NOVEL INCORPORATION OF RED STAGE *HAEMATOCOCCUS PLUVIALIS* WET PASTE AS A COLOURANT AND ENHANCER OF THE ORGANOLEPTIC AND FUNCTIONAL PROPERTIES OF *FILLOAS*

Aly Castillo[1], Tiane C. Finimundy[2], Sandrina A. Heleno[2], Paula Rodrigues[2], Filipa A. Fernandes[2], Simón Pereira[3], Carmen Garcia-Jares[1], Lillian Barros[2],Marta Lores[4]

[1] CRETUS, Department of Analytical Chemistry, Nutrition and Food Science, Universidade de Santiago de Compostela, E-15782, Santiago de Compostela, Spain.
[2]Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Campus de Santa Apolónia, Bragança, 5300-253, Portugal.
[3]Institute of Aquaculture, Department of Microbiology and Parasitology, Universidade de Santiago de Compostela, Campus Vida, E-15782, Santiago de Compostela, Spain.
[4]LIDSA, Department of Analytical Chemistry, Nutrition and Food Science, Universidade de Santiago de Compostela, E-15782, Santiago de Compostela, Spain.

Haematococcus pluvialis Flotow is a microalga used as a nutraceutical, due to its high content in bioactive compounds, mainly carotenoids, in which astaxanthin stands out [1]. Furthermore, *H. pluvialis* has shown a high antioxidant potential and combined to its intense red colour, this microalga could have a dual functionality, as a colourant, and a bioactive ingredient [2]. The process to obtain this ingredient involves several transformation steps, such as lyophilisation and saponification, that raise the development costs, to obtain free astaxanthin, that paradoxically presents greater instability and solubility than its esterified counterpart [3]. Thus, this work provides an alternative approach for the application of red, astaxanthin-rich, *H. pluvialis* wet paste as a partial substitute for wheat flour (7% and 13% w/w) in the preparation of *filloas* (Galician pancakes), a typical dessert from the northwestern region of the Iberian Peninsula. To evaluate its power as a natural pigment, the stability of colour over time (3, 6 and 9 days) was measured in contrast to a commercial colourant. At the same time, its physicochemical properties were measured, such as the microbiological profile to determine its functionality as a food preservative. As a result, a redness stability (a*), 8% higher than the commercial colourant, was obtained for the maximum concentration of *H. pluvialis* analysed. The texture showed a significant response ($p<0.02$), improving its properties as the concentration of the microalga increased, showing during the first 6 days a tenacity of 3.23 N and an extensibility of 15.10 mm, which represents a 52 and 19% improvement respectively, in relation to the control group. In turn, an enrichment of carotenoids, fatty acids, and phenolic compounds in combination with a potential moderator of microbiological degradation by this unicellular organism gives added value to this food matrix.

Key words: *Haematococcus pluvialis*, filloas, microalga, colourant, bioactive compounds, functional food

References

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