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Short communication

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Determination of food colorants in a wide variety of food matrices by microemulsion electrokinetic capillary chromatography. Considerations on the found concentrations and regulated consumption limits

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Abstract

Color additives are used widely by the food industry to confer a desirable appearance. Some of the most used colorants (Tartrazine (E102), Sunset Yellow (E110), Red Allure (E129) and Blue Brilliant (E133)) were determined in this study using microemulsion electrokinetic capillary chromatography (MEEKC). Regression coefficients were greater than 0.9981; intra- and inter-day precisions, in terms of percentage RSD, were less than 7.01% and 8.55%, respectively; recoveries were between 90 and 100% in most cases. LODs and LOQs ranged from 0.24 to 1.21 mg L⁻¹ and from 0.80 to 4.03 mg L⁻¹, respectively. Moreover, MEEKC consumed less solvent than HPLC, making the analysis more environmentally friendly. The proposed method is suitable for the determination of colorants in a wide variety of foods. Results showed that consumers should be aware of colorants to avoid consumption exceeding recommended amounts.

Keywords: MEEKC; colorants; food products; method development

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