

## "Sustainable Cosmetics" is promoted by SCANCOS!

**SCANCOS** (Scandinavian Society of Cosmetic Chemists) organized once again an exciting and fully-booked conference with almost 120 participants from 11 countries. Participants received the latest news from critical consumer groups, environmentalists, academia, industry, trade associations and authorities in the area.

The perhaps most controversial issue of this year, the parabens, was properly addressed by the Colipa scientific spokesman **Florian Schellauf**. Florian went through a completely new set of scientific data showing that the most disputed paraben (butylparaben) is largely metabolized before entering the systemic circulation. Potentially only minute amounts of the substance are being present in the blood stream after topical application. Perhaps the SCANCOS-conference was the first public meeting disclosing this important matter?

The findings are neither unique, nor unexpected. Other researchers have previously presented similar results indicating a slow uptake and high metabolism of parabens, but nevertheless this study is considered important as this issue has never been addressed in this level of completeness and at high quality standards (GLP) before. Many exploratory scientific studies may suffer from quality defects causing dissemination of misleading information. Sometimes results are also misrepresented or misinterpreted by other parties. When scientists try to reproduce the results, it is impossible. We now await the EU's scientific committee to make its final conclusion on this issue.

### Day 1: The natural protection - from skin to evidence.

The meeting began with two prominent researchers from the universities of Lund and Malmö, **Emma Sparr** and **Johan Engblom**. Emma has shown that lipid-membrane in the skin respond to ambient humidity and either retard or facilitate the diffusion of substances through it; "**Responding membranes**." Skin lipids crystallize at dry ambient conditions and become less permeable. Emma has also discovered that the humectants glycerin and urea not only attracts water, but can also replace water at low humidity. Johan applies the current knowledge on lipid-organization to control **drug delivery**. Johan's knowledge can also be used to reduce the absorption of cosmetic compounds that are devoted to action on the outer surface of the skin, as preservatives and UV filters.

**Jari Alander** from AAK showed that vegetable oils rich in **natural antioxidants** (for example Canola) can be used to protect sensitive vegetable oils as well as skin cells against photo-oxidation. Food ingredients are increasingly used in cosmetics, as pointed out in a number of presentations. Hence, knowledge about the strategy by which the food industry protects their products against microbial attacks is relevant also to the cosmetics industry. **Pernilla Arinder** from SIK gave an interesting overview of models to predict the growth of various microorganisms in food. Some microorganisms should duplicate to enhance the flavor in, for

example, certain sausages, while others should not survive. Risk management of the different steps in the manufacturing chain is applicable also to cosmetics.

In contrast to food, you do not expect cosmetics to contain microorganism. **Michael Dyrgaard Lundov** from The National Allergy Research Centre, Gentofte Hospital, told us that cosmetics may still contain microorganisms. In a survey of 15 products from patients with hand eczema, as many as 67% were contaminated! Mostly in the orifice of the container. Contamination may aggravate eczema! However, more often than microorganisms, the preservatives in the products are culprit substances for contact allergy. The increasing frequency and the most potent ones were discussed.

**Andrea Wingenfeld** from ISP broadened our perspective on nature and safety. She reminded us about the embarrassing conclusion that we expect ingredients synthesized in nature to be safer than those which we synthesize ourselves in our factories! Are human quality control and safety restrictions less rigorous than the ones used in nature? In addition, she poses the question whether it is more advantageous to nature and humans to use organic harvesting of 1000 kg of a cosmetic ingredient, than to manufacture the same amount in a factory? How much water, farmland and biocides will be used? We also know that organic harvesting may also compete with agricultural food-processing.

The question about "natural preservation" was also raised. We should remember that preservatives from nature are not by default approved by our authorities. Benzoic acid and sorbic acid have been actively approved, whereas for example caprylyl glycol is not approved as a preservative.

After these scientific presentations, our first day of the conference was ended with a summary of the influence of media activities on the consumer-behavior, the so-called "**People's Court**". **Kim Michael Christiansen** from the trade organization SPT told us that as many as 63% of the Danish consumers notice test results reported in media, and that 68% also follows the advice given by the media! At the moment, not only consumer groups, but also politicians and authorities question the use of for instance parabens in cosmetics. Misleading information erodes trust!

