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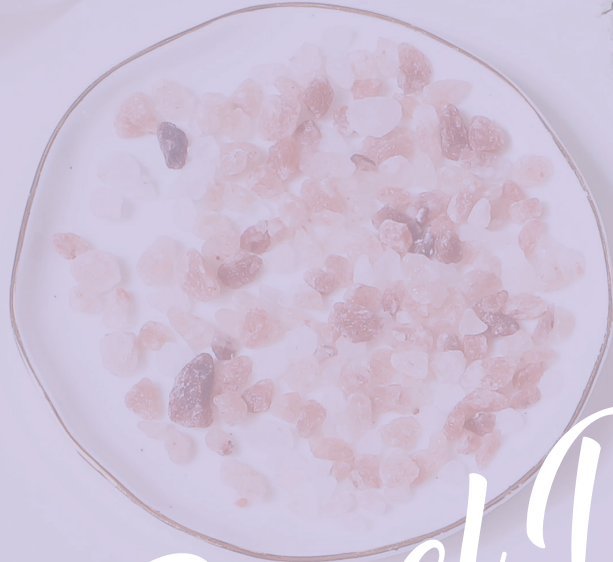
#respectfulbeauty

When nature, ethics and science come together.

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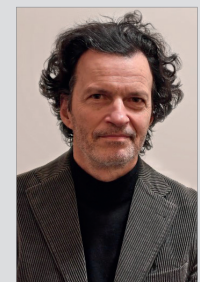
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Panel Discussion on

GIORGIO DELL'ACQUA
ADVISOR NYSCC 2023

Giorgio Dell'Acqua is currently the Chief Science Officer at Nutrafol, a company specialized in natural based supplements and topicals for healthy hair and scalp. Giorgio is also the 2023 Advisor of the NY Chapter of the Society of Cosmetic Chemists (NYSCC) and a member of its Scientific Committee. After obtaining his PhD in Cell Biology in 1989, Giorgio worked in Academia for 15 years as an investigator in applied medical research. Moving to the private sector in 2000, he has spent the last 23 years as an executive and cosmetic scientist in the personal care industry. During his career, he directed R&D, Innovation, Science, and Product Development at multiple companies. He has helped bring more than 200 successful active ingredients and finished products to market, has authored more than 80 publications in medicine and cosmetic science, he holds 2 patents and has been a keynote speaker on clean beauty, natural ingredients, and sustainability.



Keywords: Natural, sustainability, farming, clean.

Commentary article

NATURAL INGREDIENTS: WHAT WE LEARNED AND WHAT IS NEXT

During the past 20 years we have seen the presence of natural ingredients in finished cosmetic products rising. The main reason being an increase market demand for natural formulated cosmetic products considered safer than their non-natural or partially natural counterpart, but still carrying some efficacy. Unfortunately, producers of natural based cosmetics have often short cut in their development to bring products with little efficacy and with an inferior sensorial experience to their non-natural based counterpart when related to aesthetic, texture, and application. Furthermore, limited technology available from natural ingredients suppliers and/or the ingredients cost in use made the task of the formulator harder to achieve an effective natural based formulated product. More recently, consumer have put the bar higher when considering purchasing a natural formulated product and safety is not the only requirement. The clean beauty movement has also redefined safety and challenged the myth of natural equals

safe by adopting some safe chemicals in their formulation offer, (i.e., a good balance of chemicals and naturals) as well as a minimalistic ingredient approach around a balance of safety and efficacy. What is needed today is more technology and more science associated to the development of natural based products. A strong imprint of sustainability is needed as well.

As I discussed in the past in different occasions, technology is available to develop and test natural ingredients, to make sure safety and efficacy is present at concentrations that allow the ingredients to be incorporated in finished products.

More concentrated extract (standardized for actives ingredients), better bioavailability, better stability, as well as specific active are part of the suppliers offer with the advantage in using less material. Testing is more cost effective (including clinical studies) thanks also to increase interest by laboratories/CROs to meet the cosmetic market and therefore proposing interesting testing packages that contains latest tech (omics) and accurate end points.



The rise of natural ingredients in the last decade



CHIARA DEGL'INNOCENTI

Product Manager Hair Care Cosmetic Actives, Rahn

As member of an active ingredients development team, natural ingredients, are my daily work. It is a fascinating world, which in the last few years, got more and more attention from the consumers and consequently from the whole cosmetic industry itself. This industry is often defined as beauty and personal care, which, however, is a broad definition for the business. If we consider all the different applications that are part of the beauty and personal care industry, i.e., skin care, color cosmetics, hair care and hygiene care; all have had a different market evolution regarding the use of natural ingredients. It is therefore difficult to analyze the next evolution of natural ingredients solely for cosmetics. Indeed, we have noticed how, in the last 10 years, there has been a growing interest from cosmetic companies in the research of natural active ingredients for their skin care developments. Even companies that historically were more oriented in the development of dermatological cosmetic products, traditionally using synthetic active ingredients have, in some way, modified their business model and offer to meet the growing consumers' demand for natural ingredients. Concurrently, we have also observed an increase in the number of natural ingredient producers in the market.

