

Effects of Pasteurization and Curd Cutting Size on Viscoelasticity of Costeño Cheese

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Abstract : Effects of pasteurization temperature and curd cutting size on viscoelasticity of costeño cheese were evaluated. A 3²-factorial experiment was developed in a completely random design (pasteurization temperature: 63°C / 30min, 73°C / 15s and 83°C / 1s; curd cutting: 1, 3 and 5 cm). Pressure required to maintain a constant deformation was determined from relaxation tests by using an EZ Text Shimadzu® texturometer and a 2.04 Rheometer® software. Obtained data was represented by means of Peleg's standard and linear model. Results showed that interaction among temperature and cutting factors significantly affected residual asymptotic modulus "Ea.", resulting in a totally different cutting tendency for each temperature and time ratio level. Pressure decline level "a" and velocity at which pressure relaxes "b" were only affected by main effects of pasteurization, temperature and curd cutting size. When using pasteurization levels of 63°C / 30min and 73°C / 15s with curd cutting sizes of 2.8cm and 2.6cm respectively, an increase in the influence of the viscous component is produced in costeño cheese. The opposite occurs when using an 83°C / 1s pasteurization level, since there is a decrease of this component; prevailing before the elastic component, though. Finally, it was possible to establish that for the 83°C / 1s heat treatment level, curd cutting size did not affect viscoelasticity of costeño cheese.

Keywords : deformation, pressure, Peleg, relaxation.

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