



MOISTURE ADSORPTION BEHAVIOR OF BANANA FLOURS (*MUSA PARADISIACA*) UNMODIFIED AND MODIFIED BY ACID-TREATMENT.

ABSTRACT

The moisture sorption isotherms of untreated banana flour (UBF) and acid treated banana flours (ATBFs) were determined using the static gravimetric method of saturated salt solutions at temperatures of 30°C. The range of water activities (a_w) was calculated to be between 0.14 and 0.97. The equilibrium moisture content absorption data were fitted to four sorption models that differ in the information that can be obtained from each one: Brunauer-Emmett-Teller equation (BET), Guggenheim, Anderson and de Boer (GAB), Smith, and Iglesias-Chirife. Monolayer moisture content (X_0) for UBF and ATBFs were found in the range of 4.06–5.47 (BET model) and 3.87–5.88 (GAB model). The GAB model was found to be the most suitable model to describe the isothermal water sorption of UBF and ATBFs in the intervals proposed of a_w . The X_0 values of both models (BET and GAB) increase with increasing a_w . The Banana flour treated for 11 days (ATBF₃) presents the highest value of X_0 compared with all samples. This result suggests that mechanism of adsorption of water and molecular structure in ATBFs was affected, attributed to changes in morphology and crystallinity of the samples with treatment.

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