

TITLE: ENZYMATIC PROFILE OF YEAST ASSOCIATE WITH BROMELIADS FROM CAATINGA BIOME

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ABSTRACT:

Yeasts are single-celled microorganisms belonging to the Fungi kingdom. Its biotechnological use has grown substantially due to its wide advantages over animals and plants, such as: stability in industrial applications, generation time and ease of manipulation in genetic engineering. The Caatinga is an exclusively Brazilian environment that has *sui generis* characteristics. It shows a diverse biological heritage, being the granary of endemic species. Therefore, the Caatinga represents a promising environment for bioprospecting of microorganisms producing extracellular enzymes for industrial purposes. In view of the above, the present work had the objective of analyzing the biotechnological potential through six extracellular enzymes (amylase, caseinase, cellulase, esterase, lipase and pectinase) produced by yeasts isolated from the Caatinga Alagoana bromeliads. The collection of microorganisms was carried out in two regions: Private Heritage Reserve Tocaia in the Municipality of Santana do Ipanema (BRT), and Serra Caiçara in the municipality of Maravilha (BMA), Alagoas, Northeast Brazil. The yeasts were isolated in the Laboratory of Molecular Diversity - UFAL, following methodologies pre-established in the literature and established by our group. The yeasts were cultured in YEPD-Agar for 48 hours and then seeded on the corresponding enzyme substrates and incubated for 7 days at 25 ° C. After this period the Petri dishes were analyzed semiquantitatively for production or absence of enzymatic activity. In this study, among the isolates tested, 87.9% (n = 204) were able to produce at least one of the enzymes analyzed, of which 85% were positive or strongly positive. The most produced extracellular enzymes were: esterase, followed by caseinase, cellulase, amylase, lipase and pectinase. According to this, we can conclude that yeasts associated with bromeliads from Caatinga presents a great biotechnological potential, emphasizing the importance of knowing the biodiversity of the place, as well as its applications in the various industrial sectors. The microorganisms adapted to the region undergo varying and stressful conditions, possibly presenting a high plasticity to live in the place and with this, may present interesting characteristics for biotechnological applications.

Keywords: Caatinga alagoana. Bioprospecting. Extracellular enzymes.

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