

AURO



Passion for natural paints

# The natural choice for daily life

*Our plant ingredients*



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## MOTHER NATURE SENDS HER REGARDS

Allow us to introduce the chemical factory called plant. Cellulose is made from the stems, the leaves deliver colourants, the leaf surfaces exude waxes, fat and protein are won from the fruits, and the blossoms hold fragrances as well as resins. From these renewable sources, we develop our special products. For thousands of years already, natural cleaning and care substances like alcohol, oils or vinegar have proved to be successful. The typical basic household cleaners have been systematically further developed by AURO experts and thus been turned into high-grade cleaning, care and maintenance products that are geared to the most diverse consumer needs. They are also suited for sensitive people because they are free from synthetic fragrances and irritants. Another asset is that all AURO products can of course be reintegrated into the natural cycle of materials without hesitation.

Allow yourself to be tempted and follow the plants and their stories. They give our products singular scents, a mysterious lustre and a most pleasant touch. It is easy to come clean with tried and tested substances like linseed oil, beeswax or cembra oil.

We hope you will enjoy reading.

The AURO-Team

*„Everything is good as it comes  
from the hands of nature.“*

Johann Wolfgang von Goethe (1749 - 1832),  
German classical poet, natural scientist and statesman.

## SUNFLOWER OIL

The light yellow sunflower oil is extracted from the seeds.



## A SUN-KISSED BEAUTY

With their wonderfully beautiful flower heads, sunflowers are the typical summer flowers. Some species of this annual plant reach a height of up to 5 metres and their stems can have a diameter of up to 10 cm. The name of the yellow plant refers to its ability to always turn its head towards the sun, in the morning towards the east, in the evening to the opposite direction, westward, day by day.

About 400 years ago, Spanish seafarers brought the plant home from North America. It is very likely, however, that the sunflower is much older because petrified seeds were found that seem to indicate that sunflowers existed already 5.000 years ago. Back then, the versatile beauty served people as food. Only about 150 years ago, it was discovered that oil can be pressed from the kernels of the flower.

The oil is rich in lecithine and vitamins, it protects the skin from environmental influences and even has a slightly disinfecting effect. It is also used in medicinal ointments and cremes. In the kitchen, the oil is at its best. The substantial, decated oil is used for baking, frying and cooking.

The oil is pressed from the sunflower kernels that are first cleaned and, according to the variety used, also peeled. During the extraction process, the temperature rises to 220 °C which gives the oil a nice light yellow colour. It has a delicate



aroma that reminds of nuts and wood. For one litre of oil, 2.5 kg of sunflower kernels are needed.

At AURO, we use the light yellow, fatty oil from the seeds of sunflowers from certified organic farming (cof). It is used in lacquers, paints and soaps.



## LAVENDER OIL



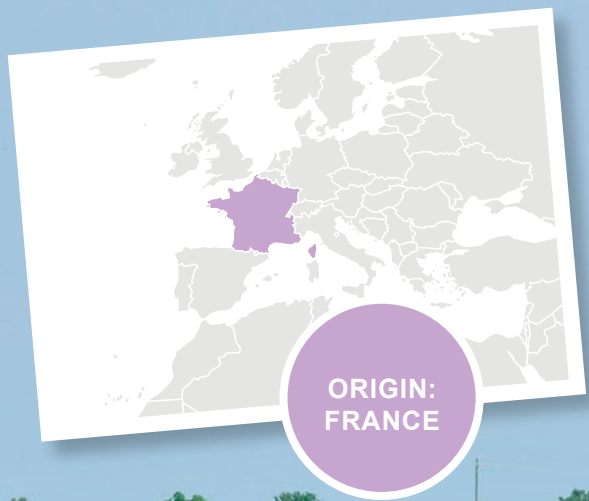
### A MIXTURE OF TRUE LAVENDER AND SPIKE LAVENDER

The botanical name of the lavandin plant is *Provence Lavender*, in Latin it is *Lavandula Intermedia*. With its height of up to 80 cm, it has a special position within the lavender family. The dense, globelike bushes with their numerous purple-coloured blossoms have a stronger camphor smell than other lavender species. They are sweeter but less aromatic and less mild than the genuine lavender. On the other hand, it is much more robust and has a much higher yield. Not more than 40 kg of blossom panicles of Lavandin are needed to produce one kg of ethereal oil whereas 150 kg would be needed to produce the same amount of oil from the wild-growing genuine lavender. In the Provence region, the economical advantages of the lavandin plant have been used since approximately 1930

and played an increasingly important role for the region. The oil is hardly used in medicinal compounds but is well suited for use in perfumes or in fragrance compositions that are meant to give a feeling of harmonical well-being. Dried lavandin is often used in scented sachets and the oil serves as aromatic substance in cleaning, care and maintenance products.

### Cultivation and use

The blooming period is in July and August. The plant does not seed itself and is reproduced by cuttings. At AURO, we use the ethereal oil from the lavender plant (*Lavandula Hybrida* Oil) that is native to the Mediterranean area as aromatic essence. It is won by water vapour distillation.



The beautiful fields appeal to all senses.  
The lavender is harvested in August or early September.



## COCONUT FAT

### A SYMBOL FOR EXOTICISM

For many people, the coconut is a symbol for exoticism, associated with palm trees, white beaches in turquoise-coloured lagoons and, if available, a drink served in a coconut half... Inhabitants of the tropical coasts have a more realistic view as the coconut tree is also an important source of food and raw material for many people. From the palm leaf to the nutshell, there is hardly a part of the plant that does not prove to be very useful. In the native countries, the coconut tree is also called the „tree of life“ or „the tree of thousand possibilities“. The colour of the oil is white to yellow, it smells fresh and mild, with a light coconut scent. The tree with the latin name *cocos nucifera* originates from the Malay Archipelago where it was cultivated already 3.000 to 4.000 years ago.

### Extraction

The oil is suited for use in soap and candle manufacturing. The high share of lauric acid makes coconut oil also an important base material for surfactants. In order to be processed, the seed has to be cleaned and made available with the required moisture content. If needed, the seed gets preheated and dosed before it enters the auger where it is



pressed through the narrowing spiral segments of the extruding press. The oil runs through sieve baskets with differently big meshes into a stainless steel funnel suited for foodstuff. The oil cake is pressed out through a freely adjustable gap. The coconut oil, also called coconut fat, we use at AURO is won from coconut fruits that are grown in certified organic farming (cof). With the help of alkaline solutions, it is processed further into coconut oil soap in our own production plant.



### Did you know?

The coconut is one of the most important crop plants worldwide. The annual production is 44.723.000 tons. About 8 % of the worldwide oil demand is covered by coconut oil.





The plants tolerate saltwater, sand, storm and heat.

## CASTOR OIL



The „palm of Christ“ grows in tropical summer rain areas and can reach a height of up to 13 metres.

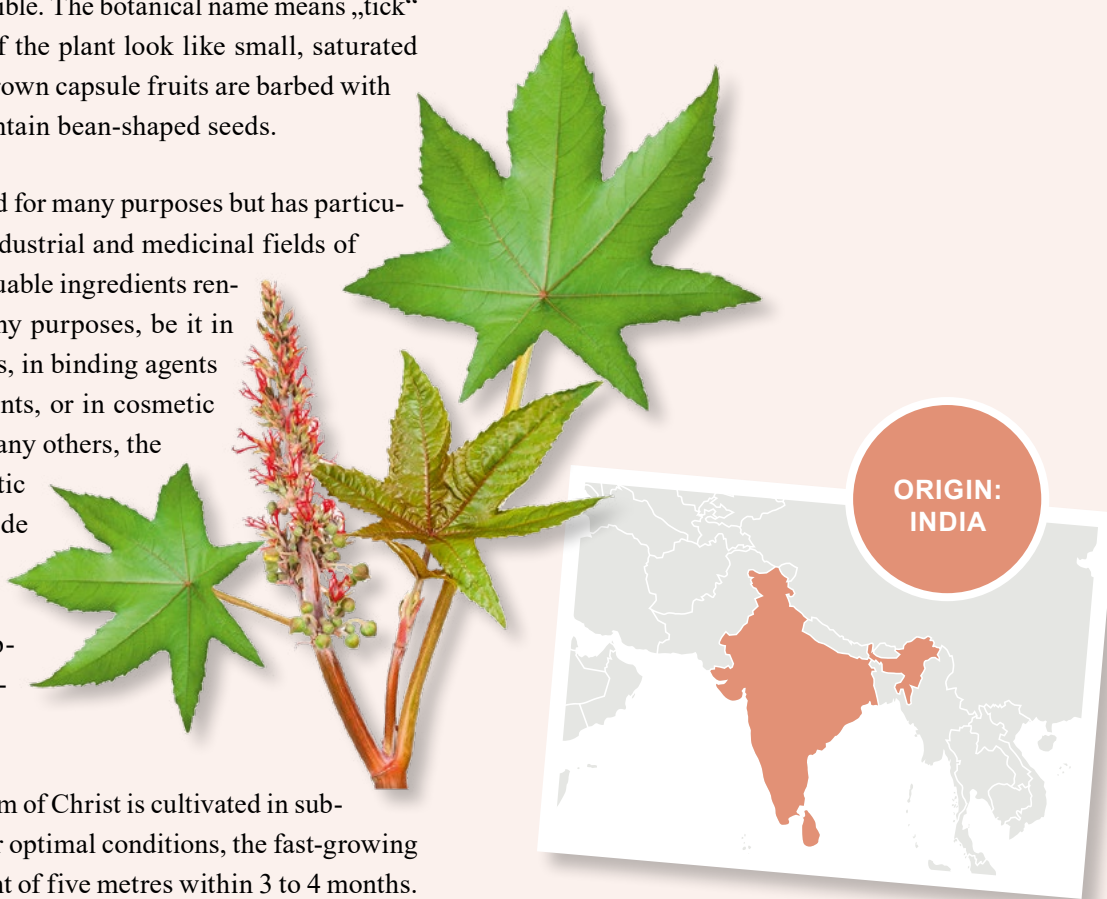
## AN OIL WITH MANY TALENTS

This oil was known in the ancient world already and was probably originally native to the Ethiopian tropes. In old Egypt, castor oil served as versatile remedy as well as fuel for oil lamps. The viscous oil is of a light yellow colour, the taste is mild but unpleasant. The oil is won from from the castor shrub, also known as the „palm of Christ“. The exact origin of the latter name is not clear although castor is mentioned in the bible. The botanical name means „tick“ because the seeds of the plant look like small, saturated ticks. The reddish brown capsule fruits are barbed with soft prickles and contain bean-shaped seeds.

The oil can be used for many purposes but has particular importance in industrial and medicinal fields of application. The valuable ingredients render it suited for many purposes, be it in lubricants for motors, in binding agents for lacquers and paints, or in cosmetic products. Among many others, the medicinal or cosmetic areas of use include natural laxatives, remedies for scars or age marks, lipsticks or hair conditioners.

Nowadays, the palm of Christ is cultivated in subtropical areas. Under optimal conditions, the fast-growing plant reaches a height of five metres within 3 to 4 months. In tropical climate, it can reach, after several years, a height of up to 13 metres and forms a lignified stem.

As opposed to the poisonous ricin that is contained in the seed coat, the castor oil is harmless. The poison is not liposoluble and remains in the residues after the pressing of the seeds. After the castor oil is dehydrated and boiled to a thick stand oil, it is used as soap in the binding agent that is used at AURO in cleaning, care and maintenance products.



## RESEARCH AND DEVELOPMENT IN THE FIELD OF ECOLOGICAL CLEANING PRODUCTS



**Since 2011, Dr. Markus Lettau is the Head of Research and Development at AURO. Among other things, he focusses on the development of new biogenic binding agents and the research on raw material concepts that can help to optimise and broaden the AURO product portfolio.**

Cleaning products have always constituted a particular part of the AURO product range. Besides the development of paints and varnishes, the cleaning products have always played an important role in AURO's R&D concept. The same raw material philosophy that applies to our paint

products is also valid for the cleaners. We recognise that consumers increasingly demand a high ecological quality from the products they use in the household. Everyday products are closely connected to the topics of health and ecology nowadays and ecological products quit their niche existence.

This clearly recognisable trend towards more „green“ products has also arrived at the conventional producers of chemical products who add products to their portfolios that are manufactured on the basis of natural raw materials. For AURO this has the consequence that we can choose from more raw materials for our own development of new cleaning, care and maintenance products.

In our research and development department, we are constantly searching for such new, innovative raw materials. These undergo extensive performance tests in our laboratory

### Nothing ventured, nothing gained

Countless laboratory tests and working hours are needed until the final composition for an AURO product is found. The raw materials have to be tested on suitability and compatibility with our strict raw material philosophy. A variety of criteria have to be met in many tests and optimal technical characteristics must have been achieved before an AURO product enters the trade.





A variety of natural raw materials determine the composition of AURO products.

The aim is to ameliorate existing product compositions in order to advance their effectiveness and achieve ecological advantages at the same time. New raw materials can, for example, be considerably more effective. Consequently, less of the material has to be used in the formulation, for the benefit of the environment.

Of course, our customers can always count on the familiar integral AURO transparency. We continue to fully

declare all ingredients of the product composition on the product label and therefore let you have the proverbial look over our shoulder.

Besides the aspects of a healthy indoor climate and a high product quality, the research and development at AURO also addresses the topics of sustainability and a consistently ecological choice of raw materials.

## CEMBRA OIL

### THE QUEEN OF THE ALPS

There are many names for this tree species growing in high mountain regions: Cembra pine, arolla pine, Swiss pine, to name but a few. The tree belongs to the pine family and is indigenous to the Alps and the Carpathians. The evergreen trees can reach an age of 1.000 years and a height of 25 metres. The needles always appear in clusters of five on short sprouts. Notwithstanding their longevity, they brave the often rough weather in the mountains which led to the appreciative name „Queen of the Alps“.



