

904-1 FROM WILDERNESS TO BOTTLE, MICROBIOTA ANALYSIS OF THE MANIPUEIRA SELVAGEM, A NEW WILD BEER FROM BRAZIL

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Resumo:

Brazil is a continental country with a wide and important variety of biomes, with an abundance of microbiomes yet to be explored and huge potential for applications of new fermentative yeasts. Therefore, the study of Brazilian biodiversity is extremely important to provide inputs to improve the food industry, in addition to its possible application in biotechnology. Many of these organisms are part of the anthropological context of the country, especially those related to native food. Beverages fermented with local ingredients, bringing unique flavors, textures and contexts to Brazilian history. The Cauim are one spontaneously fermented ancestral beverage based on cassava that may have appeared more than 6 thousand years ago in the Amazon and is still consumed and produced by native peoples throughout the national territory. The Manipueira Project brought together 53 breweries across Brazil, covering all the most important national biomes, not only to develop the Brazilian wild beer style, but also to discover and better understand the role of microbiome related to each spontaneous fermentation, in addition to enabling the identification of unique yeasts. All breweries used the same basic recipe to produce each wild beer, with the only difference being that they had to use manipueira from local cassava. Also, all brewers started their process over the same time, so the season would not intervene in the fermentation process. The microbiomes of the different fermentation processes were analyzed over a period of 3 first months, through metagenomics assays and yeast isolation. Breweries and home brewers collected samples in a selected period of the process with a sterile falcon. For the yeast isolation process, an aliquot of collected samples were diluted in NaCl 0,9% in a sterile falcon tube and 50uL of the solution were plated on YPD 6% RBC medium, after 3 days at 30°C, white creamy colonies were selected and transferred to the YPD and stored in glycerol 50% and frozen in -80°C for further identification. Other aliquots of each sample were processed for microbiota analysis, which were conducted with the expertise of ByMyCell genomics startup. The results showed large diversity of microorganisms in the first 24 hours, majority of genera in the next 15 days and the predominance of another species for the last period of fermentation kinetics. Interestingly, the yeast predominance was different in each brewery analyzed, showing the importance of each biome in the spontaneous fermentation process. Identification and understanding the microbiota present in each fermentative biome process will provide valuable information on the biotechnological potential of wild yeasts present in different Brazilian biomes through the production of wild beer using the same input, cassava.

Palavras-chave:

wild beer, microbiome, fermentation, metagenomic