

Physicochemical, microbiological, functional and sensory properties of frozen pulp of orange and orange-red chilto (*Solanum betaceum* Cav.) fruits

María Eugenia Orqueda, Sebastian Torres, Hernan Verón, Jorgelina Pérez, Fabiola Rodriguez, Catiana Zampini and María Inés Isla

Scientia Horticulturae 276: 109736. (2021)

Abstract

The frozen fruit pulp market has shown suitable growth due to the current technology available, having broad market potential. This study aimed to evaluate the physicochemical, microbiological, functional, and sensorial characteristics of *Solanum betaceum* pulp (chilto pulp) with different skin colors (orange and orange-red) under storage at $-18\text{ }^{\circ}\text{C}$ during different periods: 0, 30, 60, 90 and 180 days. The pulps were stable microbiologically during the entire storage time, according to food legislation. The physicochemical results indicate that all the frozen pulps of chilto fruits had values in conformity to identity and quality standards and had a high content of bioactive compounds, fibers, and proteins. The pulps presented a powerful antioxidant and antihyperglycemic activity demonstrated by *in vitro* tests, which gives it a functional value in addition to the nutritional value. The results of the sensory analysis showed a good acceptance of the pulps by consumers, particularly in attributes such as color, aroma, and texture. The chilto fruit pulp can store up to 180 days at $-18\text{ }^{\circ}\text{C}$ retaining the physicochemical, microbiological, functional, and sensorial characteristics similar to the fresh pulp. For this reason, it is considered an interesting post-harvest conservation method for the expansion and revalorization of native Argentine fruits.