

Title Polyphasic characterization of bacterial community in fresh cut salads
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Abstract

In the present work we describe a polyphasic study of bacterial community in fresh cut salads packaged under ordinary and modified atmospheres. Samples of fresh cut salads were aseptically collected at 0, 3, and 6 days of storage and analysed both by culture-dependent and -independent methods. DNA extracted from fresh cut salad samples was used as a template for PCR amplification of 16 S rRNA gene; the PCR products were analyzed by denaturing gradient gel electrophoresis (DGGE); finally, clone libraries of 16 S rRNA gene from the fresh cut salad was constructed. Results of plating count revealed a significant increase of all microbial loads in fresh-cut salad samples packaged in OA and that the microbial growth of the different groups was significantly affected by the conditions applied for MA packaging. A constant presence, throughout storage, of the pathogenic bacteria in all the fresh-cut salads samples was highlighted by PCR-DGGE analysis. Therefore, the polyphasic approach used in the present study allowed us to characterize the main species involved in the fresh cut salad products and to better understand their dynamics throughout storage.