

Engenharia de Alimentos

Dominant bacterial microbiota and organic acids from a mix-hybrid and SJ02 hybrid fermentation

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Resumo

Cocoa beans must be fermentation to produce the characteristic taste of chocolate. During fermentation many bacterial and fungal groups interact such as, yeast, acetic acid bacteria (AAB), and lactic acid bacteria (LAB). The aim of this work was to estimate the dominant bacterial population and evaluate the organic acids of two spontaneous fermentations performed with a mixture of hybrids (PS1319, PH16, BN34, CEPEC2002, SJ02, CCN10 and Ipiranga) and the SJ02 hybrid. The fermentations were performed in wooden boxes and lasted for 144 h. The dominant microbiota was estimated from samples taken at 72 h of fermentation. The bacterial groups estimated, and the mediums used for this purpose were MRS, GYC, AN for LAB, AAB, and mesophilic bacteria, respectively. In addition, the different morphotypes found in each medium were isolated. The organic acids (oxalic, citric, malic, lactic, and acetic acid) in the pulp were also evaluated at 72 h by using a high-performance liquid chromatographer (HPLC). The bacterial groups had a higher population at 72 h in the SJ02 fermentation (4.58, 5.24, and 5.16 log CFU/g for LAB, AAB, and mesophilic) compared to the mix-hybrid fermentation (3.30, 3.38, and 3.68 log CFU/g for LAB, AAB, and mesophilic). The number of morphotypes found in the mix-hybrid fermentation (5, 15, and 13 for LAB, AAB, and mesophilic) were higher in comparison to the SJ02 fermentation (4, 7, and 4 for LAB, AAB, and mesophilic). Both fermentations had the same oxalic acid concentration (0.025 g/kg), citric acid concentration was higher for the mix-hybrid fermentation (0.400 g/kg), malic acid was only detected in the SJ02 (0.022 g/kg), and lactic and acetic acid was higher for the SJ02 fermentation (0.940 and 2.670 g/kg). The high populations found in the fermentation with only one hybrid may be due microorganisms compete lesser with other groups when compared to the mixture. The differences in the bacterial population and organic acids concentrations were mainly related to the hybrid characteristics.

Palavras-Chave: hybrid, fermentation, organic acids.

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Link do pitch: https://youtu.be/1Jl_tjunPd4