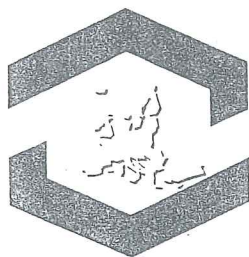


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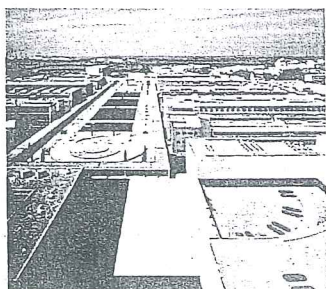


COST 927 Action

**Thermally processed foods:
possible health implications**

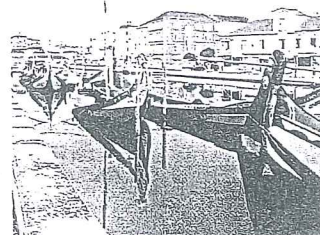
**Analytical and chemical aspects related to
thermally processed foods**

Abstract Book



16 – 17th April 2009

**University of Aveiro
Aveiro - Portugal**



Chemical changes in foods processed by pressure-assisted thermal processing (PATP)

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Pressure-assisted thermal processing (PATP) is now being investigated as a novel sterilization method for low-acid foods that are heat-sensitive. In PATP, the adiabatic compression/decompression heat increases/decreases temperature almost instantaneously, and the simultaneous application of high pressure (~600-700 MPa) and temperature (~100-120°C) accelerates spore inactivation. Some data are already available in the literature concerning PATP effects on chemical components of foods and are coming mostly from EU researchers as a direct consequence of novel food laws. Changes are analyzed using a reaction kinetics approach including activation volume (V_a) and activation energy (E_a) values. The complex effects of food matrix, pH, dissolved oxygen and presence of antioxidants show that optimization of vitamin, pigment and flavor retention while ensuring PATP microbial and enzyme inactivation will require substantially more chemical reaction kinetics research. This presentation will summarize a review of worldwide efforts of pressure and temperature effects on reaction kinetics in different food matrices.

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