

What is distilling?



The still (right) and the cooler (left), with the glass carafe under the pipe in which we collect the hydrosol.

Distilling is an ancient process and the word distill comes from the Latin word 'destillare', meaning 'to drip off'. It is believed that the first distillations were done by the Greeks and that the Romans adopted it. The rich Romans lived in luxury and used the fragrant, essential oils in their bath houses and in their perfumes. The Arabs refined distilling even more.

Precious

In the world of essential oils and perfumes, one quickly thinks of luxury and preciousness. And that is not surprising, when you know that it takes kilos of flowers or leaves to make a few drops of essential oil.

The amount of volatile substances in a plant varies by plant species, but it is very little in all species. To make 1 litre of lavender essential oil, one needs 150 kilos of lavender flowers and for 1 litre of rose oil, at least 6000 kilos of rose petals.

We distilled rose petals for hydrosol a few times and needed at least 2 kilos of petals to do this. We had no idea how many petals this should be, but we now know that this means hours of picking.

Not only flowers and herbs can be distilled. Essential oils and hydrosols can also be distilled from wood, seeds, roots or resin.

The distillation process

Essential or essential oils are extracted from plant material by steam distillation. During this process, the hydrosol or hydrolate is also created. Previously, this hydrosol was seen as a by-product, but in recent years these plant waters or flower waters have become so popular that people now also do distillations to produce hydrosols alone.

There are different distillers, but they all have the same operation. We have a small cauldron, which fits about 1 kg of plant material, and a large one, which fits an amount of 6 to 10 kg.

The bottom part of the kettle holds pure (spring) water. On this we place a metal sieve and on this sieve we put the plant material. This is pressed as tightly as possible and then the kettle is closed with a lid. The water does not come into contact with the plant material.



To ensure that there are as many dissolved substances in the hydrosol as possible, the plant material (herbs, roots, seeds flowers) is made as small as possible.

The lid is tightly fastened so that nothing can escape from the cauldron.

Attached to the lid is a hollow tube that is screwed to the cooling kettle. This tube is now connected to a long spiral tube inside the cooling kettle, which flows out at the bottom of the cooling kettle. From this flows the hydrosol containing the essential oil. The spiral tube is surrounded by cool water, which allows the steam to condense inside the tube.

The start

We put the kettle with plant material and water on a gas burner and then the waiting begins for the first drops of hydrosol to drip out of the cooling kettle. A good hydrosol is distilled slowly at a temperature of around 100 °C.

Once the water at the bottom of the kettle begins to boil, after about 45 minutes, steam is created. This rises along the plant material and in the process all light substances (including essential oils and other water-soluble substances) are extracted from the plant material. Heavier substances are left behind.

The water vapour (the steam) containing the essential oil rises to the tube connected to the cooling boiler. In this it cools and condenses. Slowly, the condensed water, the hydrosol, runs through the spiral tube and, after about an hour, the first hydrosol drips out of the pipe into the glass carafe, which we placed underneath.



Slowly, the hydrosol containing the essential oil drips into the decanter and soon we see the oil floating on the hydrosol. Depending on the amount of essential oil in the plant material, the layer of oil thickens.

When there are 500 ml of hydrosol in the carafe, we pour it into the separating funnel so that we can easily separate the oil from the hydrosol at the end of the distillation.

We stop the distillation when we notice that the quality of the hydrosol deteriorates. We notice this by the smell and by the acidity. Hydrosol has an acidity below 6.5, sometimes even a pH of 3!

Essential oil

Using the separating funnel, we separate the essential oil from the hydrosol and see that we have a little oil and a lot of hydrosol. The essential oil contains the fat-soluble (lipophilic) parts and the distillation water contains the water-soluble (hydrophilic) parts, the hydrosol.

Not all distillations give essential oil. Sometimes there is so little essential oil in the plant material that we have to settle for just the hydrosol. As, for example, with nettle, plantain, rose, or lemon balm. But that doesn't mean the hydrosol is any less valuable.

Essential oil in brown glass bottles containing 2.5 ml and 5 ml. Hydrosol in blue glass bottles containing 100 ml.



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