

# Botanical Briefs: Ylang-Ylang Oil— Extracts From the Tree *Cananga odorata*

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## Clinical Importance/Cutaneous Manifestations

Ylang-ylang is an essential oil obtained by steam distillation of the fragrant flowers of the tree *Cananga odorata*. In Victorian times, ylang-ylang oil was mixed with coconut oil to create the famous Macassar hair oil, which was used by both men and women to enhance the hair's luster and to promote its growth. At the turn of the century, ylang-ylang oil was used to treat malaria and other tropical fevers.<sup>1,2</sup>

Currently, ylang-ylang oil can be found in a vast array of cosmetic products including massage oils, scented candles, soaps, moisturizing creams, and perfumes. The use of ylang-ylang oil also is becoming increasingly common in the growing field of aromatherapy, which is the use of aromatic botanical extracts for medicinal purposes. The purported uses of ylang-ylang extract include the treatment of depression, high blood pressure, and anxiety; additionally, the extract potentially has a relaxing and soothing effect on the skin. Despite ylang-ylang oil's increasing popularity in the United States, robust evidence of beneficial clinical effects is lacking.

Ylang-ylang oil is a known cause of contact dermatitis and has been reported to induce hyperpigmentation, especially on the face.<sup>3-7</sup> In one study from Japan, 183 women with cosmetic contact dermatitis were evaluated and patch tested for allergic reactivity; of these patients, 25 (14%) reacted to ylang-ylang oil.<sup>6</sup> Larsen et al<sup>8</sup> found that greater than 90% of patients with known perfume sensitivity reacted to either Balsam of Peru, a fragrance mix, or both. Three essential oils—sandalwood, narcissus, and ylang-ylang—were detected in almost all the remaining patients who did not react to



Figure 1. Flower of *Cananga odorata*.



Figure 2. Flowers and leaves of *Cananga odorata*.

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Balsam of Peru or the fragrance mix.<sup>8</sup> Because of the apparent increased prevalence of ylang-ylang oil allergy, the North American Contact Dermatitis Group now includes the extract in its standard screening series.

### Family, Nomenclature, and Distribution

The name ylang-ylang originates from the Tagalog language, which is in the Austronesian family of the Pacific languages.<sup>9</sup> Ylang-ylang oil is extracted from the flowers of *C odorata* and belongs to the Annonaceae family of plants. The Annonaceae family consists of 2050 species in 125 genera, most of which are found in the tropics.<sup>10</sup> *C odorata* is native to the Malay Archipelago and is now grown in southern India, Java, Philippines, and many other islands in the Pacific, primarily for the soap and perfume industry.<sup>4</sup>

### Identifying Features/Plant Facts

The leaves of *C odorata* are bright green, glossy, and oblong, with a rounded base. The flowers consist of 6 narrow twisted petals. The flowers are green upon blossoming but rapidly turn a greenish-yellow or orange (Figures 1 and 2). Blossoming may occur throughout the year but is most common in late autumn.<sup>11</sup>

### Allergens

Fragrance materials are among the most common causes of allergic contact dermatitis. Ylang-ylang oil contains several allergens, including isoeugenol—the main sensitizer—and derivatives of geraniol and linalool.<sup>4,12</sup>

Rudzki et al<sup>13</sup> tested 200 subjects using a 2% concentration of 35 essential oils; 4 subjects reacted to ylang-ylang oil. In 1998, the International Fragrance Association changed the maximum recommended concentration of isoeugenol in cosmetic products from 0.2% to 0.02%. In Japan, there has been a reduced frequency of allergy to ylang-ylang oil, which may have resulted from this reduction of isoeugenol derivatives.<sup>9</sup>

Ylang-ylang sensitivity can result in occupational contact dermatitis, especially among manicurists, hairdressers, aromatherapists, and individuals in the cosmetic manufacturing industry.<sup>14-17</sup> Most of the reported cases have described hand dermatitis resulting from products containing ylang-ylang oil.

Given the heightened popularity of herbal and botanical products in the United States and abroad, it is important that dermatologists recognize the potential for ylang-ylang oil allergy in patients with exposure to cosmetic or aromatherapy products containing ylang-ylang oil.

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