

Point of View

Natural Fragrance Ingredients*

Trends and challenges

Jack Corley, Aromatic International LLC

What are Natural Fragrance Ingredients?

I have defined natural fragrance ingredients as volatile aromatic compounds found in plants. This includes essential oils, floral extracts (concretes and absolutes), exudates and oleoresins. For purposes of this article I am also including floral waters and botanical extracts.

According to Freedonia, a market research group, today's essential oil and natural extract market is around \$2 billion, or 11.6 percent, of the world fragrance and flavor market. That figure has doubled since 1989, reflecting increasing consumer demand for "all things natural," whether soft drinks or shampoos. Today's consumers are far more educated and discriminating in their consumer product choices; this has had a major impact on how companies market their products.

Labeling

Truth in labeling laws have become a friend or foe to many companies engaged in the business of fragrance and beauty care. Those embracing it have found a way to endear themselves to health-conscious consumers, building brand loyalty through innovative product development and consumer marketing. Today, new natural products used in personal care are being introduced so rapidly that it is hard



Truth in labeling laws have become a friend or foe to many companies engaged in the business of fragrance and beauty care — those embracing the laws have found a way to endear themselves to health-conscious consumers, building brand loyalty through innovative product development and consumer marketing.

to keep up with the most recent advances. We in the industry now hear of antioxidants called extremozymes, which are volcanic organisms, in addition to others such as cranberry seed oil, pequi, and maracuja, which contain natural fatty acids like omega-3 and omega-6, and polyphenols.

Truth in labeling, however, has also proven to be quite challenging to companies doing business in Europe. The 7th amendment of the European Cosmetics Directive, enacted by member state law in September of this year, requires the

identification of 26 "fragrance allergens" on labels for the final product when present above a pre-determined, stipulated cut-off level. A number of substances naturally present in essential oils are covered by this list, including coumarin, eugenol, geraniol, citronellol, and the ubiquitous linalool. This new requirement is having a predictably profound effect on how perfumers are creating new fragrances today. It should be pointed out that while this list of 26 allergens is only impacting Europe at this time, it does directly affect the US multinationals who sell their products outside the North American market.

History

Long before the concept of allergens existed, natural fragrance ingredients were part of daily life. About 4,000 years ago, Egyptians were busy concocting fragrances containing myrrh, cinnamon, rose, galbanum and olive oil. The Ancient Egyptians referred to incense as the "fragrance of the gods." Burning of incense in religious rituals had many purposes. First, the scents were thought to be pleasing to the

*These comments were originally presented at the Personal Care Ingredients & Technology Exposition's High Function Naturals symposium in New York, April 2004.

gods. Second, they served as flight-paths for prayers. And third, they masked the stench of burnt offerings made to the gods. Perfume laboratories were attached to temples in Egypt and Israel. At En Gedi in Israel, the remains of a temple complex have been found complete with a 6th century AD perfume laboratory. In the Assyrian “Book of Herbs,” a collection of cuneiform-inscribed tablets from the 2nd millennium BC, there appear



Since 1989, there has been considerable growth in consumer demand for “all things natural,” whether soft drinks or shampoos.

not only recipes for established medicinal herb compositions, but also for fragrant ointments and perfumes. Among them is found a perfumed drink meant to cure bad breath. The Romans, too, quite fond of public bathing, enjoyed submerging their bodies in perfumed baths.

Birth of the modern age: The first industrial development of fragrances occurred in the town of Grasse in the south of France, which was destined to become the center of the perfume industry. In the

16th century, factories were established specializing in the manufacture of gloves and, later, perfumed gloves, which were popularized by Catherine de Medici, Queen of France (1547-1559), who chose civet, amber and musk for her gloves. The shift from leather glove manufacturing to perfume marked the beginning of the modern era of perfumery, and Grasse flourished with continual improvements in distillation methods, which added more and more natural fragrance ingredients to the perfumer’s pallet.

With increasing manufacturing sophistication, the French began to reach out beyond their borders to find new blossoms, stems, leaves, roots, bark, fruit, peel, wood, sap and even glandular secretions from animal sources to satisfy their insatiable appetite for new scents. Northern Africa, in particular, Morocco, Tunisia and Egypt, became French perfume factory outposts. Petitgrain, orange flower, jasmine, rose and many other floral oils became the building blocks for so many classic fragrances.

