

Title Taxonomic structure of the yeasts and lactic acid bacteria microbiota of pineapple (*Ananas comosus* L. Merr.) and use of autochthonous starters for minimally processing

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Abstract

Pichia guilliermondii was the only identified yeast in pineapple fruits. *Lactobacillus plantarum* and *Lactobacillus rossiae* were the main identified species of lactic acid bacteria. Typing of lactic acid bacteria differentiated isolates depending on the layers. *L. plantarum* 1OR12 and *L. rossiae* 2MR10 were selected within the lactic acid bacteria isolates based on the kinetics of growth and acidification. Five technological options, including minimal processing, were considered for pineapple: heating at 72 °C for 15 s (HP); spontaneous fermentation without (FP) or followed by heating (FHP), and fermentation by selected autochthonous *L. plantarum* 1OR12 and *L. rossiae* 2MR10 without (SP) or preceded by heating (HSP). After 30 days of storage at 4 °C, HSP and SP had a number of lactic acid bacteria 1000 to 1,000,000 times higher than the other processed pineapples. The number of yeasts was the lowest in HSP and SP. The Community Level Catabolic Profiles of processed pineapples indirectly confirmed the capacity of autochthonous starters to dominate during fermentation. HSP and SP also showed the highest antioxidant activity and firmness, the better preservation of the natural colours and were preferred for odour and overall acceptability.