



Product Focus

Essential Oil Purity

Oshadhi

The Gift of Plants • The Power of Nature

What factors determine
quality in essential oils?

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Purity in Essential Oils

Many factors determine the purity of an essential oil. Among these:

Cultivation: Essential oils for therapeutic use should ideally stem from chemical-free unpolluted areas of cultivation (certified organic, traditional, wild crafted plants). (There is evidence that the widespread use of chemicals can alter the DNA structure of the plant.)

Production Methods: Most essential oils are produced by steam distillation. This should ideally be by low or medium pressure without the use of chemical solvents. Unfortunately, the distiller or producer is often more concerned with profit than with the correct treatment of the plants. High steam pressure and quick distillation are more cost-effective, but rarely create a fine and precious product. This is why organic farmers distill their plants very carefully with the slower method of low pressure steam distillation, which yield a richer, therapeutically more effective essential oil.

Adulteration: Only about five per cent of the global production of essential oils is destined for therapeutic use. Most essential oils are used for perfumery, in detergents, and for flavouring. The pressure to reduce costs has compelled many industrial manufacturers to dilute or adulterate oils. This means that the only way to be sure that the essential oil is pure - as nature intended it - is to know exactly how it originated. And in most cases this will mean purchasing directly from the farmer. All oils for therapeutic use should be unadulterated 100% pure natural products - no chemical additives, diluting with alcohol or thinning with other oils should occur, unless necessary for certain purposes (i.e. access to the product because too solid, or specifically for the creation of new products, blends, etc.) Essential oils should not be peroxidized, decolorized, nor deturpenated.

Some common methods of adulteration:

- *Dilution* with vegetable carrier oils, alcohol and synthetic oils (which are cheaper).
- *Blending* with cheaper oils of the same plant but from another country. For example: Bourbon Geranium with Geranium from China; Moroccan Myrtle with Myrtle from the Balkans; Siberian Fir with Chinese Fir, etc.
- *Mixing* with cheaper essential oils of the same plant but extracted from a different part of the plant. For example: Clove bud with Clove leaf; Cinnamon bark with Cinnamon leaf; Angelica root with Angelica leaf...
- *Dilution* with cheaper essential oils of plants of similar species. For example: Thyme (*thymus vulgaris*) with wild Thyme (*thymus mastichina*); Lavender with Lavandin; Ceylon cinnamon with Chinese Cassia;
- *Adulteration* with cheaper essential oils of different plants or of species with a similar name. For example: East Indian with so called West Indian Sandalwood (*Amyris*); Lemongrass with Litsea; Patchouli with Eucalyptus; Verbena with Lemongrass; Frankincense with turpentine; Rosewood with Ho oil; Melissa with "Indian Melissa" (Lemongrass etc.); Clary sage with Lavender; Mandarin with Orange; The so called 'white' Thyme with turpentine...
- *Mixing* with isolated natural or (semi-) synthetic compounds. For example: Lemon with citral and Orange-terpenes; Peppermint with menthol; Eucalyptus with cineol; Geranium with geraniol or citronellol; Patchouli with clove bud terpenes; Rosemary with camphor; Thyme with thymol or carvacrol; Cardamon with terpenyl acetate; Elemi with Orange terpenes; Clary sage with linalyl acetate or synthetic linalool; Clove bud with eugenol...

TESTING FOR PURITY

Continued careful laboratory testing for purity using gas chromatography and - if necessary - mass spectrography should be practised regularly. This will guarantee that essential oils are 100% pure. Comprehensive analysis is a prerequisite in the selection of our line, including tests such as:

- Optical rotation
- Density
- Refraction
- Gas chromatography analysis
- And, if necessary, mass spectrography

THE IMPORTANCE OF LABELLING - ORIGIN AND NAMES

Confusion about plant names: The origin of the oil can provide important information about its quality. But numerous oils also have wrong names which often leads to confusion on the side of the customer. For example:

- There is no relationship between the Atlas Cedar from Morocco and the Texas Cedar. The Texas Cedar is not a cedar but a Juniper.
- The American 'Cedar leaf oil' stems in reality from a Thuya (thuya occidentalis) and again has nothing to do with a Cedar.
- Spanish sage oil (salvia lavandulifolia) is not the same as *salvia officinalis*, the true Sage, and quite distinct in its chemotype and fragrance as well.
- Marjoram oil from Spain, also called 'wild Marjoram' is actually a special kind of Thyme oil (*thymus mastichina*) and is not the same as the 'true Marjoram' (*Majorana hortensis*), which is mainly distilled in France or Egypt.
- Spanish Lavender oils are usually the wild growing Spike Lavender containing cineol and are not the same as the true Lavender oil (*Lavendula officinalis*) which contains more esters. The botanical name tells the truth.

Subspecies with different properties: Many essential oils like Rosemary, Basil, Lavender, Thyme, Sage, Eucalyptus etc. have subspecies which often exhibit very different fragrances and effects; this phenomenon is called *biochemical polymorphism*.

- Eucalyptus dives or Peppermint Eucalyptus has very little in common with "true" Eucalyptus (i.e. eucalyptus globulus), which itself is more similar to oils such as Niaouli or Cajeput.



Moroccan Herb Garden



Juniper needles



Melissa



Rose



Myrtle

(The links below are clickable...)



Spike Lavender

Niaouli (linalol) is more reminiscent of Rosewood or Ho oil than 'true' Niaouli (cineol type)

• Thyme geraniol is completely different to Thyme alpha-terpineol or Thyme thuyanol etc.

IN SUMMARY

Production of essential oils is really for two different reasons: industrial or therapeutic.



Tarragon

The aim for industrial use is to obtain a specific standardised reproducible note of fragrance or an identical active ingredient. These oils will generally not appear in price lists under a specific botanical name. The reason for this is that those oils are produced either from different species of lesser value, from mixed crops or from mixing with synthetic components.

For therapeutic use we want to have a pure, 'clean' unadulterated oil with a good energy value and a clear fragrance.



Bitter Orange

The more exact the description of the essential oil, the less risky it is for the buyer to purchase an unwanted product. A company who can inform its customers about its oils shows that it is better connected to the plant source and therefore the chances of adulteration are minimized.

For the sake of transparency and clarity, essential oils should be labelled with their:

- exact botanical name
- country of origin
- part of plant used for distillation
- mode of cultivation
- major biochemical compounds



Atlas Cedar

In order to ensure the above points are adhered to, a good aromatherapy company has no choice other than to source essential oils direct from the grower/supplier, and to build a close relationship with those farmers who cultivate healing plants to the highest standards. Through this personal contact one knows that they practise methods of cultivation which are in accordance with the natural laws of the land, and utilize methods of distillation which do not damage the pure essences from the plants.



Helichrysum