TITLE: CHARACTERIZATION OF THE KILLER PHENOTYPE OF YEAST FROM COCOA FERMENTATION IN THE SOUTH OF BAHIA FOR THE SELECTION OF STARTERS

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ABSTRACT:

The fermentation of cocoa is a natural and spontaneous process, with an enzymatic action to improve flavor. This step occurs in wooden troughs and is carry by a complex succession of microorganisms. This work aimed to investigate the population of microorganisms present in the fermentation selecting potential strains for starter. Samples were collected at the "Capela Velha" farm, in Uruçuca - BA. Samples of the wet cocoa mass were collected at intervals of 12 hours, from the beginning up to 144 hours. Temperature and pH of the mass were monitored during the same collection intervals. In the laboratory, physiological assays were conducted to evaluate the enzymatic production and Killers phenotype of the yeasts. In total, 109 microorganisms were isolated: 45 yeasts, 42 lactic acid bacteria and 22 acetic acid bacteria. PCR-MSP fingerprint was carried out with yeast strains in which a great diversity was observed. In the enzymatic assay six yeast showed protease activity and four of them presented Killer phenotype. These four strains were then identified by sequencing as *Starmerella bacillaris, Galactomyces geotrichum* and *Pichia manshurica*. The data pointed to two yeasts as the best candidates to be used as starter in the cocoa fermentation, thus improving the quality of the final product and the efficiency of the process

Keywords: Fermentation, cocoa, yeasts, killer, starter.

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