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O16 New coloring strategy for dairy products using anthocyanin extracts from edible flowers

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Among dairy fermented products, yogurt is certainly one of the most popular, being consumed worldwide due to its organoleptic and nutritional properties.¹ Nevertheless, some of the yogurts available in the market are prepared with artificial colorants, and the recent concerns with the safety of these compounds push forward the development and application of natural alternatives. Edible flowers, rich in natural pigments, arise as promising sources for the development of new coloring strategies for food products.²

The central aim of the present work focuses on the use of anthocyanin-rich extracts from edible petals of *Rosa damascena* “Alexandria” and *R. gallica* “French” draft in *R. canina*, as an alternative to the E163 (anthocyanin commercial extract) as a new way of coloring dairy products (specifically yogurts). The anthocyanin aqueous extract from rose petals was characterized for its anthocyanin profile by HPLC-DAD-ESI/MS. Furthermore, it was incorporated in natural yogurts and the stability of the developed color was assessed on two distinct periods (preparation day and after 7 days of storage at 4 °C). Likewise, the nutritional composition (AOAC methods), free sugars (HPLC-RI) and fatty acids (GC-FID) profiles were also evaluated in the developed yogurts. For better comparison a negative control (yogurt without any coloring agent) and a positive control (yogurt with the commercial colorant - E163) were prepared and analyzed considering the same parameters.

Two anthocyanins were detected in the aqueous extract of rose, but cyanidin-3,5-*O*-diglucoside was by far the major compound, as it corresponds to 98% (13.19 ± 0.01 µg/g extract) of the identified anthocyanins (the second was cyanidin-3-*O*-glucoside). In what concerns its incorporation in yogurts, it should be bear in mind that the use of additives on dairy products has to consider the consumers’ acceptability, being therefore highly dependent on its organoleptic and rheological properties. Likewise, it is crucial that new developed products maintain the same nutritional properties as those available in the market. In this study, the yogurts prepared with the anthocyanin extract of rose petals and the negative and positive controls showed similar nutritional composition, free sugars and fatty acids profile throughout the assayed storage period.

In conclusion, rose petals represent a potential coloring alternative (in the yellow-orange range) for dairy products without withdrawing the consumers’ acceptance requisites. With the incorporation of these natural extracts for the development of new food products with high added value, a second objective related with the functionalization of the products might also be achieved, potentiating the health benefits to the consumers.

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