

A conversation with Dr. Peter May, Sales & Marketing, Flavex Naturextrakte GmbH



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Flavex Naturextrakte GmbH

EURO COSMETICS: *Your company manufactures natural extracts. How long has your company been in business and how do you make the extracts?*

Dr. Peter May: We are a medium-sized company that has specialized in the extraction of herbs, spices, and other plants with supercritical carbon dioxide for more than 30 years.

Supercritical extraction is a gentle, natural, and environmentally-friendly method in which food-grade carbon dioxide is used as a solvent under pressure. The extracts contain no additives and are practically free of germs and heavy metals. No preservatives are required. Furthermore, the extraction is done without temperature load and by excluding oxygen. Thus, valuable and sensitive active ingredients are preserved. This method is also approved for the manufacturing of organic certified extracts.

EURO COSMETICS: *What are the fields of application for CO₂ extracts?*

Dr. Peter May: The main fields of applica-

tion are cosmetics, perfume, food supplements, foods, and aromatherapy. We provide these markets with innovative fragrances and active ingredients.

With CO₂ extraction technology, a wide variety of different types of extracts can be made, such as highly-concentrated bioactive extracts, special fatty oils, and essential oils.

For cosmetic applications, for example, we offer extracts with anti-aging properties in our product line. The CO₂-extracted pomegranate seed oil with high puniic acid and phytosterol content improves the elasticity and strength of skin with topical application, and it protects the skin against moisture loss. Extracts of amaranth, millet, evening primrose, and sea buckthorn seeds, guggul resin, and wheat bran contain high amounts of valuable bioactive phytosterols. Phytosterols play an important role in skin metabolism. For example, they stimulate collagen formation and improve the cells' membrane stability, which makes them ideal anti-aging components. The guggul extract has an effect similar to co-enzyme Q10.

EURO COSMETICS: *Environmental hazards and air pollution are especially serious in*

densely-populated urban areas and big cities. Do natural extracts protect skin here too?

Dr. Peter May: UV exposure, exhaust gases, nitrogen oxides, ozone, fine dust, and oxidative stress due to free radicals make a significant contribution to health problems such as respiratory ailments, mucosa inflammation, and skin problems.

Here, the extracts named, in combination with antioxidants such as rosemary and sage, which also have anti-inflammatory and antimicrobial properties, can be helpful.

Extracts of arnica, chamomile flowers, and marigold have an anti-inflammatory effect. As active ingredients, sea buckthorn berry and sea buckthorn fruit pulp oil have a high palmitoleic acid content and unsaponifiable components with phytosterols, tocopherols, and carotinoids, which have a synergistic, protective effect when used against environmental hazards. Palmitoleic acid as essential component of the skin lipids protects and regenerates skin and mucous membranes. The effect of these components with topical application can be described in brief as "protect-heal-nurture."



Sea buckthorn berries



Raw materials warehouse (cinnamon)

EURO COSMETICS: *Are there indications that optimal nutrition helps prevent skin diseases?*

Dr. Peter May: Yes, there are some initial very promising studies in this direction. Omega-3 fatty acids, for example, have an anti-inflammatory effect and reduce the general risk of inflammation-related chronic conditions, which especially increase with aging. Newer dermatological studies show that the long-term consumption of foods rich in Omega-3 fatty acids keeps the skin healthy, increases the threshold value for erythema formation and protects against UV-induced genetic damage. Omega-3 fatty acids are also important for the function of cell membranes. Thus, long-term consumption reduces the risk of basal cell skin cancer.

Clinical studies with orally-administered sea buckthorn seed extract have proven its anti-oxidative, anti-inflammatory, and regenerative effects with an improvement of the skin hydration, elasticity, and roughness of the skin.

EURO COSMETICS: *There is a preference for extracting fats/oils using cold pressing and hexane extraction.*

What advantages does CO₂ extraction offer here?

