Oil-in-water emulsion gels stabilized with chia (*Salvia hispanica* L.) and cold gelling agents: Technological and infrared spectroscopic characterization

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Abstract

This paper reports on the development of olive oil-in-water emulsion gels containing chia (*Salvia hispanica* L.) (flour or seed) and cold gelling agents (transglutaminase, alginate or gelatin). The technological and structural characteristics of these emulsion gels were evaluated. Both structural and technological changes in emulsion gels resulting from chilled storage were also determined. The color and texture of emulsion gels depend on both the cold gelling agents used and chilled storage. Lipid oxidation increased ($p < 0.05$) during storage in emulsion gels containing transglutaminase or alginate. Analyses of the half-bandwidth of the 2923 cm^{-1} band and the area of the 3220 cm^{-1} band suggest that the order/disorder of the oil lipid chain related to lipid interactions and droplet size in the emulsion gels could be decisive in determining their textural properties. The half-bandwidth of 2923 cm^{-1} band and area of 3220 cm^{-1} band did not show significant differences during chilled storage.