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The Properties and Natural
Sources of Benzyl Acetate

Rose, Queen of Flowers and
Divine Feminine:
A Psychospiritual Profile

Vibrational Healing with Flowers

A Bulgarian Adventure

Aromatherapy for Spring and
Summer

Allergy/Stress-Induced Dry
Eczema: A Case Study

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Rose and Jasmine



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From the Editor



Spring is finally here! A time of renewal as we refresh, restore and rejuvenate our body and soul. This issue brings you all things floral as we explore Rose, Jasmine, Ylang Ylang and flower essences.

Anita James takes us away to Bulgaria for the annual Rose Festival and Southern France to vicariously live through her as she immersed herself in Roses. Jennifer Rhind takes us through history as we explore Jasmine and its potential use in Aromatherapy. Katharine Koeppen returns to our pages to discuss the deeper psychospiritual aspects and lore of Rose. Do you find the different fractions of Ylang Ylang oil a bit confusing? Tim Blakely explains the differences and shares knowledge from his travels to Madagascar about the quality and sustainability of the exotic flower.

We take a look at the making of flower essences in Hawaii with Marza Millar. Marza discusses her experience and the new research into the vibrational healing of these floral waters that is currently underway.

This issue launches the first of several chemistry profiles from H. Rodolfo Juliani and associates from Rutgers University. We begin with benzyl acetate, common between the floral oils explored in this issue.

As spring is here, Suzanne Catty discusses a variety of essential oils and hydrolats and their uses to rejuvenate our skin as we prepare for shorts and swimsuit weather. Eileen Cristina provides a protocol for allergy induced eczema using hydrolats. From Turkey, Jayda Uras shares a few recipes to moisturize and freshen the skin with Rose essential oil.

Katharine Koeppen provides a detailed account of the Pacific Institute of Aromatherapy 30th Anniversary Lectures in which Kurt Schnaubelt discussed the latest developments in essential oil science.

I hope you'll find this issue equally as "heady" as the aromatic oils discussed.

Lora Cantele



On the cover:

Rose (*Rosa damascena*) © H. Zell

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A Bulgarian Adventure

Anita James, SPdipA, MIFPA, Cert Ed.



Rose blossoms © Anita James

Roses are one of my favourite flowers and Rose otto (*Rosa damascena*) is without a doubt my favourite essential oil. The aroma takes me back to my childhood and times spent with my grandfather in his greenhouse which was surrounded by rose beds. During the summer the perfume seemed to be constantly in the air along with the buzzing of huge bumble-bees searching out the bounty of pollen and nectar offered by the flowers.

When I trained as an Aromatherapist, my love affair with Rose was reignited and my dream was to travel to Bulgaria for the Rose harvest and visit one of the festivals. Earlier this year my dream became a reality. In late May I flew from a grey London morning into the bright, sunny weather of Sofia.

After a two-hour drive through the most amazing and changing scenery of mountains, rolling hills, beautiful wildflower meadows, vines, small villages and roads lined with walnut and cherry trees, we entered the Rose Valley.



The Rose Valley © Anita James

The Rose Valley is a region of Bulgaria which is edged by the Balkan Mountains to the north and the Sredna Gora range of Mountains to the south. The Valley is formed by two rivers: the Stryama and the Tundzha. When I entered the Rose Valley I instantly felt protected by the Mountains and got a sense of this being

a special place. In the flat bottom of the Valley we passed through small villages, seeing the rose fields interspersed with vines, orchards, lavender and other crops. There was a feeling of stepping back in time as we passed fields being ploughed by horses and men cutting hay with side-cut scythes. Horse carts are commonplace and it's joyful to see a young foal running alongside its mother at the front of a cart, all gangly legs and fluffy mane. We arrived at Kalofer mid-afternoon. This was to be our base for the first part of our adventure.

The centre of the Rose oil industry is in Kazanlak which holds one of the largest Rose festivals. Other towns in the valley important in the production of Rose oil are Karlovo, Kalofer and Sopot. The climate of the Rose Valley is what makes it so special for growing roses. The Valley has altitudes of between 990 and 2300 feet, giving it a mild climate from around early March when the rose bushes come into leaf. There is regular rainfall ensuring a mean precipitation of between 80 to 100 litres (21-26 gallons) per square metre a month providing almost perfect growing conditions. Coupled with the excellent soil, soft sunshine, cool nights and humid winds, it ensures the highest quality oil is produced from the plants. The gentle rainfall is thought to help prevent oil evaporation from the flowers.

According to old chronicles, the first roses were imported into Thrace (the ancient name of Bulgaria) by Alexander the Great's garrisons. The true history of the Bulgarian rose, however, is believed to begin much later. Legend tells that in the 16th century a Turkish magistrate brought a rose plant back from Damascus that he had fallen in love with during his journey. He began to cultivate it and named it *Rosa*

damascena in tribute to its city of origin. The then Sultan was amazed by the beauty of the plant, and in 1593 he ordered the cultivation of these roses for use in the palace grounds. This event is thought to mark the start of rose cultivation in what was to become the Valley of the Roses. Today the Bulgarian Rose (*Rosa damascena* var. 'Trigintipetala') is known worldwide for its aromatic qualities. These are a result of the natural evolution of the rose originally from Damascus to the Bulgarian climate and growing conditions.

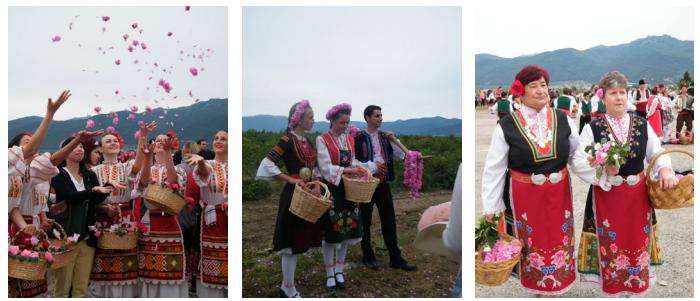
After a wonderful start to an evening spent in the outdoor dining area of the hotel eating traditional food and drinking Bulgarian wine, we took a gentle stroll into the town centre. We had arrived on the national day to celebrate the revolutionary poet Hristo Botev who was born in Kalofer; there were celebrations all over the town, ending with a display of fireworks. Later in the week we were to visit the Botev School, house and museum in the town.

Next morning we had an early start. Following a traditional breakfast of Banitsa, a filo pastry made layered with crumbled local soft cheese and egg, our party drove from Kalofer towards Kazanlak for the



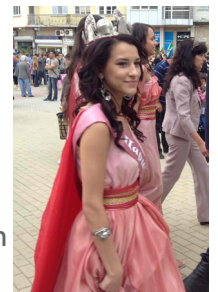
Traditional still © Anita James

first part of the Rose festival. On the morning of the Rose festival smaller celebrations and events are held in the rose fields and villages surrounding Kazanlak. The first thing that hit us when we got out of our cars was the all-consuming rich aroma of roses. On an area at the side of the fields, the villagers in traditional costumes wearing rose garlands, rose crowns and carrying baskets of roses were mingling with visitors who had come to celebrate the harvest. A traditional still had been set up on a wood fire. People were free to fill bottles with rose water and get very close to the still. Around the fields were displays of traditional crafts, food to taste, dancing and lots of roses. You were able to walk in the rose fields and pick roses. The atmosphere was one of joyful celebration filled with people passionate about their heritage and crops.



Local people celebrating at the Rose Festival © Anita James

It was soon time to leave the rose fields and head for the centre of Kazanlak and the main Rose festival. The first festival took place in 1903 and since then has taken place every year on the first weekend in June. The centre of the town was filled with people and a party atmosphere enveloped everyone. After lunch in one of the wonderful restaurants in the town square it was time to take our place on the side of the main street to watch the procession. The procession began with the Rose Queen. Each year a Rose Queen is picked in a contest from which only young girls graduating from Kazanlak's high schools are eligible. The two runners up accompany her on the journey in the majestic chariot. The Rose Queen is crowned for one year in which she will take part in duties relating to the Rose oil production and the Valley.



Rose Queen © Su Hagan

In a huge flurry of excitement and noise the procession begins. All of the villagers that have taken part in the morning celebrations in the rose fields around Kazanlak have now arrived and joined together to form the procession. They are also joined by the 'Black Roses,' a local motorbike group on their huge motorbikes. Local sports groups, majorettes, theatre groups, folk musicians and traditional dancing ensembles all add to the carnival atmosphere of the parade. Rose petals are strewn by the procession all over the road and thrown into the assembled crowd. The procession eventually arrives into the main square where the celebrations continue with local craft and food stalls, dancing displays and local musicians playing traditional folk tunes.



Dance display © Anita James

All too soon it's time to go as we have an appointment at one of the rose distilleries. After a drive through the Rose Valley we arrive in Tarnichene at a walled and gated property at the end of a track set in woodland surrounded by fields of roses and lavender. The distillery is owned by the Enio Bonchev family and started to produce Rose oil in 1909.



Still © Anita James

In 1947, after the Second World War, it passed to the communist authorities who continued to run the business until 1967 when it was turned into a museum. In 1992, at the end of communism, it was passed back to the family who originally owned it. Since then they have restored the distillery and then the business.

The traditional copper stills are in a building to the left of the site and are used today solely for the production of rose water. The newly installed stainless steel stills are used for the production of Rose and Lavender (*Lavandula angustifolia*) essential oils which can be either steam or water distilled. There are wonderful examples of traditional copper stills, harvest baskets and other equipment used in the production of essential oils around the site.

The family owns 150 hectares (370 acres) of land surrounding the site. The site was originally chosen for its underground springs, rich soils and high water table. The spring water is still used today as part of the distillation process.

The family also owns other modern stills close to the main site. These are used for the distillation of organic Rose, Lavender and Peppermint (*Mentha x piperita*) which are grown on land surrounding the distillation site.

The main distillery also produces Lavender. The Rose and Lavender oils produced at the main distillery use crops grown on the Bonchev's own land as well as crops from local producers in the area. Oil is produced during the months of May, June and July with the stills remaining unused for the rest of the year.

After the tour with a guide around the distillery it was time to purchase Rose otto essential oil and Rose water to remind me of my wonderful adventure.

After a truly inspiring and magical day constantly enveloped by the aroma of roses, we made our way back to Kalofer to prepare ourselves for more adventures in the Valley of the Roses.

This was only the first full day of my adventure. In the days that followed, after an early morning start, we would go to the fields with the pickers, make rose syrup and rose jam, create crowns and garlands, visit a traditional Bulgarian laundry, visit a Thracian temple and burial chamber, and play with mud (traditional cob building technique). We spent all of our time with the warm sun on our faces in the most wonderful countryside.

If you want to hear more please contact me at essentiallyholistic@gmail.com.

If you would like to join the Rose Tour in 2014 for your own Bulgarian adventure contact:

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Bags of rose petals © Anita James

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<http://www.eniobonchev.com/>

Additional information supplied by Nikolay Tsutsov, Su Hagan and the guides from the Enio Bonchev distillery.



Anita James is a clinical aromatherapist, holistic practitioner, and international aromatherapy speaker. A series of major life changes paved the way for her more than 15 year career as an aromatherapist and educator. Her company, Essentially Holistic based in Derbyshire, England also provides an online IFPA accredited program. Her passion is working with young children and families using a mixture of aromatherapy, massage and nutritional advice to help overcome behavioural issues. <http://essentiallyholistic-onlinetraining.com>

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Jasmine Absolute: A Profile

Jennifer Rhind, PhD, CBiol.



Jasminum grandiflorum blossom © Holistic Photo

Jasmine has been celebrated since ancient times; its flowers have been used in garlands, as hair ornaments, in worship and ritual, at feasts and celebrations, and in scented waters and unguents for bathing and anointing. The old Persian name, 'yasmin' means 'fragrant' and there is a consensus that its scent is indeed exhilarating and delightful. Classen, Howes and Synnott (1994) refer to a South Indian folktale of a king whose laugh would spontaneously spread the fragrance of Jasmine for miles around! Here we will review Jasmine, looking at its botanical origins, its very positive impact on human wellbeing over the ages, and, of course, its volatile oil – which we know as an absolute - and its use in contemporary aromatherapy.

Botanical and geographical origins

There are many species of *Jasminum*, which is an evergreen climbing shrub that produces small, white, star-shaped, and highly fragrant flowers, whose scent becomes more intense at night. This happens in order to attract its pollinators, nocturnal moths. Its white flowers reflect moonlight, allowing them to be visible during the hours of relative darkness, and this might also aid the moths in their quest.

It is thought that Jasmine originated in Kashmir, at the border of India and Iran. In India there are at least 43 species. Jasmine belongs to the Oleaceae family and three species in particular are cultivated for their volatile oil: *J. auriculatum*, *J. grandiflorum* (or *J. officinale* var. *grandiflorum*, with five distinct petals) and *J. sambac* (with single and double-flowered varieties), whose name is derived from the Sanskrit 'mallika.' These species are tropical/subtropical plants and do not tolerate severe frosts. During the European Renaissance, *J. officinale* was cultivated first in Italy

and then in France for its use in fragrances. Budding *J. grandiflorum* cultivars on to the hardier rootstock of *J. officinale* (which is also known as 'poet's jasmine') resulted in plants that were more frost and disease resistant. By the end of the 17th century, Grasse was a major grower and processor of *J. grandiflorum*, reaching a peak in 1920. Jasmine production also moved to the then French colonies in Algeria and Morocco. Small amounts of Jasmine are still produced in Grasse, Italy and Spain, but since the 1970s Egypt has been a major producer (Weiss, 1997). *J. auriculatum* is cultivated and processed in southern India, as is *J. grandiflorum*, however the most common species in India is *J. sambac*, where it is known as 'Moonlight of the Grove.' It is to India that we must turn to explore the traditions regarding Jasmine flowers and their fragrant oil, because this gives us insight into its impact on wellbeing and its contemporary therapeutic uses.

