PROCESS TO OBTAIN A FRUCTOSE SYRUP AND PRODUCTS DERIVED FROM *YUCCA FILIFERA*	
Offering Organization:	Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C.
Type of Organization:	Public Research Center
Development Stage:	Laboratory
Desired Relationship:	– Technological research and development financing (technological partner) – Specialized application tests – Creation of a new company (Joint Venture) for the commercialization of the products outlined herein – Licensing of patents
Sector:	Foods
Area of knowledge:	Food Technology
Key words:	*Yucca filífera*, fructose syrup, sweeteners, sugar substitute . sugar extraction, ion exchange

DETAILED DESCRIPTION:

Problem to be solved:

Process to obtain a fructose syrup and other products derived from the extraction of syrups high in crystalline fructose and gluconic acid from the flesh of the Chinese palm fruit scientifically named *Yucca filifera*.

Solution:

Obtainment of a syrup high in fructose and gluconic acid, derived from the process consisting of the following stages:

- Extraction of sugars
- Clarification of the product (purification)
- Color Clarification
- Ion Exchange
- Evaporation

New and Innovative Aspects:

- Provide a process to obtain a fructose syrup with greater sweetening power.
- Supply a product with lower cariogenic capacity.
- Provide a syrup which, by its nature, can be used as an intermediary product to obtain fructose and gluconic acid.

TECHNICAL CHARACTERISTICS:

This invention relates to a process of obtaining a fructose syrup and other products derived from *Yucca filifera*. The process is comprised of the following steps: pre-select the raw material taking into consideration maturity and low moisture levels; subject the product to a sugar extraction step (pulping) in a heated and agitated aqueous solution; subject the resulting product to a filtration step under ambient conditions to remove bagasse, with the ensuing liquid phase from the filtration sent to a settling vessel in order to submit the product to a clarification by precipitation stage in an acidic medium by adding a weak acid until a pH of 2 is reached; then directly

incorporate a lime slurry until reaching a neutral pH ; heat the neutralized suspension to a temperature of 60°C to 80°C and let it stand for about 1 hour until reaching complete precipitation of the solids, where two phases are obtained and the supernatant is removed and sent to an activated carbon column for the clarification of the syrup maintained at temperatures of 45°C to 75°C; the resulting clarified syrup is a mixture of fructose and glucose and mineral salts which is sent through a deionization stage to obtain a diluted fructose syrup; lastly concentrate the syrup using evaporation at warming temperatures in a vacuum until obtaining a fructose syrup.

Main advantages derived from its utilization:

- Procedure that takes advantage of the carbohydrate content (70%) in the form of fructose to obtain a syrup high in fructose with characteristics superior to those obtained from corn starch, with the advantage of obtaining other products derived through the use of an enzymatic treatment such as the more valuable products crystalline fructose and gluconic acid.

Applications:

- Sweeteners, Sugar substitutes

INTELLECTUAL PROPERTY

- Patent protected process in Mexico
- Applied in 1994 and granted in 1997

ABOUT THE OFFERING ORGANIZATION

Presentation:	El Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C. (CIATEJ) is a public research center that belongs to the national technology development and innovation network, the National Council for Science and Technology (CONACyT). CIATEJ is focused on the agricultural, food, health, and environmental sectors with an emphasis on the application of innovative biotechnology.
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