Water Quality Improvement and Development of Bakery Products with the Residue of Jucara acai Pulp

Kingeski Ferri, Joao

Santos de Almeida, Maria

Jucara Palm is one of native species of Atlantic Forest. It produces a fruit, Jucara acai, and a palm that when extracted kills the plant. The processing of this fruit generates 81% of residues in our region that becomes waste and corresponds to 8.3t of residues per year. This organic waste accumulated pollutes the soil, water and even emits greenhouse gases. The aim of this study was to propose the full use of Jucara acai. We produced flour with the peel of this byproduct and applied in bakery products. Hedonic scale was used to evaluate the samples of bread produced with different concentrations of Jucara acai flour (JAF). Experiments were performed using a 22 full factorial central composite design to show statistical significance of NaOH concentration and time on production of activated carbon with the seed. This carbon was used to filter water. ANOVA was used to analyze the significance of the proposed model at 95% of reliability. We characterized the activated carbon. The most accepted product using flour was the one containing 8.3% of JAF. The best performances in the reduction of turbidity, iron and manganese from water were obtained with seeds carbonized around 5h, presenting a reduction of 82%, 99% and 55%, respectively. The amount of NaOH used in chemical activation of carbon didn´t influence significantly the adsorption capacity. Results pointed that the full use of Jucara acai can produce positive environmental impacts. Our activated carbon is an alternative to improve the water consumed in rural region, since most of the occupant population suffers with lack of supply services, being 85% cheaper than similar products. With this product we can attend 70% of this population.

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