In hair care we are now seeing this evolution continue with more and more natural ingredients entering the industry. There is an increased interest in the development of more natural hair care products that also include natural active ingredients. This is a major step in an application that, so far, has usually been more refractory and not embracing the concepts related to naturality. There

is now a definite intention to bring ingredients, so far used in skin care products, into the hair care world, following the so called "skinification" trend. I believe this new trend will continue to rise and develop in the near future, driven by a higher consumer's demand for more natural hair care products, especially to be used at home

As previously mentioned, it is undeniable that there is an increase in consumers that favor natural cosmetics products. This also emerged from the 2019 Statista's survey about natural cosmetics, where more than 50% of surveyed U.S. households stated that they already buy all-natural skin care products, while 35% wanted to start buying them. However, despite this, I do not believe that all the consumers choosing the natural option are doing so because they associate natural ingredients with benefits. I believe the main driver of these consumers is to make a more ethical and familiar choice when buying a natural cosmetic product. Purchasing natural cosmetic products make the consumers feel to have done a better choice for the planet, to have done a better choice for their health and because chemical ingredients are often seen as "unsafe". Additionally, they have bought something which is familiar to them because the products are based on ingredients that they recognize from daily life, e.g., oats, aloe vera, lavender, etc. Conversely, consumers that associate benefits to natural ingredients are the minority and hence the whole cosmetic industry, including of course us, have a duty to demonstrate to consumers that natural ingredients also have benefits. I believe that science is key: for example, during the development

of a natural active, we proved scientifically how the use of this active will bring benefit to the skin. However, in my opinion the problem is in transferring this knowledge from the producer of natural ingredients to the manufacturer of finished cosmetic products, and ultimately the consumer. Another aspect is that not all natural ingredients used in finished natural cosmetic products are supported by clinical studies and this is unfortunate because it undermines the credibility of natural cosmetic products in being efficient. Overall, I see these two aspects as the main challenges for the future to fill the gap and prove to the consumers seeking for product performance and efficacy that natural cosmetic products may also fulfil this aspect, and this can be supported by science.

As already discussed, consumers are moving towards purchasing natural products for a more ethical way of living and therefore, the all-new movement around clean beauty has developed and increased. For us, as developer of active ingredients, it is a very important topic, it is also a very complex one, which so far has not been regulated by the authorities. There are no real guidelines existing that can help companies to move into this topic and hence we have created our own framework to have a conduct of behavior, which accompanies us in all our new product innovation processes and business activities. Our framework is like a compass rose with the four primary cardinals of quality, social responsibility, transparency, and compliance and intercardinals of sustainability, development, safety

and sourcing. We endeavor to always follow these eight directions as much as possible and to be compliant with the clean beauty concept. Whilst natural ingredients are also part of clean beauty, I do not believe they are its major driver. Having a natural ingredient makes the evaluations of some of our compass points easier

to achieve, but not all of them. It also does not mean that a synthetic product could not respect the concept of clean beauty. I believe that the main point for clean beauty stands on how the ingredient has been designed, manufactured, tested and sold, and not necessarily on the background of the raw material itself.

Therefore, from a marketing perspective, it can be said that natural ingredients are driving clean beauty and by embracing the philosophy of clean beauty manufacturers of natural ingredients will reflect and evaluate their processes and method of manufacturing their products.

How to re-discover the beauty of nature?



GIULIA FATTORINI

Product Manager, ROELMI HPC

Recent years have seen an increase in awareness of climatic changes, respect of the Planet and environment. This behaviour influences every aspect of life and concerns the entire industrial world in a transversal way.

We have witnessed an evolution of this concept also in the cosmetic world, starting not only by respecting the needs of the skin, but of the entire ecosystem that we are part of. This vision has given rise to the industrial ecology which consists of Green Engineering and Green Chemistry, driving towards more and more sustainable chemical transformations and processes.

Never more than now the future of the Planet has become of primary importance, moving from consumerism to circular economy.

From the regulatory point of view, the ISO 16128 concurs to provide the guidelines on definitions and criteria for natural and organic cosmetic ingredients and products. A scientific judgment applied to offer principles towards a consistent logical framework for natural and organic cosmetic ingredients and products incorporating common approaches employed in existing references. The purpose of these guidelines is to encourage a wider choice of natural and organic ingredients in the formulation of a diverse variety of cosmetic products to encourage innovation (1).

On the other side, EffCI has dedicated a working group, called INO (Ingredients of Natural Origin), to discuss about regulation regarding natural ingredients applications.

Our working method believes in the bond between efficiency-focused original approaches and safe principles to provide fully proven SustainAbility. For example, we have a proprietary concept (2) that includes a repetitive efficacy control on every production, aiming at reaching maximal efficacy maintaining highest safety results.

From the consciousness about respect of nature and respect of themselves, a new phenomenon called "Clean Beauty" has driven the cosmetic market in the last years.

Respect for skin health and respect for planet means the use an ecological industry in ingredients development process aiming at minimizing the impact on environment. From here, the gained use of the technology process to create "clean" cosmetic ingredients called "upcycling". Upcycled products are the result of the valorization of by-products of other industries such as the food and textile ones, giving them a new life in the cosmetic world.

For instance, a complete line of emollients can be created from non-edible olive fractions. The fundamental

step is the industrial knowhow on the assembly technology to obtain specific ingredients: an ingredient with stabilizing and texture enhancing properties, an ingredient with a rich skin feeling and a carrier for active ingredients that can also give to final formulations a dry and thin touch. By recognizing the excellent properties of olive oil on the skin, it is possible to recreate a line of olive-oil-like ingredients to reach the best sustainability without losing any property of nature perfection (3).

A second example comes from the organic juice industry, with active waters that have been conceived by upcycled Mediterranean fruits. Rich in the phytochemical's characteristic of the native fruit, such as "oligoelements" and molecules that can still function as precious active ingredients for the skin, these active waters not only could replace the demineralized water used in the formulation process with an alternative sustainable source, but they could also contribute to the overall efficacy of the cosmetic product, deliver skin benefits and generate label claims (4).

The Clean beauty need is also linked to a new trend called "skin-minimalism", that is the use of few, clean and efficacy ingredients in the finished products. Being a skinminimalism means becoming a mindful consumer, performing a new