But other ingredients were discovered in nearby Italy. In 1792, Jean Marie Farina created the famous “Eau de Cologne,” based on Italian citrus oils of neroli, lemon and bergamot, with the addition of French lavender and rosemary. This perfume became known as the first popular “bouquet,” and was the genesis for the custom fragrance manufacturing industry. Farina’s bouquet led to the creation of the fragrance “4711,” named after the address of the building in which it was created — 4711 Glockengasse Cologne, Germany.

Changing Supply Bases

Over the years, extraction and distillation methods continued to improve, and the sources of natural materials have shifted numerous times. Grasse is now a retirement community for wealthy Europeans. And North Africa, Italy and many other former natural product growing areas have given way to demographic, social, cultural, economic and technological

changes. China and India continue to grow as primary producers of many essential oils and other natural products. Those countries now account for over 40 percent of natural fragrance and flavor ingredient production. The United States, at 15 percent, maintains some producer preeminence by virtue of mint and orange oil production. Take those products out of the mix, and the United States is virtually a non-entity.

Where We're Headed

The importance of essential oils and natural extracts, however, should not be underestimated. As mentioned earlier, at almost 12 percent of the \$18 billion world flavor and fragrance market, this segment is still a very important part of the overall business. According to Freedonia, growth for essential oils and natural extracts in the 2004-2009 period is expected to be around 30 percent, or 6 percent annualized, which is more than double the expected growth of the US fragrance market for this same period. The difference reflects growth in certain niche areas such as the organic naturals segment, which I will address soon. This is good news for those involved in the production and trade of essential oils, particularly as demand for traditional US fragrance products is weak.

Competition: The US fragrance market is growing marginally at around 2.5 percent per year. Year 2004 market value is expected to be around \$7.7 billion. The US fragrance market is highly saturated,

dominated by cosmetic and toiletries leaders such as Unilever, L'Oreal, Procter & Gamble, Estée Lauder and Shiseido. The fierce competition in this market has led to price wars and new distribution channels and approaches. Mass market name brand fragrances continue to represent the largest piece of this \$7.7 billion pie. In addition, fragrances used in hair care, skin care and even the \$3 billion candle market are created with the mass market in mind. The competition has resulted in lower and lower price points. Name brand fragrances traditionally found only in upscale boutique and specialty stores are now heavily discounted in Wal-Mart, K-Mart and even warehouse clubs.

The challenge of naturals: Mass market fragrances tend to have a much higher concentration of aroma chemicals, not naturals, to meet lower price point demand. The business of creating and marketing mass market fragrances while trying to address the consumer shift towards health and wellbeing poses a creative and economic dilemma for perfumers and consumer product companies. Natural personal care products must be effectively differentiated from lower priced mass

market counterparts if people are expected to pay a higher price.

Men and the Aging Population: Reasons for Hope

With respect to trends, today's profitable areas for fragrance and fragrance applications are in cosmeceuticals, aromatherapy, and spa and beauty, where demand for natural products is also increasing. And men are becoming more esthetically dis-

cerning and interested in their appearance. As the baby boom continues to age, coupled with a median age of 40 expected by 2007, men will simply want to look younger. In a survey of 1,300 men conducted by the "Men's Health" and the Cosmetic, Toiletry & Fragrance Association, 67 percent said it is more important for men to look their best today when compared with 10 years

ago. The results showed 78 percent of men make an active effort to look their best, and 86 percent make an effort to make their skin look its best. That may explain why this segment is growing at over 7 percent per year with 2004 sales estimated to be around \$350 million.

Some other interesting trends regarding men and fragrance:

- Forty-two percent wear fragrance daily, compared to 37 percent in 1998
- Men own four to five different brands
- Men are demanding products with more natural ingredients with an emphasis on herbal, exotic fruit, floral and vanilla

Desirability of Naturals

There is a near universal consumer perception regarding the ingredients that are used in the creation and development of "healthy" cosmetics and personal care products: namely, "natural" equals "healthy." The value of natural personal care sales is estimated to be around \$4.5 billion, or 10

percent of health and beauty care sales in the United States. "Natural" has become ubiquitous in many consumer goods categories.

