Preservatives driven by consumers

Organic Monitor has reported that the move to new alternative preservative systems is driven by high consumer demand for natural and organic cosmetics as well as the growing trend for formulators avoiding parabens.

Parabens are the most widely used preservatives, present in thousands of personal care products that include moisturisers, shampoos, toothpastes, lubricants, and gels. However, some consumers are avoiding products containing them because of non-scientifically proven safety concerns. Concerns over a possible ban are leading cosmetic companies to develop paraben-free formulations.

According to Judi Beerling at Organic Monitor: "Many companies are using preservative systems that comprise multi-functional natural ingredients". By using such 'synergistic blends', the material has anti-microbial properties while not having to be registered as a preservative with the respective authorities. Examples of such preservative systems include blended botanical extracts and spice extracts.

Another development is self-preservation techniques, with some methods originating from the food industry. Hurdle technology involves creating hurdles to block growth of microorganisms in cosmetic formulations; for instance, using materials that reduce the pH of the formulation. Some companies are adding emollients with membrane disrupting properties in cosmetic formulations, while others are boosting natural preservative systems by the use of chelating agents or a glycol alternative.

Organic Monitor says that a major finding from their Technical Insights study is that these new alternative preservative systems are usually not as cost-effective as parabens. Most alternative preservatives have prices in multiples of that for parabens. There are also stability and safety issues associated with natural materials. Supply could also be an issue for large-scale production of cosmetic products.

Customisation is another major development. Formulators are realising the ideal preservative system needs to be customised according to the product type, formulation and packaging. Packaging also plays an important role, with many natural and organic cosmetic companies using airless packaging to reduce contamination risks.

Tea tree water aids organic products

Earthoil has introduced a tea tree condensate which gives an immediate organic boost to personal care and cosmetic products. Distilled from organic tea tree, Earthoil's Organic and Fair Trade Tea Tree Water substitutes water in formulations, increasing the organic ingredient content and creating the potential for '100 per cent organic' labelling.

According to organic standards, water is not classed as an organic ingredient. As a result, high percentages of water commonly found in personal care and cosmetic products can dilute the organic ingredient content in these products. Offering an innovative and sustainable solution to this problem, Tea Tree Water from Earthoil is a naturally occurring product of the tea tree oil distilling process. The pale yellow, camphoraceous liquid acts as a substitute for water in any cosmetic application, while bringing with it the well-documented healing qualities of tea tree.

COMMENT

Cosmetics testing put under the microscope

The thorough testing of cosmetic products is vital to ensure safety and efficacy, and consumers today are far more reliant on scientific data proving claims in order to make informed decisions on their cosmetic purchases. As cosmetics have evolved to become more complex formulations with increasingly powerful results, so the need to back up the claims with evidence has increased.

This is an area where marketing departments and formulators work particularly closely, and as a result, clashes can occur. Theresa Callaghan's article in this issue of *Personal Care* argues very powerfully that increased understanding between the two teams can benefit the development process for all concerned, while also outlining the range of reasons why a study will end up being weak or vulnerable. After all, a study is only as strong as the weakest set of data put into it, so it is vitally important that care is taken throughout the various stages of the entire process. As the articles discussing testing in this issue explain, there is never any guarantee that a product will perform well on the market, but a well-planned testing regime will help to eliminate some of the factors that lead to below-par performance.

Also in this issue is a review of the in-cosmetics show in Barcelona. The range of new products launched at the show was excellent and I hope to be including detailed information on many of these new products in the months to come.

Richard Scott
Editor

New solutions for skin problems

At in-cosmetics 2012 in Barcelona, Greentech presented new solutions for major skin problems. Clerilys W, a strong and natural lightening ingredient fights against age spots thanks to its exfoliating properties and its whitening function, inhibiting activity at three levels on melanogenesis. Secondly, XCell-30, a specific active for atopic tendency skin care and dry skin, and also Silidine; a subtle mix of oligosaccharides and minerals that enhances vascular tonicity.

Also, a new anti-ageing innovation for mature skin was launched. QT 40 acts on the preservation and protection of the dermis constituents, for the reshaping of the face contour. QT 40 stimulates the synthesis of the hyaluronic acid receptor to re-densify and firm the dermis to avoid sagging of the facial contour.

Finally, a natural antiperspirant active has been promoted with new tests on volunteers. In synergy with Greensil, a natural high adsorbant powder, the natural antiperspirant complex is more efficient than aluminium salts.

Compliance 'a burden' says Chairman

The Annual Luncheon of the Chemical Business Association was held at The Grosvenor House Hotel, London on 25 April 2012.

Chairman of the Association, Dr Neville Prior, who is also Chairman of Cornelius, delivered a speech at the event that welcomed current policies that are looking to rebalance the economy and revive the UK's manufacturing industry. He also stressed the importance of recognition in official circles that there is an increasing cost and burden related to regulatory compliance for chemicals businesses. Despite a number of initiatives designed to remove red tape and make compliance less problematic and the framework less complex, Dr Neville Prior said: "We remain concerned that this is a case of activity being confused with progress."

Dr Neville Prior also announced a victory in the CBA's campaign against government plans to introduce new and extended regulatory costs at a time when the deficit reduction strategy relied heavily on economic growth. Government departments have abandoned these plans, but the Association will continue to monitor the situation.

Dr Neville Prior.

The lunch was followed by an entertaining half-hour from award-winning journalist and broadcaster, John Sergeant.

Gravitational ageing signs reduced by new active

To reduce the gravitational signs of ageing, Evonik launched Sphingokine NP at in-cosmetics 2012. This latest active is based on Evonik's sphingolipid technology.

The unique short-chain ceramide Sphingokine NP was found to stimulate the cross-talk between cells throughout the skin. By this it provides multilayer activity improving the state of the various skin layers.

Due to deep penetration of Sphingokine NP, the molecule can reach all different skin layers from the epidermis to the dermis and even the subcutaneous tissue.

Various *in vitro* studies have shown that Sphingokine NP functions in the epidermis as a signalling molecule for keratinocyte differentiation. This leads to strengthening, densifying and smoothing effects of the *stratum corneum*, the protection barrier of the human skin. In addition, factors that stimulate dermal cells (fibroblasts) are induced by Sphingokine NP, leading to improved communication between keratinocytes and fibroblasts and dermal matrix stimulation by keratinocyte-derived signals. In the dermal parts of the human skin, Sphingokine NP supports the dermal scaffold function by inducing fibroblast-derived signals for improved ECM (extracellular matrix) organisation.

In addition, dermal matrix formation is stimulated by keratinocyte- and adipocyte-derived signals. Thus, Sphingokine NP tightens the skin structure and tones skin tissues.

Double award winner aids cell communication

Mibelle's DermCom ingredient was a double silver winner at in-cosmetics 2012 for the Innovation Zone Best Ingredient Award and the BSB Innovation Prize.

DermCom reaches fibroblasts via intercellular communication and uses this strategy to successfully rejuvenate the skin matrix deep in the dermis. It stimulates the communication between epidermal and dermal skin cells by triggering keratinocytes to secrete growth factors. These growth factors enhance the synthesis of collagen and elastin in the dermis.

Clinical studies have confirmed that DermCom both improves and repairs skin texture through its growth-factor like activity, boosting collagen and elastin production, stimulating natural growth factors of the skin, and renewing the skin's resilience and firmness.

Natural extracts and clays

Beraca introduces new biofunctional extracts sourced from four Amazonian fruits: annatto, acerola, guaraná and açaí. The new ingredients mark the launch of Beraca's powdered extracts. Besides having a higher concentration of active ingredients, they have shown improved stability for use in cosmetic formulations. Free from water interference, the ingredients remain active for a longer period of time and are less susceptible to contamination.

With a standardised concentration of active ingredients such as bixin, ascorbic acid, caffeine, and anthocyanin, among others, the extracts are a natural alternative to synthetic raw materials used for manufacturing different cosmetic products.

Also recently launched is the Beraclays line, which contains 13 naturally coloured clays sustainably extracted from the soil of different regions of Brazil. With various applications in the cosmetic industry, they do not contain artificial dyes or pigments. Their tones and shades are

variations of minerals and oligoelements found in nature.

Beraclays' decontamination process does not use radiation or generates toxic waste, allowing their organic properties to be preserved. Composed of mineralogical active ingredients with clinically proven benefits, Beraclays can be used for various purposes, the main of which being as a natural colouring alternative to creams, masks and lotions.

Congress in Johannesburg

The 27th IFSCC Congress will be held on 15-18 October 2012 at The Sandton Convention Centre, Johannesburg.

The South African Society of Cosmetic Chemists will host the event entitled 'Beauty in Diversity – A Global Village' that will feature a wide range of topics and keynote speakers.

Topics include: Developments in active research, Naturals – R&D advances, Neurobiology – wellness and wellbeing, Nanotechnology – science, technology, and pitfalls, Advances in delivery systems and technology, Legislation and regulations – global requirements.

For more information visit: www.ifscc2012.co.za

Partnership creates extracts range

DuPont Tate & Lyle Bio Products Company has partnered with Bio-Botanica to create a new line of botanical extracts called ZeaBasics. These products, manufactured by Bio-Botanica, feature the proprietary ingredient Zemea propanediol.

Zemea is a natural, 100 per cent bio-based ingredient made from corn sugar through fermentation and developed for use in the cosmetics and personal care market. It is a high-performance, environmentally sustainable alternative to petroleum-based glycols and glycerin, where the product's lack of skin irritation, improved moisturisation and aesthetic properties are benefits.

Bio-Botanica utilises its proprietary Bio-Chelated process to manufacture the botanical extracts and combines them with Zemea for natural personal care and cosmetic applications. Formulators should consider ZeaBasics for their natural products. ZeaBasics reduce the feeling of tackiness, greasiness and increasing the perception of easy absorption and smoothness, providing an overall pleasant consumer experience.

New results reveal moisturising effect

Ceapro has released new information demonstrating the quality of their CP Oat Beta Glucan, when compared to a commercial hyaluronic acid.

When tested in a standardised study using eleven subjects, the clear, odourless liquid ingredient was found to improve the moisturising effect of the epidermis superficial layers by 16% after one application.

CP Oat Beta Glucan not only offers high levels of moisturisation, but also previous studies have demonstrated its capabilities to reduce fine lines and wrinkles. This makes it an ideal ingredient for anti-ageing products. Studies show the appearance of lines and wrinkles are reduced, with a 16% reduction in the average depth of the deepest wrinkle, and a 13% reduction in overall roughness after eight weeks' use. In addition CP Oat Beta Glucan promotes collagen synthesis, allowing for improved skin elasticity as well as acting as a natural immuno-stimulent. CP Oat Beta Glucan is ideal for skin rejuvenating creams, lotions and serums, as although an effective film-former, the ingredient is also capable of penetrating the skin. Due to its patented extraction process, CP Oat Beta Glucan is highly purified allowing for exceptionally easy formulation.

First prize for natural 24-hour deodorant

Germany-based Dr. Straetmans GmbH has won the BSB Innovation Prize in the category of functional ingredients at this year's in-cosmetics in Barcelona. The members of the jury from Henkel, La Prairie, Mibelle Cosmetics and Procter & Gamble highlighted the excellent performance of the natural ingredient, dermosoft decalact deo.

dermosoft decalact deo is the first certified natural deodorant active that shows clinically proven 24-hour deodorant effect. The assessment was done in a clinical study with 20 individuals evaluated by an expert panel under controlled conditions. The sniff-test was done comparing to the well known, petrochemically-derived ethylhexylglycerine as a benchmark. The duration of the deodorant formulation was evaluated after single use and after one week of daily use. In both cases dermosoft decalact deo showed 24-hours of deodorant effect which was superior to ethylhexylglycerine with only 6 hours duration. *In vitro* testing against *Corynebacterium xerosis* that was performed prior to sniff-testing, already showed that the natural dermosoft decalact deo exhibits the same reduction of *Corynebacterium xerosis* as triclosane and ethylhexylglycerine.

New head appointed

As of 1 June 2012, Inese Lowenstein will become head of the Pigments & Cosmetics business unit at Merck.

Lowenstein is director of marketing in the Process Solutions business unit of Merck Millipore. She joined Millipore in 2003. From 1999 to 2003, she held various management positions at two biotechnology companies in Massachusetts and California. From 1992 to 1996, she had marketing and sales responsibility at an energy supply company in Riga, Latvia.

Lowenstein is a native of Latvia. She studied business and engineering at Riga Technical University. Additionally, she earned a Masters degree in Business Administration from the Walter A. Haas School of Business, University of California in Berkeley in 1998. Lowenstein will move from Merck Millipore in Bedford, Massachusetts, to Darmstadt.

Marketing manager

Lonza has announced that Victor Low has joined the Lonza Personal Care team as a commercial marketing manager. Victor will be responsible for driving and supporting new global product launches for the natural and protein product lines.

Victor has over six years' experience at Croda where he has held positions of increasing responsibility, finally as marketing executive. In this role, Victor's responsibilities were to launch and promote unique botanical extracts for personal care in North America. Victor's previous responsibilities included formulation development for hair care and project management for manufacturing.

