



PHYSICOCHEMICAL AND ENZYME CHARACTERIZATION OF SMALL AND LARGE STARCH GRANULES ISOLATED FROM TWO MAIZE CULTIVARS.

ABSTRACT

In this study, some morphological, physicochemical, and the initial characterization of the starch granule enzymes of blue and white maizes of small and large granules are described. Starch was isolated from blue and white maizes, and the small and large granules were separated. The efficiency of separation was higher in large granules than small of the blue maize starch. The amylose content was slightly greater (1.3%) in large granules than smaller in both starches studied. No differences in the average gelatinization temperature were found between large and small granules, but the enthalpy of gelatinization value was higher in the small granules. The electrophoretic pattern showed that the granule-bound starch synthase (GBSSI) had higher expression in large than small granules and that explain the higher amylose content in the former granules. The differences showed in the starch biosynthesis enzymes in small and large granules might explain partially the physicochemical and functional properties of maize.

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Autores: Rubí G. Utrilla-Coello, Edith Agama-Acevedo*, Ana Paulina Barba de la Rosa, Sandra L. Rodríguez-Ambríz, Luis Arturo Bello-Pérez.