Characterization and identification of lactic acid bacteria in "morcilla de Burgos"

A total of 176 lactic acid bacteria (LAB) isolated from a typical Spanish blood sausage called "morcilla de Burgos" were identified by means of phenotypic characteristics and 16S rDNA RFLP (ribotyping). LAB were isolated from "morcilla" of different producers and in different storage periods, which includes unpackaged, vacuum and modified atmosphere packaged "morcilla" and vacuum packed and pasteurised "morcilla". The knowledge of specific spoilage bacteria of "morcilla de Burgos" will be useful to design new preservation methods to extend the shelf-life of this product. Identification made according to phenotypic and biochemical characteristics shows the majority of the isolates were heterofermentative LAB (93.2%) and eight different bacterial groups could be distinguished (A-G). Weisella viridescens was the main species detected (42%). In addition, Leuconostoc spp. (23.9%), Weissella confusa (11.4%) and Lactobacillus fructosus (5.7%) species were found. Few strains were phenotypically misidentified as Lactobacillus sanfrancisco, Pediococcus spp., Lactobacillus sakei/curvatus and Carnobacterium spp. and 11 strains remained unknown. Most of the leuconostocs were identified as Leuconostoc mesenteroides and Leuconostoc carnosum species. Ribotyping shows a quite good correlation with phenotypic methods, although it has been possible to identify 15 different clusters. W. viridescens and leuconostocs were also the predominant LAB. Strains identified as W confusa by phenotypic characteristics were resolved in W confusa and Weissella cibaria by ribotyping. Neither Carnobacterium piscicola nor Lb. sanfrancisco were identified by means of genotypic method. All Lb. fructosus strains and some more included in different phenotypic groups (17 strains in total) could not be associated with any reference strain (cluster VII). (C) 2004 Elsevier B.V. All rights reserved.
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