

Sandalwood Scents

In fine fragrance, sandalwood is a popular and expected ingredient in both women's and men's fine fragrances, particularly as base notes. According to Michael Edwards' research, sandalwood is so well liked, about 47% of all perfumes created since 1790 contain sandalwood notes. Unless you are a botanist, wood scientist, forester or perfumer, the term sandalwood is used generically for multiple species. In perfumery, there are two main types of sandalwood, Indian sandalwood (*Santalum album*) and Australian sandalwood (*Santalum spicatum*).

Often considered the poor cousin of Indian sandalwood, the *Santalum spicatum* species dates back to the 18th century and is from the wild forest native to Australia. Indian sandalwood and Australian sandalwood have different olfactive profiles. When compared to Indian sandalwood (*Santalum album*), Australian sandalwood (*Santalum spicatum*), is described as more raw, earthy and sharp. Steven Claisse, VP Senior Perfumer at Takasago, characterizes Australian sandalwood as "earthier and coarser" while Christina Christie, Senior Perfumer at Fragrance Resources, Inc., agrees and adds "rooty" to describe the difference. Additionally, there are synthetic ingredients reminiscent of sandalwood. According to Kari Arienti, VP Senior Perfumer at Symrise, "there are powerful woody chemicals evocative of Indian sandalwood, but you can't get the complexity, richness and depth of character like that of real sandalwood." Claisse concurs, "Indian sandalwood imparts a special naturalness and creates an effect that is not replaced by synthetics." Steven Orson, Senior Perfumer, Bell Flavors & Fragrances, agrees, "There are aroma molecules that can create a sandalwood effect and you can achieve success, but Indian sandalwood is incomparable. There is nothing else like it. Nothing replaces it." In perfumery, Indian sandalwood (*Santalum album*) is the more coveted of the two species for fine fragrance formulation. *Santalum album* oil contains higher levels of Beta santalols, the active ingredient that gives it its signature scent, compared to *Santalum spicatum*.

Known for its precious oil, Indian sandalwood (*Santalum album*) is derived from the heartwood. Classified as woody or oriental, Indian sandalwood is valued for its distinct olfactive properties, which are often described as creamy, milky, sweet, warm, soft and rich. Commonly used as a base note, it is a natural fixative and has an inherent capacity to enhance other perfume ingredients. Indian sandalwood adds warmth, depth and character to fragrances. "As a young perfumer, I remember having Indian Sandalwood in my kit. It was fabulous. The dry down was

super rich and creamy. It was very voluptuous!” says Arienti. Similarly, Claisse recalls as a perfumer starting in the industry, “Indian Sandalwood was a staple in my perfumer palette and formulations. We were able to use a lot of it.” “It has a luxurious, creamy effect and has the most refined character compared to other woody essential oils such as patchouli and cedar, which are harsher and earthier. Indian Sandalwood is smoother and has a very linear profile; it’s an extremely consistent material. In a formula it has a tendency to round out a fragrance and meld other materials together. It adds a lovely, sensual effect on the skin,” says Claisse. Likewise, Orson notes, “Indian sandalwood is the preferred sandalwood in all classic perfumery. It was a commonly used ingredient in fine fragrance and toiletries, very much like cedarwood is now. Indian sandalwood has a certain creaminess; it’s smooth and milky. It also has a synergistic effect that helps smooth out other woods in a formula. It has a superior substantivity, it’s very long lasting on the skin.”

Several recent fragrance introductions have been inspired by or are based on Indian sandalwood. Alexander Vreeland created a line of five fragrances in tribute to his late grandmother Diana Vreeland, the well-known editor of Harper's Bazaar and Vogue. Absolutely Vital is one of the five perfumes and was designed for Vreeland’s “love for India and passion for sandalwood.” The fragrance is self described as “a mysterious and enveloping woody composition of Indian sandalwood.” In 2014, Crabtree & Evelyn repackaged, reformulated and relaunched its 2004 men’s Sandalwood scent. The company also changed the name to Indian Sandalwood. Maison Francis Kurkdjian’s Aqua Vitae Forte launched in June 2015 and is a woody, citrus floral with a foundation of East Indian sandalwood and Haitian vetiver. As a part of the Asian Tales fragrance collection by niche perfumer Kilian Hennessy, Sacred Wood is an ode to Indian Sandalwood because it “has been exploited excessively and its existence is vulnerable.” Kilian created this scent because he “wanted to restore the essence of this fragrance [Santalum album] that has an important imprint in our olfactory heritage.” Indian sandalwood continues to be an important inspiration and ingredient story in perfumery.

