



EFFECT OF DIFFERENT THERMAL TREATMENTS AND STORAGE ON STARCH DIGESTIBILITY AND PHYSICOCHEMICAL CHARACTERISTICS OF UNRIPE BANANA FLOUR.

ABSTRACT

Unripe banana flour is an important source of indigestible carbohydrates, mainly resistant starch (RS). However, during cooking of the fruit, the indigestible carbohydrates are transformed to digestible. The aim of this study was to test different treatments: cooking (5, 15 and 25 min), cooking plus high-moisture treatment (HMT) and cooking plus HMT plus storage (HMT + S), to increase the slowly digestible starch (SDS) and RS fractions. Polarization light microscopy, leached amylose, X-ray diffraction pattern, thermal and pasting characteristics, and starch digestibility analysis of the flours were evaluated. The longest cooking time decreased the RS content in the non-gelatinized samples; HMT and HMT + S increased the SDS level. These samples could be used in products without heat treatment during their preparation. The gelatinized samples presented a significant fraction of RS in comparison with the non-gelatinized, demonstrated that the samples can be used in products where cooking is necessary, conserving a high amount of indigestible carbohydrates.

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