Traditional uses

Scented flowers, such as Jasmine, were important in early Hindu society where their use was secular. The 'Ramayana' refers to personal floral decorations used by women, including the use of Lotus or Jasmine flowers in the hair, and men who wore floral garlands, especially in the bedroom. The use of fresh flowers was also associated with perfumes and bathing. Garlands and perfumes were common gifts during courtship, while exchanging garlands was found in some

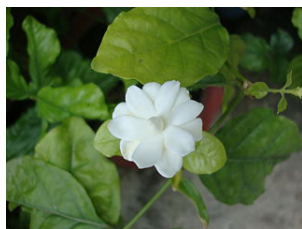


Jasmine garlands © Challiyan

forms of marriage ceremony (Goody, 1993); scented flowers, such as Jasmine, acquired sexual and erotic associations as well as being a token of affection.

Literature describes these rituals and scented products in detail. For example, the Sanskrit 'Manasollasa' (circa 1130) gives the ingredients of a perfumed body oil – sesame oil with Jasmine, Coriander, Cardamom, Holy Basil (Tulsi), Costus, Pandanus, Agarwood, Pine, Saffron, Champaca and Clove (Morris, 1984) – using many of India's beautiful natural ingredients.

In most ancient cultures, scents were used in personal care and also regarded as therapeutic. Jasmine had medicinal uses too – Jasmine oil was not only considered to be an aphrodisiac, but also a muscle relaxant and was used to facilitate childbirth. Weiss (1997) cites Culpepper's comments in the 'English Physician' (1652) which illustrate the many uses of Jasmine oil, from counteracting uterine diseases, 'warming the womb' and facilitating birth, to alleviating breathing difficulties and opening, warming and softening the nerves and tendons. The ancient Greeks and Romans enjoyed its fragrance through early trade routes allowing them to import Jasmine pomade from India. Weiss (1997) relates an anecdote about the Roman, Lucius Plotius, who was hiding from his political enemies but was betrayed by the strong smell of his favourite Jasmine fragrance!



Jasminum sambac © Prenn

Jasmine, especially *J. sambac*, also has a tradition of use in China; the flowers were, and still are, used to scent and flavour teas. Here, one of the secular uses of incense was to purify the atmosphere around the sick and in public places, so the air would be scented with Jasmine. So, we can see that Jasmine has a very long, multicultural tradition, mainly due to its fragrance. Now we will look at how its volatile oil is extracted and incorporated into scented products.

Jasmine volatile oil and extracts

In India, several traditional products are made with Jasmine flowers. Attar of Jasmine is made by hydro-distilling the flowers into Sandalwood oil; it is estimated that 500kg of flowers are required to produce just 1kg of the attar (Weiss, 1997). 'Chameli ka tel' is a traditional perfumed oil made by extracting the

flowers with hot sesame or groundnut oil, and 'Sira' is Jasmine-scented sesame oil, made by spreading alternate layers of flowers and sesame seeds. The spent flowers are removed and replaced every 12 hours until the seeds are impregnated with the fragrance of Jasmine, then they are crushed and pressed (Weiss, 1997).

Jasmine absolute

In times gone by, Jasmine flowers were extracted by enfleurage, however nowadays the production of the absolute is a combination of a labour intensive, traditional harvesting process and modern solvent extraction. Jasmine flowers are harvested manually, and very carefully, to avoid bruising. Bruising is thought to change the composition of the volatile oil and increase the indole content, which has a detrimental effect on the odour. A highly-skilled picker can collect 3kg in 6 hours. Picking is usually carried out between dawn and 9.30-10.00am, and only half-opened and fresh fully-opened white flowers are selected, not buds or flowers that have started to turn yellow. Picking encourages further flowering; even if it rains the flowers are picked, despite the fact that they have no value. The harvested flowers must be processed very quickly because any delay reduces the yield and quality. Processing is by solvent extraction to give a concrete, and an absolute by alcohol extraction of the concrete (Weiss, 1997).

Jasmine absolute is a dark, orange/brown liquid. It has over one hundred constituents, but is dominated by aromatic esters such as benzyl acetate (fresh, jasmine-like and fruity), methyl jasmonate (sweet, floral, herbaceous), methyl anthranilate (orange flower-like, fruity, and harsh) and benzyl benzoate (faint, sweet and balsamic). Monoterpenoid alcohols such as linalool (sweet, fresh, floral, woody) are present, as are the aromatic alcohols such as benzyl alcohol (almost odourless) and the sesquiterpenol farnesol (delicate, floral, and lily of the valley-like). The celery-like ketone, cis-jasmone, is also found, and there are trace amounts of indole. Jasmine is often classed as an 'indolic' fragrance, along with others from white flowers such as orange blossom, tuberose and white champaca. Indole is a cyclic imine – a nitrogen con-



Jasmine absolute
© Itinerantrader

taining molecule – and is a trace constituent in the volatile oil of some white flowers; it is very important in their aroma and has been described as ‘faecal’ at a 10% concentration. Indole can also be perceived as the odour of putrefaction, but trace amounts can impart a Jasmine-like nuance (Jouhar, 1991; Calkin and Jellinek, 1994; Curtis and Williams, 2009; Lawless, 2009).

The aroma of the absolute varies according to its source, but is typically floral, fruity, heavy, and animalic with a waxy, spicy dry out (Williams, 2000). Weiss (1997) quotes Arctander, generally considered to be the leading authority on natural fragrance description, who described the scent of Jasmine as “an intense floral, warm, rich, highly diffusive odour, with a peculiar waxy-herbaceous oily-fruity and tea-like undertone.” Aftel (2008) infuses her description of Jasmine with its effect on the senses. She describes it as a narcotic, i.e. sultry and calming scent, rather than using the terms ‘heavy’ or ‘heady,’ and with the ability to “seize the senses and the imagination.”

There are, however, subtle but distinct differences between the French *J. grandiflorum*/*J. officinalis* absolute and the Indian *J. sambac*, which is possibly more ‘indolic’ and according to Lawless (2009) is “sweet, fresh, light white floral and lily-like, with a delicate, ethereal soft, green backnote.”

Jasmine in early and contemporary perfumery

Although the scent of Jasmine has not changed over time, nothing remains of the perfumes of antiquity, and so began an experimental archaeology project. The Seplasia project, named after the perfume area in Capua, aimed to recreate and analyse a Jasmine perfume of ancient Rome, ‘lasmelaion.’ This was made according to the instructions given by Dioscorides in *De Materia Medica*, and its formula referred to the methods used to make two other perfumes, ‘Susinum’ and ‘Liliaceum.’ ‘Susinum’ was a perfume made with lily roots, and it was thought to prevent facial wrinkles, heal facial sores



Page from *De Materia Medica* by Dioscorides © Marie-Lan Nguyen

and scurf, as well as being an anti-inflammatory and diuretic (Stewart, 2007). The ingredients were Sesame oil (*Sesamum indicum* from India), Jasmine flowers (*Jasminum grandiflorum* from France), Cardamom (*Elettaria cardamomum* from Sri Lanka), Cinnamon (*Cinnamomum verum* also from Sri Lanka), Saffron (*Crocus sativus* from Iran) and Myrrh (*Commiphora myrrha* from Somalia). Honey and salt were used in the process. The perfume was analysed to determine its volatile composition; the main constituents were ethyl acetate and acetic acid, 1,8-cineole, linalool, α -terpinyl acetate, β -myrcene and benzyl acetate. Most of the eighty or so constituents could be directly related to the raw materials. However, it is the olfactory appraisal that is exciting as we can hear a contemporary description of a perfume of antiquity. In the words of an experienced perfumer, ‘lasmelaion’



Opium perfume © kuzmanoviz

was described as giving “a very pleasant jasmine note, quickly hidden by strong spicy notes (cinnamon, clove, pepper). The perfume also provided terpenic notes and a persistent styrax bottom note, making it recall as the ancestor of Opium™ (Yves Saint Laurent). Although cinnamon was predominant, this floral composition was surprising and interesting” (Castel et al, 2009).

The influential 20th century perfumer, Jean Carles, described Jasmine absolute as “being to perfumery what butter is to haute cuisine: the effect of margarine is never quite the same” (Calkin and Jellinek, 1994). As well as suggesting that Jasmine absolute is one of the most important raw materials of modern perfumery, he is also saying that small amounts of natural Jasmine can make a huge improvement to a fragrance constructed with otherwise synthetic Jasmine notes.

Jasmine absolute in contemporary Aromatherapy

The resistance to the use of absolutes in therapeutic practice, and defence of their use and potential, was summarised by Baylac and Racine (2003). The first reason that some Aromatherapists usually give is the concern that benzene and chlorinated solvents may remain in the product. However, modern solvent extraction does not use these solvents, and the process also involves ethanol extraction which will remove

any residual primary extraction solvent remaining in the concrete. In reality, the final absolute will only contain a few parts per million of the primary solvent, and much less than 3% ethanol. The second line of resistance is that the composition of absolutes and resinoids is complex and less accessible than that of essential oils, and that they contain small proportions of non-volatiles with as yet unknown properties. It could also be countered that most of the absolutes do not have a tradition of therapeutic use and so it is difficult to predict how they might behave in the context of Aromatherapy. However, these reservations are not held by all Aromatherapists, and Jasmine absolute has acquired an established place in Aromatherapy.

For the Aromatherapist who would like to use Jasmine, but would prefer to avoid the absolute, options are limited. It is very difficult, although perhaps not impossible, to source Jasmine obtained by enfleurage, or perhaps a molecular distilled product (an incolore). Attars, produced by hydro-distillation into sandalwood oil, which fixes the volatiles, offer an alternative for those who are resolutely opposed to absolutes. Unfortunately, quality can be a problem. Very few pure attars are produced; much of what is on the market is composed of synthetics, isolates, or extended with liquid paraffin (McMahon, 2000). True Sandalwood oil (from *Santalum album*) is also very scarce. However, the scent of the genuine attar



Dried jasmine flowers
-herbal medicine ©
FotografiaBasica/iStock

is exquisite. Motia attar is made from *J. sambac*, and chameli is attar from *J. grandiflorum*. In Unani Tibb medicine; the forerunner of modern western herbal medicine originating in the Middle East, Jasmine attar is considered to be cold and moist, and so indicated for hot and dry conditions, and there is a tradition which states that attar of Jasmine can heal up to seventy different illnesses

(Graham, 2014). The Aromatherapeutic uses of attars have not been the subject of much investigation, however it is suggested here that that the stimulating, activating nature of the scent of Jasmine aroma might be tempered or modified by the harmonising qualities of Sandalwood (Hongratanaworakit et al, 2004; Heuberger et al, 2006), i.e. relaxing at a physiological level while activating at a behavioural level.



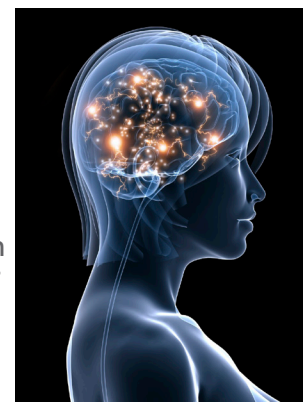
Woman smelling jasmine
© ivanmateev/iStock

Reflecting its long-held associations with pleasure and sensuality, the scent of Jasmine is often said to impart feelings of joy, exhilaration, creativity, warmth, liberation and confidence, and it is also associated with being 'in touch with the senses,' and being 'at ease in your own skin' (Lavabre, 1990; Lawless 1994; Mojay, 1996; Holmes, 1998). So, it is hardly surprising that in Aromatherapy, Jasmine absolute is used to counteract mild depression and anxiety, stress, low self-esteem and lack of confidence. It has applications in skincare and is indicated for mature, dry, oily or sensitive skin; Jasmine is also indicated for the alleviation of muscular aches and pains, spasm, and coughs, as a uterine tonic and for dysmenorrhoea (Lawless, 1992; Holmes, 1998), mirroring traditional uses as recorded by Culpepper. Research has largely supported these applications, which are based clearly on traditional practices.

Research and evidence base for Aromatherapeutic applications

Research and evidence base for Aromatherapeutic applications

In humans, the effects of odours can be examined and measured using the electroencephalogram (EEG) which reveals brain wave activity; aspects of this, such as contingent negative variation (CNV), are sensitive to changes in activity and also reflect anticipation (Torii, 1997). Early investigations, such as those conducted by Torii and Fukada (1985) and Torii et al (1988), used CNV measurements to demonstrate that some odours such as Lavender had a sedative effect, while others such as Jasmine had a stimulating effect. In 1999, Degel and Köster found that the odour of Lavender reduced errors in math and letter counting tasks, in comparison to no odour or the odour of Jasmine. They proposed that this result can be explained by the Yerkes-Dodson law which states that when the arousal level passes a maximum, the performance will decrease. In this case, Lavender relaxed the test



Brain activity © Eraxion/iStock

subjects leading to a better task performance, but Jasmine caused further stimulation and arousal, thus performance was not enhanced. These early studies all pointed to Jasmine having stimulating effects. Later, in 2007, Hirsch et al demonstrated that the aroma of Jasmine could make a significant improvement to bowling scores. They hypothesised that it might do this by regulating mood, enhancing alertness and reducing anxiety whilst improving self-confidence and hand-eye coordination. They concluded that a similar effect could be expected in other activities that involve hand-eye coordination and precision, so the results of this study may be much wider-ranging than bowling and indeed support the Aromatherapeutic use of Jasmine to improve mood, alertness and self-confidence, and to reduce anxiety.

However, Aromatherapy practice does not just involve odour; it can also involve touch, massage and the transdermal absorption of essential oils. Hon-gratanaworakit (2010) conducted a placebo-controlled study to investigate the effects of self-administered abdominal massage with *J. sambac* oil. He showed that this not only had a physiologically stimulating effect but also elicited an increase in subjective behavioural arousal. This study specifically supports the use of Jasmine in Aromatherapy for its stimulating, activating effects. Although its alleged aphrodisiac effects have not been investigated, Holmes (1998) suggested that the euphoric nature of its scent might be mediated by two types of chemical opioid peptide neurotransmitters – the enkephalins and endorphins. He explains that in Greek ‘euphoria’ means ‘wellbeing,’ and that Jasmine fragrance might trigger the release of enkephalins. Similarly, endorphins are related to feelings of wellbeing and possibly sexual desire, and so his hypothesis can help explain this aspect of Jasmine’s effects on the psyche.

