

Title: CHEMICAL COMPOSITION OF ENZYMATIC HYDROLYSATES OBTAINED FROM RESIDUES OF OPEN MARKET PLACES IN THE CITY OF MANAUS-AM, BRAZIL: POTENCIAL STUDY OF SUCH AS SUBSTRACTS FOR PRODUCTION OF BIOETHANOL.

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Abstract:

The rapid advancement of technology, social development and the need for mobility for long distances, create a higher demand for energy. The most used power source today is the one derived from crude oil (petroleum), which is a non-renewable energy source. It is noteworthy knowing that oil reserves are becoming scarce, that is why are so important the incentives for other energy sources, like bioethanol, for instance. Nowadays the two most used methods for bioethanol production are Simultaneous Saccharification and Fermentation (SSF) and Separate Hydrolysis and Fermentation (SHF). SSF has its advantages over SHF, one of them is the use of enzymatic hydrolysis, but its operation requires attention. The use of this method inspire new researches to try to obtain ethanol from different sources of biomass like residues produced in the market places in the city of Manaus, for example the tucuma peel (*Astrocaryum aculeatum*), peel of peach palm (*Bactris gasipaes*), acai seed (*Euterpe oleracea*), peel of cassava (*Manihot esculenta*) root and cupuacu peel (*Theobroma grandiflorum*). Which most of the times are not used, and become garbage, generating environmental problems for the city. This research aimed to investigate the composition of enzymatic hydrolysates obtained from residues produced in the open market places in the city of Manaus. For that were used 4% of each residue, for the reaction were used 50 mL of phosphate buffer (0.05M) pH=5.0, the enzymes used were Celluclast[®] 1,5L (cellulase) and Pectinex Ultra SP-L (pectinase), they were used independent and combined. The hydrolysates obtained were analyzed by the following analytical assays: method of soluble solids content (°Brix) and method of reducing sugars with 3,5-dinitrosalicylic acid (DNS). The use of the enzymes combined released higher amounts of sugars in all residues. The hydrolysate that showed the higher amount of reducing sugars was the one of peach palm peel (23.83 g/L) on the other hand the hydrolysate of acai seed showed low amount of reducing sugars. In relation to soluble solids content the peach palm peel also showed high value (4.2°B) and the hydrolysate that obtained lowest value was the acai seed (3.0°B), in relation the hydrolyzed of cassava peel, cupuacu peel and tucuma peel obtained an amount of reducing sugar, 9.89 g / L 1.75 g / L and 2.32 g / L, respectively. Thus, the hydrolysate with biggest potential for production of ethanol by fermentation is the one of peach palm peel.

Key words: enzymes, peach palm, reducing sugars.

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