CHARACTERIZATION OF DETERGENT FIBER PROFILE OF FIFTEEN AMAZONIAN AGROINDUSTRIAL WASTES

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Fruit production is in constant growth in Amazon, especially because of its regional products i.e. açaí, cupuaçu, Brazil nut, and guava. A great variety of products can be obtained from the edible part of fruits, like juices, jams, dried and candied fruits, etc.. During processing, a high amount of waste is generated, which usually result in pollution problems when not properly managed. Fruit byproducts are commonly rich in biomass and can be reused in production of food, feed, adsorbents, depending on their main nutrients (e.g.: proteins, lipids, and fiber contents). The aim of this work was to characterize the fibre profile of fifteen Amazonian fruit byproducts: açaí seeds, Brazil nuts shell, Inga edulis leaves, green coconut fiber, ripe coconut shell and coir, sugarcane bagasse, star fruit bagasse, passion fruit peel, cupuaçu seeds byproduct, guava seeds and bagasse, palm residue, and sourso seed and bagasse. Therefore, the profile of detergent fiber (DF) was analyzed by van Soest and Wine (1963) method, and the cellulose, hemicellulose and lignin fraction. The results showed a wide variety of DF profiles, the majority of wastes presenting a DF content higher than 50%, except in sourso bagasse (37.59%). Some wastes, as coir and Brazil nut shell can be considered as rich in detergent fiber for containing values close to 100%, being 65% and 44% of cellulose and 34% and 50% of lignin, respectively. As expected, the wastes have different profiles of detergent fiber, opening different applications in food, feed or adsorption sectors.

Key-words: Detergent fiber, fruit byproducts, cellulose, lignin.