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Evaluation of microbiological and chemical characteristics of sourdoughs fermented by sediments of pulque (xaxtle) as starter culture

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Sourdough is an intermediate product between dough and traditional bread preparation containing flour, water and metabolically active microorganisms; mainly lactic acid bacteria (LAB) and yeasts. The main of this research was to study the influence of the microorganisms from the xaxtle on microbiological and chemical characteristics of sourdoughs inoculated with sediments of pulque (xaxtle) from three different regions of Mexico. The molecular identification of microorganisms from xaxtle and sourdoughs was made using the APIweb software from bioMerieux for comparison of assimilation and/or fermentation patterns and PCR reaction was made. Five species of lactic acid bacterias (LAB) were found in xaxtle coming from different regions of Mexico: *Lactobacillus pentosus*, *Lactobacillus paracasei ssp paracasei 1*, *Lactobacillus plantarum 1*, *Lactobacillus plantarum 1* and *L. brevis 1* and two species of yeasts: *Saccharomyces cerevisiae* and *Saccharomyces paradoxus*. Acetic acid and lactic acid were quantified in sourdoughs inoculated with xaxtle using enzymatic and chromatographic (HPLC) methods with an ORH-801 column. There were 0.185, 0.238 and 0.128g/g of sourdough of lactic acid and 0.220, 0.163 and 0.256 g/g of sourdough of acetic acid in sourdough of Nanacamilpa, Villalta and Milpa Alta. As a result of fermentation sourdough with LAB and yeasts from the xaxtle during 24 hours (30° C), the bread made with the sourdough inoculated with xaxtle of Milpa Alta (XM) showed the major acidity value of 15.6 mL of NaOH 0.01N and pH of 3.4. The xaxtle of Nanacamilpa, Tlaxcala (XN) run better than the others as starter fermentation culture for sourdoughs.

Biography

Sanchez Pardo is a currently from Instituto Politécnico Nacional.

Notes: