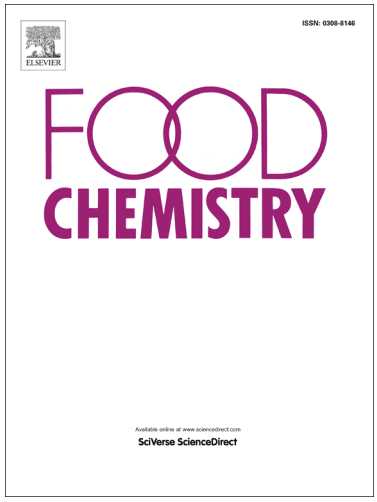

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Organic amaranth starch: a study of its technological properties after heat-moisture treatment

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Abstract

Organic amaranth starch (*Amaranthus caudatus*) was studied after heat-moisture treatment (HMT) using different moisture contents and different times. The starch extracted by the aqueous method presented low lipid and protein content. After HMT, an increase in the thermal stability was identified. The onset and peak temperatures were higher with an increase in moisture content and the times used in the modification. The gelatinisation enthalpy varied due to the heterogeneity of the crystals formed after the structural reorganisation caused by HMT. The relative crystallinity was lower for the physically modified starches. An increase in the pasting temperature was accompanied by a decrease in the viscosity, setback and breakdown, which were proportional to the moisture and time used. The morphology of the HMT-modified samples was not altered; however, agglomerations were noted. Low levels of dispersion homogeneity and suspension stability were observed for the modified samples due to the strong presence of agglomerates.

Keywords: *Amaranthus caudatus*; Organic starch; Thermal analysis; Physical modification. Gelatinisation.

1. Introduction

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