

III Reunión Nacional de Carotenoides y I Reunión Hispano-Portuguesa de Carotenoides

CAROTENOID ENRICHMENT OF FATTY AND DAIRY FOODS: CONSUMER ASSESSMENT AND COLORIMETRIC STABILITY STUDY

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Nowadays, interest in carotenoids has grown based on studies suggesting their protective antioxidant effect. Consequently, drugs which containing synthetic antioxidant compounds, have been used for treatment and prevention of diseases associated with oxidative stress and antioxidant deficiencies but unfortunately some of them have shown toxic properties in animal models [1]. Currently, the research is oriented towards the development and use of safer and more economical molecules of natural origin. On the other hand, the recommended doses of these antioxidants to prevent certain diseases are not easily covered by dietary modifications. Subsequently, an alternative way could be supplementing our diet using extracts enriched with them. In this context, there is a growing interest for developing new functional foods which are usually traditional foods enriched in one or several components that promote beneficial effects on human health [2].

In light of the above, our research group has developed a methodology to fortify different types of food with β -carotene from *Blakeslea trispora* fungi. The present work shows the carotene enrichment of fatty foods (butter and margarine) and dairy products (condensed milk and cheese spreads). These foods have been prepared and studied using colorimetry to evaluate their stability. In addition, food samples prepared with different levels of carotene fortification have been evaluated by a panel of tasters, who have shown their acceptability based on a visual assessment of the samples (Figure 1).



Figure 1.-Butter carotene fortification. A₁:0; A₂:24; A₃:48; A₄:72 and A₅:120 mg carotene / Kg of butter.

The outcomes obtained indicate that, in general terms, the prepared samples have a good color stability over the tested interval of 50 days. Thus, during the first 20 days the changes in color are practically imperceptible to the human eye. With regard to the consumer's perception, the best rated samples were those prepared with the lowest concentration of beta-carotene tested and which therefore had a color closer to the commercial samples. On balance, these enriched foods could represent an engaging way to incorporate carotenoids in the appropriate doses in human organism.

References

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Acknowledgements: The FQM-337 research group would like to thank the Ministry of Labour and Social Economy of the Government of Spain for the research contract of M. Hurtado within the "Programa Investigo" of the Spanish Public Employment Service (SEPE-NextGenerationEU). The authors would like to thank DSM Vitatene SAU for providing carotenoids.

Palabras clave: Carotenoids, functional foods, stability

Participación preferida: oral