Scarcity of Indian Sandalwood

Native to India, Santalum album has been said to date back to 4000 years. Historically, Santalum album has been harvested from wild forests growing primarily in the southern part of India in the Bangalore area. It is one of the most expensive woods in the world and is heavily rooted in Indian culture. Driven by the scarcity of Santalum album, trees are being illegally cut down, often leading to violent criminal acts. The high demand for Santalum album oil and the supply

shortage has resulted in adulterated oil and an increased cost. Claisse states, “Like other naturals because of scarcity, price and regulatory issues, Indian sandalwood has been slowly phased out of our perfumer’s palette and is rarely seen in commercial products today.” “As a perfumer for over forty years, I remember Indian sandalwood was a fundamental ingredient in my fine fragrance formulas. Then in the 80s the use of sandalwood was being diminished and shrinking from our palette because there were less expensive aroma chemicals that loosely imitated the sandalwood effect,” says Orson. Perfumer Cecile Hua of Mane, says “Unfortunately, when I started my career as a perfumer, natural sandalwood was already very limited, so I did not get much time to learn to play with it and I had to learn to formulate with synthetics quickly.” Christie sympathizes, “I would like to use Indian sandalwood because it imparts a traditional, historic and classic feeling, but I rarely have the opportunity to formulate with it.” The Indian government has attempted to regulate and avoid the deforestation of *Santalum album*, but unfortunately, this royal tree has been overharvested. In 2012 the *Santalum album* tree was added to the Red List of Threatened Species by the International Union for Conservation of Nature and Natural Resources.

Sustainably Sourced Indian sandalwood

In response to the unsustainable harvesting of Indian sandalwood and as part of a regional development project, in 1982 the Australian government planted *Santalum album* trees in the northern part of Australia. Fortunately, the *Santalum album* tree showed good growth rates and potential to thrive. In 1999, Santanol founded the first Australian commercial plantation. Santanol owns and manages one of the largest *Santalum album* sustainable plantations in the remote, pristine Kimberley region of Australia. To meet consumer supply and demand for Indian sandalwood, Santanol launched their first commercial harvest and distillation of sustainable *Santalum album* oil in 2014. In 2008, Christopher G. Jones’ PhD thesis, *The Best Of Santalum Album*, states “*S. album* is postulated to have originated from an over-sea dispersal out of northern Australia or Papua New Guinea 3 to 5 million years ago.” Assuming this is accurate, it appears that Indian sandalwood may have come full circle and is now being harvested from Australia where it may have originated.

The Santanol Way

With ideal growing conditions of rich soil, abundant water and sunshine, Santanol owns and manages a sustainable 2,100-hectare plantation in Australia. In India, *Santalum album* trees grow

wild and are unmanaged, whereas Santanol uses technology and advanced horticultural techniques to oversee every step of the sandalwood cycle, from seedling propagation to oil extraction. Traditionally, in India, Santalum album trees are harvested between 30 to 60 years of age. Now, the harvest time has been cut in half and it takes approximately 15 years for the production of optimal Santalum album oil. This process results in more homogenous, sustainable and high quality products comparable to Santalum album grown in India. Santanol's oil is produced to ISO specifications at their distillation facilities where it is refined and blended to meet market specifications. Santanol is able to meet the supply and demand for Santalum album, which is reliable, traceable and environmentally friendly. "Fragrance suppliers can now have the opportunity to replace the scarce Indian grown Santalum album with Australian grown Santalum album without sacrificing quality. The difference is that the Santalum album oil has been ethically sourced from renewable and sustainable plantations and will be available for generations to come," says Remi Clero, CEO of Santanol.

A Return of Indian Sandalwood to the Perfumer's Palette

Within the fragrance and flavor industry, ingredients are continually becoming more and more regulated, challenging perfumers to work with a limited palette of materials. Even though many naturals are no longer available or too expensive to use, consumers' interest in natural and sustainable ingredients is evident and shows no signs of waning. "Our customers are requesting sustainable, eco-conscious naturals to be used in formulas. This trend is becoming more important and apparent in the marketplace," says Claisse. Given the opportunity and if affordable, perfumers are excited to welcome natural and sustainable Indian sandalwood to their dwindling palettes. "I want to support ethical and sustainable practices, and would be willing to use raw materials that fall under these categories. As a professional perfumer, I need to make sure that the source is reliable, in terms of consistency and volume. Luckily, with the rise of the niche market and the remarkable effort of specialty retail in investing in the juice, expense is less of a concern than volume and stability, creating opportunities for new natural materials. The magic and beauty of perfumery is with every new ingredient you get to play with, you discover and learn new tricks!" says Hua. Christie agrees, "If I had the opportunity to access natural, sustainable and ethical Indian sandalwood, I would definitely dive into it." Orson concludes, "If ethical and sustainable Indian sandalwood was available, of course I would want to use it. However, the market is competitive and the choice of ingredients one selects for a formula is price driven. I anticipate a premium product and for this reason I see an opportunity for the return of Indian sandalwood predominantly in fine fragrance and higher-end products."