Victor earned his Bachelors' degree in Chemical Engineering from Rutgers University.

Next generation biomimetics

Croda has announced the launch of Keramimic 2.0, a new keratin quat that Croda claims takes biomimetics to the next generation. Developed using the company's proprietary manufacturing method, this highly specialised conditioning active provides targeted repair to the most damaged areas of the hair's surface.

Developed using the most recent advances in Proteomics, the amino acid sequences of the peptides found in Keramimic 2.0 match those present in cuticular and cortical regions of human hair. Keramimic 2.0 not only treats 'like with like', it mimics the peptides found in hair keratin proteins to repair and condition the most damaged areas of the hair cuticle.

In addition to Keramimic 2.0's biomimetic behaviour, it can intelligently work to provide restoration to the areas of the hair that need the most treatment. Analysis of a hair fibre shows the hair's anionic surface becoming progressively more anionic as it is subjected to more damage towards the tip. Time of Flight Secondary Ion Mass Spectroscopy (ToF-SIMS) image mapping technique has been used to demonstrate that using Croda's cationic chemistry, Keramimic 2.0 deposits on the most damaged areas of the hair cuticle from root to tip, intelligently repairing the hair's surface right where it is needed most.

Soothing extract launched

ID Bio has been promoting its new TitrExtract Chamomile, one of three new extracts to be added to the range. TitrExtract Chamomile features the soothing and restorative properties of chamomile, titrated in bisabolol oxide.

Recommended usage levels are 1%-10% and it is ideal for use in baby care products, calming shampoos for irritated scalps, and body care products for damaged skin.

Chamomile has been used since Ancient Greece and was studied for its exceptional curative virtues, notably for its action on headaches. It also appears in Nordic mythology, in Scandinavia, and was one of the nine sacred plants that were given to the mankind by Odin, the sky god. Today, chamomile is used to treat various diseases in adults and young children.

Milk for sensitive skin

Crodarom has launched Chufa Milk EC, a naturally rich balm that is ideal for dry, sensitive skins. Chufa, or tigernut, is considered as one of the oldest cultivated plants in Ancient Egypt.

Chufa Milk EC is an Ecocert-certified milk obtained from organic chufa, from the tubers of *Cyperus esculentus*. The plant thrives in wetlands and grows around streams and ponds. Consisting of sugars, amino acids, flavonoids, minerals and vitamins C,E and B, chufa with its moisturising and antioxidant properties may be used just as easily in skin care as hair care applications.

Relocation of company HQ

Essential oil and aromatic chemical distributor, Berje, has announced the relocation of the company's North American headquarters to its new facility in Carteret, New Jersey.

The specially designed 235,000 ft^2 (24,000 m^2) warehouse and office complex will house all company activities including executive offices, QC/R&D, in addition to all support functions. The new facility will add vastly more manufacturing and distribution capacity for both domestic and international business.

The site was chosen for its close proximity to major highways, the port of Newark and Newark Airport: essential to the company's import and export segments.

The existing distribution sites in the mid-west and on the west coast will continue to serve their local areas.

Natural anti-ageing active

Skin ageing is the result of the imperfect repair of cumulative damage by both internal stress factors, such as allergies, overactive immune response and age-related changes, and external factors, such as environmental pollutants, ultraviolet/visible light, and irritants to the skin.

Recentia CS, the first Zeta Fraction ingredient to be introduced by AkzoNobel, capitalises on a broad spectrum of powerful substances contained in the living leaves of the *Camellia sinensis* (tea plant) to help cosmetic products reduce the signs and appearance of ageing.

A comprehensive array of assay tests conducted by AkzoNobel Global Personal Care has demonstrated that Recentia CS bioactive cosmetic ingredient offers many characteristics that are important to manufacturers of finished cosmetic products. These characteristics include minimising formation of reactive oxygen species and free radicals (DPPH: 2,2-diphenyl-1-picrylhydrazyl), preventing oxidative damage from sunlight-generated singlet oxygen, and ensuring photo-stabilisation of active product ingredients susceptible to UV radiation.

3rd Congress on skin physiology

The third edition of SPIM (Skin Physiology International Meeting) will take place in Vichy on November 22 and 23, 2012. The Congress is held every two years and its aim is to integrate high-level conferences of internationally recognised researchers with youth researcher sessions.

Four topics related to skin physiology will be presented for this third edition: microflora, ageing, epidermal dynamics and cellular physiology. More information and registration is available on the site: www.skin-meeting.com