

## Use of native agave fructans as stabilizers on physicochemical properties of spray-dried pineapple juice

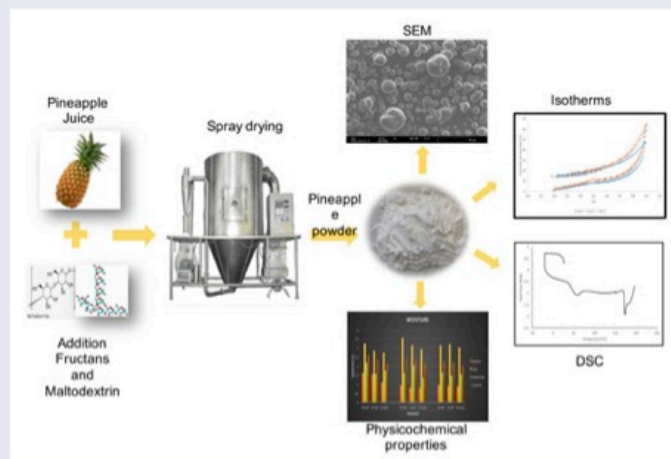
Darvin Ervey Jimenez-Sánchez<sup>a</sup>, Montserrat Calderón-Santoyo<sup>a</sup> , Erasmo Herman-Lara<sup>b</sup> ,  
Cristina Gaston-Peña<sup>c</sup>, Guadalupe Luna-Solano<sup>c,d</sup> , and Juan Arturo Ragazzo-Sánchez<sup>a</sup> 

<sup>a</sup>Laboratorio Integral de Investigación en Alimentos, Tecnológico Nacional de México, Instituto Tecnológico de Tepic, Tepic, Nayarit, México; <sup>b</sup>Departamento de Ingeniería Química y Bioquímica, Instituto Tecnológico de Tuxtepec/Tecnológico Nacional de México, Tuxtepec, Oax, Mexico; <sup>c</sup>Instituto Cubano de Investigaciones de los Derivados de la Caña de Azúcar Vía Blanca 804 y Carretera Central, San Miguel del Padrón, La Habana, Cuba; <sup>d</sup>División de Estudios de Posgrado e Investigación, Tecnológico Nacional de México, Instituto Tecnológico de Orizaba, Orizaba, Veracruz, México

### ABSTRACT

Native agave fructans have technological applications as sweeteners and stabilizers in powder form. The effect of two stabilizing additives for pineapple juice was studied through calorimetry and physicochemical tests such as water activity, moisture content, solubility, bulk density, adsorption, and desorption isotherms. The samples were prepared with 10% maltodextrin concentration, added with 0%, 2%, and 4% native agave fructans. The spray-drying process was carried out with an inlet temperature of 120°C. The treatments with the fructans presented lower moisture content with respect to the treatment solely with maltodextrin. The stabilizing power that is shown is corroborated by the sorption isotherms, which showed a higher degree of hysteresis with the addition of fructans during storage. This implies that, despite the water retention capacity of fructans, this was not enough to affect the stability of the product. The obtained thermograms showed that an increase in fructans concentration increases the glass transition temperature ( $T_g$ ) of the powder.

### GRAPHICAL ABSTRACT



### ARTICLE HISTORY



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### KEYWORDS

Fructans; spray drying;  
calorimetry;  
isotherms; pineapple

### Highlights

- Moisture content and  $a_w$  in pineapple powder decrease with agave fructans addition.
- The addition of fructans did not affect the stability of the pineapple powder.
- The pineapple powder  $T_g$  increases with fructans addition.
- Bulk density decreased and solubility decreased in powders with fructans addition.

**CONTACT** Juan Arturo Ragazzo-Sánchez  [jragazzo@ittepic.edu.mx](mailto:jragazzo@ittepic.edu.mx); [arturoragazzo@hotmail.com](mailto:arturoragazzo@hotmail.com)  Laboratorio Integral de Investigación en Alimentos, Tecnológico Nacional de México/Instituto Tecnológico de Tepic, Av. Tecnológico # 2595, C.P. 63195 Tepic, Nayarit, México

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