عنوان مقاله:

Fructose Enrichment Of Date Syrup Using Immobilized Glucose Isomerase Enzyme

محل انتشار:

هجدهمین کنگره ملی صنایع غذایی (سال: ۱۳۸۷)

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خلاصه مقاله:

Considering the differences of glucose compounds in various dates, this research has been aimed to convert the glucose existing in date syrups to enriched fructose syrup using immobilized glucose Isomerase enzyme. This procedure is very much similar to the process used for producing high fructose corn syrup(HFCS), however it should be noted that the sucrose hydrolysis stage has been discarded in this study due to negligible amounts of sucrose in the used date syrups.This enzyme (EC: ۵.۳-۱.۵) reversibly converts aldopentoses and aldohexoses to its Isomerase in temperaturerange of about ۶۰ ° c. Quality and quantity of products are highly dependent on temperature range and p H of the reaction , as the amount of produced fructose will increase by increasing temperature and p H .Besides, enzymestability also heavily depends on aforementioned elements. Isomerization process was performed in a batch in which reaction conditions were ۳۰-۹۰ ° c range and p H = ۶-۸.۵ . It became evident that immobilized glucoseIsomerase enzyme would be benefit from the highest activity and stability in ۵۰-۶۰°c and p H = ۷-۷.۷

کلمات کلیدی:

Substrate, Enzyme activity, Heat resistance, Relative activity