



EFFECT OF DUAL MODIFICATION OF BANANA STARCH AND STORAGE TIME ON THERMAL AND CRYSTALLINITY CHARACTERISTICS OF ITS FILMS.

ABSTRACT

Banana starch was oxidized at three different levels and subsequently acetylated. This double modified banana starch was used for film preparation with the addition of glycerol. Thermal and crystallinity properties were evaluated. Acetylation decreased the peak temperature and enthalpy of double modified banana starch. When the oxidation level and storage time increased in films elaborated with the double modified banana starch, both thermal parameters increased as well. The T_g showed slight changes in films prepared with the double modified banana starch compared to its oxidized counterpart, and similar patterns were found when oxidation levels increased in double modified films. However, a decrease in the T_g was determined with the storage time in films prepared with oxidized and double modified starches. Films prepared with the double modified banana starch presented lower percentage of crystallinity than its oxidized counterpart, nevertheless at higher storage periods, crystallinity levels increased. Thermal and crystallinity properties of films prepared with double modified banana starch could be used to understand the behavior during their application.

<http://onlinelibrary.wiley.com/doi/10.1002/star.201100004/abstract>

CEPROBI - IPN

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Revista: Starch Stärke. Volume 63, Issue 9, pages 550 - 557.