

Alicyclobacillus acidoterrestris spores in fruit products and design of pasteurization processes

Filipa V.M. Silva^a and Paul Gibbs^{b,c}

^a Escola Superior Agrária de Santarém, Instituto Politécnico de Santarém, Quinta do Galinheiro – S. Pedro, 2001-904 Santarém, Portugal

^b Department of Food Safety and Preservation, Leatherhead Food Research Association, Randalls Road, Leatherhead, Surrey, KT22 7RY, UK

^c Escola Superior de Biotecnologia – UCP, Rua Dr. António Bernardino de Almeida, 4200 Porto, Portugal

ABSTRACT

Alicyclobacillus acidoterrestris is a thermoacidophilic, nonpathogenic and sporeforming bacterium which has been found in commercial pasteurized fruit juices in the past. Only few and recent studies were available in the literature, since only in 1984 Cerny et al. [Cerny, G., Hennlich, W., & Poralla, K. (1984). Fruchtsaftverderb durch bacillen: isolierung und charakterisierung des verderbserregers. *Z. Lebensmitt. Unters. Forsch.* 179, 224-227] reported a spoiled aseptically packaged apple juice with *A. acidoterrestris* and in 1987 Deinhard et al. [Deinhard, G., Blanz, P., Poralla, K., & Altan, E. (1987). *Bacillus acidoterrestris* sp. nov., a new thermotolerant acidophile isolated from different soils. *Systematic and Applied Microbiology*, 10, 47-53] named first this species. Detection and identification methods for *A. acidoterrestris* were reviewed and data regarding heat resistance of spores and growth in fruits were collected. Finally, a new methodology to design pasteurization processes for high acidic fruit products is presented.