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Preliminary Characterization of Biofilms Obtained from Native Starch of Chayote (*Sechium edule* [Jacq.] Swartz) Fruits †

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Abstract: Using natural substances or materials, such as biopolymers, constitutes an alternative for designing mucoadhesive patches for the oral cavity. Starch is considered one of the most abundant, economic, and readily available polymers. In previous articles, procedures for obtaining starch from chayote, *Sechium edule* (Jacq.) Swartz, specifically from the *albus minor* variety, was validated. Results obtained when characterizing this native starch pointed to particular features that make it possible to predict its use for designing drug-releasing biofilms for the oral cavity. This work aimed to design and characterize, in a preliminary way, biodegradable films obtained from native chayote starch. Thus, four starch suspensions in water were prepared (3%, 6%, 8%, and 10%). The molding method was used to evaluate the appearance, solubility, swelling, elasticity, and viscosity of the resulting films, considering the starch concentrations used and once hydroxypropylmethylcellulose and a plastifier had been added. The films were homogeneous and transparent, with optimal mechanical and functional properties. These preliminary results revealed that biofilms obtained from native chayote starch constitute an alternative for administering pharmaceutical drugs when treating oral diseases.

Keywords: chayote; biodegradable films; starch.

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Conflicts of Interest

The authors declare no conflict of interest.