

# Accepted Manuscript

The influence of agave fructans on thermal properties of low-fat, and low-fat and sugar ice cream

Aurora Pintor-Jardines, Jose L. Arjona-Román, Alfonso Totosaus-Sánchez, Patricia Severiano-Pérez, Leandro R. González-González, Héctor B. Escalona-Buendia



PII: S0023-6438(18)30284-6

DOI: [10.1016/j.lwt.2018.03.060](https://doi.org/10.1016/j.lwt.2018.03.060)

Reference: YFSTL 6989

To appear in: *LWT - Food Science and Technology*

Received Date: 29 August 2017

Revised Date: 2 February 2018

Accepted Date: 23 March 2018

Please cite this article as: Pintor-Jardines, A., Arjona-Román, J.L., Totosaus-Sánchez, A., Severiano-Pérez, P., González-González, L.R., Escalona-Buendia, Hé.B., The influence of agave fructans on thermal properties of low-fat, and low-fat and sugar ice cream, *LWT - Food Science and Technology* (2018), doi: 10.1016/j.lwt.2018.03.060.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

1 The influence of agave fructans on thermal properties of low-fat, and low-fat and  
2 sugar ice cream

### 3 **Abstract**

4 The thermal properties of low fat, and low fat and sugar ice cream formulations, in  
5 which agave fructans were used as a sugar and fat, were evaluated by Modulated  
6 Differential Scanning Calorimetry. Approximately 3.0 g/100 mL of agave fructans  
7 promoted a positive effect on thermal properties for both types of formulation,  
8 showing a significantly lower ( $P<0.05$ ) fraction of frozen water. The highest  
9 concentration of agave fructans resulted in the highest percentage of non-frozen  
10 water ( $P<0.05$ ). The addition of agave fructans led to a significantly higher ( $P<0.05$ )  
11 glass transition temperature. Glass transition incited a change in heat capacity as  
12 moisture and agave fructans increased. Agave fructans had the ability to reduce  
13 the number and formation of ice crystals, and hence the melting temperature of ice  
14 cream. The samples with longer melting time resulted in a reduction of energy,  
15 showing low enthalpy values. The quantity of agave fructans used as fat and sugar  
16 replacer affected the infrared spectroscopy spectra, and led to an increase in the  
17 magnitude of the bands, especially in the O-H group that corresponds to polymeric  
18 hydrogen bonding between agave fructans and water.

19

20

21

22 **1. Introduction**

Download English Version:

<https://daneshyari.com/en/article/8891145>

Download Persian Version:

<https://daneshyari.com/article/8891145>

[Daneshyari.com](https://daneshyari.com)