Slippery definitions: Claims of naturalness can be seen everywhere in the consumer market, even in cases in which the product contains just a small amount of a natural ingredient. This has caused a great deal of consumer confusion, controversy and even lawsuits as companies struggle to support their "natural product" claims. So how does one qualify the term natural in a way that is meaningful to the consumer? Call it organic!

Consumers seem to be open to the use of organic ingredients in personal care, according to a recent National Marketing Institute study. There is a corollary between natural and organic, with most consumers associating organic as a higher, or purer, form of natural. But what is organic? Well, it is simply a method of growing and processing natural ingredients under controlled conditions that must meet stringent purity standards to insure the materials are free of pesticides, heavy metals and synthetic fertilizers. It is important to remember that natural products are not always organic, though organic products are always natural.

Pricing pressures: That brings me back to the "paradox" I referred to a few minutes ago. Unlike aroma chemicals, where greater use generally means lower prices, the more you use of a natural fragrance ingredient, like essential oils, the higher the price. That problem is exacerbated when we throw organic essential oils into the equation, because of their extremely limited availability today.

The risks: Tony Burfield, in a recent article for Soap Perfumery and Cosmetics, makes a compelling case with respect to other problems facing the future availability of natural products used in perfumery. He argues that this "return" to "all things natural" has resulted in the potential extinction of 5,714 plants, many of which are used in perfumery and cosmetics. Burfield further explains that "[g]reen policies and any semblance of ecological awareness with respect to these commodities often seem to originate more from the attitudes of consumers via the raw materials producer and re-seller, in spite of the existing national and international laws restricting or forbidding trade in certain species." He goes on to say that:

the trend towards exotic botanical extracts as actives in cosmetic products is a major development and has spawned some interesting associations....Charges of bioethnic plundering in exotic materials for cosmetics are generally offset by the fact that indigenous peoples may gain monetarily from these exploits. But ethnobotany is now such a buzz-word across the cosmetic world that it is hard to establish whether there is any effective monitoring for the majority of these raw materials, and ignorance of the conservation status of these commodity items would seem to be the norm among the majority of technical staff of many leading companies.



The results of a recent study showed 78 percent of men make an active effort to look their best, and 86 percent make an effort to make their skin look its best.

Burfield cites a number of fragrance ingredients that are at risk, including essential oils produced from orchids, and a number of other essential oils such as costus, rosewood, amyris, sandalwood, cedarwood, wormwood, organum and buchu to name a few.

The trend of consumer preference for natural versus synthetic is not just a result of fashion, but actual lifestyle changes for those consumers, and Burfield's comments point to the shortages, if not potential extinction of needed materials. Such are the

consequences — *if* producers and consumers are not on the same page with respect to agro-management and sustainable production methods. So, if consumers view natural as good, and organic as better, how does one respond to consumer needs in the face of limited availability?

An eye toward solutions: Allow me to go back to the example of the perfumer who generally creates fragrances using aroma chemicals, which are both readily available and very stable in terms of price and quality. In the years to come, how does that same perfumer create a winning fragrance that has to be 100 percent natural, and perhaps organic, while

satisfying consumer demands at reasonable pricing? At this moment in time, it is a paradoxical question. But it is a dilemma that many companies in the fragrance creation business are facing. Surely regulatory pressures will not dissipate as time goes on, and the controversies over synthetic versus natural and conservation versus exploitation will continue in coming years. The greatest challenge is balancing the demand for natural fragrance ingredients with supply. Natural products are often crop items that have specific growing seasons, and are subject to infestation and climatic variations like all agricultural products. Adequate supply requires planning and development as is clearly pointed out in Tony Burfield's article. This requires closer collaboration between consumer products companies and their fragrance manufacturers. And the fragrance manufacturers need to have closer collaboration with the actual producers of the fragrance ingredients. This will insure that the producers are able to respond more timely to market changes.

Despite these unresolved issues, though, perfumery will never go away. Some 4,000 years have passed since the Egyptians were busy concocting fragrances containing myrrh, cinnamon, rose and galbanum. And somewhere today, perhaps even in Egypt, a perfumer is creating a new fragrance that contains these same natural products.

Address correspondence to Jack Corley, Aromatic International LLC, 114 Four Winds Drive, Middletown, NJ 07748. ■