TITLE: ENZYMATIC PROFILE OF CRUDE EXTRACTS PRODUCED BY ACTINOBACTERIAS CULTIVATED IN LICURI RESIDUES (*Syagrus coronata* - (Martius) Beccari)

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ABSTRACT:

Actinobacteria are natural producers of several enzymes of industrial importance, but they have been little investigated and applied for solid state fermentation aiming the production of such enzymes, in part, due to the fact that they require a longer cultivation time, when compared to fungi and yeasts. In this present work, two actinobacteria, CDPI-30 (*Arthrobacter polychromogenes*) and CDPA-32 (*Streptomyces violaceoruber*), both previously isolated from *Poço Azul* in the city of *Nova Redenção* (Bahia, Brazil), were cultured in a mixture (1:1, g/g) of licuri (*Syagrus coronata* - (Martius) Beccari) residues: defatted cake and shells, obtained in *Feira de Santana* (Bahia, Brazil) as a result of licuri proccessing to extract its oil. Fermentation of 20 g of residue was carried out with a 10% (v/w) inoculum and an initial moisture of 67-70% at 28 °C for 12 days, for both strains individually. The crude extracts were obtained after water extraction (10:1, mL:g) and were investigated for different enzymatic activities: amylase, pectinase, xylanase CMCase, tannase and laccase. For the CDPA-30 strain it was detected, until now, activities per gram of residue of: 135.0±0.6 $U_{amylase}$/g, 27.0±1.4 $U_{pectinase}$/g, 300,1±0.5 $U_{xylanase}$/g and 8.8 ± 0.4 U_{CMCase}/g. For the CDPA-32 strain the respective values were: 125.6±0.2 $U_{amylase}$/g, 39.0±0.3 $U_{pectinase}$/g, 322,8±1.2 $U_{xylanase}$/g e 14.9±0.1 U_{CMCase}/g. For both strains, no activities of tannase and laccase were detected and the activities of lipase, lignin peroxidase and manganese peroxidase are yet to be investigated. The higher activities detected for both crude extracts will be characterized in terms of their optimal temperature and pH conditions and kinetic parameters, since, depending on the medium in which the microorganisms are cultivated, their enzymes may have different characteristics. Therefore, it is important to investigate enzymes from different microbial sources in order to search for better properties for industrial application. Thus, it is possible to verify that the isolated actinobacteria are good producers of enzymes from low cost substrates and deserve to be better investigated as to their enzymatic potential for the production for enzymes commonly applied in the textile, pulp and paper and food industries, for example.

keywords: actinobacteria, agroindustrial residues, enzymatic screening, solid state fermentation

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