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Evaluation of bread quality and volatile compounds of breads made by sourdoughs fermented by sediments of pulque (xaxtle) as starter culture

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Sourdough is an important modern fermentation method of cereal flour and water. The fermentation process is carried out by lactic acid bacteria (LAB) and yeasts which confer specific flavor characteristics to the bread. The main aim of this research was to investigate the bread quality and volatile compounds of breads made by sourdoughs inoculated with sediments of pulque (xaxtle) used it as starter culture. Fifty five volatile compounds were found in the bread made with sourdoughs inoculated with xaxtle from three different regions of Mexico. Using gas chromatography-mass spectrometry, compounds as 3-hydroxy-2-butanone; 3-methyl-1-butanol; 2-methyl, 1-butanol; dimethyl disulfide; furfural, nonanal, phenyl ethyl alcohol and butanoic acid were presented in the flavor profile of the breads and having a positive response to sensory analysis made by evaluators. The xaxtle of Nanacamilpa (XN) and the xaxtle of Villa Alta (XV) were the best breads getting 8.3 ± 0.03 , 8.8 ± 0.02 , 6.2 ± 0.08 and 8.2 ± 0.01 scores in a scale from 0 to 10 in color, smell, texture and flavor attributes respectively which are positive attributes in favor of the quality bread. 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 acid flavor therefore its sample was less acceptable getting 8.1 ± 0.01 , 7.8 ± 0.02 , 5.3 ± 0.01 and 7.9 ± 0.01 in the same attributes evaluated. 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: