

METHODS OF EXTRACTING ESSENTIAL OILS

Steam distillation

This is the most commonly used method. The raw materials are collected and placed in large vats with water and then heated. The steam extracts the oil from the plant and the vapour produced passes into a condenser and is then cooled with the essential oil separating from the flower water.

Expression

This method is used for citrus oils such as lemon, lime, mandarin, orange and bergamot and the essential oil is expressed by squeezing it from the rind or peel of the fruit. This method is referred to as the cold press method and the best source of raw material would be organically grown fruit, which has not been sprayed with pesticides.

Solvent extraction

Delicate flower material such as jasmine, hyacinth or tuberose have their essential oil extracted by this method as their delicacy would not withstand the heat of steam distillation.

The flowers are covered by a solvent such as ether, petroleum, hexane or acetone and then heated to extract the essential oil. This is then filtered which leaves a paste called concrete made up of wax and fragrance which is then mixed with alcohol and distilled at low temperatures, the alcohol absorbs the fragrance and when the alcohol is evaporated off an aromatic absolute remains.

This method is used on delicate flowers such as rose and jasmine and as many tonnes of the flowers are needed and it is a relatively time consuming process this method makes the oils more expensive than others. Some consider this not the best method of extraction as minute traces of the solvent can be left behind.

Carbon Dioxide Extraction

When CO₂ (carbon dioxide) is subjected to high pressure, the gas turns into liquid. This liquid CO₂ can then be used as a very inert, safe, "liquid solvent." which will extract the aromatic molecules in a process similar to that used to extract absolutes. The advantage, of this method, is that no solvent residue remains, since at normal pressure and temperature, the CO₂ simply reverts to a gas and evaporates.

Enfleurage

This is one of the earliest methods used to extract essential oils from flowers. A pure, odourless, cold fat is placed in a thin layer on a glass frame and the flower petals are placed in layers on top. After 30 hours the fat will have absorbed the essential oils. The glass frame is turned and new flowers take their place. Once the fat is saturated with the essential oils it, is washed with alcohol, which absorbs the

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essential oils and finally the alcohol is evaporated off leaving pure essential oil. This is an expensive method of extraction, which is not in common use.

Maceration

The flowers or petals are slightly ruptured and placed in warm fat. This is repeated many times until the fat becomes saturated with essential oil and is then bathed in alcohol, which evaporates leaving essential oil.