

<b>PROCESS FOR THE MANUFACTURING OF NOPAL-BASED FOODS</b>	
<i>Offering Organization:</i>	Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C.
<i>Type of Organization:</i>	Public Research Center
<i>Development Stage:</i>	Pilot plant
<i>Desired Relationship:</i>	<ul style="list-style-type: none"> <li>– Technological research and development financing (technological partner)</li> <li>– Specialized application tests</li> <li>– Creation of a new company (Joint Venture) for the commercialization of the products outlined herein</li> <li>– Licensing of patents</li> </ul>
<i>Sector:</i>	Food
<i>Area of knowledge:</i>	Food Technology
<i>Key words:</i>	Nopal-based foods, crystalized nopal, nopal base, syrup, nopal mucilage, candy, gummy candy, gumdrop

#### **DETAILED DESCRIPTION:**

##### *Problem to be solved :*

The nopal cactus has great socio-economic importance in Mexico and is one of the country's principal vegetables produced. Nopal is rich in soluble fibers, which are absorbed slowly by the body and help in the maintenance of stable blood-sugar levels. One feature of the current market is the trend toward nutraceutical or functional products as the public seeks out foods that provide health benefits. However, snacks and candies, for instance, are characterized as contributing poorly to nutrition.

##### *Solution:*

Combining the physical and natural properties of nopal with the growing demand for unconventional foods and candies with nutraceutical properties, we propose a food manufacturing process that consists of obtaining "crystalized nopal" from recovered residual syrups and utilizing it in the preparation of a food candy or gumdrop.

##### *New and Innovative Aspects:*

- The development of new alternative uses of nopal that meet the needs of the market to satisfy consumer desires.
- The use of residual syrups and nopal mucilage present in these syrups allowing for the development of an additional product type, food candy or gumdrops.

#### **TECHNICAL CHARACTERISTICS:**

This invention relates to the development and manufacturing process of a confectionary product made from crystallized nopal, which is obtained first through the selection of ripened nopal. The nopal must then be cleaned, de-spined, trimmed, and cut into small pieces or strips that are later subjected to a combination of osmosis and dehydration using sucrose syrups and juice of varying concentrations from oranges, lemons, or jalapenos, plus dehydration from hot air for a duration of several hours. On the other hand, this invention relates also to the development of a foodstuff utilizing nopal mucilage and residual nopal syrups from the process obtaining crystalized nopal. From there, we proceed with the addition and mixing together of the ingredients, heating the

ingredients in order to blend them, and finally we obtain the finished product.

*Main advantages derived from its utilization:*

- It is an option for the utilization of nopal and its physical, nutraceutical, and natural properties.
- These products have a long shelf life and do not need refrigeration during distribution and warehousing.
- The development of new alternatives for the use of nopal that meet the needs of the market with respect to nopal-based foodstuffs.

*Applications:*

- Food

**INTELLECTUAL PROPERTY**

- Patent granted in 2012, valid until 2026

**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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