Dr. Peter May: With CO₂, high-quality, sensitive fatty oils with a higher content of poly-unsaturated fatty acids and unsaponifiable ingredients such as carotenoids, phytosterols, tocopherols, tocotrienols, and triterpenes can be extracted gently. In comparison to hexane extraction, there are

also no solvent residuals in the extract. CO₂ extraction at moderate temperatures and excluding oxygen guarantees that poly-unsaturated fatty acids are not oxidized during extraction. Valuable oil seeds with oil content of 10% or less are especially well-suited for CO₂ extraction since the entire oil content is extracted with this technology. Also, additional refining steps are usually not required, since undesired by-products that would cause a compromising of the extract are completely retained in the extraction residues.

EURO COSMETICS: *You mentioned that you also manufacture essential oils. What advantage does CO₂ extraction offer as compared to steam distillation?*

Dr. Peter May: Oxidation products of monoterpenes and sesquiterpenes, which form during steam distillation, are suspected of triggering allergic reactions. Gentle extraction with CO₂ at low temperatures and excluding oxygen prevents the degradation and oxidation of sensitive ingredients. CO₂ extracts therefore contain the complete spectrum of genuine ingredients and have an authentic fragrance profile. Natural fragrances and perfumes are currently trendy. Recent growth has been greater than in the cosmetics sector in general. Usually natural fragrances have a very complex fragrance profile. Here, CO₂ extraction is the method of choice. CO₂ extracts of vanilla pods, coconut, musk, lavender, and coriander are just a few examples. The balanced fragrance profile of supercritical vanilla planifolia extract is unmatched and can be described as sweet, creamy, warm-woody, with a few spicy notes.

EURO COSMETICS: *How do you explain the boom in natural cosmetics?*

Dr. Peter May: Today, we have registered a drastic increase in skin diseases such as allergies, neurodermatitis, etc. Especially responsible for these are: Stress, improper nutrition, and environmental stresses. Traditionally, natural ingredients have been used in cosmetics and for skin diseases since ancient times. The gentle and sustainable effectiveness of natural ingredients is a great advantage, precisely with



Extraction system

stressed, sensitive skin. That which helps with healing can also do good service in cosmetics for prevention and care.

EURO COSMETICS: *What especially distinguishes your company?*

Dr. Peter May: In addition to our many years' experience and expertise with CO₂ extraction technology, quality assurance is a crucial factor for our success. As a manufacturer, we control the entire supply chain from raw material to extract. Quality assurance starts with the checking of the authenticity and purity of the raw materials, extends to in-process controls, on through to quality control of the CO₂ extracts with state-of-the-art analytical methods for valuable active ingredients and contaminants. Continuous research and development for existing products as well as innovative new developments that take into account the scientific state of the art are other components of our success that guarantee the high quality of our products. We can deliver more than 100 extracts, for the most part in organic quality, directly from our warehouse.

EURO COSMETICS: *How do you address sustainability at your company?*

Dr. Peter May: Flavex maintains cultivation contracts for key raw materials with select-

ed agricultural operations in Germany, as well as in other European and non-European countries.

Industrial, intensively-operated agricultural production is one of the main causes of ecological and social problems, as well as the decline of biodiversity. By contrast, Flavex relies on environmentally-friendly, and, insofar as possible, organic cultivation. Through supplier audits on-site, Flavex supports its partners in sustainable production and provides advice about all

aspects of cultivation. Thanks to this orientation and our long-term relationships with suppliers we trust, we create the conditions for socially responsible and sustainable products for all actors in the supply chain. We are convinced that sustainability is not just a guarantee of outstanding quality; it also offers all partners a competitive advantage.

EURO COSMETICS: *How do you see the future of Flavex?*

Dr. Peter May: Natural extracts support the physiological and biochemical balance of metabolism and the skin and thus contribute to prevention and keeping people healthy. The demand for high-quality and analytically well-documented natural extracts with a high percentage of active ingredients will also increase in the future. Easy-to-declare active ingredients such as CO₂ extracts, which in most cases are 100% extracts from the plant in question, are trendy now. Furthermore, the extracts fulfill the criteria for all known natural cosmetic seals and standards. We will go into the future with great trust and we are convinced that this positive development will continue.

EURO COSMETICS: *Thank you for the conversation.* ■



Extract preparation - vacuum distillation system