

Implementation of sustainable development goals in the cosmetics industry based on the example of cleansing cosmetics containing a surfactin-rich digestate extract

Autorzy

Artur Seweryn

Tomasz Wasilewski

Zofia Hordyjewicz-Baran

Michał Bochynek

Dominika Pannert

Marcin Łukaszewicz

Agnieszka Lewińska

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Streszczenie

The implementation of sustainable development goals in the cosmetics industry is focused primarily on the phase of product design and the formulation of fully functional cosmetics based on raw materials of natural origin. The aim of the present study was to evaluate the feasibility of using a surfactin-rich digestate extract—a raw material of biotechnological origin—as an ingredient in cleansing cosmetics. A composition was designed, and shower gels based on the digestate extract were formulated. In the next stage of the study, the prototypical products were subjected to a quality assessment with an emphasis on the properties determining their functionality and safety of use by consumers. The shower gels formulated with raw materials of natural origin with the addition of the surfactin-rich extract show acceptable functional properties including viscosity, foaming ability and fat emulsification properties. Importantly, the use of the digestate extract was found to significantly improve the safety in use of the evaluated cosmetic prototypes. This finding is corroborated by a significant decrease in the zein value, which is a measure of the irritant effect of cosmetic formulations. A slight decrease in the ability to emulsify fats found for the tested prototypes confirmed their appropriate functionality and mild effect on the skin. Through the use of the surfactin-rich digestate extract, the cosmetics acquired a natural color derived from the extract. Colorimetric analysis shows that the color changes in the samples should be noticeable even by inexperienced observers.

Słowa kluczowe

Sustainable products, Cosmetics, Biosurfactants, Surfactin, Safety, Quality

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