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Oleogels for the development of healthier meat-based food products

Authors: Artur J. Martins^{a,b*}, Lorenzo, J.M.^c, Franco, D.^c, António A. Vicente^a, Rosiane L. Cunha^d, Lorenzo M. Pastrana^b, and Miguel A. Cerqueira^b

Affiliation:

a - Centre of Biological Engineering, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal.

b - International Iberian Nanotechnology Laboratory, Av. Mestre José Veiga s/n, 4715-330 Braga, Portugal

c- Centro Tecnológico de la Carne de Galicia, rúa Galicia n° 4, Parque Tecnológico de Galicia, San Cibrao das Viñas, 32900 Ourense, Spain

d - Department of Food Engineering, Faculty of Food Engineering, University of Campinas, UNICAMP, CEP: 13083-862, Campinas, SP, Brazil

Author contact information: arturmartins.web@gmail.com

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Plain abstract summary (narrative text maximum 350words)

Obesity is a disease that can be addressed through preemptive actions and behavioral changes like proper diet and exercise. In connection with obesity, cardiovascular disease can become an additional and severe problem. Scientific data regarding western diets, recons that dietary lipids account for over 35% of the daily caloric content of an individual's diet. Because of this it would be valuable to have alternatives with anti-obesogenic effects [1]. Another significant dietary factor in the prevention of obesity is a balanced omega-6/omega-3 ratio intake, that can be achieved through the consumption of enriched foods. Food innovation is driven by food products that contribute to improve health. These products are known as functional foods and they can be used strategically in order to avoid or battle the above-mentioned disorders.

Functional oleogels were produced using enriched alpha-linolenic linseed oil with plant sterols (in hamburger production) and beeswax (in pate production) as oil gelators. Oleogels with 8 % (w/w) of gelator were used in both products as replaces of saturated fat. The range of fat replacement went from 25 to 75 % in hamburgers (H-25 and H-75) and 30 to 60 % in pate (P-30 and P-60). Tests with hamburgers showed that consumer acceptance and preference was directed towards the control samples. Nevertheless, the hamburgers samples with less amount of oleogel (H-25) were classified positively in both the acceptance and preference tests. Those same two sets of samples (control an H-25) showed similar textural characteristics. In the pate sensorial tests, the control sample was the much-liked one, however after data observation, the overall score for the P-30 sample still

remains positively interesting and not that far from the control. Also, significant differences were recorded for the preference tests between the control samples and the samples with oleogels. After oleogel incorporation both products revealed an increased polyunsaturated fatty acid (PUFAs) content, followed by an increase of the omega-6/omega-3 ratio that can result in a possible high omega-3 bioavailability through digestion, possibly leading to an anti-obesity effect.

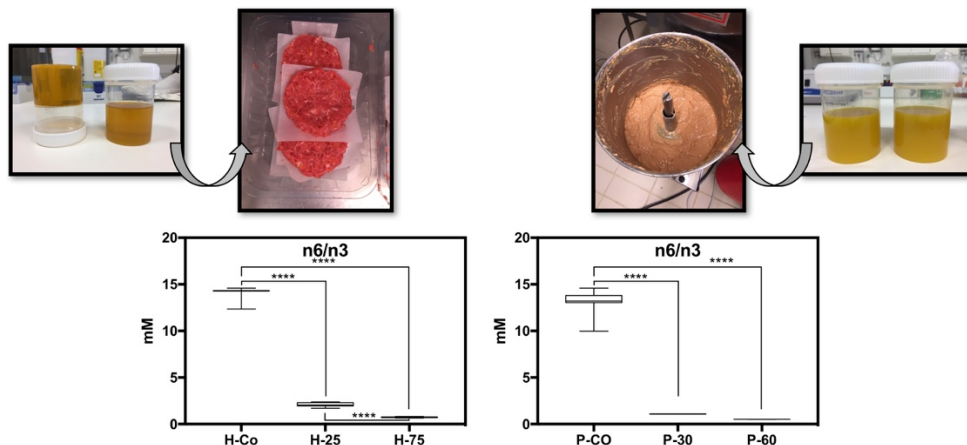


Fig. 1. Illustration of both products and omega-6/omega-3 ratio profile.

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