



EFFECT OF THE PEARLED IN THE ISOLATION AND THE MORPHOLOGICAL, PHYSICOCHEMICAL AND RHEOLOGICAL CHARACTERISTICS OF BARLEY STARCH.

ABSTRACT

In diverse industries, the starch of different botanical sources is widely used due to its functionality. The objective was to evaluate thermal properties, rheological behavior, particle size distribution and structural characteristics of starch isolated from pearled and whole barley. Commercial corn starch was used for comparison. Whole barley starch (WBS) and pearled barley starch (PBS) had average gelatinization temperatures of 61.3 and 61.6 °C, and enthalpy values of 9.19 and 8.54 J/g, respectively. The stored samples for 7 days presented a phase transition temperatures of 49.9 and 51.8 °C, and enthalpy value of 1.9 and 1.7 J/g, for WBS and PBS, respectively. At the longest storage time (14 days) the temperature of the phase transition was similar and an increase was showed in the enthalpy value for WBS (2.3 J/g) and PBS (2.4 J/g). The viscoelastic behavior of pastes at 90 °C and gels at 25 °C were characterized by $G' > G''$ and no statistical difference was found between both starches. The granule size distribution of PBS and WBS showed a bimodal pattern. The pearled process of barley did not affect significantly some characteristics of its starch.

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