## Day 2: Simplifying the development of cosmetics?

**Jørgen Hyldgaard**, HYGADÉ, began the second day of the conference by an overview of how the safety of cosmetics can be guaranteed. Based on individual ingredients **toxicity data** the **safety margin** of the product could be determined. The only problem is the lack of data for many ingredients.

**Jeppe Frydendal**, from Nordic Ecolabelling, presented data showing that 93% of Danes recognizes the Swan label and 73% also know that the Swan is an "eco-label." The association aims to accelerate the replacement of unsuitable substances in cosmetics. Swan-labeled products should therefore not contain **parabens** (?) according to their criteria. In the newly

proposed criteria also **zinc oxide** will be banned, except in children ointments for diaper rash. Furthermore nanoparticles (except titanium dioxide as UV-filter) will be banned. Toothpastes with low fluoride content and rinse-off products claiming mildness may need to substantiate their marketing in order to get the Swan-label.

**Jeppe Frydendal**, from Nordic Ecolabelling, presented data showing that the Swan label has a high level of recognition in the Nordic Countries (e.g. 93% in Denmark and 97% in Sweden) and is much appreciated by the consumers. Nordic Ecolabelling aims to accelerate the replacement of unsuitable substances in cosmetics, based upon their perspective on impact on the environment and human health. For example, today the Swan-labeled products must not contain parabens and tomorrow zinc oxide will be very limited due to its environmental classification. However, for zinc substances an exception will be made for e.g. children ointments for diaper rash. Furthermore, nanoparticles (except titanium dioxide as UV-filter) are proposed to be banned. Interestingly, the efficiency of a Swan-labelled product shall be substantiated in the future, including all marketing claims. As an example, toothpastes with low fluoride content and rinse-off products claiming mildness may need to substantiate their marketing in order to get the Swan-label.

**Ulrika Lamberth** from Stockholm Cooperative Society presented their study on natural cosmetics. How should consumers interpret the confusing marketing? Ulrika noted that similar presentation techniques are applied on the products, despite large differences in compositions. The organization insists on for a global definition of natural and organic cosmetics. In addition they have asked the competent authorities to judge the marketing "free from". Will such statements mislead the consumers to believe that other products are unsafe? Furthermore, the organization dismisses in vitro testing for claim substantiation and requires double-blind studies on humans to substantiate the marketing.

**Judi Beerling** is an active colleague in SCANCOS "sister" organization in UK, and in the IFSCC. From her position as the technical expert in Organic Monitor in UK, Judi gave an excellent overview of the fast-growing business of natural and organic cosmetics, which now accounts for 2.7% of the market share in Europe. It's a complex picture of many different types of labels and criteria that all are derived from the consumer's trust in nature as a source of gentleness. But Judi recalled a published analysis of 350 plants in which 71 plants were shown to contain one or more CMR substances (carcinogenic, mutagenic or toxic to reproduction). Whether the hazardous substances also can be found in the extracts used for manufacturing of cosmetics is an issue for the raw material supplier and the person making the safety assessment. Judi presented the key features for **NaTrue**, **Cosmos** and **Fair Trade**, which all have the aim to promote cosmetics becoming "sustainable".

**Florian Schellauf**, Colipa, discussed not only parabens, but also the characteristics and safety of nanoparticles. We know that substances in molecular form penetrate the skin with great difficulties, which make the penetration of particles even more unlikely. Data show that even subcutaneous injection of the inert substance titanium dioxide in its nano-form to be safe. My

personal reflection is that also topical application of zinc oxide of any size would be as harmless as titanium dioxide.

**Annette Orloff**, who previously worked at the Danish Environmental Protection Agency, and now addresses scientific issues at the EU Commission's Unit for cosmetics and medical devices, summed up the conference by giving a comprehensive summary of the changes in the coming cosmetics regulation. Annette reported about the more stringent procedure for safety assessment of cosmetics and of the handling of CMR substances and nanomaterials. Some CMR substances will be permitted in cosmetics if they also are permitted in food. Nanomaterials will be accepted "case-by-case." Surveillance of cosmetics will be facilitated by the new European regulatory framework Platform of European Market Surveillance Authorities for Cosmetics (PEMSAC).

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