



## **Yield and texture of “Queso Fresco” made from milk processed by high pressure homogenization**

**Author Block:** Daniela Escobar, Laboratorio Tecnológico del Uruguay, Montevideo, Uruguay; Stephanie Clark, Washington State University, Pullman, WA; Vykundeshwari Ganesan, University of Tennessee, Food Biopolymers Group, Knoxville, TN; Luis Repiso, Laboratorio Tecnológico del Uruguay, Montevideo, Uruguay; Federico M. Harte, University of Tennessee, Food Biopolymers Group, Knoxville, TN

### ***Abstract:***

Queso Fresco is a Hispanic-style cheese with widespread acceptance among US consumers. Queso fresco is a white, soft, and crumbly cheese that was originally manufactured using whole raw milk. However, food safety concerns and current US regulations prohibit the commercialization of queso fresco manufactured with raw milk. Nonthermal processing technologies able to inactivate potential pathogens in milk but keeping proteins and other constituents in their native state, are of interest for the processing of dairy products traditionally made from raw ingredients, such as queso fresco. The objective of this work was to determine yield, composition, and textural properties of queso fresco made from raw and pasteurized milks processed by high pressure homogenization (HPH). Raw and pasteurized (65°C; 30 min) whole milks were subjected to 0, 100, 200, and 300 MPa HPH. Crumbliness, springiness, stickiness, cohesiveness, and oiliness attributes were evaluated by a trained panel in a 1-15 anchored scale. The experiment was replicated three times in a completely randomized block design. Cheeses exhibited a 10.5% to 13% yield when raw milk was subjected to HPH (0 to 300 MPa) and 12.8% to 14.2% yield when pasteurized milk was subjected to the same HPH pressures. The key crumbliness attribute increased from 11.5 to 13.2 in cheeses from raw milk processed with 0 to 300 MPa HPH and from 11.1 to 14.2 in cheese from pasteurized and then homogenized milks. In general, cheeses made from pasteurized-HPH milk showed increased stickiness values (~9.2) when compared to those made from raw-HPH milks (~7.5). No significant differences were observed for Oiliness in the various cheeses studied. Cheeses with higher crumbliness scores also showed lower yield force profiles when subjected to uni-axial compression. Our results indicate that HPH has a strong potential for the manufacture of queso fresco with excellent yield and textural properties.