BIO-SUSTENTABILIDADE E BIO-SEGURANÇA ALIMENTAR, INOVAÇÃO E QUALIDADE ALIMENTAR

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As doutrinas expressas em cada um dos resumos são da inteira responsabilidade dos autores.

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Data

Outubro de 2022

12:15 - 12:30	**OC** Multielement analysis to trace authenticity using potential markers of PDO pears and PGI apples cake fillings *Ana M.S. Costa, Elisabete Coelho, Lina Carvalho, Eugénio Soares, Eduarda Pereira, Manuel A. Coimbra*
12:30 - 12:45	**OC** Detection and quantitation of added water in octopus using a rapid and non-destructive method based in Time Domain Reflectometry (TDR) *Bárbara Teixeira, Helena Vieira, Sandra Martins, Rogério Mendes*
12:45 - 14:15	**Lunch**
ROOM 2	**Chairperson -** Anabela Raimundo
15:20 - 15:35	**OC** Impact of origin on the nutritional evaluation of dark chocolates from Africa and America *António Panda, Nuno Alvarenga, Ana Partidário, Manuela Lageiro, Cristina Roseiro, João Lita da Silva, João Dias*
15:35 - 15:50	**OC** Nutritional and physicochemical analysis of quince from Cova da Beira region: similarities, differences and particularities *Guido R. Lopes, Ana Martins, Alexandra Camelo, Ana Rodrigues, Helena Beato, Luisa Paulo, Mafalda Resende, Mário Cristovão, Marlene Mota, Christophe Espírito Santo*
15:50 - 15:57	**FC** Study of the amino acids profile of *Coffea canephora* silverskin from different geographical origins *Susana Machado, M. Beatriz P. P. Oliveira, Jesus Simal-Gandara, Rita C. Alves*
15:57 - 16:06	**FC** Effect of heat treatment on the quality and composition of canned tuna coating liquid *Nuno Ferreiro, Karina Duarte, Conceição Fernandes, José Alberto Pereira, Nuno Rodrigues*
16:04 - 16:11	**FC** Effect of moisture on the characteristics of hazelnut kernel during storage *Paula M. R Correia, Ana Filipe, Ana Cristina Ferrão, Elsa Ramalhosa, Raquel Guiné*
16:11 - 16:55	**Coffee Break / Poster Session**
ROOM 2	**Chairperson -** *Ilda Caldeira*
16:55 - 17:10	**OC** Chia *(Salvia hispanica* L.*)* whole flour: phenolic profile and authenticity *Walter Nei Lopes dos Santos, Bárbara Elizabeth Alves de Magalhães*

Effect of heat treatment on the quality and composition of canned tuna coating liquid

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Canned tuna is one of the most popular products on the market with great commercial value.[1] It is a product rich in protein, and fat that is mainly unsaturated fatty acids, namely omega-3 as an essential fatty acid. Tuna can be presented and commercialized with different covering liquids. Olive oil is a vegetable oil rich in monounsaturated fatty acids with different organoleptic properties from other vegetable oils.[2] According to the intensity of fruitiness, extra virgin olive oil can be classified as ripe fruity and green fruity, the latter being classified as mild, medium and intense, depending on the intensity. Temperature is one of the factors that degrade the organoleptic characteristics of olive oil.[3] In this sense, the present work aims to study the effect of the application of heat treatment on tuna coating liquids. To this end, different coating liquids were studied (sunflower oil, refined olive oil, mature olive oil, soft green and intense green), and the behaviour with the application of heat was verified. Fifty cans were filled with coating liquid, closed in a crimping machine and pasteurized following the usual procedure in the industry. The filling liquids were analysed before and after heat treatment, namely at time 0 (T0) and at the end of six months (T6), having been stored at room temperature and at 50ºC. Quality parameters (free acidity, peroxide value, specific extinction coefficients), oxidative stability by the Rancimat method and antioxidants (DPPH and total phenols) were evaluated for each sample. Regarding the quality parameters at T0, it was found that most of the values are within the legal limits established by regulation 2568/1991, except for the acidity parameter in mature olive oil, which presented an average value of 0.98%, and also for the sunflower oil in K_{232}, K_{268} and ΔK that exceeds the established value. Regarding the covering liquids in T6 with heat treatment at 50ºC, it was verified in the free acidity that they all exceed the legal limit. In the case of peroxide value, all meet the legal limits and for K_{232} only sunflower oil exceeds the legal limit. In K_{268} the limits are exceeded by all hedging nets. In the case of ΔK, only sunflower oil exceeds the legal limit. There was a clear increase in the parameters: free acidity and peroxide value from T0 to T6 50ºC, where as in the specific extinction coefficients, this increase was not registered. Regarding the oxidative stability, comparing the T0 with the T6 50ºC, it was found that both in the T0 and in the T6 50ºC the sunflower oil was the one with the lowest oxidative stability. At T0, refined olive oil was the one that showed the highest oxidative stability, while at T6 50ºC, the mature green olive oil showed the highest stability. Regarding the antioxidants, namely DPPH, it was found at both times that sunflower oil had the lowest percentage of inhibition and intense green olive oil the highest. The same happened in the total phenols. With this work, it is possible to see that sunflower oil is clearly the liquid coverage that has the lowest qualities for consumers since it was the one that presented the lowest values in all parameters, even not respecting the legal limits of some parameters. It was found that olive oil is, from the quality and benefit to the consumer point of view, the best topping liquid to adopt to accompany tuna, given that even with the application of temperature, there are drastic drops in the proportion of antioxidants. Adopting olive oil as a vegetable covering will make it possible to have a combination of nutritional and organoleptic properties of better quality for the consumer.

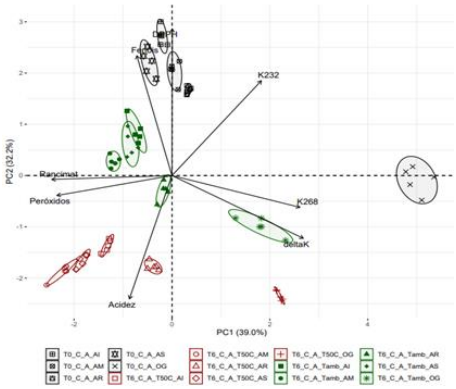

Figure 1. Principal component analysis discrimination of the different canned tuna samples according to the covering liquid at different storage times using quality parameters, antioxidant activity and Rancimat for samples in contact with the coating liquids.

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