

Panelists

Sustainability in the
cosmetics industry

Panelist

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FROM NATURE TO INNOVATION: CRAFTING SUSTAINABLE BEAUTY SOLUTIONS

In today's world, sustainability has evolved from a mere trend into an essential feature in the personal care market. No longer a 'nice to have', it has become a prerequisite for new developments. At first glance, the focus could simply seem to be on reducing environmental impact while maintaining product efficacy and quality. However, sustainability extends far beyond this. It requires an integrated approach that considers environmental concerns alongside social and economic development. As defined by the United Nations Brundtland Commission in 1987, in fact, sustainability is about 'meeting the needs of the present without compromising the ability of future generations to meet their own needs'(1).

Sustainability and eco-ethics

This holistic view is becoming increasingly important as consumers become more vigilant, demanding products that are eco-friendly, ethically sourced, and socially responsible. Yet, with the market flooded with sustainability claims, the need for transparency and robust data has never been greater. Companies must not only talk the talk but also walk the walk, providing clear, verifiable evidence of their sustainable practices. This shift towards genuine sustainability is crucial for earning consumer trust and ensuring long-term success in the personal care industry.

Regulations and green initiatives: an ongoing transformation

Consumers are not the only ones pushing towards more sustainable solutions. The shift is also driven by emerging regulations. Regulatory bodies worldwide are implementing stricter guidelines to ensure the safety and environmental impact of personal care products. Recent examples include the ban on microplastics, the European Green Deal, the European Union Deforestation Regulation (EUDR), and a tighter regulation of 1,4-dioxane. The European Green Deal, in particular, is a comprehensive framework aimed at making the EU's economy sustainable by turning climate and environmental challenges into opportunities. For the cosmetics industry, this means reducing carbon footprints, enhancing resource efficiency, and possibly transitioning to a circular economy. The Green Deal promotes innovation in sustainable chemistry and renewable energy use, encouraging greener production methods and materials.

Eco-labeling schemes like COSMOS, NATRUE, and the EWG Verified mark, along with guidelines like ISO16128, are also gaining traction, assuring consumers that products meet rigorous sustainability criteria. These labels often cover aspects such as organic content, ethical sourcing, biodegradability, and reduced environmental impact. Sustainable sourcing and certifications like RSPO are also becoming increasingly important.

Regulations are therefore playing a crucial role in transforming the cosmetics industry. This shift not only supports environmental goals but also drives innovation and growth in the market for sustainable products. Green Deal principles, combined with tighter limits on 1,4-dioxane, for example, are giving a significant boost to naturally-derived surfactants, as alternatives to traditional fossil-based products. Mild surfactants such as glycosides and amino acid derivatives can particularly benefit from this scenario. These alternatives offer a lower environmental impact with a reduced carbon footprint, aligning with the push for more sustainable personal care products.

Green claims: the path to transparency

In this framework, the personal care market is overloaded with sustainability claims, as mentioned above. To enhance consumer trust and to encourage truly sustainable practices and transparency, Europe, for example, is adopting the Green Claims Directive. Aiming to combat misleading environmental claims, its scope is to ensure that all sustainability assertions made by businesses are accurate, verifiable, and based on robust scientific evidence. Companies will be required to substantiate their green claims with clear and transparent data, preventing greenwashing and promoting genuine environmental responsibility. Transparency throughout the supply chain is therefore becoming a 'license to operate'. With growing consumers' knowledge and awareness of ingredients and sustainability topics, the industry is asked to provide greater details on products. Clear documentation and traceability of sourcing, production, and processing practices help consumers make informed choices and hold companies accountable for their environmental and social impact. This transparency builds consumer confidence and drives the industry towards more responsible and sustainable practices.

A revolutionary impact on innovation

In today's landscape, therefore, cosmetic formulators face significant pressure to find more sustainable and biodegradable alternatives to traditional ingredients and formulations. High standards for performance, safety, and sensory appeal must now align with increasing sustainability requirements. This approach has completely revolutionised research processes: instead of solely focusing on end results, the starting point is now the identification of a suitable sustainable source. Chemical modifications are then made to achieve the desired performance, while retaining and enhancing the natural essence of the ingredient.

This is no simple task. Nature offers a vast array of materials, but these often do not perfectly align with the needs of personal care formulations and consumer expectations. In addition, not all ingredients from natural origin respect the principles of sustainability and eco-ethics: for example, some might not come from renewable sources. Therefore, choosing the right feedstocks and enhancing natural materials becomes essential, underscoring the key role of chemical innovation and a sustainable-by-design approach.

As if it were easy, it's far from sufficient. Product development must also respect the environment and the communities involved throughout the entire supply chain and production phase, aiming for not just a sustainable product, but an entirely sustainable process. This goes hand in hand with the need for a rigorous substantiation, through data such as Life Cycle Assessment (LCA) at product level. Achieving sustainability requires therefore responsible chemistry and sustainable industrial practices that prioritise ecological integrity and social responsibility.

Innovative sustainability through novel approaches

Hence, continuous technological advancements are crucial to minimise the environmental impact of production processes, reduce emissions, energy consumption, and waste, and develop new sustainable solutions, all while maintaining strong performance and quality.

In this context, upcycling stands out as an effective and tangible strategy for achieving the much-desired sustainability. Upcycled personal care ingredients reinvent waste materials, transforming by-products into high-performance beauty solutions. The natural essence of the starting material is retained and enhanced through thoughtful modifications, resulting in innovative ingredients.

Biotechnology is another novel approach, offering advanced technical solutions. Through microbial fermentation, using microorganisms such as bacteria, yeasts, or fungi, it is possible to produce compounds of cosmetic interest. Biotechnological processes allow for the creation of high-quality ingredients with a significantly reduced ecological footprint compared to conventional methods.

Conclusions

The path towards sustainable beauty is complex and multifaceted, requiring a harmonious blend of innovation, transparency, supporting data and regulatory compliance. As the Personal Care industry continues to evolve, embracing sustainable practices and transparent supply chains will be essential for building consumer trust and achieving long-term success. By leveraging sustainable-by-design upcycling and biotechnological approaches, as well as robust green claims, the industry needs to move closer to a future where beauty and sustainability go hand in hand. The journey to full sustainability has just begun, but we have already taken the first steps.

References and notes

1. Brundtland report. <https://www.are.admin.ch/are/en/home/media/publications/sustainable-development/brundtland-report.html>