TITLE: ENZYMATIC POTENTIAL OF YEASTS ISOLATED FROM BROMELIADS OF ATLANTIC FOREST

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ABSTRACT:

Biotechnology has been used by mankind for a long time, and nowadays, industrial biotechnology is a key to economic development as it covers multiple areas such as agriculture, pharmacy, food industry, medicine and others. Therefore the selection of new microorganisms that shows biotechnological potential is essential and the Atlantic Forest, even though became very degraded by the anthropic action, still presents high biodiversity that can supply this need. This study aims to prospect yeasts from bromeliad's phylloplane that shows extracellular enzymatic activity. The yeasts were isolated from bromeliads from 4 locations of the state of Alagoas and then processed according to protocols already established on the literature. The production of enzymes (amylase, cellulase, esterase, pectinase and protease) were determined using a diffusion method involving colonies grown on solid media with specific substrates at the temperature of 25ºC for 7 to 10 days and then measure the size of the degradation halo and the colony. The isolates were identified by DNA extraction, followed by amplification of D1/D2 region of rDNA and sequencing. We obtained 320 isolates of yeast and yeast-like, of which 212 were tested to all enzymes and 87% were positive to at least one enzyme. The enzymes esterase, protease and cellulase were the most produced by the tested isolates which were composed mainly for the *Aureobasidium*, *Papiliotrema* and *Pseudozyma* genera, showing a result that corroborates with the literature since these groups already demonstrates a great enzymatic production. Based on this results it was possible to verify that this yeasts have a high biotechnological potential as its rate production of extracellular enzymes can provide rentability in future industrial applications, and this huge enzymatic production can be related to the specific substrate where the strains were collected which is a complex and promising microenvironment.

Keywords: Biotechnology, Extracellular enzymes, Phylloplane.

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