We also have some evidence that Jasmine absolute can be of benefit to the skin, including mature, dry, oily and sensitive skins, which is supportive of its inclusion in anti-aging phytocosmeceuticals. Jasmine has been shown to have free radical scavenging properties, and may offer protection against UV-B induced skin damage (Baylac and Racine, 2003). In 2004, Baylac and Racine investigated the potential for aromatic extracts, including Jasmine absolute, to inhibit human leukocyte elastase (HLE) *in vitro*. This enzyme is important in the pathophysiology of inflammation,

and is also involved in the degradation of the matrix proteins collagen and elastin. UV exposure will stimulate HLE activity, hence the ultimate effect of visible sun damage to the skin, including wrinkles and loss of elasticity. In this study, the absolutes, including Jasmine, outperformed the essential oils in their ability to inhibit HLE. It has also given us reason to believe that Jasmine absolute might have anti-inflammatory properties.

We can look to tradition to support some of Jasmine’s other potential Aromatherapeutic uses. It is thought to be a uterine stimulant and relaxant. This suggests that it can be of use in amenorrhea and dysmenorrhea, and its actions on the psyche certainly suggest that it could be useful in counteracting premenstrual syndrome (PMS). Clumsiness and coordination issues are sometimes a feature of PMS, and the observations made by Hirsch et al. (2007) could indicate that Jasmine might alleviate this aspect too. Additionally, Jasmine has been used in traditional medicine and Aromatherapy during labour, to relax and strengthen contractions, and to aid expulsion of the placenta in the final stages (Lunny, 2000; Holmes, 2001).

Jasmine’s probable analgesic properties (Holmes 1998, 2001) suggest that it is useful oil for muscular pain, whether due to tension, overuse, abuse or disuse, and again its positive effects on mood can add another dimension to its usefulness in this regard.

Synergistic blending with Jasmine absolute

Jasmine has a diverse range of actions and applications, coupled with a complex and beautiful scent; it is one of the Aromatherapeutic oils suitable for use on its own, without blending. However, several oils are very compatible with Jasmine - such as Clary Sage (*Salvia sclarea*), Geranium (*Pelargonium graveolens*), Coriander (*Coriandrum sativum*) seed and Bergamot (*Citrus bergamia*), which complement its mood enhancing and pain relieving aspects; Sweet Fennel (*Foeniculum vulgare*) shares its affinity with the female reproductive system; while Cardamom (*Elettaria cardamomum*), Ginger (*Zingiber officinale*) and Nutmeg (*Myristica fragrans*) can support its actions on the respiratory system and on pain relief. However, when combined with other traditional aromatics from the east, such as Sandalwood (*Santalum album*) and Patchouli (*Pogostemon cablin*), we can connect with its

olfactory heritage, and explore further opportunities for synergistic blending.

A unique aromatic with a strong evidence base

From this short exploration of Jasmine, we can see that it is very distinctive and, in Aromatherapy, of great value. Its heady and sensual fragrance has an enormous impact on the senses.

In both traditional medicine and contemporary Aromatherapy, Jasmine has been used, very successfully, to promote feelings of wellbeing and to alleviate imbalances in the nervous, reproductive, integumentary, respiratory, and digestive systems. As with most essential oils and absolutes, its Aromatherapeutic uses have their roots in traditional medicine and observations, however in the case of Jasmine, much of this is supported by research; we have a reasonable evidence base on which to support our practice. We could paraphrase Jean Carles and conclude that 'Jasmine absolute is to Aromatherapy what butter is to haute cuisine: the effect of margarine is never quite the same!' ❧

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J. auriculatum © Gagan

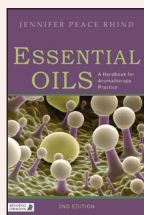


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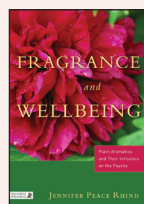
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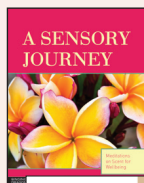


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The Properties and Natural Sources of Benzyl Acetate

H. Rodolfo Juliani, PhD.



Jasmine oil extract © fiota/iStock.com

Introduction

Essential oils, also known as volatile oils, are a complex mixture of components. Single essential oils extracted from a single source (e.g. leaves, flowers, bark) can contain up to a few hundred of components. These components belong to several chemical classes, though few classes dominate the chemical profiles of essential oils. The main groups of compounds include the terpenes and phenylpropanoids. Many essential oils are dominated by monoterpenes (C_{10} , or ten atoms of carbon) while the minority are dominated by sesquiterpenoids (C_{15}). Diterpenes are found only in trace amounts (C_{20}). Typical examples include Lavender (*Lavandula angustifolia*) essential oil and Lemongrass (*Cymbopogon citratus*) essential oil. Terpenes are derived from condensation of the terpene precursors isopentenyl pyrophosphate (IPP, five atoms of carbon, C_5) and dimethylallyl pyrophosphate (DMAPP, C_3) to yield geranyl diphosphate (GPP) and farnesyl diphosphate (FPP), which can be modified by terpene synthases to produce over 1000 monoterpenes and approximately 5000 sesquiterpenes (Woronuk et al, 2011). The other important pathway is the shikimic pathway that yields phenylpropanoids typically derived from phenylalanine (Figure 1); this important group of components include a wide range of products used in varied industries. Typical examples include eugenol from *Syzygium aromaticum* oil, cinnamic aldehyde from *Cinnamomum zeylanicum* and methylchavicol (a.k.a estragole) from *Ocimum basilicum*). Benzyl acetate, a member of the phenylpropanoid family, is a widely used product in cosmetics, detergents, varnish removers, and the food industry as flavoring in several food products.

Some facts regarding the shikimate pathway include the absence of this metabolic pathway in animals

(and humans) thus blocking the synthesis of three of the essential amino acids (phenylalanine, tyrosine, and tryptophan) that need to be obtained from plants as part of the diet. This pathway is also the target of Glyphosate (Roundup) that is used as an herbicide to disrupt the biosynthesis of these three amino acids.

The aim of this review is to provide an overview of the properties, biosynthesis, natural sources, and biological activities (including adverse effects) of benzyl acetate (Figure 1).

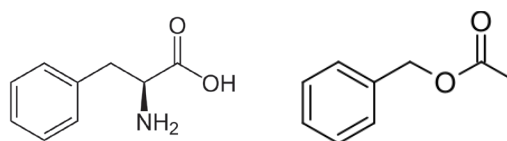


Figure 1. Chemical structure of the amino acid phenylalanine (left) precursor of many phenylpropanoids including benzyl acetate (right).

Sensory, physical/chemical properties

Benzyl acetate is the official name set by the International Union of Pure and Applied Chemistry. The name refers to a benzyl group (benzene ring attached to a methylene group) that in turn is attached to an acetate group. It is also known by acetic acid, phenylmethyl ester, acetic acid benzyl ester, benzyl ethanoate, phenylmethyl acetate, among others. It contains nine atoms of carbons (71.98% of total weight), ten of hydrogen (6.71%) and two of oxygen (21.31%), with a formula weight of 150.2.

Simple esters are characterized by floral and fruity notes. The aroma of benzyl acetate has been described as sweet, floral, fruity and fresh, particularly with peach, apple, apricot and cherry notes (Table 1).

Benzyl acetate is a colorless mobile liquid at room temperature. It is soluble in ethanol, one ml of benzyl

acetate will dissolve in 5 ml 60% ethanol; (40% water). It is soluble in most fixed/edible oils and propylenglycol and insoluble in water and glycerol (Table 1). Boiling point is 214-215.5°C. Refractive index ranged from 1.501 to 1.504. As many other phenylpropanoids, benzyl acetate's density (1.052-1.056) is higher than water; it will sink in water (Table 1). Flash point is high (102°C) thus it is not flammable though it is still combustible.

Names	Benzyl acetate, acetic acid benzyl ester, Acetic acid, phenylmethyl ester, acetic acid benzyl ester, acetic acid phenyl methyl ester, (acetoxymethyl)benzene, acetoxymethyltoluene, benzyl ethanoate, phenylmethyl acetate
Formula and molecular formula	$C_9H_{10}O_2$, $C_6H_5CH_2OCOCH_3$,
Formula weight	150.2
Elemental composition	C (71.98%), H (6.71%), O (21.31%)
Physical form	Mobile and colorless liquid
Aroma notes	Sweet, floral, fruity, fresh
Flavor/fragrance notes	Apple, apricot, cherry
Solubility	Soluble in ethanol, most fixed oils, propylene glycol. Insoluble in glycerin and water.
Solubility in alcohol	1 ml in 5 ml 60% ethanol
Boiling point	214°C, 215.5°C
Flash point	102°C
Melting point	-51.3°C
Refractive index	1.501-1.504
Density	1.052-1.056 ²
Cataloging	FEMA No. 2135, CAS NO. 140-11-4

Table 1. Names, sensorial, physical and chemical properties of benzyl acetate.

SOURCES: Committee on Food Chemicals Codex. (1996). IARC (1999). Acros Organics (2002), Anonymous (2003), ChemAxon (2013). U.S. Dept. of Health and Human Services (1993).

Adverse effects

As human exposure to benzyl acetate can be high, occurring through inhalation, dermal contact or ingestion of foods, several studies have been conducted to assess its safety. Benzyl acetate has been approved by the US Food and Drug Administration for use as flavoring in foods. The World Health Organization approved daily intake up to 5 mg/kg of body weight. It was found that this component can produce irritation when inhaled (U.S. Dept. of Health and Human Services, 1993). It was observed that benzyl acetate did not increase the incidence of tumors in either mice or rats when administered in the diet. Studies

on activities of benzyl acetate to induce mutations (genotoxicity) *in vivo* and *in vitro* were negative. All of these studies showed that this component cannot be classified as a human carcinogen (NCBI, 2013; IARC, 1999). Experiments conducted by the National Toxicology Program (1993) during a 2-year feed study of benzyl acetate in rats receiving 3,000, 6,000, or 12,000 ppm found no evidence of carcinogenic activity. The LD50 has been determined in several animal models and was found to be moderately high 830-2490 mg/kg showing its low toxicity. However, this component in a purified form can irritate the eyes, respiratory system and skin and can be harmful if swallowed (Acros Organics, 2002).

Biosynthesis

Phenylalanine, an amino acid, is the starting compound for the phenylpropanoid pathway. This amino acid is biosynthesized through the shikimate pathway (Yu and Jez, 2008). The enzyme Phenylalanine ammonia lyase catalyzes the deamination of phenylalanine to yield cinnamic acid. This component is further transformed to benzaldehyde and reduced to yield the corresponding alcohol (benzyl alcohol). The enzyme acetyl coenzyme A transfers the acetyl group to yield benzyl acetate (Figure 2) (Pichersky and Dudareva, 2007).

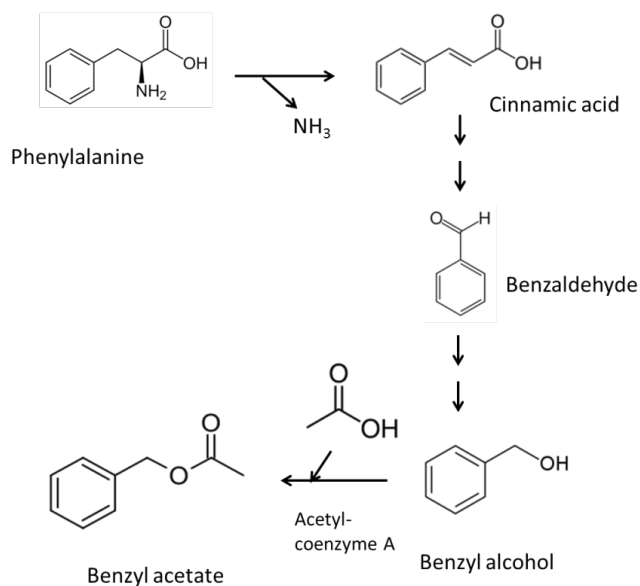


Figure 2. Simplified biosynthesis of benzyl acetate in plants (adapted from Pichersky and Dudareva, 2007).

Natural sources

Many insects such as Euglossine bees are attracted by the volatile components, including benzyl acetate, emitted by orchid flowers where they collect odor substances and thus contribute to flower pollination.

Benzyl acetate response showed the highest intensity in electroantennographic detectors in male Orchid bees (*Euglossa cybelia*). It has been proposed that some bees will collect these components to synthesize pheromones (Schiestl and Roubik, 2003). For this property, these components are used as bait to attract insects (Muby Chemicals, 2013).

Benzyl acetate has been found in the flowers of several species, particularly in the genus *Jasminum*, *Hyacinthus*, *Gardenia*, and *Cananga*. It has also been identified in several fruits including bael fruit (*Aegle marmelos*), quince (*Cydonia vulgaris*), and in mushrooms of the genus *Agaricus* (IARC, 1999).

Ylang ylang (*Cananga odorata*) essential oil, Jasmine (*Jasminum grandiflorum* L.) absolute, and Narcissus (*Narcissus tazetta* L. var. *Dahuabai*) absolute are extracted from flowers and commercialized at a large scale. The Ylang ylang oils are distilled from the fresh flowers of the tropical tree *Cananga odorata*, of the Annonaceae family. Ylang ylang essential oil is obtained on a fractionation based on the time of distillation, thus producing four or five grades. The first fractions contain the high volatile components while the 4-5 grades are richer in heavier components such as sesquiterpenes. The first fraction, for example, is dominated by high levels of benzyl acetate (27.5%) followed by linalool (9%) and methyl benzoate (6.1%). A single essential oil may contain up to 161 components. Fraction 4 was characterized by trace amounts of benzyl acetate with this fraction enriched by sesquiterpenes (Brokl et al, 2013).

