Photostability of Natural Orange-Red and Yellow Fungal Pigments in Liquid Food Model Systems - DTU Orbit (13/12/2018)

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The variation in the photostability among the currently authorized natural pigments limits their application span to a certain type of food system, and more robust alternatives are being sought after to overcome this problem. In the present study, the photostability of an orange-red and a yellow fungal pigment extract produced by ascomycetous fungi belonging to the genera Penicillium and Epicoccum, respectively, were studied in a soft drink model medium and in citrate buffer at low and neutral pH. The quantitative and qualitative color change pattern of the fungal pigment extracts indicated an enhanced photostability of fungal pigment extracts compared to the commercially available natural colorants Monascus Red and turmeric used as controls. Yellow components of the orange-red fungal pigment extract were more photostable than the red components. Chemistry of the photodegradation of the orange-red pigment extract was studied by high-performance liquid chromatography-diode array detection-mass spectrometry (HPLC-DAD-MS), and a light-induced formation of a structural analogue of sequioamnoscin C, a Monascus-like polyketide pigment discovered in the extract of Penicillium aculeatum IBT 14263 on yeast extract sucrose (YES) medium, was confirmed in the soft drink medium at pH 7.

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