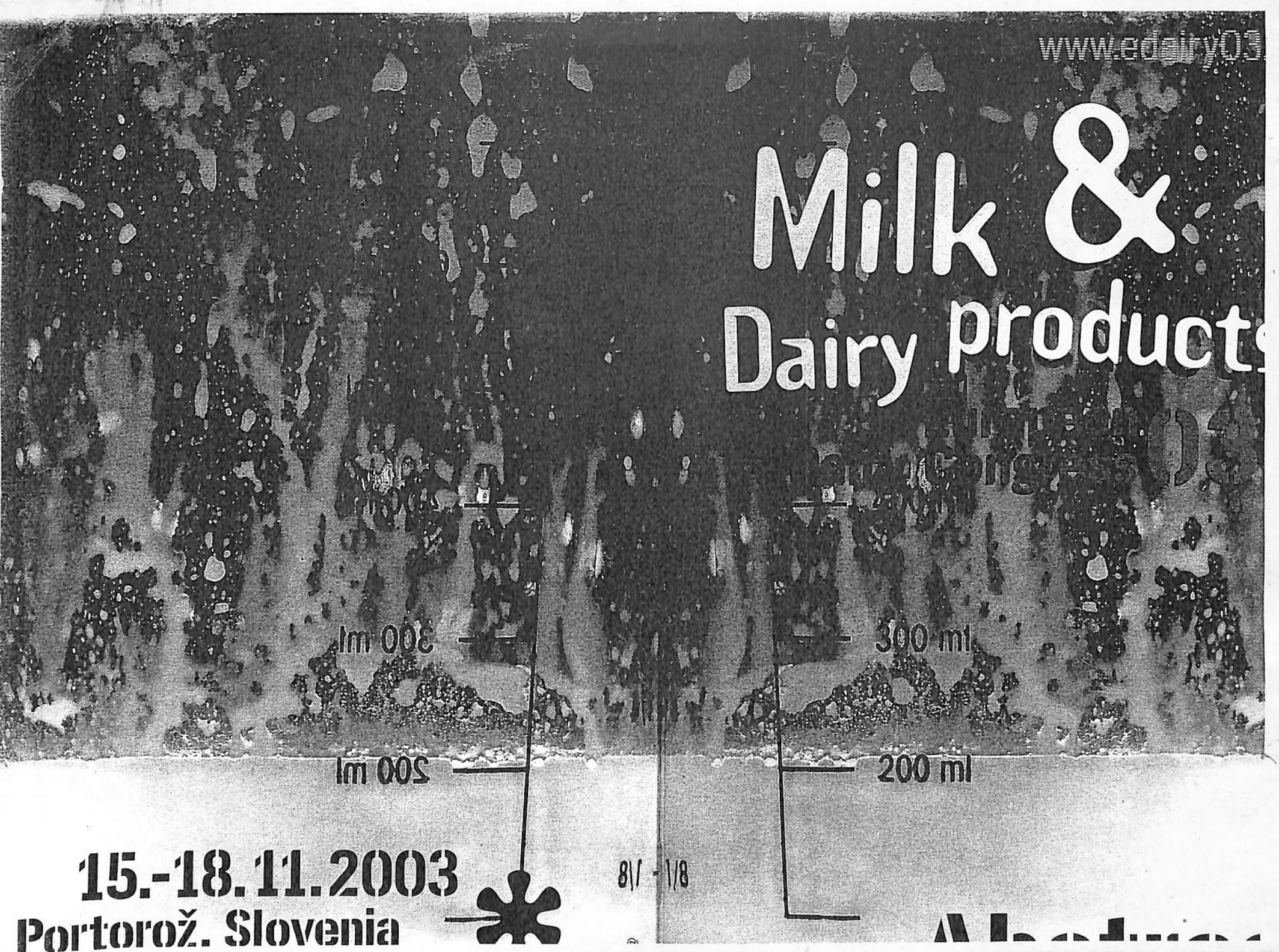
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200 ml
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Characterization of autochthonous lactic acid bacteria from artisanal Italian cheese

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In recent years several studies have been conducted to select from raw milk and artisanal cheeses produced without starter cultures autochthonous bacteria. Increasing information on the natural microbial population present in dairy products can help to prevent the loss of microbial biodiversity in typical foods and consequently the loss of a wide range of cheeses produced by different methods whose typical features depend on local and regional traditions and on the indigenous microbial population present in raw milk and selected by the cheese-making environment. Moreover these studies could be the basis for the selections of new strains to be used either as specific cultures in a large-scale production of traditional cheeses improving the existing dairy product manufacture. Indeed the diversity of starters used in industrial dairy fermentation is low and there is an increasing demand from cheese makers for new starter that show advantageous effects on cheese characteristics. Then the aim of this work was to study the natural lactic bacteria population of an artisanal Italian cheese from Piedmont (Northern Italy) and produce a new starter to be used in a large-scale production. Isolates collected from curd and ripened artisanal cheeses were identified by the combined use of PCR 16S-23S rDNA spacer analysis, species-specific probes and 16S rDNA sequencing. Lactococci constituted 67 % of the coccal isolates. Enterococci were also isolated together with strains of *Streptococcus macedonicus* and *S. thermophilus*. Lactobacilli were only detected in three samples of curds. For each isolate was also determined the acidification and the proteolytic activity and the aroma production by the SPME-GC-MS. On the basis of obtained results some isolates were selected and about twenty starters used in cheese-making with raw and pasteurised milk were produced. The obtained cheeses were evaluated with sensory analysis and two showed good results with typical taste and flavour. The results suggest the possibility to use these starters in dairy industry as new strains and in artisanal cheese-making to improve the existing cheese quality.