



ISOLATION AND CHARACTERIZATION OF MEXICAN CHAYOTE TUBER (*SECHIAM EDULE SW.*) STARCH.

ABSTRACT

Starch was isolated from Mexican chayote tubers (*Sechium edule Sw.*) and the yield, physicochemical, rheological, and molecular characteristics were investigated. Commercial potato was used for comparison. Starch yield was 49% with a purity of 89.1%. AM content of chayote tuber starch was 26.3%. Birefringence was shown in chayote tuber starch and granules had diverse shapes such as spherical, oval, and polygonal, with size between 10 and 25 μm . B-type XRD pattern was shown by chayote tuber starch. Chayote tuber starch had higher peak viscosity (PV) than potato starch and the maximum PV for chayote tuber starch was obtained at lower temperature. Flow properties of chayote tuber starch showed higher hysteresis than potato at the same concentration. In chayote tuber and potato starches, $G' > G''$ at both temperatures. Chayote tuber starch presented slightly lower gelatinization temperatures, but slightly higher enthalpy of gelatinization than potato starch, and similar retrogradation rate (due to the enthalpy value of the phase transition) were found in both tuber starches. Chayote tuber starch presented higher Mw and Rz values than potato starch. Chayote tuber could be an alternative for starch isolation with specific physicochemical and molecular characteristics.

<http://onlinelibrary.wiley.com/doi/10.1002/star.201000078/abstract>

CEPROBI - IPN

Autores: Juan P. Hernández-Uribe, Edith Agama-Acevedo, Rosalía A. González-Soto, Luis A. Bello-Pérez, Apolonio Vargas-Torres*

Revista: Starch - Stärke. Volume 63, Issue 1, pages 32–41.