its high resistance to thermal processes thus causing food spoilage, specially in fruit products. The objectives of this work were to compare inactivation kinetics of B. fulva ascospores under ohmic and conventional heating in industrial strawberry pulps with different contents of soluble solids to determine possible non thermal effects and to evaluate the protective effect of sucrose under such conditions. Ascospores were activated by heating the pulps (14-37 ºBrix) to 80 ºC during 20 min. Temperatures of 85 ºC, 90 ºC, 100 ºC and 105 ºC were used for both treatments. Enumeration was performed in triplicate by plating in DRCB agar for 48 h at 30 ºC. Thermal histories of the samples were made equal by adjusting the voltage input during the heating phase of ohmic heating, thus eliminating temperature as a variable. First order inactivation kinetics was found for both treatments in all products tested. Ohmic D-values were always lower (statistically different) than conventional values thus confirming a non-thermal effect due to electricity. The z-value was similar for both treatments when using 14.5 and 24 ºBrix samples but the raise of the ºBrix values to 30.5 and 37.0 led to significantly different z-values. The protective effect of sucrose, when using ohmic heating, has been also confirmed by the obtained data.