

INNOVATIONS IN THE FOOD AND COSMETICS INDUSTRY: NEW OPPORTUNITIES FOR USING BIOTECHNOLOGY
(ІННОВАЦІЇ В ХАРЧОВІЙ І КОСМЕТИЧНІЙ ПРОМИСЛОВОСТІ: НОВІ МОЖЛИВОСТІ ВИКОРИСТАННЯ БІОТЕХНОЛОГІЙ)

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У публікації проведено огляд сучасних тенденцій у створенні здорових та екологічно безпечних продуктів харчування та косметики за допомогою біотехнологій. Було проаналізовано дослідження вчених про вплив біотехнологій на виробництво їжі та косметичних засобів.

Ключові слова: *здоровий спосіб життя, біотехнології, харчова промисловість, косметична промисловість, здоров'я, тенденції, генетично модифіковані організми, ГМО, університет Кембриджа, біологічно активні речовини.*

The publication provides an overview of current trends in creating healthy and environmentally safe food and cosmetic products using biotechnologies. Research on the impact of biotechnologies on the production of food and cosmetic products, has been analyzed.

Key words: *healthy lifestyle, biotechnology, food industry, cosmetics industry, health, trends, genetically modified organisms, GMOs, University of Cambridge, biologically active substances.*

In the modern world, with increasing attention to healthy living and environmental safety, biotechnologies are becoming an increasingly important tool in the food and cosmetic industries. They open up new opportunities for creating products that not only meet consumer needs but also contribute to the preservation of health and the environment. In this article, we will explore the latest trends in using biotechnologies to create healthy and environmentally safe food and cosmetic products.

One of the key directions in the use of biotechnologies in the food industry is genetically modified organisms (GMOs) [1]. Research conducted by the University of Cambridge has shown that genetically modified crops can be more resilient to stressful conditions such as drought or disease, allowing for increased yields and reduced pesticide usage [2]. GMOs are also used to study the development of certain diseases, aging processes, and regeneration.

As of today, agricultural crops that were genetically modified according to official portals' data for 2019 include 29 crops: alfalfa, apple, Argentine and Polish canola (rapeseed), carnation, chicory, cotton, creeping thistle, eggplant, eucalyptus, flax, maize, melon, papaya, petunia, plum, poplar, potato, rice, rose, soybean, squash, sugar beet, sugarcane, sweet pepper, tobacco, tomato, and wheat [4].

In the cosmetic industry, biotechnologies also play a significant role. One of the most promising directions is the use of biotechnologies to obtain bioactive substances for cosmetic products. Research conducted by Stanford University has shown that extracts from marine algae, obtained using biotechnologies, have powerful antioxidant and soothing properties for the skin [3].

Vegetable oils are a rich source of fatty acids and are used successfully in cosmetic products. They are a combination of triglycerides, comprised of both saturated and unsaturated fatty acids. Used in components of cosmetic formulations that are marketed for the daily care of the face and body [5].

Proteins in the form of enzymes are used in skin care products to prevent acne, and acne-like conditions such as pimples, and blackheads. These include lactoperoxidase and glucose oxidase.

In addition, polysaccharides derived from gram-negative bacteria such as *Klebsiella pneumoniae* are used to enhance cell renewal and improve skin hydration [5].

In conclusion, biotechnologies open up numerous new opportunities for the food and cosmetic industries. They enable the creation of products that not only meet consumer needs but also contribute to the preservation of health and the environment.

Literature:

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