In Arabian Jasmine (*Jasminum sambac*), both the concrete and absolute showed high levels of benzyl acetate (5-12.2% and 7.5-13.2 % respectively). Other components included linalool (7-11% for concrete and absolute respectively), α -farnesene (2-17%, 2-19%) and hexenyl benzoate (9-19%, 11-21%). In this sample more than 58 components were identified (Rout et al, 2010). Other samples of this species (Wu et al, 1981) were dominated by linalool 14.33%, benzyl acetate 11.04%, and benzyl alcohol 10.12%. In absolutes of *Jasminum grandiflorum* L. from India, benzyl acetate was the major compound identified (23.7%) (Jirovetz et al, 2007).

The chemical composition of *Jasminum multiflorum* concrete extracted from the flowers was affected

by the harvesting time. As the concrete produced by flowers harvested in the morning were considered of better quality as they contained increased levels of cis-jasmone, benzyl alcohol, linalool and benzyl acetate as compared with samples collected in the evening (Ahmad et al, 1998).

Benzyl acetate in high amounts (19.4%) was found in the essential oils of the flowers of *Narcissus tazetta* and *Narcissus serotinus* (Melliou et al, 2007). This component was also detected in melons (*Cucumis melo*) (Kemp et al, 1973).

An interesting example involving benzyl acetate and other volatile organic compounds (VOCs) is the fact that the pathogen *Fusarium* can induce the production of VOC in maize plants that in turn stimulate the generation of these volatile components in uninfected plants. It was observed that insect pests, notably the leaf beetle (*Oulema melanopus*) are then attracted to VOC produced by the induced plants (Piesik et al, 2011).

Therapeutic benefits

Essential oils and extracts containing benzyl acetate showed several biological activities. The absolute of *Jasminum grandiflorum* L. (India) showed medium to high activity against several gram positive and negative bacteria including *Enterococcus faecalis*, *Escherichia coli*, and *Salmonella* sp (Jirovetz et al, 2007). Other studies have found that Jasmine oil (*J. grandiflorum*) showed minimum bactericidal concentration (MBC of 0.5%) against *Propionibacterium acnes*, the bacteria linked to the skin condition acne (Zu et al, 2010). The oils of Thyme (*Thymus vulgaris*), Cinnamon (*Cinnamomum zeylanicum*) and Rose (*Rosa damascena*) showed higher antibacterial activities (0.016, 0.016 and 0.031% MBC respectively). For the Arabian Jasmine (*J. sambac*), benzyl acetate showed higher minimum inhibitory concentration (MIC, 1.95 μ l/ml) than the essential oil against *E. coli* (31.25 μ l/ml) (Rath et al, 2008). The essential oil of Jasmine was one of the most active against *E. coli* with highest inhibition zone of (26mm) and lowest MIC value (higher than 1.6mg/ml) (Yadav et al, 2012). This report failed to indicate the species from which this oil was extracted, a reminder of the importance of properly labeling plant products with the correct botanical name. While many of these publications refer to the extractives obtained from flowers generically as essential oils,

in commerce these products are in reality obtained through solvent extraction process to produce concretes and absolutes and not through the process of water distillation to extract common essential oils.

The essential oil of Ylang ylang showed repellent activity against pestiferous social wasps (*Vespula pensylvanica* and *Polistes dominulus*). Electroantennographic detection (EAD) studies showed that benzyl acetate was one of the active components acting against the wasps (Zhang et al, 2013).

It has been mentioned that current scientific knowledge lags behind the claims made by popular Aromatherapy. Many reports have studied the effects of essential oils on human behavior. One report on the influence of volatile oils (Ylang ylang, Jasmine and others) on human attention revealed the complex correlations between subjective evaluations and objective performance. In these oils, using water as a control, researchers found that the more the stimulatory a substance (the oils and water) was judged, the more positive the reactions were observed, showing that the effects of essential oils on attentional behavior was mainly psychological (Ilmberger et al, 2001). These authors mentioned the need to conduct additional and careful designed studies to better understand the complex interactions of exposure to aromas with personal and subjective factors.

Other researchers have observed physiological effects of Ylang ylang oil significantly decreasing blood pressure and increasing skin temperature. In behavioral studies, subjects rated themselves as being more calm and relaxed when exposed to the oil than subjects in the control group (Hongratanaworakit and Buchbauer, 2006).

Conclusion

Benzyl acetate can be considered a component safe for a normal use in cosmetics, fragrances and foods. In a purified form, benzyl acetate is also a safe component to handle as it is not flammable. It is the main component of Jasmine and Ylang ylang fragrance materials produced on a large scale. Benzyl acetate is also found in many fruits. Reports have shown several benefits of the use of this component and its natural oils. Many studies have found antimicrobial activities against pathogenic bacteria. It has been observed that benzyl acetate-containing oils can have positive psy-

chological benefits, while other studies have linked the use of essential oils with physiological effects (e.g. reduced blood pressure). This review has described the properties, safety, sources benzyl acetate and its oils that can be used for the development of many different products for the benefits of the Aromatherapy practice. ☞

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The New Use Agriculture and Natural Plant Products Program (NUANPP) in the School of Environmental and Biological Sciences (SEBS), Rutgers—the State University has a core mission to develop new crops/plants and to identify and develop new uses for plants and plants. A key research and development area of NUANPP is in chemistry, sensory and quality characters of essential oils. For more information visit: aesop.rutgers.edu/~newuseag/

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Rose, Queen of Flowers and Feminine Divine: A Psychospiritual Profile



Katharine Koepfen, RA, LMT, NCBTMB

Rose Spirit © tr3gi/iStock.com

Rose is the reigning queen of aromatics. Few essential oils are so universally loved or derived from flowers steeped in centuries of rich and fascinating lore.

The fragrant and colorful history of rose begins some 35 million years ago when the first blossoms fell and were eventually fossilized, awaiting discovery millennia later (U. of Illinois, 2013). All roses are thought to have descended from the wild, 5-petaled apothecary rose (*Rosa gallica*) which was brought into cultivation in northern Persia and the Caucasus at least 3,000 years ago. From these cultivations, the primary strains of damask (*Rosa damascena*) and cabbage (*Rosa centifolia*) roses developed. Persian and Middle Eastern roses were introduced into the Mediterranean basin by the Greeks and eventually spread throughout Europe. These two species became the “old European” roses from which the vast majority of essential oil is still distilled.

The links among rose, the mother and the divine feminine, go back thousands of years. As noted, the original wild rose has 5 petals. The number 5 is associated with both Venus, the Roman goddess of beauty and love, and Ishtar, the ancient Babylonian mother goddess (Stewart, 2013). These goddesses were symbolized by the 5-pointed pentagram, which resembles a stylized rose in bloom. Greek and Roman civilizations honored their love goddesses, Aphrodite and Venus, with annual rose festivals. Both Roman temple prostitutes and priestesses of Venusian cults wore the flower, known as the badge of Venus.

Old Chinese and Indian societies identified female mother goddesses with rose and identified rose with the moon, which is an archetypal feminine symbol in all cultures.

Later Christianized cultures further associated rose with both the divine feminine and the mother archetype by linking it with the Virgin Mary, a figure of compassion and sorrow. Numerous anecdotal reports mention an overwhelming scent of roses present during reported visions of the Virgin. Those who witnessed the death of various saints who maintained a devotion to Mary also reported a strong rose scent surrounding the deathbed.

In mystical Judaism, rose correlates with Binah, the highest female sefirah in the Tree of Life. Binah is said to be the “mother” of the 7 lower sefirot falling beneath her on the sacred tree (Berkowsky, 2000). The flower’s mystical associations also permeate Sufism and early Christianity, where rose was a symbol of transcendent desire and devotional love.

Rose otto may be regarded as the mother of Aromatherapy, since it is believed to have been the original essential oil distilled by Persian physician/chemists. Both white and red roses were adapted by later alchemists as symbols of the *Vas Spirituale*, the sacred womb from which the philosopher’s stone would be born. Their glyph of a white blossom nested within a red rose referred to the womb giving birth to a pure, virgin daughter substance. This symbolism was resurrected in the Victorian language of flowers, in which a red rose referred to passion and a white bloom to purity.

Despite all references to passion, Rose is historically known to be a cooling herb, and rose otto is probably the most purely yin essential oil in the Aromatherapy repertoire. This is easy to see when the growth habits of rose are examined. The dew-loving plant requires large amounts of moisture from the

air and soil coupled with protection from drying winds in order to thrive and bloom profusely. Blossoms are most aromatic between the hours of 2 a.m. and 9 a.m., and harvesting often begins by moonlight, adding to the yin signature of the plant. Given these characteristics, it is not surprising that rose has been classically indicated for hot, dry and inflammatory conditions: In Ayurvedic medicine, rose is even combined with ground pearls and exposed to moonlight to create an anti-inflammatory compound known as 'pisti' (Crow D, 2008).

Rose's ability to cool heat and soothe dryness extends beyond the mere physical plane. Contemporary practitioners are more likely to use this precious essential oil to facilitate healing of the emotional and spiritual bodies, and it can be remarkably effective when used in very small, even vibrational quantities. The Rose absolute works equally well in this regard. Many Aromatherapists have a marked preference in using the more ethereal *damascena* oil for psychospiritual purposes, while reserving *centifolia* oil for treatment of physical issues. In reality, the two oils are often interchangeable, since physical symptoms may be manifestations of emotional or spiritual imbalance.

Medieval literature recommends rose to "gladden the heart" and it can be employed in conditions of liver congestion which may manifest emotionally as anger, frustration, irritability, apathy, disappointment or depression. Additionally, rose is helpful for situations where the liver and heart energies are not working in harmony, creating a condition known in Traditional Chinese Medicine as disturbed shen. Disturbed shen is akin to soul confusion, and can result in anxiety, insomnia, manic behaviors, hypersensitivity, jumpiness, and difficulty concentrating. The body and spirit eventually run down from all this frenetic activity, causing the soul to figuratively dry out. Rose returns juiciness, coherence and brightness to the spirit, and allows for joyful clarity of purpose.

Rose resonates with several chakras, but most strongly with the heart which is associated with all forms of love: physical, parental, sexual, romantic, platonic, devotional, universal. The heart is the energetic seat of the emotions and the bridge between the ever-challenging temporal world and the spiritual world of soul contracts. Combine the feminine, mothering

aspect of rose with the emotional and spiritual trials of love gone wrong, and there are many indications for use of this oil.

Most individuals (be they male or female) who have mother issues will benefit from Rose otto. Blinded by negative experience, they have difficulty recognizing the goodness, nurturing, unconditional love or divinity in the mother archetype even though they may ache to experience these qualities. Someone who was neglected or abused by a female parent often has problems with self-nurturing, self-esteem, sexual insecurities, repressed anger and an overwhelming need for acceptance, often coupled with a fear of rejection. One whose heart was closed early in life needs to have a balm to ease its opening, and the possible pain and fear that might be associated with that opening. Rose allows for a slow, gentle release of woundedness, and in these instances is particularly healing when combined with Mandarin (*Citrus reticulata*), Bergamot (*Citrus bergamia*), Sweet marjoram (*Origanum majorana*) or Benzoin (*Styrax benzoin*).

Conversely, Rose would also be appropriate for someone who is having trouble mothering because of an issue such as postpartum depression or lack of a proper role model for female parenting. In this circumstance, the woman cannot or will not step into her mother archetype. Rose otto's affinity for balancing the female reproductive organs and detoxifying the liver (estrogen is conjugated by this organ which is heavily stressed during pregnancy) combine the physical and emotional benefits of the oil.

A woman who lacks confidence in expressing her femininity or a man who cannot get in touch with his feminine side is also a good candidate for Rose. Jasmine (*Jasminum grandiflorum*) is a good accompaniment here.

In England, roses were traditionally planted on the graves of lovers who died prior to marriage. This points to another indication for rose, the continual longing for loves lost. Certain individuals idolize romantic love, clinging to and fantasizing about the loss of relationships, including the most casual of encounters. They may pine over perceived missed romantic opportunities or harbor secret crushes. Their sorrow may take the form of deep, brooding grief or near hysteria. Either way, the preoccupation with

lost or unrequited love becomes so obsessive that it eventually leaves them mentally and emotionally exhausted. When the fire element has extinguished in these people, Rose will rekindle it. As they recover their energy, Rose cools their obsessional mind while warming their hearts, allowing them to focus on loving themselves. Once these individuals master self love, they are finally free to love others without fear of loss.

Any discussion of Rose should mention its remarkable ability to assist in processing and healing from trauma, particularly sexual abuse or abuse perpetrated by alcoholics. The oil is effective for a number of emotional situations typically experienced by trauma survivors: grief, despair, fear of terrifying events, isolation, loss, sexual insecurity, self-loathing, lack of acceptance and confusion regarding forgiveness. Rose encourages compassion, opens and supports the heart, aids self-love by banishing self-hatred and denial, and brings hope to the deeply wounded individual. In cases of abuse, its ameliorating effects can be enhanced by blending with Tarragon (*Artemisia drancunculus*), Black spruce (*Picea mariana*) or Myrrh (*Commiphora myrrha*).

Many people with addictions, or those suffering from deep trauma are actually seeking connection with the divine. When union with the divine feminine is facilitated via rose, a traumatized individual may experience unconditional, universal love for the first time.

Rose lore includes stories of sub rosa meetings, where the flower was hung over a conference or dining table as sign that utter discretion would be observed regarding all conversations held at the table. This strong association with secrecy ties into trauma and abuse. Many trauma survivors are holding terrible secrets... for themselves or others. The fire element aspect of Rose encourages these skeletons to be brought into the light and transformed for the higher good of the individual, burning away long-held feelings of victimization. The oil is powerful balm for issues involving betrayal, where its effect can be enhanced by Blue cypress (*Callitris intratropica*).

Equally important is Rose otto's relevance to the healer, one who may give too much of herself and become overburdened by holding others' numerous secrets. Professional caregivers can fall prey to burn-

out and exhaustion, a situation known as compassion fatigue (Koeppen, 2008). Rose supports hearts that are too big, yet overwhelmed with guilt or anger after repeated empathic engagement with clients. The oil gives professionals permission to be compassionate with themselves and set appropriate boundaries while strengthening their ability to hold a healing space and 'bodhisattva' energy for others.

Finally, Rose is classically indicated for processing the grief, despair and sorrow experienced by those who are dying and those whom death leaves behind. It raises the soul of the dying person to the light, bathing them in a universal and unconditional love. This sense of pure love incites a longing for divine union, removing fear of death and allowing safe passage to the after realms. When used on grieving persons in somato-integrative sessions, Rose honors yet accelerates the healing cycle, its moistening quality bringing on cleansing tears that nourish and elevate the heart. The oil blends beautifully with the light-bearing quality of Bergamot when used in grief support work.

In the end, the ethereal fragrance of Rose helps us come to the realization that all we need is love, and she is its purest aromatic manifestation. ❧

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Vibrational Healing with Flowers

Marza Millar, Clinical Herbalist, CMT, RHT, MA



Flower essence making © Marza Millar

In our dawn of history, the First Nations people knew of the healing powers of flower waters. The dew was collected at sunrise off the flower's petals and a sick one was washed in the healing waters of the flowers. Did our ancestors know more than science can prove here in our modern forms of healing? I believe so! The sick that are brought to Shamans of Bolivia and Peru where they are offered flower baths in the streams of the jungle. Even modern Ahyawaska ceremonies given by the modern Shamans of Peru and Bolivia include the practice of washing the participant's body with flower waters before entering into a sacred ceremony. The Medicine Men of the Hopi Indians of Arizona have a long standing practice of healing their sick by gathering morning dew off the cactus flowers and Cypress trees that grow near the Mesas to wash the illness away. They also make a tea elixir with the flower waters to drink to help with the illness.

Dr. Edward Bach, the modern founder of Flower Remedies in the early part of this century, first started his studies of making flower essences by collecting the dew off the flowers. He used this in his research to come up with the westernized version of modern flower essences. Unfortunately Dr. Bach only spent eight years of his short life working with the flower remedies. Dr. Bach died at the age of 50, leaving much of his work unfinished, and left his notes for his assistants to carry on.

There is new research being done in the field of vibrational waters by Dr. Emoto Teresita Espinoza of El Mundo Natural in Santiago, Chile, Bruce Lipton in vibrational healing and zero point field research, Geno Nonini of Marian Farms working with cutting edge theory work in Biodynamic Horticulture with Flower

Essences, and Julie Murray with the Bach Remedies. These daring scientists and new Bioneers are some of the new contributors to the flower essence research and development.

To this day there is still no scientific way of measuring the effects of flower essences within the human body. Yet they have been used in one form or another for thousands of years. Case after case of documentation has been collected for over 30 years by such resources as the Flower Essence Society. Flower essences work—that's a written fact and proven fact. How they work is still a mystery.

I've spent the last 10 years in educational and clinical training for flower essence practitioners and medical professionals in the use of flower essences. I've traveled extensively throughout the U.S., Canada, Mexico and U.K. working with a diverse population. I have witnessed this phenomenon of great emotional and physical healing with the use of flower essences many times.

My research, with some of the leading scientists as mentioned above, has brought me to the conclusion that the flowers bring ascending and descending cycles. The Hopi Indians of Arizona gather flowers in first bloom to make their flower medicine. Then they wait until the same flower starts to cycle down and they capture the flower and make a flower medicine out of it as well, capturing two cycles of the flower.

When I tried this using the modern methodology of making a flower remedy by Dr. Bach, I found I was able to capture both the upward and the downward cycles of the flowers. When giving these different

cycles of upward and downward cycle flowers, I found an amazing difference in potency. I used an upper cycle flower essence on a client with depression. I used a downward cycle flower essence for a hyperactive child that tends to have trouble in school. The flowers seem to have more potency and are more effective to the client when captured and made with these upward and downward cycles in mind.

In modern flower essence theory, the flower captures both an up and a down cycle yet it is only one essence. In the case of the Sunflower, this always confused me. Sunflower is said to bring one out of their shell if the person is too inward, and if the person is too forward the Sunflower is also supposed to bring them to a more quiet place. I have found that if I capture the first bloom of the Sunflower



Sunflower © seraficus

and then capture the Sunflower in its final phase of bloom, making two essences of the same flower at different times, this gives it more potency than making one flower essence

in its upward cycle. So I give the upward cycle of the Sunflower Flower Essence to the inward, quiet person to help bring them out of themselves. Whereas I give the downward Sunflower flower essence to the person who is very outward to take them to a more calm and inward place.

I often combine essential oils with my flower essence therapy and formulas. The essential oil affects a chemical change whereas the flower essence makes the vibrational change within the human chemistry. I find using an essential oil that complements the flower essence enhances the therapy, has a longer impact, and shortens the course of treatment.

Recently one of my clients asked me to help her mother who was dying of congestive heart failure. She wanted her mother to die without the use of morphine, if possible, and to participate in her own process of death. After some thought I made a formula using several downward cycle flower essences with Rose essential oil. I put it in a roll-on balm of biodynamic organic almond oil. I also made a dosage bottle for her to take the same formula sublingually. I felt my client should be treated as well with the same formula but using the upward cycle flowers

and Rose essential oil in a sublingual application. Within two weeks her mother had passed in complete peace with no pain and total awareness of her process of dying. My client was steady, happy and able to go through the process with her mother with an open heart and clear head.

When making and using my flower essences, I find that using live water and planning the right day and time to pick and make the flower essence is very important. I use the Stellar Natura Biodynamic Calendar to pick and make all my essences. Flowers and



Hibiscus flower essence making © Marza Millar

plants are very connected to the events of the cosmos and the alignment of the moon, sun and stars. I take all of these factors into consideration when I make my flower essences. As a vibrational medicine, the flower remedies are influenced by the environment and the timing and cosmic events at the time in which they are made.

My experience in working with flower essences is still in the beginning stages, despite my years in the field. Still in its infancy, this new study of medicine and alternative healing is coming into focus as a future treatment—healing the mind, body and soul as one. Aromatherapy and flower essences go hand in hand as we explore their combined use in the future of alternative medicine. ☯



Flower essence making © Marza Millar



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Allergy/Stress-Induced Dry Eczema: A Case Study

Eileen Cristina, LMT, Clinical Aromatherapist

The original case study first appeared in the *International Journal of Clinical Aromatherapy* (2006). 3 (1), p16-ref. p22.

Introduction

Michael is today a vibrant child of four who enjoys books, music, puzzles and playing outside. In April of 2004, his mother sought treatment for his nighttime itching of allergy/stress-induced dry eczema. Her desire was to use an effective natural method to alleviate the itching created by Michael's dry eczema.

History

In the winter of 2004 Michael was diagnosed by his primary care physician with asthma, skin allergies, and resultant dry eczema. The physician prescribed Albuterol (generic) as needed for relief of the symptoms of asthma, and thus prevention of airway obstruction that leads to shortness of breath, wheezing, cough, and congestion. At this time Michael's physician recommended over-the-counter preparations for the dry eczema: Keri™ Moisture Therapy or Eucerin™. The latter is said to be specifically "for the relief of skin so dry it itches."

Nothing was notably effective for the itching or eczema. The use of colloidal oatmeal baths and the physician recommended Keri™ or Eucerin™ lotions were ineffective. When applied to the affected area, Eucerin™ actually exacerbated the eczema and increased the subsequent itching. Dreft™, additive-free detergent, was used in the laundry. For personal hygiene, clear glycerin soap was used. By observation, Michael's parents learned that his allergens are: soy proteins, food preservatives, and some food colorings. These items were eliminated from Michael's diet and environment.

At this point, Michael's eczema appeared during times of stress on his stomach, back, legs, and face. At bedtime the itching would deter sleep. Michael was

unable to keep himself from scratching the irritated areas. It was at this point that Michael's mother and father decided to seek aromatic treatment.

Aromatic treatment

After a full consultation with Michael's mother in April 2004, a hydrolat formula spray was prepared to relieve the itching of Michael's eczema at bedtime.

Hydrolat spray formulation

Rosa damascena var. *alba* (pH 4.36) 50%
Chamaemelum nobile (pH 3.45) 50%

Quantity and treatment suggestion

8 oz/240 ml quantity in total was prepared and dispensed in a spray bottle. The client's mother was advised to spray the affected areas of Michael's body for the relief of itching day or night.

Rationale

- Hydrolats were chosen because they are non-irritating to the skin and safe for use with children without concerns of toxicity as in the use of essential oils (Cristina, 2004).

- *Rosa damascena* was selected for the suggested properties of decongestant, anti-inflammatory, balancing and calming based on its chemistry of primarily alcohols and some esters and aldehydes. The goal was to balance (by inhalation) the stress/psyche component of the eczema as well as relieve the physical manifestations (Price and Price, 2004).

- *Chamaemelum nobile* was chosen for its anti-inflammatory action on dry, inflamed and sensitive skin. In addition it is a psychic soother for stress-reduction (Rose, 1998). The hydrolat of *Chamaemelum nobile*,



Dry eczema © Quayside

primarily esters by chemistry, is anti-inflammatory, calming and balancing to the nervous system (Viaud and Vanhove, 1999).

With the hydrolat spray Michael received, from a natural source, relief from the itching of his allergy/ stress-induced dry eczema. When the spray was used for his legs, hands and wrists, the itching was reduced. This prevented Michael from scratching and allowed sleep to ensue. In addition, the hydrolat spray improved the red “angry” look of the eczema.

Follow-up

Michael’s mother wrote, “Thanks so much—so far, so impressive. It’s the first thing we’ve tried that seems to relieve the itching for the day or night! I’m feeling optimistic.”

Michael continues to have occasional bouts of the dry eczema, but his symptoms remain lessened by the use of the hydrolat spray.

Conclusion and reflection

After months of using physician recommended lotions without measurable relief and with some negative results, the use of the hydrolat spray formulation was effective. The goal of alleviating the itching from dry eczema was reached.

Update—April 2014

The following year, when he was five, the family moved to northern Arizona to minimize the pollen and environmental effects on Michael’s allergies. Within a year of moving, Michael’s eczema and the need for the hydrolat spray ended. This therapist visited with Michael’s family in the spring of 2014. Michael is now eczema free.


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Eileen Cristina is owner of Kneading Wellness, a Barnes’ Myofascial Release therapist and Clinical Aromatherapist with an 18-year, full-time practice. She is Board Certified in Integrative Health by the American Association of Integrative Medicine. She also teaches at the Lancaster School of Massage in Pennsylvania and teaches privately. She has been published in several industry journals and magazines.



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Practitioner share
Liz Fulcher, Clinical Aromatherapist

Mature Skin Facial Serum

8 drops Rose absolute (*Rosa damascena*)
10 drops Frankincense essential oil (*Boswellia carterii*)
10 drops Carrot Seed essential oil (*Daucus carota*)
1 oz Jojoba wax (*Simmondsia chinensis*)
½ oz/15 ml Rosehip Seed oil (*Rosa canina*)
½ oz/15 ml Pomegranate oil (*Punica granatum*)

2 oz/60 ml glass dropper bottle

Pour the carrier oils into a 2 oz (60 ml) glass bottle with orifice reducer. Add the essential oils, drop by drop. Close the bottle and gently turn over to mix the ingredients. Smooth a few drops over your face. Use the serum daily to hydrate and heal your skin.



Image © Thumb



Aromatic Wisdom Institute
school of creative aromatherapy

www.aromaticwisdominstitute.com

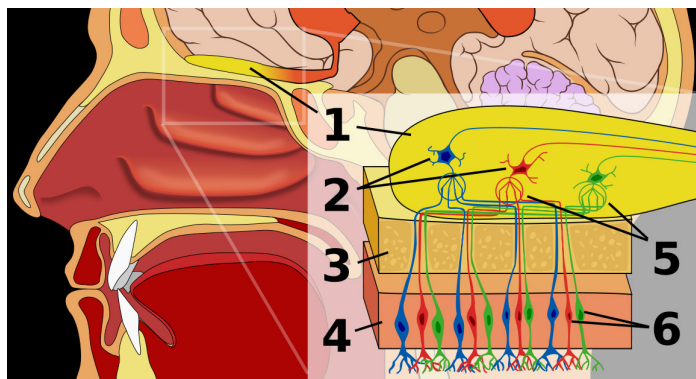
Olfactory Perception

Éva Marie Lind, Clin.Aromatologist

We respond to scent through a variety of circumstances unique to our individuality. This “learned odor response” is why the same aroma can affect each of us differently. A scent that triggers a good memory for one person (such as a flower encountered at a wedding) may revisit a painful memory for another (such as the same flower encountered at a funeral). Our individual histories, locked within the recesses of our mind, govern our responses and our feelings. We have our own unique “programming” that can dictate our perception of scent.

Perception of odor, “Osmia,” has also been labeled with levels of distinction from normosmia, which is the label that describes “normal” perception, to anosmia, the complete absence of the ability to distinguish smell. In between we find oligosmia, a decreased level of smell; heterosmia, the inability to distinguish between certain odors; hyperosmia, an overly acute sense of smell; parosmia, a distorted sense of smell; cacosmia, the perception of a pleasant odor as unpleasant that is common with individuals having emotional/mental imbalance; and hyposmia—one of the most common and temporary—a loss of smell following chronic illness such as flu, nasal infection, blow to the head, surgery or the aftermath of long-term medication. Diet and environmental chemicals can also be factors that contribute to this condition. Olfactory agnosia, the inability to recognize sensory stimuli, is of central importance to our ability to describe odor through the use of language where, despite being able to detect odors, there is an inability to interpret, contrast or classify odors.

Our nose and its epithelium are also recognized as an “organ”—one that ‘digests,’ assimilates and transfers odor molecules to the brain to be further processed. In large part, registering odors is independent of our left-brain, recognized as the “care-center” of our mind that is responsible for our impartiality, examination and intellect. Instead, odor recognition is predominately a right-hemisphere activity—the area responsible for our passion, emotion, creativity, instinctive behavior and romanticism.



Human olfactory system. 1: Olfactory bulb 2: Mitral cells 3: Bone 4: Nasal epithelium 5: Glomerulus 6: Olfactory receptor cells
by Patrick J. Lynch, medical illustrator © Chabacano

Smelling first registers in the creative hemisphere of our brain rather than in the hemisphere that deals with logic. In this, scents and odors elicit memories that are more emotional as compared to those of auditory, tactile or visual stimuli. It is our left-brain that is also responsible for governing language and speech which suggests at least one reason why it is so difficult for many to adequately describe a scent or odor with language.

It had been established with many teachers, as myself, that we had the capacity to process 10,000 different odors in one square inch of the brain. However, this reference had never had scientific and empirical validation. Recent research has shed amazing new inferences and enlightenment to this theory, offering up new research that expands this number to 1 trillion. It is quite mind-boggling, and also entirely inspirational, to recognize that humans have the capacity to discriminate this vast range of distinguishable olfactory stimuli thus validating, decisively, that our sense of smell is our predominant sensory perception mechanism. ☞

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Éva-Marie Lind has been active in the specialized Organic and Biodynamic trade for 3+ decades. A practicing Aromatologist for over 25 years, she is the founder and owner of EM Arôme and Alae Arôme, an olfactory and sensory fine arts design studio and atelier. The design strategy of EM Studios cultivates the synthesis of ecology, agriculture and cultural inheritance, and the use of ecological and pure ingredients with specific intention to enhancing health and wellness. www.emarome.com

Aromatherapy for Spring and Summer

Suzanne Catty, LHP, Registered Clinical Aromatherapist,
Certified Reflexologist



Photo © Chris Gramly

The return of warm weather is traditionally the time when we cleanse our bodies. It's an old, even ancient tradition dating back to the time when our supply of 'fresh' foods was literally at the bottom of the barrel and we were competing with the rodents for what was left. Not a pretty picture is it? But we're going way back in time here for the tradition, definitely pre-refrigeration days! Food was gathered in season then stored wherever we had space: in caves, shelters, barns (if we were lucky enough to own animals) or even in the ground if freezing was an issue and intestinal parasites were to be expected by winter's end in man and beast. So we cleansed our bodies with the first herbs of spring: Nettle (*Urtica dioica*), Lovage (*Levisticum officinale*), Angelica (*Angelica archangelica*). All the first shoots of green were eaten, the tender tips of conifers like Spruce (*Picea mariana*), Fir (*Abies balsamea*) and Pine (*Pinus sylvestris*), Hawthorn (*Crataegus species*) before the leaves unfurl, plus barks and roots plump with the new rising sap, even some toxic herbs found a place as a vermifuge. This was our medicine, our food, our healing connection with the natural world newly returned to life.

Thankfully the 21st century has benefited us in many ways, not least in food and hygiene! But cleansing the body in spring is still a good idea and essential oils and hydrosols can be a fantastic aid.

Lets start with the outside of the body. All the symptoms of winter become magnified as we move into the new season so you may be noticing these things most at this particular time. Your skin has been covered with layers of clothing for months and dead skin needs to be sloughed off to stimulate circulation and smooth the skin. Dry inside air from heating has dehydrated you and it shows on the outside too!

Renew your outer layer with a sugar or salt scrub; it's based on the same principle as dry brushing but with the added benefits of Aromatherapy. Sea salts are a must if you really want to cleanse as they contribute trace minerals and have their own de-toxifying and diuretic effects. French solar dried salt is some



Dead Sea salt and sugar scrub
© Cat_Chat/iStock.com

of the best, but Dead Sea salts are the strongest and can be mixed with other salts or used on their own. Sugar provides exfoliating properties but will not detox and renew to the same extent as sea salts.

Good essential oils to choose from include Lemon (*Citrus limon*), Grapefruit (*Citrus paradisi*), Cedarwood (*Cedrus atlantica*), Juniper berry (*Juniperus communis*), Black Pepper (*Piper nigrum*), Orange (*Citrus sinensis*) and Patchouli (*Pogostemon cablin*). Pick just one oil or a combination and mix them into a carrier oil base, such as organic Sesame (*Sesamum indicum*) oil, then stir into a big jar of salt. Your essential oils should be at least 5% concentration in the carrier oil and you need just enough carrier to help the salt stick together and to your skin. Use the scrub 2-3 times a week in the shower, from feet up to hips at least. You will look and feel great and your circulation and tone will be noticeably improved in a short time.

If cellulite is an issue consider essential oils like Helichrysum (*Helichrysum italicum*), Cypress (*Cupressus sempervirens*), Sandalwood (*Santalum austrocaledonicum*), and Lemon at 20-30% concentration in a scrub. Use the same oils in your body lotion or oil and apply 2-3 times a day for optimum results. Cellulite requires work, so don't forget that exercise and sensible eating are part of the picture.

Your hair needs moisture too. Make deep conditioning treatments at home with rich carrier oils like Coconut (*Cocos nucifera*), Shea (*Vitellaria paradoxa*), Cocoa butter (*Theobroma cacao*) or the traditional Olive (*Olea europaea*) oil to which you've added some appropriate essential oils. For normal hair try Rosemary (*Rosmarinus officinalis*), Lemongrass (*Cymbopogon flexuosus*), Ylang Ylang (*Cananga odorata*), Cedarwood, and Sandalwood. For dry hair or flaky scalp use Palmarosa (*Cymbopogon martinii*), Geranium (*Pelargonium graveolens*), and Patchouli. Deep conditioning with a hot towel or in the steam room at the gym makes the treatment even nicer. In the South Pacific they make a product called Monoi de Tahiti sometimes just called Monoi; it is Gardenia (*Gardenia brighamii*) flowers macerated in Coconut oil and has a faint, exquisite floral scent and the cool creaminess of coconut. It inspired us to make the hair products Tahiti for women and Bali for men.



Photo © SerrNovik

Essential oils and hydrosols can help clean us inside as well as out. Many Aromatherapy oils are the flavoring ingredients in the foods we buy, the beverages we drink and the products like toothpaste that are part of daily life. Sensible use of aromatics to supplement our bodies and diet makes sense. One drop of a pure, therapeutic essential oil in a small glass of room temperature water is the perfect way to start the day, like an internal shower. Think Lemon, Peppermint (*Mentha x piperita*) (great to clear up skin too), Basil (*Ocimum basilicum*), Black Pepper or a combination. But remember use just one drop at a time; two won't hurt you, but less is more with Aromatherapy. If oils are too strong for your taste, try hydrosols. These aromatic waters contain many of the properties of the oils but are non-volatile and therefore far more gentle. You could try one of the citrus waters, Orange or Chinese Grapefruit, (*Citrus grandis*) or classic digestives like Fennel (*Foeniculum vulgare*) seed, Cinnamon (*Cinnamomum zeylanicum*), Greenland Moss (*Ledum groenlandicum*) or Melissa (*Melissa officinalis*). Sipping a litre (32oz) of water every day in which you have diluted 30 ml (one ounce) of hydrosol will ensure that you not only drink enough water but will give you the healing properties of the chosen plants. Cleansing never felt so good.

Spring is also the season of love. Birds do it, bees do it... we certainly do it... getting fit inside and out will give you plenty of energy and lust for life. Some of the traditional spice oils happen to be both digestives and aphrodisiacs. Perhaps the way to a man's heart is through his stomach!! Cinnamon bark, Clove bud (*Syzygium aromaticum*), Black Pepper, Coriander (*Coriandrum sativum*), and Cardamom (*Elettaria cardamomum*) are all classic perfume ingredients, usually combined with the 'heavy' floral oils like Jasmine (*Jasminum grandiflorum*), Rose (*Rosa damascena*), Ylang Ylang, Tuberose (*Polianthes tuberosa*) and others. These spice oils not only cleanse the digestive organs and gastrointestinal tract but their warming, stimulating nature physically perks us up. When you feel good, you look good and the rest is up to you. ☺



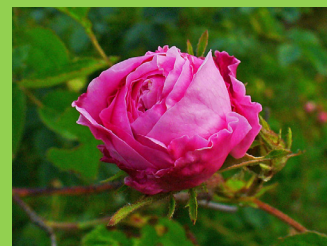
Suzanne Catty is internationally recognized as one of the pioneers of aromatherapy. She is an author, educator, and licensed holistic practitioner. She was in full-time private practice from 1995-2011. Ms. Catty is the author of three books including *Hydrosols: The Next Aromatherapy* and *The Holistic Healers Handbook*. A complete purist when it comes to natural ingredients, she manufactures health and wellness products through her company New World Organics. www.newworldorganics.com

The IJPHA would like to sincerely thank Suzanne Catty for contributing her time and expertise in serving the IJPHA as a peer-reviewer and as a knowledgeable and passionate member of the aromatic community.

Suzanne is leaving our aromatic community in pursuit of some new adventures on her journey.

Although she will be deeply missed, the IJPHA wishes her well in her new endeavors!

*In gratitude,
Lora Cantele/IJPHA*



Skin Pampering

Jayda Uras, Aromatherapist



Skin care with rose © og-vision

Pure Rose extract is prevalingly used for skin healing and anti-aging in many cultures traditionally, and is recognized as highly superior for skin cell regeneration in the cosmetic industry worldwide today. It:

- Hydrates, balances and tones all skin types
- Promotes skin cell restructuring and highly improves skin
- Promotes elasticity to counter the ageing process
- Fortifies the diminishing deep lines & wrinkles.
- Regenerates the skin, scar tissue, problematic and sensitive skin
- Increases skin vitality

Rose oil is extremely rapid, vibrating at a frequency 320 Hertz; that's 4-6 times faster than all other plant and flower essential oils.

Such high frequency allows the molecules of the rose to penetrate actively and effectively through the dermal layers of the skin allowing for high-level cell regeneration.

Anti-aging face mask for dry skin

- 1/2 avocado, mashed up
- 1 tsp flower honey
- 2 drops of Ylang Ylang (*Cananga odorata*) essential oil
- 3 drops of Rose otto (*Rosa damascena* or *Rosa centifolia*)

Combine all ingredients together. Apply to the face and leave for 10 minutes. Rinse off with cool water.

Any leftover mixture can be refrigerated up to three days.

Toning and regenerating eye makeup remover

- 1 Tbl olive (*Olea europaea*) oil*
- 1 Tbl Rose (*Rosa damascena*) hydrolat or Witch Hazel (*Hamamelis virginiana*) hydrolat
- 2 drops Rose (*Rosa damascena* or *Rosa centifolia*) essential oil
- 2 drops Frankincense (*Boswellia carterii*) essential oil

*Substitute apricot kernel (*Prunus armeniaca*) oil or sweet almond (*Prunus dulcis*) oil for oily skin.

In a 1 oz/30 ml bottle, combine all ingredients and shake to blend. Use a drop or two on a cotton ball and swipe across the eye lid to remove makeup. Be sure to keep eyes closed. This blend can also help to regenerate the under-eye area with continued use.

Toning anti-aging shaving oil for men

- 40 ml almond (*Prunus dulcis*) oil
- 5 ml carrot (*Daucus carota*) seed oil
- 4 ml flaxseed (*Linum usitatissimum*) oil
- 10 drops of Rose (*Rosa damascena* or *Rosa centifolia*) essential oil
- 4 drops of Cypress (*Cupressus sempervirens*) oil

In a 2 oz/60 ml dropper bottle, combine all ingredients and shake to blend.

This can be used after shaving but it works wonderfully for those who shave with a razor. Wet the face and hands and then add 5-6 drops of the blend into the palm and smooth onto face and then shave. This not only helps diminish the burning and redness but also allows for a great smooth burn-free shave. It can be used by women for shaving legs too.

I have found that when using these formulas one never needs to add a moisturizer afterwards. ☺



Sack of roses © Ottoman Rose



Jayda Uras studied herbal medicine, aromatherapy and biochemistry in New York and in the U.K and eventually moved to Turkey to work closer with the roses. She is continuously involved with the Rose otto (*Rosa damascena*) scientific research and cooperates with several University Pharmacology and Traditional medicine departments and professors in Turkey, Thailand, U.K and the U.S. www.ottomanrose.com

A Recap of the Pacific Institute of Aromatherapy 30th Anniversary Lectures

Katharine Koeppen, RA, LMT, NCBTMB

Pacific Institute of Aromatherapy
30th Anniversary Lectures



Jeffrey Yuen:
Chinese Medical Aromatherapy
Chronic Degenerative Diseases

© Pacific Institute of Aromatherapy

The Pacific Institute of Aromatherapy (PIA) has not offered a conference since 2009, so many people were excited to hear that Kurt Schnaubelt and company would be celebrating its 30th anniversary with a two-day event in San Francisco. The lectures were held on November 16 and 17, 2013 in the Fisherman's Wharf district, opening with a full day of presentations by Kurt Schnaubelt, PhD. Dr. Jeffrey Yuen followed on the next day with a lengthy discourse on Aromatherapy and the principles of Traditional Chinese Medicine (TCM).

Approximately 300 people attended the event, and participants seemed to be split evenly between Aromatherapy practitioners and acupuncturists. In concordance with the material presented, the majority of attendees were intermediate or advanced practitioners in their respective modalities.

The Saturday sessions began with a detailed retrospective of three decades of PIA history. This was not at all self-serving, as the history of Kurt Schnaubelt and PIA is essentially the history of Aromatherapy in the United States. Schnaubelt began his forays into essential oil research and promotion of the oils as a route to improved health before a U.S. market for Aromatherapy actually existed. He and a few others were key in creating and building this market, initially in Northern California and later in other parts of the country.

Schnaubelt relayed the story of PIA in a humble, humorous and self-deprecating style. He admitted that several early milestones in his business development occurred as a result of synchronistic and fortuitous meetings. Surprisingly, PIA's first heavyweight connections to European researchers and essential oil

producers came via a French reporter who stumbled upon Schnaubelt in San Rafael, California, while researching a story on the American Aromatherapy industry— an industry which she found virtually nonexistent. Her contacts quickly helped Schnaubelt obtain introductions to distiller Henri Viaud and researcher Rolf Deininger. Years later, a chance encounter led to a consultancy with the United Nations Industrial Development Organization, which allowed Schnaubelt to study essential oil producing plants throughout the globe, encouraging their distillation for medicinal use in native healthcare and abroad.

In addition to these lucky breaks, a great deal of hard work was involved. As early as 1988, PIA was organizing educational conferences beginning with Future Scents, which featured lectures by Aromatherapy pioneers Victoria Edwards, Marcel Lavabre, John Steele and Robert Tisserand. The following year, PIA was among the first organizations to offer intensive Aromatherapy training and, in 1992, educational tours with European farmers and distillers. Four years later, Schnaubelt published his first book, the benchmark *Advanced Aromatherapy*. He later began self-publishing his titles and has inspired other Aromatherapy authors to follow in his footsteps.

Schnaubelt turned everyone's attention to the latest developments in essential oil science during the afternoon lecture, which dealt with preventing chronic disease through the study of essential oils and systems biology. Systems biology is an emerging, interdisciplinary field which focuses on complex interactions within biological systems using a non-reductionist, or holistic, approach. Its focus is on discovering and modeling emergent properties of cells, tissues, organs, etc., via examination of cell signaling

networks. These emergent properties manifest only at very high levels of organization so they cannot be understood by breaking the biological system down into smaller components. Much of the current research in this new field is being done in China where scientists are examining common herbs used in TCM and discovering how cell signaling networks affect gene output and expression in the body.

Cells respond to irritants (internal or external) by producing signaling processes that lead to inflammation. Schnaubelt discussed the activation/inhibition of Nuclear Factor kappa B (NF kB) as an illustration of normal and perturbed cellular signaling. NF kB is activated by a number of stimuli, including free radicals, cytokines, carcinogens, endotoxins and UV radiation. It normally resides in cellular cytoplasm, but moves to the cell nucleus when activated, initiating the expression of more than 200 genes, including those that prevent apoptosis and induce cell proliferation, chemo resistance, radiotherapy resistance, and inflammation. Current research is indicating that phytochemicals present in a number of essential oils (mostly derived from spices) may inhibit NF kB, making them potentially useful in cancer prevention. In particular, Dr. Bharat Aggarwal and his team of researchers at M.D. Anderson Cancer Center were cited for their work with Turmeric (*Curcuma longa*), Ginger (*Zingiber officinalis*), high mountain Ginger (*Zingiber zerumbet*), Guggul (*Commiphora mukul*), Aniseed (*Pimpinella anisum*), Star Anise (*Illicium verum*), and Fenugreek (*Trigonella foenum graecum*).

The effects of plant aromatics on other molecular targeting systems were briefly covered, notably their ability to downregulate Cyclooxygenase-2 (COX-2), a substance which synthesizes inflammatory prostaglandins and when overexpressed, is implicated in numerous cancers and precancerous conditions. This information was put into a clinical Aromatherapy perspective by reviewing the work of Anne-Marie Giraud-Robert, a general practice physician specializing in oncology. Dr. Giraud-Robert has been employing essential oils as part of her medical practice in Aix-en-Provence, France, where she completed a study of 1800 cancer patients who were given essential oil treatments concurrently with allopathic treatments. Many of her patients had stage 3 and stage 4 complex cancers, and she has found that they fared significantly better in survival rates, general healing and

enhanced quality of life over patients who received only allopathic treatments. Among her preferred oils are Ravintsara (*Cinnamomum camphora* ct. cineole), Greenland Moss (*Ledum groenlandicum*), Helichrysum (*Helichrysum italicum* var. serotin), Niaouli (*Melaleuca quinquinervia* viridiflora), Carrot seed (*Daucus carota*) and Myrrh (*Commiphora myrrha*). A number of her recommendations were given for management of specific cancer treatment side effects. This article will not attempt to describe these recommendations, as many are mentioned in *The Healing Intelligence of Essential Oils* (Schnaubelt, 2011).

Any anniversary would be incomplete without a celebration, and conference participants were able to take a break from information overload with a casual and quiet reception at the day's end. Attendees enjoyed networking and catching up with old friends while listening to acoustic folk guitar provided by former PIA student Robert Berryman.

Many had come specifically to see Jeffrey Yuen, and they were not disappointed by Sunday's lectures. Dr. Yuen is a respected educator on the TCM conference circuit and one of the few practitioners who can elegantly translate principles and concepts of TCM in a manner that is easily understood by Western audiences. He is the Dean of Academic Affairs for the Swedish Institute's School of Acupuncture and Oriental Studies, as well as a lineage holder in two different Daoist traditions.

Yuen believes that Western Aromatherapists tend to choose essential oils to treat specific conditions rather than seeing their clients holistically and focusing on the individual. He spoke of the necessity for compassion, as well as a certain degree of detached transference between practitioner and client in order to achieve a successful outcome.

Basic TCM theory involves determining which stage of existence the client occupies and choosing appropriate interventions and modalities for that stage. Yuen defines stages of existence as self-surviving, self-fulfilling and habituation.

In the self-surviving stage, clients tend to be quite ill and experience pain, fear and poor appetite. Generally speaking, it is key to support respiration (i.e., with high cineole oils) and digestion with easily assimilated

foods. Any essential oils used should complement rather than antagonize other integrative treatments, such as medical qigong.

Self-fulfilling is an interactive state involving the need for meaning and purpose in one's life, as well as the development of desires and need for comfort. It is essential during this stage to nourish the client, also incorporating non-Aromatherapy interventions such as acupuncture, tui na, psychotherapy and bitter herbs.

Habituation is a stage of life wherein the client creates an identity, stability and surroundings which assist in maintaining his chosen self-image. If the self-image is not positive, addictive or chronic behaviors may result, and the willingness to embrace change is key to healing. Essential oils from spices are preferred, and may be used topically or internally. Adjuncts may include color, sound or taste therapies. Yuen continued his explanation of TCM by dividing disease as occurring from external, internal or genetic/constitutional factors. In his opinion, Aromatherapy is most effective when applied to constitutional maladies at the level of habituation.

He further discoursed on choosing essential oils by yin (flowers and plants with soft leaves) or yang (bark, wood, plants with hard leaves and slow-growing roots) and taste. Yuen characterizes most essential oils commonly used in TCM as spicy. Secondary in frequency are sweet oils, followed by sour, bitter and salty.

The last section of Yuen's presentation dealt with principles of blending essential oils according to the classical TCM technique for herbal patents. He cautioned against using single note oils in treating imbalances as this goes against the TCM principle of working with synergistic combinations. At the opposite end of the spectrum, he is critical of the Western tendency toward "chop suey" remedies composed of multiple essential oils, which he believes indicate confusion or lack of confidence on the part of the clinician. The most effective blends, Yuen feels, are composed simply of three essential oils: a Principal, an Associate and an Envoy.

The Principal oil is reflective of the root cause or etiology of the illness. Once the etiology is identified,

the modality of treatment and application can be determined. A Principal oil is the primary ingredient in a TCM blend.

An Associate, or secondary oil, is one that is appropriately paired with the pathology of an illness. Pathologies might be described as heat, cold and/or dampness and its degree of presentation. Envoy oils involve targeting the area where illness is manifested. Manifestation describes the direction in which the pathology is traveling and may be described as inner or outer, and upper, middle or lower. The Envoy makes up the remainder of the blend or in some situations may be altogether absent.

Using sample cases suggested by the audience, Yuen went through the process of formulating TCM blends in order to illustrate his technique, then delved into choosing appropriate carriers, whether cold-pressed vegetable oils for topical applications or various liquids for internal applications. He stressed the importance of using additives such as honey, vinegar, salt, or ginger ale to adjust an oral preparation based on its function or taste association.

Yuen deviated from his lecture at several points during the day for question and answer sessions. Many of the clinicians present had queries about specific conditions or illnesses, and he addressed several of them at length, including Down syndrome, thyroid imbalance, metabolic syndrome, valley fever and Lyme disease.

The TCM-in-a-day lecture was so comprehensive that it is impossible to do it justice in a review. Even the most experienced acupuncturists present felt that they had received new and relevant information. Participants who were unfamiliar with TCM were opened to an entirely new paradigm of healing.

Kurt Schnaubelt closed the weekend by announcing that PIA is resuming their Scientific and Wholistic Aromatherapy conferences with The Complexity of Essential Oils, taking place in San Francisco during November of 2014. The present lineup of speakers includes Guoan Luo, Bernd Markus Lange, Veronica Yap and Ayako Berg*.

Each attendee left the 30th Anniversary Lectures with a handout featuring selected excerpts of

Schnaubelt's lectures and a complimentary copy of *Aroma: The International Magazine for Essential Oils*. Jeffrey Yuen's lectures were recorded and are currently available for purchase from PIA. ☺

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*As we went to press we learned that the November 2014 PIA Conference has been postponed. Stay tuned for more information.

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Incorporated in 1994, the British Columbia Association of Practicing Aromatherapists. It is a society designated to support all practicing aromatherapists not only in British Columbia but across North America.

With the primary mandate of continuing education, the BCAPA presents leading experts in the field of aromatherapy facilitate workshops including Robert Tisserand, Rhiannon Harris, Marianne Tavares, Annie Harman, Jeanne Rose and Valerie Ann Worwood. We invite aromatherapists across the globe to attend our seminars and workshops and to visit the beautiful west coast of British Columbia! All workshops are open to BCAPA members and non-members.

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Ylang Ylang: Sourcing, Sustainability and Quality

Tim Blakely, Aromatherapist, Herbalist, Educator



Cananga odorata © Prenn

Ylang Ylang (*Cananga odorata*) is an oil that often tends to be misunderstood. This is partly due to it being the only oil that we separate out, 'fractionate,' while we are still distilling it. Add to that the confusion over another oil called 'Cananga' and you simply have an unusual oil. Since it comes from some fairly out of the way places, like Madagascar and the Comoros Islands, few Aromatherapy experts have seen it in production contributing to the lack of information regarding the plant and the oil.

Ylang Ylang is native to Southeast Asia but has spread around the tropics in the past couple centuries. It's in the Annonaceae Family, a rather large family of close to 3000 species. The family includes several famous edible plants like Soursop, Cherimoya and Rollinia, and is concentrated mainly in the tropics. There is one somewhat famous American species in the family, the Paw Paw, *Asimina triloba*, native to the Eastern U.S. that I used to eat regularly during the fall harvest season.

In the wild the tree can easily reach 80-100 feet and in Madagascar, where it's naturalized, the Ylang Ylang trees supply the majority of high canopy shade for the Vanilla plants. Vanilla requires shade to grow and in Madagascar it's the most important farm export. The Ylang Ylang is the tallest shade tree they use, and then they generally have fruit trees, such as Breadfruit, Citrus, Lychees, then smaller plants like coffee and then the shrubs they use for the Vanilla to climb up. It is a very interesting farm system that wouldn't be possible without the Ylang Ylang trees.

The scent from these trees is nice, but nothing like the scent from the cultivated trees. The main reason is that in cultivation Ylang Ylang is pruned and

shaped to about 8-10 feet in height with the branches hanging down for easy harvesting. I've been to many fields of scented plants but nothing compares in scent to Ylang Ylang. The whole field smells of it, an almost overwhelming explosion of scent.

Ylang Ylang is basically a selected cultivar of *Cananga odorata*. There are numerous cultivars but in general they have an overall nicer aroma profile than Cananga oil. You will most likely see 'true' Ylang Ylang listed as *Cananga odorata* var. genuina. Cananga oil is generally referred to as just *Cananga odorata* though it is also listed as *Cananga odorata* var. macrophylla. Ylang Ylang prefers rich bottomland and adequate rainfall but reasonably good drainage. Trees reach maturity in about five years from seed.

The vast majority of Ylang Ylang oil today is produced in Madagascar and the nearby Comoros Islands and Mayotte. In the Comoros production has decreased due to a variety of factors, mainly the increase in population and small amount of arable land. Other countries, including the Philippines and Indonesia, also produce some Ylang Ylang as well as producing Cananga.

The flowers are hand harvested early in the morning, roughly between 6-10 a.m. After that the sun causes too much loss of oil and it's not worth harvesting.



Harvesting Ylang Ylang © Tim Blakely

Though there are two 'peak' seasons, spring and fall, they harvest 12 months a year with the goal of harvesting every flower every day. The harvesting is done primarily by women.



Ylang Ylang in the still © Tim Blakely

After the daily picking is finished, the harvest baskets are loaded into small trucks to be taken immediately to the distillation unit. The flowers

are quickly loaded into the still and the distillation process is started. As the distillation progresses they regularly take measurements of the specific gravity of the oil and when it reaches a certain point, they pull that oil aside. The first fraction is generally called either Super or Extra.

After that it gets a little confusing and most likely not all distillers do it exactly the same. Some will continue to what is called Ylang Ylang I, or Premiere (meaning 'first' in French) and then keep that with the Super/Extra and call it VOP, or very old process. The rest of the distillation will produce Ylang Ylang II and III. Ylang Ylang III is often sold by itself and along with Ylang Ylang Extra they are the two most common forms of the oil sold in North America. Another common blend is made by putting all of them together and calling it 'complete,' or it might be separated out as Super/Extra and then the rest sold as 'complete.' Super/Extra has such a rich floral note it is my preferred form of the oil though I also like III, and the VOP and various 'completes' I've smelled are nice as well. As for sales, III is the most popular in North America.

A lot of people have a hard time understanding this process of fractionating Ylang Ylang. The first question is often, Why? This is mainly due to the Super or Extra being such a strong floral note that it's highly desired and is worth more money. Instead of selling one blended oil at a medium price, they are able to get a percentage of it, the Super/Extra, sold at a higher price. The how is really fairly simple. They constantly are taking samples from the oil to measure its weight. When it reaches that exact point where it goes from Extra/Super to I, they stop the distillation, pull that oil aside to be sold separately, then they continue the process and do the same thing several times to separate out what they want; it's always by the weight of the oil. The big surprise to me is why in N.America we don't sell more of the 'complete'

oil. I can easily understand why we sell Extra, but why not also sell a complete oil for a lower price. That way it would include all the top notes along with the middle and base notes. I love Ylang Ylang III, a nice deep oil, but I also love the 'complete' as well.

One key part of this whole process is determining what sustainability issues there might be. At first glance it would appear that all is good: a steady work force that is paid reasonably well based on local standards, a crop that is fairly easy to grow with no obvious damage to the environment, a simple distillation system using wood for heat, and a reasonably priced oil that provides a good export for the country.

In the background looms the one issue that has plagued Madagascar for decades: deforestation. Today Madagascar is one of the most deforested countries in the world. Its population continues to grow quickly and it's exhausting its resources. There have been some steps taken to replant the country but with mixed results. The distillation units that still use wild-harvested wood are obviously contributing to the problem of deforestation. Near to Madagascar lay the islands that make up the country of Comoros and the Islands of Mayotte. On these islands the impact of deforestation has been even greater. So, what are the options to wild-harvested wood distillation?

Some distillers have started to cultivate their own trees on wood lots, using prime farm land. The primary tree being cultivated is a species of Eucalyptus that grows quickly and burns hot. By cultivating the trees they eliminate their main contribution to deforestation. I saw one facility in which they were preheating the water for the still using a simple solar hot water system. One option that is not available to them, though useful for other crops, is to burn the leftover flowers from previous distillations. Unfortunately these flowers don't burn well enough to use.

There are many quality issues relating to the oil. The Extra/Super varies tremendously from I, II and III and is the highest priced. Adulteration occurs though the extent is unknown. I have seen Extra that included the whole oil and III that also included I and II. The debate will linger forever about what 'fractions' to sell or to sell only the complete oil. In the near future we will most likely see Extra and III dominate the market with a slow increase in sales of

‘complete.’ Extra has far more top and middle notes in it compared to Ill and is the closest smelling of the fractions to the flower itself, in my humble opinion.

All Ylang Ylang and Cananga essential oils contain significant amounts of farnesene, up to 22%, as well as small amounts of other components, like isoeugenol or methyl salicylate, that can cause skin irritation. It’s not really clear what constituents are causing irritation with Ylang Ylang. The farnesene content of Extra tends to be as high as 12% whereas the farnesene content of Ill is approximately 22%. This is a major difference, and my experience has been that Ill has a greater potential for irritation. All Ylang Ylang should be diluted to very low ratios when applied topically. According to Tisserand and Young (2014), isoeugenol is found in the oil from Comoran, but not Madagascar. Additionally methyl salicylate is found in Madagascar, but not in Comoran. I would also caution that as our industry grows our customer base is expanding and many of these new oil users don’t know about proper dilution of oils. Ylang Ylang smells so sweet and people often assume it’s a ‘safe’ oil to apply topically and this greatly increases the risk of an adverse reaction.



Tim with a basket of fresh flowers © Tim Blakely

Ylang Ylang oil is presently in the top 15 of oils sold today in N. America by dollar sales. Its popularity is due to many factors but it is one of the few oils that is probably sold as much for it’s scent, so intoxicating, as it is for its health benefits. As with virtually all oils it’s riding the growth in the industry and sales are going up. In order to avoid further long-term damage to the wild

forests of Madagascar, we must move towards a system where we support growers/distillers who utilize something other than wild-harvested wood to fuel their stills. As a company, or a consumer, it is always worth asking how a supplier is distilling their oils. ☪

Reference

Tisserand R and Young R. (2014). *Essential Oil Safety*, 2nd ed. London, UK: Churchill Livingstone. p480.

Tim Blakely is an aromatherapist, herbalist and educator for Frontier Co-Op. www.frontiercoop.com



www.aroma-jsa.jp
www.aroma-jsa.jp/english

The Japanese Society of Aromatherapy (JSA) is a group of medical professionals organized to promote and increase the level of awareness of medical aromatherapy, to establish aromatherapy as an academic discipline through scientific and medical research, to prevent aromatherapy malpractice accidents, to increase knowledge and skills through information exchange and sharing, and to improve members’ social positions.

Aromatika is a free, peer-reviewed aromatherapy journal and published quarterly in a digitally downloadable format (in Hungarian).

The magazine focuses on informational aromatic topics— essential oils, herbalism, tradition use and application methods—serves aromatherapists, naturopaths, health professionals and the public.



www.aromatika.hu

Good to Know...

Oral lavender product for anxiety disorder

On March 31, 2014, the American Botanical Council reported in HerbClip™ Online that a recent study showed oral lavender oil product effective and safe in generalized anxiety disorder. Silexan™, the product investigated in the study, was shown in clinical trials to reduce symptoms of anxiety. The randomized, double-blind, placebo-controlled trial investigated two dosages (80 mg and 160 mg) of an oral product containing distilled lavender essential oil versus paroxetine (an SSRI also known as Paxil) and a placebo. Silexan™ was found to have a greater efficacy than paroxetine. Minimal adverse effects were reported similar to the placebo group suggesting the product was well tolerated. The full study is available online at: <http://dx.doi.org/10.1017/S1461145714000017>. *Int'l J. of Neuropsychopharmacology*. 2014 Jan 23:1-11.

ACHS provides “Fast Track” opportunity to students to receive credit for previous study

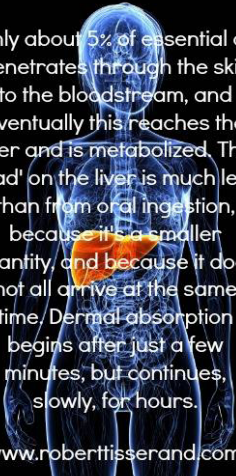
The American College of Healthcare Sciences (ACHS), a nationally accredited online holistic health college, now provides the opportunity for undergraduate students to earn academic credit by obtaining passing scores on DANTES Subject Standardized Tests (DSST) proficiency exams.

The DSST program is a sequence of examinations in many college subject areas similar to the exams students undertake when completing an undergraduate course. ACHS students now have the opportunity to submit passing test scores from three DSST exams—Here's To Your Health, Lifespan Development Psychology, and Introduction to Business—and appropriate credit hours will be awarded to the applicable ACHS course.

Priced at \$80 per test, DSST exams help ACHS students complete their studies faster and allow for reduced student debt/loan amount. The exams are an especially rewarding opportunity for ACHS military students as they are available at no cost. For more information email ACHS at registrar@achs.edu.

The scent of pine trees and climate change

Pine forests emit large quantities of volatile organic compounds (VOCs) into the atmosphere. Scientists have discovered a system by which the scented vapors turn into aerosols above cool forests affecting the Earth's radiation balance. These particles form a mist that blocks sunlight and reflects the sun's rays back into the universe. There is limited scientific knowledge about climate change as it relates to the impact of atmospheric aerosols on temperatures. Researchers found a direct pathway that leads from several biogenic VOCs, such as monoterpenes, to the formation of large amounts of extremely low-volatility vapors. The vapors form in the gas phase and condense permanently onto aerosol surfaces to produce a secondary organic aerosol. They further demonstrate how these low-volatility vapors can enhance the formation and growth of aerosol particles over forested regions, providing a missing link between biogenic VOCs and their conversion to aerosol particles. The scientists say that having a clear understanding of the way in which VOCs become aerosols will improve the accuracy with which they can predict the ability of these particles to limit rising temperatures. According to Dr. Mikael Ehn of the University of Helsinki, “In a warmer world, photosynthesis will become faster with rising CO₂, which will lead to more vegetation and more emissions of these vapours. This should produce more cloud droplets and this should then have a cooling impact, it should be a damping effect.” The vapours could have a significant impact on limiting climate change from reaching problematic levels provided that the science can catch up before heat or drought diminish the forests. —BBC News, 2/26/14



Only about 5% of essential oil penetrates through the skin to the bloodstream, and eventually this reaches the liver and is metabolized. The 'load' on the liver is much less than from oral ingestion, because it's a smaller quantity, and because it does not all arrive at the same time. Dermal absorption begins after just a few minutes, but continues, slowly, for hours.

www.roberttisserand.com

You can absorb more via inhalation than through the skin.

The soles of the feet absorb more slowly because they have no hair and thicker skin.

About 95% of ingested EO is absorbed into the bloodstream when evenly dispersed in a carrier, less if taken in water, as this reduces absorption.

Topical application is great for certain uses, inhalation and/or ingestion make sense in different scenarios.

Product Review

Anita James, SPdipA, MIFPA, Cert Ed.



LabAroma

When I heard about LabAroma I couldn't resist the temptation to take a look at the website. Being a bit of a closet techie it looked like something that would be fun to use and valuable for anyone doing lots of blending. The website is wonderfully simple in layout and easy to navigate. There is a short video and lots of information explaining all about LabAroma and how it works. An opportunity arose for me to try it so I jumped at the chance and I certainly wasn't disappointed.

Armed with loads of questions, I made a start! The programme continues the clean and clear layout on the front page of the website. I managed to work out how to use the blending tools without reading

The process to formulate a blend is simple – you select the essential oil from the palette and drag it across to the 'My Blend' section. You can add as many as you want. If you're going for a really complicated blend you can add limitless essential oils. Next comes the slightly tricky bit! You then add the percentage required for each essential oil in the blend. I did ponder if a ratio option could be added here or a calculator using drops for people who don't like percentages or fractions. When you're happy with your percentages, click "calculate" and it works it out for you. There are options to start again or add more if you're not happy with the blend.

the instructions.

LabAroma.

It is simple and intuitive, but for the complete technophobe there are easy to follow instructions. The video tutorial is now available for anyone who prefers to see it done. I tried the programme on various tech—laptop,

notebook, tablet and my Blackberry—and it adjusted to the screen size for each and worked well across all the platforms. I didn't try it on an Apple device but would expect it to work the same.

Essential Oils
Click on any oil in the palette for the essential oil's profile

Your Blend

Essential Oil	Percentage
Benzoil India	20%
Lime Mexico	20%
Orange (sweet) South Africa	20%
Cedarwood India	20%
Spearmint India	0%
0%	0%
0%	0%

Your Blend

Chemical Groups Overview

Target Region: EU

Chemical groups breakdown	Percentage
Monoterpenes	36.978%
Ketones	15.785%
Esters	14.8%
Sesquiterpenes	12.722%
Monoterpenols	3.976%
Alcohol	3%
Sesquiterpenols	2.884%
Acids	2%
Aldehydes	0.376%

Complete Chemical Breakdown

Warning: The levels of the highlighted components on the right break legal restrictions in your selected target region.

Chemical components			
d-limonene	18.912%	terpinen-4-ol	0.32%
Coniferyl Benzozate	14.8%	B-bisabolene	0.24%
l carvone	12.1%	a-bisabolene	0.214%
limonene	10.04%	p-cymene	0.2%
b-himachalene	5.624%	vanillin	0.2%
L-limonene	4.012%	fenchol	0.18%
Coniferyl Alcohol	3%	cis-B-terpineol	0.14%
other sesquiterpenes	2.552%	b-altantone	0.122%
a-himachalene	2.434%	camphene	0.1%
himachalol	2.422%	Linalol	0.096%
g-terpinene	2.12%	a-altantone	0.09%
Benzoic Acid	2%	sabinene	0.082%
altantone isomer	1.716%	Octanal	0.066%
MW=218		Decanal	0.058%
y-himachalene	1.648%	B-phellandrene	0.046%
terpinolene	1.44%	Carvone	0.024%
y-altantone	1.2%	geranial	0.014%
a-terpineol	1.12%	dodecanal	0.012%
a-terpinene	0.94%	Nonanal	0.01%
benzocycloheptenone	0.528%	valencene	0.01%
isomer MW=178		neral	0.008%
B-pinene	0.492%	Citronellal	0.008%
other sesquiterpenols	0.462%	nootkatone	0.002%
a-pinene	0.382%		
B-myrcene	0.332%		

Warnings

limonene
To be listed as an ingredient when its concentration exceeds 0.001% leave on products / 0.01% rinse off products

Effect

Showing the effect your created blend has on each system within the body. In the ranking on the right 1 represents the strongest effect and 10 the weakest. This diagram is based on calculated ranking considering each essential oils effect on the relevant body systems.

Disclaimer: Our physical effect diagram is a guide based on the professional aromatherapy experience of our team, it is not to be mistaken as a rule or definite explanation of physical treatment with essential oils.

skin	1	immune	6
respiratory	2	circulatory	7
digestive	3	urinary	8
neurological/endocrine	4	reproductive	9
muscular/skeletal	5	lymphatic	10

Name

Give your blend a name.

Print Save as PDF Save to 'My Blends'

The blend you have created is displayed as a pie chart with the chemical breakdown listed. This can be saved as a .pdf, printed or added to the 'My Blends' area. I loved this option as it means I could have gas chromatograph/mass spectrometer (GC/MS) data sheets for the blends that I supply as part of my school's work. I could also play around with the percentages to see if I could create a more effective blend. On the LabAroma+ option, the Safety data/warnings about the blend are displayed for various countries: EU, Australia, USA and Japan. This option, although quite a bit more expensive, would be invaluable to anyone making products for the retail market. There is also an 'Effect' section which lists in descending order the body systems that the blend would be effective in treating. This would be great when blending for more than one condition.

There is an option to add your own oils if you have the GC/MS breakdown. If the components aren't currently listed you can request for it to be added. I learned they would be adding and updating the oils on a regular basis. Be aware that when selecting the essential oils you can only see the common names. I

missed Cistus on the first look through as it is listed as Rock Rose. This isn't a great problem and it would probably complicate the clean buttons for each oil. You can select each oil button and get a GC/MS data reading. The profiles for the individual oils are still to be added at the time of writing this review.

Another feature is the 'Search By Component' option. You can carry out a search by setting up a less or greater than percentage field for a component. You can specify more than one component which gives really precise results. There's also a blog on the website and an option to sign up for the newsletter.

When I had finished my trial I had answered all of my initial questions. Although the initial purchase may seem a bit expensive, I can see that it would save lots of time and become an invaluable tool for any practitioner who does a lot of blending. I wish it had been around when I had trained; I will be recommending it to my students. It is simple to use, and gives results that are easy to view and utilise without you getting bogged down with loads of tech or research. From me it gets a thumbs up! 👍

www.labaroma.com

hello,

We are delighted to launch LabAroma into the wonderful world of Aromatherapy. LabAroma is a chemistry based, clinical aromatherapy focused, software tool that formulates the chemistry behind essential oil blending.

Visit www.labaroma.com or scan the link to see how LabAroma works



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