JONOTEC-Sustainable Bioplastic

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The great amount of pollution generated by the chicken feathers from butcheries, as well as family growths of Jonote (Heliocarpus appendiculatus) for the production of fig tree paper, favored the development of this project. The proposal for the experiment consists of manufacturing a bioplastic with the necessary characteristics to be used in everyday life from organic residues such as the mixture of keratin extracted from farm chicken feathers and the Jonote (Heliocarpus appendiculatus) tree mucilage, as hydrolyzing and flocculating agents. A chemical analysis was made on the Jonote (heliocarpus appendiculatus) mucilage to determine its flocculating components, obtaining a great amount of amylose and amylopectin, which being immersed in water, alcohol and NaOH in experimented portions disintegrate the chicken feathers separating them into wax, keratin and organic residues. Mixing keratine with the mucilage a bioplastic is generated, and it may be manipulated with amylose and amylopectin to obtain different textures. Nonetheless, in the research process various areas of opportunities for future projects were found; for instance, just as the feathers wax, the sticking properties found in the mucilage, as well as the clarification properties it has when being immersed in water. The support of communities in the sustainability of resources as well as the development of an economic activity makes this research important.

Awards Won: