[About](http://www.youngliving.org/) Therapeutic Grade Essential Oils

Plants not only play a vital role in the ecological balance of our planet, but they have also been intimately linked to the physical, emotional, and spiritual well-being of people since the beginning of time. The plant kingdom continues to be the subject of an enormous amount of research and discovery.

Approximately 25% of prescription drugs in the United States are based on naturally-occurring compounds from plants. Each year, millions of dollars are allocated to universities searching for new therapeutic agents that lie undiscovered in the bark, roots, flowers seeds and foliage of jungle canopies, river bottoms, forests, hillsides, and vast wilderness regions throughout the world.

As the most powerful part of the plant, essential oils and plant extracts have been woven into history since time immemorial. Essential oils have been used medicinally to kill bacteria, fungi, and viruses. They provide exquisite fragrances to balance mood, lift spirits, dispel negative emotions, and create a romantic atmosphere. They can stimulate the regeneration of tissue or stimulate nerves. They can even act to oxygenate and carry nutrients into the cells.

Today, it has become evident that we have not yet found permanent solutions for dreaded diseases, such as the Ebola virus, hantavirus, AIDS, HIV, and new strains of tuberculosis and influenza. Essential oils may assume an increasingly important role in combating new mutations of bacteria, viruses, and fungi. More and more researchers are undertaking serious clinical studies on the use of essential oils to combat these types of diseases.

The research that Gary Young has conducted at Weber State University in Ogden, Utah and now Brigham Young University as well as other documented research indicates that most viruses, fungi, and bacteria cannot live in the presence of many essential oils, especially those high in phenols, carvacrol, thymol, and terpenes. This, perhaps, offers a modern explanation why the Old Testament prophet Moses used aromatic substances to protect the Israelites from the plagues that decimated the ancient Egyptians. It may also help us understand why a notorious group of thieves, reputed to be spice traders and perfumers, was protected from the Black Plague as they robbed the bodies of the dead during the 15th century.

A vast body of anecdotal evidence (testimonials) suggests that those who use essential oils are less likely to contract infectious diseases. Moreover, oil users who do contract an infectious illness tend to recover faster than those using antibiotics.

Essential oils are substances that definitely deserve the respect of proper education. Users need to be fully versed in the chemistry and safety of the oils. However, this knowledge is not taught at universities in the United States. There is a disturbing lack of institutional information, knowledge, and training on essential oils and the science commonly known as aromatherapy. Only in Europe, which has a far longer history of using natural products and botanical extracts, can one obtain adequate instruction on the chemistry and therapy of essential oils.

The European communities have a tight framework of controls and standards concerning botanical extracts and who may administer them. Only practitioners with proper training and certification can practice aromatherapy. However, in the United States, the regulatory agencies have not recognized these disciplines or mandated the type and degree of training required to distribute and apply essential oils. This means that in the U.S. individuals can bill themselves as “aromatherapists” after a brief class in essential oils and apply oils to people—even though they may not have the experience or training to properly understand and administer them. This may not only undermine and damage the credibility of the entire discipline of aromatherapy, but it can be dangerous.

Essential oils are not simple substances. They are mosaics of hundreds—or even thousands—of different chemicals. Any given Essential oil may contain anywhere from 80 to 300 different chemical constituents. An essential oil like lavender is very complex with many of its constituents occurring in minute quantities—but all contributing to the oil’s therapeutic effects to some degree. To understand these constituents and their activity and function requires years of study.

Even though an essential oil may be labeled as “basil” and have the botanical name Ocimum basilicum, it can have widely different therapeutic actions, depending on its chemistry. For example, basil high in linalool or fenchol is primarily used for its antiseptic properties. However, basil high in methyl chavicol is more anti-inflammatory than antiseptic. A third type, basil high in eugenol, has both anti-inflammatory and antiseptic effects.

Moreover, essential oils can be distilled or extracted in different ways that have dramatic effects on their chemistry and medicinal action. Oils that are redistilled two or three times are obviously not as potent as oils that are distilled only once. Also, oils that are subjected to high heat and pressure have a distinctly simpler and inferior profile of chemical constituents, since excessive heat and temperature fractures and breaks down many of the delicate aromatic compounds within the oil—some of which are responsible for its therapeutic action. In addition, oils that are steam distilled are far different from those that are solvent extracted.

Of even greater concern is the fact that some oils are adulterated, engineered, or “extended” with the use of synthetic chemicals. For example, pure frankincense is often extended with colorless, odorless solvents, such as diethylphthalate or dipropylene glycol. The only way to distinguish the “authentic” from the “adulterated” is to subject the essential oil to rigorous analytical testing using state-of-the-art gas chromatography, mass spectroscopy, and NMRI carbon testing.

Different Schools of Application

Therapeutic treatment using essential oils follows three different models or frameworks: French, German, and English.

The English model advocates diluting a small amount of essential oil in a vegetable oil and massaging the body for the purpose of relaxation and relieving stress.

The French model prescribes the ingestion and neat (undiluted topical application) of therapeutic-grade essential oils. A common form of internal use is to add several drops of an essential oil to honey, a piece of bread, or a small amount of vegetable oil. Many French practitioners have found that taking the oils internally yields excellent benefits.

The German model focuses on inhalation of essential oils. Research has shown that the effect of fragrance and aromatic compounds on the sense of smell can exert strong effects on the brain—especially on the hypothalamus (the hormone command center of the body) and limbic system (the seat of emotions). Some essential oils high in sesquiterpenes, such as myrrh, sandalwood, cedarwood, vetiver, and Frankincense, can dramatically increase oxygenation and activity in the brain. This may directly improve the function of many systems of the body.

Together, these three models show how versatile and powerful essential oils can be. By integrating all three models with Vita Flex, auricular technique, touch therapy, spinal touch, lymphatic massage, and Raindrop Technique, the best possible results may be obtained.

In some cases, inhalation of essential oils might be preferred over topical application, if the goal is to increase growth hormone secretion, induce weight loss, or balance mood and emotions. Sandalwood, peppermint, vetiver, lavender, and white fir oils are effective for inhalation.

In other cases, however, topical application of essential oils would produce better results, particularly in the case of spinal or muscle injuries or defects. Topically applied, rosemary is excellent for muscles, lemongrass for ligaments, and wintergreen for bones. For indigestion, peppermint oil taken orally may be very effective. However, this does not mean that peppermint cannot produce the same results when massaged on the stomach. In some cases, all three methods of application (topical, inhalation, and ingestion) are interchangeable and may produce the similar benefits.

The ability of essential oils to act on both the mind and the body is what makes them truly unique among natural therapeutic agents. The fragrance of an essential oil can be very stimulating—both psychologically and physically. Similarly, the fragrance of the same essential oil may also be calming and sedating, helping to overcome anxiety or hyperactivity. On a physiological level, essential oils may stimulate immune function and regenerate damaged tissue. Essential oils may also combat infectious disease by killing viruses, bacteria, and other pathogens.

The two most common methods of essential oil application are cold-air diffusing and neat (undiluted) topical application. Other modes of application include incorporating essential oils into the disciplines of reflexology, Vita Flex, and acupressure. Combining these disciplines with essential oils greatly enhances the healing response. Essential oils produce phenomenal results that, in many cases, cannot be achieved by acupuncture or reflexology alone. Just one to three drops of an essential oil applied to an acupuncture meridian or Vita Flex point on the hand or foot can produce results within minutes.

Several years ago at a university in Europe, a professor well known in the field of aromatherapy commented that anyone who claims to cure diseases using essential oils is a quack. However, there are many people who are living proof that essential oils can be used to engineer recoveries from serious illness. Essential oils have been pivotal in helping many people live pain-free after years of intense pain. Patients have also witnessed firsthand how essential oils have corrected scoliosis and even restored hearing in those who are born deaf.

A woman from Palisades Park, California, developed scoliosis as a result of surviving polio as a teenager, which was complicated by a fall and dislocated shoulder. Suffering pain and immobility for 22 years, she had traveled extensively in a fruitless search to locate a practitioner who could permanently reset her shoulder.

She topically applied the oils of valor, helichrysum, and birch to the shoulder. Within a short time she became pain free as the shoulder relocated. She was able to raise her arm over her head for the first time in 22 years.

When one sees such dramatic recoveries, it is difficult to discredit the value and the power of essential oils and the potential they hold.

Essential oils are aromatic volatile liquids distilled from shrubs, flowers, trees, roots, bushes, and seeds.

Vegetable oils can become oxidized and rancid over time and are not antibacterial. Essential oils on the other hand cannot go rancid and are powerful antimicrobials.

They are chemically very complex, consisting of hundreds of different chemical compounds. Moreover, they are highly concentrated and far more potent than dried herbs. The distillation process is what makes essential oils so concentrated. It often requires an entire plant or more to produce a single drop of distilled essential oil.

Essential oils are also different from vegetable oils, such as corn oil, peanut oil, and olive oil. They are not greasy and do not clog the pores like many vegetable oils can.

For many centuries essential oils and other aromatics were used for religious rituals, the treatment of illness, and other physical and spiritual needs. Perhaps the people of ancient times had a greater understanding of essential oils than we have today.

Records dating back to 4500 B.C. describe the use of balsamic substances with aromatic properties for religious rituals and medical applications. Ancient writings tell of scented barks, resins, spices, and aromatic vinegars, wines, and beers that were used in rituals, temples, astrology, embalming, and medicine.

The Egyptians were masters in using essential oils and other aromatics in the embalming process. Historical records describe how one of the founders of “pharaonic” medicine was the architect Imhotep, who was the Grand Vizier of King Djoser (2780 - 2720 B.C.). Imhotep is often given credit for ushering in the use of oils, herbs, and aromatic plants for medicinal purposes.

Hieroglyphics on the walls of Egyptian temples depict the blending of oils and describe hundreds of oil recipes. A sacred room in the Temple of Isis on the island of Philae depicts a ritual called “Cleansing the Flesh and Blood of Evil Deities.” This emotional clearing required three days of cleansing using essential oils.

An ancient papyrus found in the Temple of Edfu contained medicinal formula and perfume recipes used by alchemists and high priests in blending aromatic substances for rituals.

The Egyptians may have been the first to discover the potential of fragrance. They created various aromatic blends for both personal use and for ceremonies performed in the temples and pyramids.

Well before the time of Christ, the ancient Egyptians collected essential oils and placed them in alabaster vessels. These vessels were specially carved and shaped for housing scented oils. In 1922, when King Tut’s tomb was opened, some 50 alabaster jars designed to hold 350 liters of oils were discovered. While tomb robbers had stolen nearly all of the precious oils, some of the jars still contained oil traces. The robbers chose oils over a literal king’s ransom in glittering gold showing how valuable fragrant essential oils were to this ancient civilization.

In 1817, the Ebers Papyrus, a medical scroll over 870 feet long, was discovered. Dating back to 1500 B.C., the scroll included over 800 different herbal prescriptions and remedies. Other scrolls described a high success rate in treating 81 different diseases. Many mixtures contained myrrh and honey. Myrrh is still recognized for its ability to help with infections of the skin and throat and to regenerate skin tissue. Because of its effectiveness in preventing bacterial growth, myrrh was used for embalming.

The physicians of Ionia, Attia, and Crete (ancient civilizations based in the Mediterranean Sea) came to the cities of the Nile to increase their knowledge. At this time, the school of Cos was founded and was attended by Hippocrates (460 to 377 B.C.), whom the Greeks, with perhaps some exaggeration, named the “Father of Medicine.”

The Romans purified their temples and political buildings by diffusing essential oils. They also used aromatics in their steam baths to both invigorate the flesh and ward off disease.

Ancient cultures found that aromatic essences or oils could be extracted from the plant by a variety of methods. One of the oldest and crudest forms of extraction was known as enfleurage. Raw plant material (usually stems, foliage, bark, or roots) was crushed and mixed with olive oil or animal fat. Other vegetable oils were also used. In the case of cedar, for example, the bark was stripped from the trunk and branches, ground into a powder, soaked with olive oil, and placed in a wool cloth. The cloth was then heated. The heat pulled the essential oil out of the bark particles into the olive oil, and the wool was pressed to extract the essential oil. Sandalwood oil was also extracted in this fashion.

Enfleurage was also used to extract essential oils from flower petals. In fact, the French word “enfleurage” means literally to saturate with the perfume of flowers. For example, petals from roses or jasmine were placed in goose or goat fat. The essential oil molecules were pulled from the petals into the fat, which was then processed to separate the essential oils from the fat. This ancient technique was among the most primitive forms of essential oil extraction.

Other extraction techniques were also used. Some of these included:

• Soaking plant parts in boiling water

• Cold-pressing

• Soaking in alcohol

• Steam distillation by passing steam through the plant material and condensing the steam to separate the oil from the plant.

Many ancient cosmetic formulas were created from a base of goat fat. Ancient Egyptians formulated eyeliners, eyeshadows, and other cosmetics this way. They also stained their hair and nails with a variety of ointments and perfumes. They probably used the same aromatic oils that were used in the temples. Such temple oils were commonly poured into evaporation dishes for fragrancing the chambers associated with sacred rituals and religious rites.

Ancient Arabians were another early culture that developed and refined a process of distillation. They perfected the extraction of rose oils and rose water, which were popular in the Middle East during the Byzantine Empire (330 A.D. - 1400 A.D.).

There are over 200 references to aromatics, incense, and ointments throughout the Old and New Testaments of the Bible. Aromatics, such as frankincense, myrrh, galbanum, cinnamon, cassia, rosemary, hyssop, and spikenard, were used for anointing and healing the sick. In Exodus, the Lord gave the following recipe to Moses for a holy anointing oil:

Myrrh “five hundred shekels” (about 1 gallon)

Cinnamon “two hundred and fifty shekels”

Calamus “two hundred and fifty shekels”

Cassia “five hundred shekels”

Olive Oil “an hin” (about 1 1/3 gallons)

Psalms 133:2 speaks of the sweetness of brethren dwelling together in unity: “It is like the precious ointment upon the head, which ran down the beard, even Aaron’s beard: that went down to the skirts of his garments.” Another scripture that refers to anointing and the overflowing abundance of precious oils is Ecclesiastes 9:8: “Let thy garments be always white; and let thy head lack no ointment.”

The Bible also lists an incident where an incense offering by Aaron stopped a plague. Numbers 16:46-50 records that Moses instructed Aaron to take a censer, add burning coals and incense, and to “go quickly into the congregation to make an atonement for them: for there is a wrath gone out from the Lord; the plague is begun.” The Bible records that Aaron stood between the dead and the living and the plague was stayed. It is significant that according to the biblical and Talmudic recipes for incense, three varieties of cinnamon were involved. Cinnamon is known to be highly antimicrobial, anti-infectious and antibacterial. The incense ingredient listed as “stacte” is believed to be a sweet, myrrh-related spice, which would make it anti-infectious and antiviral as well.

The New Testament records that wise men presented the Christ child with frankincense and myrrh. There is another precious aromatic, spikenard, described in the anointing of Jesus: “And being in Bethany in the house of Simon the leper, as he sat at meat, there came a woman having an alabaster box of ointment of spikenard very precious; and she brake the box, and poured it on his head” (Mark 14:3). The anointing of Jesus is also referred to in John 12:3: “Then took Mary a pound of ointment of spikenard, very costly, and anointed the feet of Jesus, and wiped his feet with her hair: and the house was filled with the odour of the ointment.”

Throughout world history, fragrant oils and spices have played a prominent role in everyday life. One of the Dead Sea Scrolls on display in Israel at the Shrine of the Book Museum contains this intriguing phrase: “and he will know his children by their scent.”

Napoleon is reported to have liked a cologne water made of neroli and other ingredients so much that he ordered 162 bottles of it. After conquering Jerusalem, one of the things the Crusaders brought back to Europe was solidified essence of roses.

And the 12th century mystic, Hildegard of Bingen, used herbs and oils extensively in healing. This Benedictine nun founded her own convent and was the author of numerous works. Her book, Physica, has more than 200 chapters on plants and their uses for healing.

The reintroduction of essential oils into modern medicine first began during the late 19th and early 20th centuries.

During World War I, the use of aromatic essences in civilian and military hospitals became widespread. One physician in France, Dr. Moncière, used essential oils extensively for their antibacterial and wound-healing properties and developed several kinds of aromatic ointments.

René-Maurice Gattefossé, Ph.D., a French cosmetic chemist, is widely regarded as the father of aromatherapy. He and a group of scientists began studying essential oils in 1907.

In his 1937 book, Aromatherapy, Dr. Gattefossé told the real story of his now-famous use of lavender essential oil to heal a serious burn. The tale has assumed mythic proportions in essential oil literature. While the event did not start him on the road to essential oil research (he was already studying the oils), his own words about this accident are even more powerful than what has been told over the years.

Dr. Gattefossé was literally aflame—covered in burning substances—following a laboratory explosion in July, 1910. After he extinguished the flames by rolling on a grassy lawn, he wrote that “both my hands were covered with rapidly developing gas gangrene.” Dr. Gattefossé said that, “just one rinse with lavender essence stopped the gasification of the tissue. This treatment was followed by profuse sweating and healing which began the next day.”

Robert B. Tisserand, editor of The International Journal of Aromatherapy, searched for Dr. Gattefossé’s book for 20 years. A copy was located and Tisserand edited the 1995 reprint. Tisserand noted that Dr. Gattefossé’s burns “must have been severe to lead to gas gangrene, a very serious infection.”

Dr. Gattefossé shared his studies with his colleague and friend, Jean Valnet, a medical doctor practicing in Paris. Exhausting his supply of antibiotics as a physician in Tonkin, China, during World War II, Dr. Valnet began using therapeutic-grade essential oils on patients suffering battlefield injuries. To his surprise, they exerted a powerful effect in combating and counteracting infection. He was able to save the lives of many soldiers who might otherwise have died.

Two of Dr. Valnet’s students, Dr. Paul Belaiche and Dr. Jean Claude Lapraz, expanded his work. They clinically investigated the antiviral, antibacterial, antifungal, and antiseptic properties in essential oils.

Because of the work of these doctors and scientists, the healing power of essential oils is again gaining prominence.

One of the factors that determines the purity of an oil is its chemical constituents. These constituents can be affected by a vast number of variables, including: the part(s) of the plant from which the oil was produced, soil condition, fertilizer (organic or chemical), geographical region, climate, altitude, harvesting methods, and distillation processes. For example, common thyme (Thymus vulgaris) produces several different chemotypes (biochemically unique variants within one species), depending on the conditions of its growth, climate, and altitude. One chemotype of thyme will yield an essential oil with high levels of thymol, depending on the time of year it is distilled. The later it is distilled in the growing season (ie., mid-summer or fall), the more thymol the oil will contain.

The key to producing a therapeutic-grade essential oil is to preserve as many of the delicate aromatic compounds within the essential oil as possible. Fragile aromatic chemicals are easily destroyed by high temperature and pressure as well as contact with chemically reactive metals, such as copper or aluminum. This is why all therapeutic-grade essential oils should be distilled in stainless steel cooking chambers at low pressure and low temperature.

The plant material should also be free of pesticides, herbicides, and other agrichemicals. These can react with the essential oil during distillation to produce toxic compounds. Because many pesticides are oil-soluble, that can also mix into the essential oil.

As we begin to understand the power of essential oils in the realm of personal, holistic healthcare, we will appreciate the necessity for obtaining the purest essential oils possible. No matter how costly pure essential oils may be, there can be no substitutes.

Although chemists have successfully recreated the main constituents and fragrances of some essential oils in the laboratory, these synthetic oils lack therapeutic benefits and may even carry risks. Why? Because essential oils contain hundreds of different chemical compounds, which, in combination, lend important therapeutic properties to the oil. Also, many essential oils contain molecules and isomers that are impossible to manufacture in the laboratory.

Anyone venturing into the world of aromatherapy and essential oils must use the purest quality oils available. Inferior quality or adulterated oils most likely will not produce therapeutic results and could possibly be toxic. In Europe, a set of standards has been established that outlines the chemical profile and principal constituents that a quality essential oil should have. Known as AFNOR (Association French Normalization Organization Regulation) and ISO standards, these guidelines help buyers differentiate between a therapeutic-grade essential oil and a lower grade oil with a similar chemical makeup and fragrance.

All of the therapeutic effects of Young Living essential oils are based on oils that have been graded according to AFNOR (Association French Normalization Organization Regulation) standards.

Essential oils and human blood share several common properties: They fight infection, contain hormone-like compounds, and initiate regeneration. Working as the chemical defense mechanism of the plant, essential oils possess potent antibacterial, antifungal, and antiviral properties. They also ward off attacks by insects and animals. Both essential oils and human blood contain hormone-like chemicals. The ability of some essential oils to work as hormones helps them bring balance to many physiological systems of the human body. Oils like clary sage and fennel, for example, have an estrogenic action. Essential oils also play a role in initiating the regeneration process for the plant, the same way the blood does in the human body.

This similarity goes even deeper. Essential oils have a chemical structure that is similar to that found in human cells and tissues. This makes essential oils compatible with human protein and enables them to be readily identified and accepted by the body.

Essential oils have a unique ability to penetrate cell membranes and diffuse throughout the blood and tissues. The unique, lipid-soluble structure of essential oils is very similar to the makeup of our cell membranes. The molecules of essential oils are also relatively small, enhancing their ability to easily penetrate into the cells. When topically applied to the feet or elsewhere, essential oils can travel throughout the body in a matter of minutes.

The ability of some essential oils, like clove, to decrease the viscosity or thickness of the blood can also enhance circulation and immune function. Adequate circulation is vital to good health, since it affects the function of every cell and organ, including the brain.

Research indicates that when essential oils are diffused, they can increase atmospheric oxygen and provide negative ions, which in turn inhibits bacterial growth. This suggests that essential oils could play an important role in air purification and neutralizing odors. Because of their ionizing action, essential oils have the ability to break down and render potentially harmful chemicals nontoxic.

In the human body, essential oils stimulate the secretion of antibodies, neurotransmitters, endorphins, hormones, and enzymes. Oils containing limonene have been shown to prevent and slow the progression of cancer. Other oils, like lavender, have been shown to promote the growth of hair and increase the rate of wound healing. They increase the uptake of oxygen and ATP (adenosine triphosphate), the fuel for individual cells.

European scientists have studied the ability of essential oils to work as natural chelators, binding with heavy metals and petrochemicals and ferrying them out of the body.

Today approximately 300 essential oils are distilled or extracted, with several thousand chemical constituents and aromatic molecules identified and registered. The quantity, quality, and type of these aromatic compounds will vary depending on climate, temperature, and distillation factors. Ninety-eight percent of essential oils produced today are used in the perfume and cosmetic industry. Only about 2 percent are produced for therapeutic and medicinal applications.

Because essential oils are composites of hundreds of different chemicals, they can exert many different effects on the body. For example, clove oil can be simultaneously antiseptic and anesthetic when applied topically. It can also be antitumoral. Lavender oil has been used for burns, insect bites, headaches, PMS, insomnia, stress, and hair growth.

Moreover, because of their complexity, essential oils do not disturb the body’s natural balance or homeostasis: if one constituent exerts too strong an effect, another constituent may block or counteract it. Synthetic chemicals, in contrast, usually have only one action and often disrupt the body’s homeostasis.

One of the most reliable indicators of essential oil quality is the AFNOR (Association French Normalization Organization Regulation) or ISO certification. This standard is more stringent and differentiates true therapeutic-grade essential oils from similar Grade A essential oils with inferior chemistry.

The AFNOR standard was written by a team headed up by the government-certified botanical chemist, Herve Casabianca, Ph.D., while working with several analytical laboratories throughout France.

Dr. Casabianca introduced these standards into North America when he collaborated with Sue Chao at Young Living Essential Oils in 2000. During that collaboration the Young Living gas chromatograph was calibrated according to the European standards.

Dr. Casabianca recognized that the primary constituents within an essential oil had to occur in certain percentages in order for the oil to be considered therapeutic. He combined his studies with research conducted by other scientists and doctors, including the Central Service Analysis Laboratory certified by the French government for essential oil analysis.

As a result, many oils that are listed as therapeutic-grade, such as, frankincense or lavender, can be checked to see if they do indeed meet AFNOR standards. If some constituents are too high or too low, the oils cannot be AFNOR or ISO certified.

For example, the AFNOR standard for Lavandula angustifolia (true lavender) dictates that the level of linalool should range from 25 to 38 percent and the level of linalyl acetate should range between 25 and 34 percent. As long as the oil’s marker compounds are within a specific parameter, it can be recognized as a therapeutic-grade essential oil.

As a general rule, if two or more marker compounds in an essential oil fall outside the prescribed percentages, the oil may not be able to meet the AFNOR standard. It cannot be recognized as therapeutic-grade essential oil, even though it is still Grade A and of relatively high quality.

What distinguishes a therapeutic-grade essential oil from a Grade A essential oil that is not therapeutic-grade or AFNOR-certified? A lavender oil produced in one region of France might have a slightly different chemistry than that grown in another region and as a result may not meet the standard. It may have excessive camphor levels (1.0 instead of 0.5), a condition that might be caused by distilling lavender that was too green. Or the levels of lavandulol may be too low due to certain weather conditions at the time of harvest.

By comparing the gas chromatograph chemistry profile of a lavender essential oil with the AFNOR standard, you may also distinguish true lavender from various species of lavandin (hybrid lavender). Usually lavandin has high camphor levels, almost no lavandulol, and is easily identified. However, Tasmania produces a lavandin that yields an essential oil with naturally low camphor levels that mimics the chemistry of true lavender. Only by analyzing the chemical fingerprint of this Tasmanian lavandin using high resolution gas chromatography and comparing it with the AFNOR standard for genuine lavender can this hybrid lavender be identified.

Currently, there is no agency responsible for certifying that an essential oil is therapeutic grade. The only indication for a therapeutic-grade oil is if it meets ISO or AFNOR standards. (ISO is the International Standards Organization which has set standards for therapeutic-grade essential oils adopted from AFNOR.)

The oils used in the products discussed in this book have been and are constantly being analyzed and graded according to the AFNOR standards.

To our knowledge, Young Living is the only essential oil producer in North America that has been collaborating with government-certified analytical chemists in Europe to ensure that its essential oils meet AFNOR standards.

In the United States, few companies use the proper analytical equipment and methods to properly analyze essential oils. Most labs use equipment best-suited for synthetic chemicals—not for essential oil analysis. One firm in the U.S. that uses the proper machinery and test standards is Young Living Essential Oils. This company has made serious efforts to adopt the European testing standards, widely regarded as the “gold standard” for testing essential oils. In addition to operating its analytical equipment on the same standard as the European-certified laboratories, Young Living is continually expanding its analytical chemical library in order to perform more thorough chemical analysis.

Properly analyzing an essential oil by gas chromatography is a complex undertaking. The injection mixture, film thickness, column diameter and length, and oven temperature must fall within certain parameters. The column length should be at least 50 or 60 meters. However, almost all labs in the United States use a 30-meter column that is not long enough to achieve proper separation of all the essential oil constituents. While 30-meter columns are adequate for analyzing synthetic chemicals and marker compounds in vitamins,

minerals, and herbal extracts, they are far too short to properly analyze the complex mosaic of natural chemicals found in an essential oil.

A longer column also enables double-phased ramping to be conducted, which enables constituents that occur in small percentages to be identified by increasing the separation of compounds. Without a longer column, it would be extremely difficult to identify these molecules, especially if they are chemically similar to each other or the marker compound.

While gas chromatography (GC) is an excellent tool for dissecting the anatomy of an essential oil, it does have limitations. Dr. Brian Lawrence, one of the foremost experts on essential oil chemistry, has commented that sometimes it can be very difficult to distinguish between natural and synthetic compounds using GC analysis. If synthetic linalyl acetate is added to pure lavender, a GC analysis cannot really tell whether that compound is synthetic or natural, only that it is linalyl acetate. Adding a chiral column can help, however in distinguishing between synthetic and natural oils. This addition allows the chemist to identify structural varieties of the same compound.

This is why oils must be analyzed by a technician specially trained on the interpretation of a gas chromatograph chart. The analyst examines the entire chemical fingerprint of the oil to determine its purity and potency, measuring how various compounds in the oil occur in relation to each other. If some chemicals occur in higher quantities than others, these provide important clues to determine if the oil is adulterated or pure.

Young Living is now analyzing each batch of its essential oils at an AFNOR-certified laboratory by a chemist licensed to test therapeutic-grade essential oils.

Adulteration of essential oils will become more and more common as the supply of top-quality essential oils dwindles and demand explodes. These adulterated essential oils will jeopardize the integrity of aromatherapy in the United States and may put many people at risk.

Today much of the lavender oil sold in America is a hybrid called lavandin, grown and distilled in China, Russia, France, and Tasmania. It is brought into France, cut with synthetic linalyl acetate to improve the fragrance; propylene glycol, DEP, or DOP (solvents that have no smell and increase the volume) are then added and it is sold in the United States as lavender oil. Often lavandin is heated to evaporate the camphor and then is adulterated with synthetic linalyl acetate. Most consumers don’t know the difference, and are happy to buy it for $7 to $10 per half ounce in health food stores, beauty salons, grocery and department stores, and through mail order. This is one of the reasons it is important to know about the integrity of the company or vendor from which you purchase your essential oils.

Frankincense is another example of a commonly adulterated oil. The frankincense resin that is sold in Somalia costs between $30,000 and $35,000 per ton. A great deal of time—12 hours or more—is required to properly steam distill this essential oil from the resin, making it very expensive. Frankincense oil that sells for $25 per ounce or less is invariably distilled with gum resins, alcohol or other solvents, which is a cheaper process, but leaves the essential oil laden with harmful chemicals. Sadly, when these cut, synthetic, and adulterated oils cause rashes, burns, or other irritations, people wonder why they do not get the benefit they expected and conclude that essential oils do not have much value.

Some statistics show that one company—Proctor & Gamble—uses twice as much essential oil as is produced in the entire world. From where are these so called “essential oils” coming? In France, production of true lavender oil (Lavandula angustifolia) dropped from 87 tons in 1967 to only 12 tons in 1998. During this same period the demand for lavender oil grew over 100 percent. So where did essential oil marketers obtain enough lavender to meet demand? They probably used a combination of synthetic and adulterated oils. There are huge chemical companies on the east coast of the U.S. that specialize in the duplication of every essential oil that exists. For every kilogram of pure essential oil that is produced, it is estimated there are between 10 and 100 kilograms of synthetic oil created.

Adulterated and mislabeled essential oils present dangers for consumers. One woman who had heard of the ability of lavender oil to heal burns used lavender oil from a local health food store when she spilled boiling water on her arm. But the pain intensified and the burn worsened, so she later complained that lavender oil was worthless for healing burns. When her “lavender” oil was analyzed, it was found to be lavandin, a hybrid lavender that is chemically very different from pure Lavandula angustifolia. Lavandin contains high levels of camphor (12-18 percent) and can itself burn the skin. In contrast, true lavender contains virtually no camphor and has burn-healing agents not found in lavandin.

Adulterated oils that are cut with synthetic extenders can be very detrimental, causing rashes, burning, and skin irritations. Petrochemical solvents, such dipropylene glycol and diethylphthalate, can all cause allergic reactions, besides being devoid of any therapeutic effects.

Some people assume that because an essential oil is 100 percent pure, it will not burn their skin. This is not true. Pure essential oils may cause skin irritation if applied undiluted. If you apply straight oregano oil to the skin, it may cause severe reddening and burning. Citrus and spice oils, like orange and cinnamon, may also produce rashes. Even the terpenes in conifer oils, like pine, may cause skin irritation on sensitive people.

Some writers have claimed that a few compounds when isolated from the essential oil and tested in the lab can exert toxic effects. Even some “nature-identical” essential oils (a structured essential oil that has been chemically duplicated using 5 to 15 of the essential oil’s chemical compounds in synthetic form) can produce unwanted side effects or toxicities. Isolated compounds may be toxic; however pure essential oils, in most cases, are not. This is because natural essential oils contain hundreds of different compounds, some of which balance and counteract each other’s effects.

Many tourists in Egypt are eager to buy local essential oils, especially lotus oil. Venders convince the tourists that the oils are 100 percent pure, going so far as to touch a lighted match to the neck of the oil container to show that the oil is not diluted with alcohol or other petrochemical solvents. However, this test provides no reliable indicator of purity. Many synthetic marker compounds can be added to an essential oil that are not flammable, including propylene glycol. Or, flammable solvents can be added to a vegetable oil base that will cause it to catch fire. Some natural essential oils high in terpenes can be flammable.

Much of the published information available on essential oils should be regarded with caution. Many aromatherapy books are merely compilations of two or three other books. The content is similar, only phrased and worded differently. Because the information has been copied from sources that have never been documented, the same misinformation repeatedly surfaces.

Many aromatherapy books claim that essential oils, like clary sage, fennel, sage, and bergamot, can trigger an abortion. Several years ago, a rumor circulated about a laboratory research project in which the uterus of a rat was turned inside out and a cold drop of clary sage oil was applied to the exposed uterine wall. When this caused a contraction of the muscle, clary sage was labeled as abortion- causing. One must ask, what would have happened if cold water had been dropped on the exposed uterus? The uterine wall would likely have contracted in response? Following this reasoning, water could be labeled as abortion-causing as well.

The truth is that to our knowledge, there has never been a single documented case that clary sage, lemon, sage, or bergamot essential oils have caused an abortion. Sclareol, a compound in clary sage, is not an estrogen, although it can mimic estrogen if there is an estrogen deficiency. If there is not an estrogen deficiency, sclareol will not create more estrogen in the body. As a rule, essential oils bring balance to the human body.

The belief that pure essential oils will not leave a stain when poured on a tissue is also unfounded. Any essential oil high in waxes will leave stains. Oils like frankincense, cedarwood, clove, ylang ylang, blue cypress, or German chamomile may also leave a noticeable residue. However, an essential oil spiked with synthetic diluents or solvent may or may not leave a stain.

The fragrance of an essential oil can directly affect everything from your emotional state to your lifespan. When a fragrance is inhaled, the odor molecules travel up the nose where they are trapped by olfactory membranes well protected by the lining inside the nose. Each odor molecule fits like a little puzzle piece into specific receptor cell sites lining a membrane known as the olfactory epithelium. Each one of these hundreds of millions of nerve cells is replaced every 28 days. When stimulated by odor molecules, this lining of nerve cells triggers electrical impulses to the olfactory bulb in the brain. The olfactory bulb then transmits the impulses to the gustatory center (where the sensation of taste is perceived), the amygdala (where emotional memories are stored), and other parts of the limbic system of the brain. Because the limbic system is directly connected to those parts of the brain that control heart rate, blood pressure, breathing, memory, stress levels, and hormone balance, essential oils can have profound physiological and psychological effects.

The sense of smell is the only one of the five senses directly linked to the limbic lobe of the brain, the emotional control center. Anxiety, depression, fear, anger, and joy all emanate from this region. The scent of a special fragrance can evoke memories and emotions before we are even consciously aware of it. When smells are concerned, we react first and think later. All other senses (touch, taste, hearing, and sight) are routed through the thalamus, which acts as the switchboard for the brain, passing stimuli onto the cerebral cortex (the conscious thought center) and other parts of the brain.

The limbic lobe (a group of brain structures that includes the hippocampus and amygdala located below the cerebral cortex) can also directly activate the hypothalamus. The hypothalamus is one of the most important parts of the brain, acting as our hormonal control center. It releases chemical messengers that can affect everything from sex drive to energy levels. The production of growth hormones, sex hormones, thyroid hormones, and neurotransmitters, like serotonin, are all governed by the hypothalamus. Thus the hypothalamus is referred to as the “master gland.”

Essential oils—through their fragrance and unique molecular structure—can directly stimulate the limbic lobe and the hypothalamus, thus exerting a profound effect on body and mind. Not only can inhalation of essential oils be used to combat stress and emotional trauma, but they can also stimulate the production of hormones from the hypothalamus. This results in increased thyroid hormones (our energy hormone) and growth hormones (our youth and longevity hormone).

Essential oils may also be used to reduce appetite and produce dramatic reductions in weight because of their ability to stimulate the ventromedial nucleus of the hypothalamus, a section of the brain that governs our feeling of satiety or fullness following meals. In a large clinical study, Alan Hirsch, M.D., used fragrances, including peppermint, to trigger significant weight losses in a large group of patients who had previously been unsuccessful in any type of weight-management program. During the course of the six-month study involving over 3,000 people, the average weight loss exceeded 30 pounds. According to Dr. Hirsch, some patients actually had to be dropped from the study to avoid becoming underweight.

Another double-blind, randomized study by Hirsch documents the ability of aroma to enhance libido and sexual arousal. When 31 male volunteers were subjected to the aromas of 30 different essential oils, each one exhibited a marked increase in arousal, based on measurements of brachial penile index and the measurement of both penile and brachial blood pressures. Among the scents that produced the most sexual excitement, was a combination of lavender and pumpkin fragrances. This study shows that fragrances enhance sexual desire by stimulating the amygdala, the emotional center of the brain.

In 1989, Dr. Joseph Ledoux, New York Medical University, discovered that the amygdala plays a major role in storing and releasing emotional trauma.

In studies conducted at Vienna and Berlin Universities, researchers found that sesquiterpenes, found in essential oils such as vetiver, patchouly, cedarwood, sandalwood and frankincense can increase levels of oxygen in the brain by up to 28 percent (Nasel, 1992). Such an increase in brain oxygen may lead to a heightened level of activity in the hypothalamus and limbic systems of the brain, which can have dramatic effects on not only emotions, learning, and attitude, but also many physical processes of the body, such as immune function, hormone balance, and energy levels. High levels of sesquiterpenes also occur in melissa, myrrh, cedarwood, and clove oil.

People who have undergone nose surgery or suffer olfactory impairment may find it difficult or impossible to detect a complete odor. The same is true of people who use makeup, perfume, cologne, hair sprays, hair coloring, perms, or other products containing synthetic odors. These people may not derive the full physiological and emotional benefits of essential oils and their fragrances.

Proper stimulation of the olfactory nerves may offer a powerful and entirely new form of therapy that could be used as an adjunct against many forms of illness. Essential oils, through inhalation, may occupy a key position in this relatively unexplored frontier in medicine.

Occasionally, individuals beginning to use essential oils will suffer rashes or allergic reactions. This may be due to using an undiluted spice, conifer, or citrus oil, or it may be caused by an interaction of the oil with residues of synthetic, petroleum-based personal care products that have leached into the skin.

When using essential oils on a daily basis, it is imperative to avoid personal care products containing ammonium or hydrocarbon-based chemicals. These include quaternary compounds, such as quarternariums and polyquarternariums. These compounds are commonly found ubiquitously in a variety of hand creams, mouthwashes, shampoos, antiperspirants, after-shave lotions, and hair-care products. In small concentrations they can be toxic and present the possibility of reacting with essential oils and producing chemical byproducts of unknown toxicity. These chemicals can be fatal if ingested, especially benzalkonium chloride, which unfortunately is used in many personal care products on the market.

Other compounds that present concerns are sodium lauryl sulfate, propylene glycol—extremely common in everything from toothpaste to shampoo—, and aluminum salts found in many deodorants. Of particular concern are the potentially-hazardous preservatives and synthetic fragrances that abound in virtually all modern personal-care products. Some of these include methylene chloride, methyl isobutyl ketone, and methyl ethyl ketone. These are not only toxic, but they can also react with some compounds in natural essential oils. The result can be a severe case of dermatitis or even septicemia (blood poisoning).

A classic case of a synthetic fragrance causing widespread damage occurred in the 1970s. AETT (acetylethyltetramethyltetralin) appeared in numerous brands of personal care products throughout the United States. Even after a series of animal studies revealed that it caused significant brain and spinal cord damage, the FDA, refused to ban the chemical. Finally, the cosmetic industry voluntarily withdrew AFTT after allowing it to be distributed for years. How many other toxins masquerading as preservatives or fragrances are currently being used in personal care products?

Many chemicals are easily absorbed through the skin due to its permeability. One study found that 13 percent of BHT (butylated hydroxytoluene) and 49 percent of DDT (a carcinogenic pesticide) can be absorbed into the skin (Steinman, 1997) upon topical contact. Once absorbed, they can become trapped in the fatty subdermal layers of skin where they can leach into the blood stream. These chemicals can remain trapped in fatty tissues underneath the skin for several months or years, where they harbor the potential of reacting with essential oils that may be topically applied later. The user may mistakenly assume that the threat of an interaction between oils and synthetic cosmetics used months before is small. However, a case of dermatitis is an ever-present possibility.

Essential Oil Constituents

Unlike synthetic chemicals, essential oil chemicals are diverse in their effects. No two oils are alike. Some constituents, such as aldehydes found in lavender and chamomile, are antimicrobial and calming. Eugenol, found in cinnamon and clove, is antiseptic and stimulating. Ketones, found in lavender, hyssop, and patchouly, stimulate cell regeneration and liquefy mucous. Phenols, found in oregano and thyme oil, are highly antimicrobial. Sesquiterpenes, predominant in vetiver, cedarwood, and sandalwood, are soothing to inflamed tissue and can also produce profound effects on emotions and hormonal balance.

The complex chemistry of essential oils makes them ideal for killing and preventing the spread of bacteria, since microorganisms have a difficult time mutating in the presence of so many different antiseptic compounds. In 1985, Dr. Jean C. Lapraz concluded that no known microbe could survive in the presence of the essential oils of cinnamon or oregano. This is significant as we face life-threatening, drug-resistant viruses and bacteria.

The essential oils of ravensara, melissa, oregano, mountain savory, clove, cumin, cistus, Idaho tansy, hyssop, and frankincense are highly antibacterial and contain immune supportive properties that have been documented by many researchers, such as Daniel Pénoël, M.D. and Pierre Franchomme. These oils are found in varying amounts in the blends ImmuPower, Thieves, and Exodus II.

Basic Chemical Structure

The aromatic constituents of essential oils (i.e., terpenes, monoterpenes, phenols, aldehydes, etc.) are constructed from long chains of carbon and hydrogen atoms, which have a predominantly ring-like chemical structure. Links of carbon atoms form the backbone of these chains, with oxygen, hydrogen, nitrogen, sulfur, and other carbon atoms attached at various points of the chain.

Essential oils are chemically different from fatty oils (also known as fatty acids). In contrast to the simple linear carbon-hydrogen structure of fatty oils, essential oils have a far more complex aromatic-ring structure and contain sulfur and nitrogen atoms that fatty oils do not have.

The terpenoids found in many essential oils are actually constructed out of the same basic building block—a five-carbon molecule known as isoprene.

When two isoprene units link together, they create a monoterpene; when three join, they create a sesquiterpene; and so on. Some of the largest molecules found in essential oils are triterpenoids, which consist of 30 carbon atoms or six isoprene units linked together. Carotenoids, which consist of 40 carbons or eight isoprene units, only occur in essential oils in tiny quantities because they are too heavy to be extracted via steam distillation.

Different molecules in an essential oil can exert different effects. For example, German chamomile (Matricaria recutita) contains azulene, a dark blue compound that has powerful anti-inflammatory compounds. German chamomile also contains bisobolol, a compound studied for its sedative and mood-balancing properties. There are other compounds in German chamomile that perform different functions, such as speeding up the regeneration process of tissue.

Eugenol - An aromatic molecule found in several essential oils including clove. It has been used as an antiseptic for many years.

Chemotypes

A single species of plant can have several different chemotypes based on chemical composition. This means that basil (Ocimum basilicum) grown in one area might produce an essential oil with a completely different chemistry than a basil grown in another location. The plant’s growing environment, such as soil pH and mineral content, can dramatically affect the plant’s chemistry as well. Different chemotypes of basil are listed below:

Ocimum basilicum Linalol Fenchol CT (Germany)

 • antiseptic

Ocimum basilicum Methyl Chavicol CT (Reunion, Comoro, or Egypt)

 • anti-inflammatory

Ocimum basilicum Eugenol CT (Madagascar)

• anti-inflammatory, pain-relieving

Another species of plant that occurs in a variety of different chemotypes is rosemary (Rosmarinus officinalis). Rosmarinus officinalis CT Camphor is high in camphor. Camphor serves best as a general stimulant and works synergistically with other oils, such as pepper (piper nigrum), and can be a powerful energy stimulant. Rosmarinus officinalis CT cineol is rich in 1,8 cineol, which is used in other countries for pulmonary congestion and to help with the elimination of toxins from the liver and kidneys.

Rosmarinus officinalis CT Verbenon is high in verbenon and is the most gentle of the rosemary chemotypes. It offers powerful regenerative properties and has outstanding benefits for skin care.

Thyme (Thymus vulgaris) also has several different chemotypes. Some of these are:

Thymus vulgaris CT Carvacrol is germicidal and anti-inflammatory.

Thymus vulgaris CT Linalool is anti-infectious.

There are important guidelines to follow when using essential oils, especially if you are unfamiliar with the oils and their benefits. Many guidelines are listed below. However, no list of do’s and don’ts can ever replace common sense. It is foolish to dive headlong into a pond when you don’t know the depth of the water. The same is true when using essential oils. Start gradually, and find what works best for you and your family.

Guidelines for Safe Use

1. Always keep a bottle of a pure vegetable oil handy when using essential oils. Vegetable oils dilute essential oils if they cause discomfort or skin irritation.

2. Keep bottles of essential oils tightly closed and store them in a cool location away from light. If stored properly, essential oils will maintain their potency for many years.

3. Keep essential oils out of reach of children. Treat them as you would any product for therapeutic use.

4. Essential oils rich in menthol should not be used on the throat or neck area of children under 30 months of age.

5. Angelica, bergamot, grapefruit, lemon, orange, tangerine, and other citrus oils are photosensitive and may cause a rash or dark pigmentation on skin exposed to direct sunlight or UV rays within 3 to 4 days after application.

6. Keep essential oils away from the eye area and never put them directly into ears. Do not handle contact lenses or rub eyes with essential oils on your fingers. Oils with high phenol content—oregano, cinnamon, thyme, clove, lemongrass, and bergamot—may damage contacts and will irritate eyes.

7. Pregnant women should consult a health care professional when starting any type of health program.

8. Epileptics and those with high blood pressure should consult their health care professional before using essential oils. Use caution with hyssop, fennel, basil, wintergreen/birch, nutmeg, rosemary, peppermint, sage, tarragon, and Idaho tansy oils.

9. People with high blood pressure should avoid using sage and rosemary.

10. People with allergies should test a small amount of oil on an area of sensitive skin, such as the inside of the upper arm, before applying the oil on other areas.

The bottom of the feet is one of the safest, most effective places to use essential oils.

11. Before taking GRAS (Generally Regarded As Safe - essential oils internally, dilute one drop of essential oil in one teaspoon of an oil-soluble liquid like honey, olive oil, or soy or rice milk. Never consume more than a few drops of diluted essential oil per day without the advice of a physician.

12. Do not add undiluted essential oils directly to bath water. Using Bath Gel Base for all oils applied to your bath is an excellent way to disperse the oils into the bath water.

When essential oils are put directly into bath water without a dispersing agent, they can cause serious discomfort on sensitive skin because the essential oils float, undiluted, on top of the water.

13. Keep essential oils away from open flames, sparks, or electricity. Some essential oils, including orange, fir, pine, and peppermint are potentially flammable.

Always skin test an essential oil before using it. Each person’s body is different, so apply oils to a small area first. Apply one oil or blend at a time. When layering oils that are new to you, allow enough time (3 to 5 minutes) for the body to respond before applying a second oil.

Exercise caution when applying essential oils to skin that has been exposed to cosmetics, personal care products, soaps, and cleansers containing synthetic chemicals. Some of them—especially petroleum-based chemicals—can penetrate and remain in the skin and fatty tissues for days or even weeks after use. Essential oils may react with such chemicals and cause skin irritation, nausea, headaches or other uncomfortable effects.

Essential oils can also react with toxins built up in the body from chemicals in food, water and work environment. If you experience a reaction to essential oils, it may be wise to temporarily discontinue their use and start an internal cleansing program before resuming regular use of essential oils. In addition, double your water intake while using essential oils.

You may also want to try the following alternatives to a detoxification program to determine the cause of the problem:

• Dilute the oils - 1 to 3 drops of oil to ½ tsp. massage oil, V-6 Mixing Oil, or any pure vegetable oil, such as jojoba or olive. More dilution may be needed, as necessary.

• Reduce the number of oils used at any time.

• Use single oils or oil blends, one at a time.

• Reduce the amount of oil used.

• Reduce the frequency of application.

• Drink more purified or distilled water.

• Ask your health care professional to monitor detoxification.

• Skin-test the diluted essential oil on a small patch of skin. If any redness or irritation results, cleanse skin thoroughly and reapply.

• If skin irritation or other uncomfortable side effects persist, discontinue using the oil(s). You may also want to avoid using products that contain the following ingredients to eliminate potential problems:

• Cosmetics, deodorants, and skin care products containing aluminum, petrochemicals, or other synthetic ingredients.

• Perms, hair colors or dyes, hair sprays or gels containing synthetic chemicals. Avoid shampoos, toothpastes, mouth wash, and soaps containing synthetic chemicals such as sodium laurel sulfate, propylene glycol, or lead acetate.

• Garden sprays, paints, detergents, and cleansers containing toxic chemicals and solvents.

Caution: Essential oils may sting if applied in or around the eyes. Some oils may be painful on mucous membranes unless diluted properly. Immediate dilution is strongly recommended if skin becomes painfully irritated or if oil accidentally gets into eyes. Flushing the area with a vegetable oil should minimize discomfort almost immediately. DO NOT flush with water! Essential oils are oil soluble, not water soluble.

Water will only spread the oils over a larger surface, possibly exacerbating the problem.

Keep all essential oils out of reach of children and only apply to children under skilled supervision. If a child or infant swallows an essential oil:

• Administer a quality vegetable oil, such as olive oil, or a mixture of milk, cream, yogurt, or another safe, oil-soluble liquid.

• Call a Poison Control Center or seek immediate emergency medical attention if necessary.

Note:

• If your body pH is low (4.0 to 5.0), you also could have a negative reaction to the oils.

Topical Application

Many oils are safe to apply directly to the skin. Lavender is safe to use on children without dilution. However, you must be sure it is not lavandin labeled as lavender or genetically-altered lavender. When applying most other essential oils on children, dilute them with a carrier oil. For dilution, add fifteen to thirty drops of essential oil to one ounce of quality carrier oil as mentioned previously.

Carrier oils safely extend essential oils and provide more efficient use. When massaging, the carrier oil helps lubricate the skin. Some excellent carrier oils include cold-pressed Grape seed, olive, wheat germ, jojoba, and sweet almond oils, or a blend of any of these.

When starting an essential oil application, always apply the essential oil first to the bottom of the feet. This allows the body to become acclimated to the oil, minimizing the chance of a reaction. The Vita Flex foot charts (see attachment) identify areas for best application. Start by applying 3 to 6 drops of single or blended oil, spreading it over the bottom of each foot.

When applying essential oils to yourself, use 1 to 2 drops of oil on two to three locations twice a day. Increase to four times a day if needed. Rub the oil and allow it to absorb for two to three minutes before applying another oil or getting dressed (to avoid staining clothing).

As a general rule, when applying oils to yourself or another person for the first time, do not apply more than 2 singles or blends at one time.

When mixing carrier oil with essential oil blends or diluting oils, it is best to use containers made of glass or earthenware, rather than plastic. Plastic particles can leach into the oil and then into the skin once it is applied.

Before applying oils, wash hands thoroughly with soap and water.

Massage

Start by applying 2 drops of a single oil or blend on location and massaging in. If working on a large area, such as the back, mix 1-3 drops of the selected essential oil into one teaspoon of pure carrier oil (such as V-6 Mixing Oil or Massage Oil Base).

Keep in mind that many massage oils, such as olive, jojoba, or wheat germ oil may stain some fabrics.

Acupuncture

Licensed acupuncturists can dramatically increase the effectiveness of acupuncture by using essential oils. To start, place several drops of essential oil into the palm of your hand. Dip the acupuncture needle tip into the oil before inserting it. You can pre-mix several oils in your hand if you wish to use more than one oil.

Acupressure

When performing acupressure treatment, apply 1 to 3 drops of essential oil to the acupressure point with a finger. Using an auricular probe with a slender point to dispense oil can enhance the application. Start by pressing firmly and releasing. Avoid applying pressure to any particular pressure point too long. You may continue along the acupressure points and meridians or use the reflexology or Vita Flex points as well. Once you have completed small point stimulation, massage the general area with the oil.

Warm Packs

For deeper penetration of an essential oil, use hot packs after applying oils. Dip a cloth in comfortably warm water. Wring the cloth out and place it on the location. Then wrap the cloth loosely with a dry towel or blanket to seal in the heat. Allow to stand 15 - 30 minutes.

Cold Packs

Apply essential oils on location, followed by cold water or ice packs when treating inflamed or swollen tissues. Frozen packages of peas or corn make excellent ice packs that will mold to the contours of the body part and will not leak. Keep the cold pack on until the swelling diminishes. For neurological problems, always use cold packs, never hot.

Layering

This technique consists of applying multiple oils one at a time. For example, place marjoram over a sore muscle, massage into the tissue gently until the area is dry, then apply the next oil, such as peppermint, until the oil is absorbed and skin is dry. Then layer on the third oil, such as basil.

Creating a Compress

· Rub 1-3 drops on location, diluted or neat, depending on the oil used and the skin sensitivity at that location.

· Cover with a hot, damp towel.

· Cover the moist towel with a dry towel for 10-60 minutes, depending on individual need.

As the oil penetrates the skin, you may experience a warming or even a burning sensation, especially in areas where the greatest benefits occur. If burning becomes uncomfortable, apply massage oil, V-6 Mixing Oil, or any pure vegetable oil, such as olive or jojoba, to the location.

A second type of application is very mild and is even suitable for infants, children, or those with sensitive skin.

· Place 5 to 15 drops of essential oil into a basin filled with warm water.

· Vigorously agitate the water and let it stand for 1 minute.

· Water temperature should be approximately 100ºF (38ºC), unless the patient suffers neurological conditions; in this case, use cool water.

· Place a dry face cloth on top of the water to soak up oils that have floated to the surface.

· Wring out the water and apply the cloth on the location. To seal in warmth, cover with a thick towel for 15 - 30 minutes.

Bath

Adding essential oils to bath water is challenging because oil does not mix with water. For even dispersion, drop in the oils while running the bath, or add 2 to 3 drops of oil to a cup of Epsom salts or bath gel base and pass this mixture under the faucet. Either method will help the oils disperse evenly and prevent stronger oils from stinging sensitive areas. You can also use premixed bath gels containing essential oils as a liquid soap in the shower or bath. Lather down with the bath gel, let it soak in, and then rinse. To maximize benefits, leave them on the skin or scalp for several minutes to allow the essential oils to penetrate. You can create your own aromatic bath gels by placing 5 to 15 drops of essential oil in 1/2 ounce of unscented bath gel base.

How to Enhance the Benefits of Topical Application

The longer essential oils stay in contact with the skin, the more likely they are to be absorbed. Rose Ointment or a high quality lotion may be layered on top of the essential oils to reduce evaporation of the oils and enhance penetration. It also helps seal and protect cuts and wounds. Do not use lotion on burns until they are at least three days old.

Direct Inhalation

• Place 2 or more drops into the palm of the left hand, and rub clockwise with the right hand. Cup hands together over the nose and mouth and inhale deeply.

• Add several drops of an essential oil to a bowl of hot (not boiling) water. Inhale the vapors that rise from the bowl. To increase the intensity of the oil vapors inhaled, place a towel over the head and bowl before inhaling.

• Apply oils to a cotton ball, tissue, or hand-kerchief (do not use synthetic fibers or fabric) and place in the air vent of your car.

• Inhale directly.

Indirect or Subtle Inhalation (wearing as a perfume or cologne)

• Rub 2 or more drops of oil on your chest, neck, upper sternum, wrists, or under nose and ears. Breathe in the fragrance throughout the day.

Diffusing

Diffused oils alter the structure of molecules that create odors, rather than just masking them. They also increase oxygen availability, produce negative ions, and release natural ozone. Many essential oils, such as lemongrass, orange, grapefruit, Eucalyptus globulus, melaleuca (tea tree), lavender, frankincense and lemon, along with essential oil blends (Purification, Citrus Fresh, and Thieves), are extremely effective for destroying airborne germs and bacteria.

A cold-air diffuser is designed to atomize a microfine mist of essential oils into the air, where they can remain suspended for up to several hours. Unlike aroma lamps or candles, it disperses oils without the heating or burning, which can render the oil therapeutically less beneficial and even create toxic compounds. Burned oils may become carcinogenic. Research shows that cold air diffusing certain oils may:

• Reduce bacteria, fungus, mold, and unpleasant odors.

• Relax the mind and body, relieve tension, and clear the mind.

• Help with weight management.

• Improve concentration, alertness, and mental clarity.

• Stimulate neurotransmitters.

• Stimulate secretion of endorphins.

• Stimulate growth hormone production and receptivity.

• Digest petrochemicals on the receptor sites.

• Improve the secretion of IgA antibodies that fight Candida.

• Improve digestive function.

• Improve hormonal balance.

• Relieve headaches.

Start by diffusing oils for 15-30 minutes a day. Remove immediately if there is any discomfort. As you become accustomed to the oils and recognize their effects, you may increase the diffusing time to 1-2 hours per day. Do not diffuse the blend Thieves or cinnamon bark for longer than 15 minutes at a time per day.

Place the diffuser high in the room so that the oil mist falls through the air and removes the odor-causing substances.

By connecting your diffuser to a timer, you can gain better control over the length and duration of diffusing. For some respiratory conditions, you may diffuse the oils the entire the night.

Do not use more than one blend at a time in a diffuser as this will alter the smell and the therapeutic benefit. However, a single oil may be added to a blend.

Always wash diffuser before using a different oil blend. Use alcohol, natural soap and warm or hot water.

If you don’t have a diffuser, you may add several drops of essential oil to a spray bottle, add water, and shake. You can use this to mist your entire house, work place, or car.

To freshen air, use the following essential oil blend:

• 20 drops lavender

• 10 drops lemon

• 6 drops bergamot

• 5 drops lime

• 5 drops grapefruit

Diffuse neat, or mix with 1 cup of distilled water in a spray bottle; shake well before spraying.

OTHER EASY WAYS TO DIFFUSE OILS

• Add essential oils to cedar chips to make your own potpourri.

• Put scented cedar chips in closets or drawers to deodorize them.

• Place any conifer essential oil onto each log in the fireplace. As they burn, they will disperse a lovely smell. This method has no therapeutic benefit, however.

• Put essential oil on cotton balls and put in car or home air vents.

• Place a bowl of water with a few drops of oil on a wood stove.

• Dampen a cloth, apply essential oils to it, and place it near the intake duct of your heating and cooling system.

Humidifier and Vaporizer

Essential oils like peppermint, lemon, eucalyptus Radiata, melaleuca alternafolia and frankincense make ideal additions to humidifiers or vaporizers.

Note: Test the oils in the vaporizer or humidifier first; some essential oils may damage the plastic parts of vaporizers.

Vaginal Retention Implant

For systemic health problems, such as Candida or vaginitis, a vaginal implant is one of the best ways for the body to absorb essential oils.

· Place 20-30 drops of essential oil in 2 tablespoons of carrier oil.

· Apply this mixture to a tampon (for internal infection) or sanitary pad (for external lesions). Insert and retain for 8 hours or overnight. Use tampons or sanitary pads made with organic cotton.

Rectal Implant and Retention Enema

Enemas and rectal implants are the most efficient ways to deliver essential oils to the urinary tract and reproductive organs. Always use sterile syringe.

• Mix 15-20 drops of essential oil in a tablespoon of carrier oil.

• Place mixture in a small syringe and inject into the rectum.

• Retain mixture through the night (or longer for best results).

• Clean and disinfect applicator after each use.

Water Distillers and Filters

You can apply oils like peppermint, lemon, clove, and cinnamon to the post-filter side of your water purifier. This will help purify the water.

Dishwashing Soap

To add fragrance or improve the antiseptic action of your liquid soap, add several drops of essential oils such as lavender, Melaleuca alternifolia, fir, spruce, pine, lemon, bergamot, and orange.

Cleaning and Disinfecting

A few drops of oil may be added to the dishwasher to help disinfect and purify. Some popular oils are lemon and peppermint, although any antibacterial oil would work well.

Painting

When painting, add a 5 ml. bottle of your favorite essential oil, such as White Angelica, Abundance, or Sacred Mountain, to 1 gallon of paint. Mix well. The oil will counteract the unpleasant smell of paint. Because essential oils are not fatty oils, they will leave no oil spots on the walls. We recommend that no more than 90 ml. of essential oils be user per 5 gallons of paint.

Laundry

Essential oils may be used to enhance the cleanliness and fragrance of your laundry. As unpleasant as it seems, dust mites live in your bedding, feeding from the dead skin cells you constantly shed. Recent research has shown that eucalyptus oil kills dust mites. To achieve effective dust mite control, add 25 drops of eucalyptus to each load, or approximately 1/2 ounce to a bottle of liquid laundry detergent.

You may also add several drops of essential oils to the rinse cycle, such as fir, spruce, juniper, lavender, cedarwood, wintergreen/birch, or rosewood.

Instead of using toxic and irritating softening agents in the dryer, place a washcloth dampened with 10 drops of lavender, lemon, melaleuca, bergamot, or other essential oils While the oils will not reduce static cling, they will impart a distinctive fragrance to the clothes. In addition, because clothing (like everything else) has a frequency, consider moving toward natural fabrics instead of synthetics. Cotton, linen, silk, and wool possess energy frequencies harmonious to the human body.

Surface Cleansers: Counters, Furniture, etc.

Instead of purchasing standard household cleaners for surfaces, you can create your own natural, safe version by filling a plastic spray bottle with water and a squirt of dishwashing soap. Add 3 to 5 drops each of lavender, lemon, and pine essential oils. Shake the spray bottle well, and your homemade cleaner is ready to spray. This simple solution is extremely economical, yet it cleans and disinfects as well as any commercial cleaner. Please keep in mind that some of the oils used directly may stain some surfaces, such as linoleum.

Additional antibacterial and antiviral oils that are excellent for cleaning include cinnamon, clove, Eucalyptus globulus, thyme, juniper, Melaleuca alternifolia, spruce, lemongrass, and grapefruit.

Floors and Carpet

By combining essential oils with common household products, you can create your own nontoxic aromatic floor and carpet cleaners.

To clean hard floors, add 1/4 cup of white vinegar to a bucket of water. Then add 5-10 drops of lemon, pine, spruce, Melaleuca alternifolia, Purification, or another suitable oil. If the floor is especially dirty, add several drops of dishwashing soap. This will clean even the dirtiest floor.

To make a carpet freshener, add sixteen to twenty drops of essential oils to a cup of baking soda or borax powder. Mix well and place in a covered container overnight so that the oil can be absorbed. Sprinkle over your carpet the next day and then vacuum the powder up.

You may also saturate a disposable cloth or tissue with several drops of essential oil and place it into the collecting bag of your vacuum. This will diffuse a pleasant odor as you clean. If your vacuum collects dirt into water, simply add a few drops into the water reservoir before cleaning. This refreshes both the carpet and the room.

Insecticide and Repellent: Dust Mites, Fleas, Ticks, Ants, Spiders, etc.

Many of us use synthetic chemicals to deal with insects. Essential oils and oil blends, such as lavender, lemon, peppermint, lemongrass, cypress, Eucalyptus globulus, cinnamon, thyme, basil, Thieves, Purification, and citronella, effectively repel many types of insects including mites, lice, and fleas. Peppermint placed on entryways prevents ants from entering.

If you need moth repellents for your linens and woolens, avoid toxic commercial mothballs made of naphthalene. Natural essential oils, like citronella, lavender, lemongrass, Canadian red cedar, or rosemary, can just as effectively repel moths and other insects. You can make a sachet by placing several drops of essential oil on a cotton ball. Wrap and tie this in a small handkerchief or square of cotton. Hang this cloth in storage areas or add it to your chest of linens. Refresh as often as necessary.

You can put this sachet in your bureau drawers to keep your clothes freshly scented. Lavender and rose are classic scents. For children’s sleepwear, Roman chamomile is especially fragrant and relaxing. To scent stationery, stretch out a scented cotton ball and place in an envelope.

Hot Tubs and Saunas

Hot tubs, Jacuzzis, and saunas act as reservoirs for germs, especially if used frequently. Lavender, cinnamon, clove, Eucalyptus globulus, thyme, lemon, or grapefruit can be used to disinfect and fragrance the water. Use 3 drops per person. For saunas, add several drops of rosemary, thyme, pine, or lavender to a spray bottle with water and then spray down the surfaces. Scented water can also be used to splash on hot sauna stones.

Note: Some essential oils may damage plastic sauna/spa filters or hoses.

Deodorizing: Kitchens, Bathrooms, etc.

The kitchen and bathroom are often a source of odors and bacteria. Use the following mixtures to freshen, deodorize, and disinfect the air, work areas, cupboards, bathroom fixtures, sinks, tiles, woodwork, carpets, etc. These blends are safe for the family and the environment.

Since the oils separate easily from water, always shake well and keep on shaking the bottle as you use these mixtures. They will deodorize and clean the air, instead of covering the odors.

Single oils:

• Rosemary CT cineol with lemon, Eucalyptus globulus, and lavender.

Blends:

• Lavender with Purification.

Recipe #1

Mix:

• 2 drops rosemary CT cineol

• 4 drops lemon

• 3 drops Eucalyptus globulus

• 4 drops lavender with 1 quart water.

Shake well and put in a spray bottle.

Recipe #2

Mix:

• 3 to 4 drops lavender

• 5 to 6 drops Purify with 1 quart water.

Shake well and put in a spray bottle.

Recipe #3

Mix:

• Pine with chamomile, Melaleuca alternifolia, lemongrass, or clove.

Cooking

Many essential oils make excellent food flavorings. They are so concentrated that only 1-2 drops of an essential oil is equivalent to a full bottle (1-2 oz. size) of dried herbs.

As a general rule, spice oils impart a far stronger flavor than citrus oils do. For stronger spice oils (such as oregano, nutmeg, cinnamon, marjoram, tarragon, wintergreen, thyme, or basil), you may choose to dip a toothpick into the oils and stir food (after cooking) with toothpick. This controls the amount of essential oil that is put into the food.

Oils that can be used as spices: Basil, cinnamon, clove, fennel, ginger, lemon, marjoram, nutmeg, oregano, peppermint, Rosemary CT cineol, sage, spearmint, tarragon, coriander, grapefruit, mandarin, orange, wintergreen/birch, black pepper, and thyme.

For a recipe that serves 6-10 people, add 1 to 2 drops of an oil and stir in after cooking and just before serving, so the oil does not evaporate.

Cooking tips:

• Cakes, frosting, puddings, fruit pies: Lemon, clove, orange, mandarin, or peppermint.

• Pie Crusts: V-6 Mixing Oil has been reported to produce very flaky crusts.

• Herbal teas: Lavender, Roman chamomile, orange, tangerine, lemon, peppermint, wintergreen/birch, and melissa. ADD Two drops in a cup of warm water.

• Cool refreshing drink: Lemon, orange, mandarin, tangerine, or peppermint added to a teaspoon of blue agave and mixed in a pitcher of cold water.

• Flavored agave: stir in your favorite oil, such as cinnamon, clove, lavender, basil, German or Roman chamomile, or lemon.

Internal and Oral Use as a Dietary Supplement

All essential oils that are Generally Regarded As Safe (GRAS) or certified as Food Additives (FA) by the FDA may be safely taken internally as dietary supplements. In fact, many oils are actually more effective when taken orally.

Essential oils should be diluted in vegetable oil, agave, almond, oat, or rice milk prior to ingestion. More or less dilution may be required, depending on how strong the oil is. More potent oils, such as cinnamon, oregano, lemongrass, and thyme, will require far more dilution than relatively mild oils, and very mild oils like lavender or lemon may not need any dilution at all. As a general rule, dilute 1 drop of essential oil in 1 teaspoon of blue agave nectar or in 4 ounces of a beverage.

Usually no more than 2 or 3 drops should be ingested at one time (during any four to eight hour period). Because essential oils are so concentrated, 1 to 2 drops are often sufficient to achieve significant benefits.

Essential oils are extremely concentrated, so they should be kept out of reach infants and children. If a large quantity of oil is ingested at one time (more than 5 drops), contact your health care physician or a Poison Control Center immediately.

Note: Essential oils should not be given as dietary supplements to children under six years of age. Parents should exercise caution before orally administering essential oils to any child, and again, oils should always be diluted prior to ingestion.

Toothpick application: Dip end of wood toothpick into oil and apply to mixtures when one drop of oil is too much.

Cooking Tips:

• Ginger, cinnamon, clove, or nutmeg can be added to spice up gingersnap cookies. Toothpick application is preferred.

• Lemon, orange, mandarin, or tangerine oil can be added to a regular sponge or bundt cake recipe.

• Peppermint or spearmint oil can be added to chocolate cake, brownie, or frosting recipes.

• Nutmeg, cinnamon, clove, or ginger oil can be used in pumpkin pie or spice cake recipes.

• Oregano, marjoram, thyme, or basil can be put in tomato sauces for spaghetti, pizza, ravioli, and lasagna recipes. Toothpick method of application is preferred.

The key to producing oils that are of genuine therapeutic quality starts with the proper cultivation of the herbs in the field.

· Plants should be grown on virgin land uncontaminated by chemical fertilizers, pesticides, fungicides, or herbicides. They should also be grown away from nuclear plants, factories, interstates, highways, and heavily-populated cities, if possible.

· Because robust, healthy plants produce higher quality essential oils, the soil should be nourished with enzymes, minerals, and organic biosolids. The mineral content of the soil is crucial to the proper development of the plant, and soils that lack minerals result in plants that produce inferior oils.

· Land and crops should be watered with reservoir or watershed water. Mountain stream water is best because of its purity and high mineral content. Municipally-treated water or secondary run-off water from residential and commercial areas can introduce undesirable chemicals and residues into the plant and the essential oil.

· Different varieties of plants produce different qualities of oils. Only those cultivars that produce the highest quality essential oil should be selected.

· The timing of the harvest is one of the most important factors in the production of therapeutic-grade oils. If the plant is harvested at the wrong time of the season or even at the incorrect time of day, a substandard essential oil can be produced. In some instances, changing harvest time, by even a few hours, can make a huge difference. For example, German chamomile harvested in the morning will produce an oil with far more azulene (a powerful anti-inflammatory compound) than chamomile harvested in the late afternoon.

Other factors that should be taken into consideration during the harvest include the amount of dew on the leaves, the percentage of plant in bloom, and weather conditions during the two weeks prior to harvest.

To prevent herbs from drying out prior to being distilled, distillers should be located as close to the field as possible. Transporting herbs to distillers hundreds or thousands of miles away heightens the risk of exposure to pollutants, dust, mold, and petrochemical residues.

Essential oils can be extracted from the plant by a variety of methods, including solvent extraction, carbon-dioxide extraction, and steam distillation. Steam distillation is one of the most common and has several advantages over other methods.

Steam distillation involves channeling a flow of steam into a cooking chamber that holds raw plant material. As the steam rises, it ruptures the oil membranes in the plant and releases the essential oil. The steam, carrying the essential oil molecules, rises to the condenser, where the oil-water mixture condenses and re-liquefies. It is then sent to a separator where the oil is separated from the water. The run-off water is referred to as hydrosol or “essential water”.

However, there are many variants in steam distillation. Subtle differences in distillation equipment and processing conditions can translate into huge differences in essential oil quality. The size and material of the cooking chamber, the type of condenser and separator, and the degree of temperature and pressure can all have a huge impact on the oil. In many respects the way essential oils are steam distilled can enhance or destroy their therapeutic potency. Distillation is as much a science as it is an art. If the pressure or temperature is too high, or if the cooking chambers are constructed from reactive metals, the oil may not be therapeutic grade, even though it still may technically be “Grade A.”

Vertical steam distillation offers the greatest potential for protecting the therapeutic benefits and quality of essential oils. In ancient distillation, low pressure (5 pounds or lower) and low temperature were extremely important to produce the therapeutic benefits. Marcel Espieu, president of the Lavender Growers Association in Southern France has long maintained that the best oil quality can only be produced when the pressure is zero pounds during distillation.

Temperature also has a distinct effect. At certain temperatures, the oil fragrance, as well as the chemical constituents, may be altered. High pressures and high temperatures seem to cause a harshness in the oil. Even the oil pH and the electrical polarity are greatly affected. For example, cypress requires a minimum of 24 hours of distillation at 265° F and 5 pounds of pressure to extract most of the therapeutically-active constituents. If distillation time is cut by only two hours, 18 to 20 constituents will be missing from the oil.

However, most cypress is distilled for only 2 hours and 15 minutes! The short distillation times allow the producer to cut costs and produce a cheaper oil, since money is saved on fuel to generate the steam. It also causes less wear and tear on equipment. Sadly, it results in an oil with little or no therapeutic value.

In France, lavender produced commercially is often distilled for only 15 to 20 minutes at 155 lbs. of pressure with a steam temperature approaching 350 degrees F. Although this oil costs less and is easily marketed, it is of poor quality. It retains few, if any, of the therapeutic properties of high-grade lavender distilled at zero pounds of pressure for a minimum of one hour, 15 minutes.

In many large commercial operations, distillers introduce chemicals into the steam distillation process to increase the volume of oil produced. Chemical trucks can now pump solvents directly into the boiler water. This expands oil production by as much as 18 percent. These chemicals inevitably leach into the distilling water and mix with the essential oil, fracturing the molecular structure of the oil and altering both its fragrance and therapeutic value. These chemicals remain in the oil after it is sold because it is impossible to completely separate them from the oil.

Another way that essential oil producers increase the quantity of oil extracted is through redistillation. This refers to the repeated distillation of the plant material to maximize the volume of oil by using second, third, and fourth stages of steam distillation, with each distillation generating successively weaker and less potent essential oils. Such essential oils are also degraded due to prolonged exposure to water used in the redistillation. This water can hydrolize or oxidize the oil and begin to chemically break down the constituents responsible for its aroma and therapeutic properties.

Few people appreciate how chemically complex essential oils are. They are rich tapestries of literally hundreds of chemical components, some of which— even in small quantities—contribute important therapeutic benefits. The key to preserving as many as possible of these delicate aromatic constituents is to steam distill plant material in small batches using low pressure and low heat. This is the traditional method of distillation that has been used for centuries in Europe but is being abandoned in favor of high-volume pressure cookers designed to operate at over 400° F and over 50 pounds of pressure.

Even more important, the cooking chamber where the plants are distilled should be constructed of a non-reactive metal, preferably stainless steel, to reduce the possibility of the essential oil being chemically altered by more reactive metals such as aluminum or copper.

No solvents or synthetic chemicals should be used or added to the water used to generate steam because they might jeopardize the integrity of the essential oil. Even the addition of chemicals to water used in a closed-loop heat-exchange system of the condenser can be dangerous, since there is no guarantee that they will be completely isolated from the essential oil. It is unfortunate that many essential oils distilled commercially are processed using boiler water laden with chemicals and descaling agents.

Absolutely no pesticides, herbicides, fungicides, or agricultural chemicals of any kind should be used in the cultivation of herbs earmarked for distillation. These chemicals—even in minute quantities—can react with the essential oil and degrade its purity and quality and render it therapeutically less effective. During distillation, pesticide residue leaches out of the plant material, with the extracted essential oil.

Different Types of Oil Production

Expressed oils are pressed from the rind of fruits, such as grapefruit, lemon, lime, mandarin, orange, and tangerine. Rich in terpene alcohols, expressed oils are not technically “essential oils,” even though they are highly regarded for their therapeutic properties. Expressed oils should only be obtained from organically grown crops, since pesticide residues can become highly concentrated in the oil.

Steam distillation is the oldest and most traditional method of extraction. Plant material is inserted into a cooking chamber, and steam is passed through it. After the steam is collected and condensed, it is run through a separator to collect the oil.

Solvent-extraction involves the use of oil-soluble solvents, such as hexane, dimethyl-enechloride, and acetone. Because there can be no guarantee that solvent residues will not be found in the finished product, none of Young Living’s essential oils are processed using solvent extraction.

Absolutes are technically not “essential oils” but are “essences.” They are obtained from the grain alcohol extraction of a concrete, which is the solid waxy residue that is derived from the extraction of plant materials, usually flower petals. This method of extraction is used primarily for botanicals where the fragrance and therapeutic parts of the plant can only be unlocked using solvents. Jasmine and neroli are extracted this way.

Producing pure essential oils is very costly. It often requires several hundred or even thousands of pounds of raw plant material to produce a single pound of essential oil. For example, it takes three tons of melissa to produce one pound of oil. Its extremely low yield explains why it sells for $9,000 to $15,000 a kilo. It takes 5,000 pounds of rose petals to produce approximately one pint of rose oil. It is not difficult to understand why these oils are so expensive.

The vast majority of oils are produced for the perfume industry, which is only interested in their aromatic qualities. High pressure, high temperatures, and the use of chemical solvents are used in this distillation process to produce greater quantities of oil at a faster rate. To many people, these oils smell exquisite but lack true therapeutic properties. Many of the important chemical constituents necessary to produce therapeutic results are either flashed off with the high heat or are not released from the plant material.

A Summary of the Benefits of Therapeutic-Grade Essential Oils

1. Essential oils are small enough in molecular size that they can quickly penetrate the tissues of the skin.

2. Essential oils are lipid soluble and are capable of penetrating cell membranes, even if the membranes have hardened because of an oxygen deficiency. According to Jean Valnet, M.D., essential oils can affect every cell of the body within 20 minutes and are then metabolized like other nutrients.

3. Essential oils, according to researchers at the University of Vienna, stimulate blood flow, which increases oxygen and nutrient delivery.

4. Essential oils are some of the most powerful known antioxidants as determined by the ORAC test developed by Tufts University. They may prevent mutations, fungus, and oxidation in cells, and work as free-radical scavengers.

5. Essential oils are antibacterial, antifungal, anti-infectious, antimicrobial, antiparasitic, antiviral, and antiseptic. Some essential oils have been shown to destroy all tested bacteria and viruses.

6. Essential oils may detoxify the cells and blood in the body.

7. Essential oils containing sesquiterpenes have the ability to pass the blood-brain barrier.

8. Essential oils are aromatic and when diffused may provide air purification by:

 -Increasing ozone and negative ions in the area.

 -Eliminating odors from cooking, bacteria, mold, animals, and other sources.

 -Filling the air with a fresh, aromatic scent.

9. Essential oils promote emotional, physical, and spiritual well being.

10. Essential oils are made up of three of the same elements as the human body: hydrogen, oxygen, and carbon.

This information was taken from a compilation by Essential Science Publishing and can be found in the book "Essential Oils Desk Reference".