### Extraction of the excellent oil

The coniferous tree grows in sunny altitudes. Its very slow growth provides for a sufficient production of essential ingredients. The precious oil is won from the hackled parts of the tree by water vapour distillation, a technique

used for centuries already. Only the leftovers from timber production, branches, needles, saw waste, are used for distillation. The residues from the distillation process are used to heat the distillation oven so that the material cycle is closed and a precious natural product is won without any use of fossil fuels.

### Use at AURO

At AURO we use the water-clear oil of the Cembra tree with the strong but pleasant scent in our Cembra oil furniture polish. It refines furniture with an intensive wax care and, at the same time, is anti-static and repels insects. The Cembra oil used at AURO stems from Cembra trees grown in Carinthia, Austria. According to experts, this region delivers the most precious Cembra oil worldwide.

**By the way:** Cembra oil is also used in scented sachets, as remedy for colds and as massage oil.





The arolla pine, also referred to as Cembra pine, grows in Carinthia, a mountainous landscape in Southern Austria.

## LEMON OIL

### LIGHTNESS AND FRESHNESS

The yellowish ethereal oil with the distinctive fruity citrus smell is the extract from the fruits of the lemon tree *Citrus limonum*. The fruit belongs in the rue family and grows on evergreen trees that are equipped with thorns and can get up to six metres high. It is a very special feature that they can bloom the whole year through and bear fruits at the same time. This allows for up to four harvests a year. The big blossoms of the lemon tree are white, sometimes they have violet tips.

The oil is won by decating from the peel which immediately brings forth the wonderful, typical smell of the lemon. This scent is associated with cleanness, hygiene and freshness. This is hardly surprising because the oil indeed has good cleaning, antiseptical and antibacterial properties.

believed to  
m i s t i c



The ethereal scent is also put people in an optimistic mood, to sharpen the spirit and activate the intellect. The fruity, fresh oil just adds more activity and liveliness to our everyday life.

The most precious lemon oil comes from Sicily because it has more than 4 %



of the vital ingredient citral. For 1 litre ethereal oil, approximately 3.000 lemons are needed. At AURO the genuine ethereal oils of the lemon are used as aromatic substance.



**ORIGIN:  
SICILY**



Originally native to North India, the lemon is nowadays found in much warmer regions of the world.

# VINEGAR

## AN ACCIDENTAL PRODUCT WITH ENORMOUS EFFECTS

Vinegar has already been produced in ancient advanced civilisations. Especially in the ancient Near East and Mediterranean areas, herbs were mixed into vinegar to turn it into a palatable drink. Fragrant oils or juices were also used to mix with vinegar. Particularly the mixture of vinegar and water is found in Roman history as an elixir that was supposed to equip warriors with strength and good health. The origin of vinegar, however, is by far more mundane. It was found by accident when mead, beer or wine stood too long and turned sour. Acetic acid is produced by omnipresent bacteria that get into the wine, start their metabolism and thus turn the alcohol into acetic acid. However, only as late as the 19<sup>th</sup> century it was discovered that it takes bacteria for the production of acetic acid.

Medicinal uses of vinegar have been recorded very early, e.g. in cases of respiratory diseases or indigestion. In the 18<sup>th</sup> century, it was found out that vinegar can be used as a preserving agent for

fish or vegetables and that it has disinfecting and healing properties. Besides that, it was used with growing pleasure in the preparation of food. In France, it was particularly popular at that time to use vinegar for the creation of refined marinades for salads. They were sold on the street, right off so-called vinegar barrows which held different barrels with varying acid contents. Shortly after, researchers also developed an interest in vinegar. Chemists discovered that acetic acid was the result from alcohol and tartaric acid once the alcohol had evaporated and turned the tartaric acid into acetic acid. Modern home remedy also knows vinegar as a cure, e.g. antifebrile compresses or the inhalation of vinegar solution for a cough.

Nowadays vinegar is mostly used as preserving agent, as spice and in the food industry. At AURO, we use wine vinegar as a natural acid that has been fermented from wine to alcohol and then further fermented to acid.





Vineyards are often close to rivers and face south or west, towards the sun.

## LIME OIL



The blooming period of the lime tree is in late spring or early summer (May, June).

## THE FRESHEST OF ALL CITRUS OILS

The tropical, bittersweet smell of the lime reminds of sunny climes, white sand beaches at a turquoise-coloured seaside and green palms. In aromatherapy, the ethereal oil does its magic by giving new motivation, joy of life and buoyancy. In various ways, it has reviving and refreshing effects on the psyche. No wonder, given its fresh, sweet smell that, at the same time, has a fruity appeal. The word lime comes from the French language and means „small lemon“. Like its big sister, the lemon, the lime belongs in the rue family. It is also known by the Latin name *Citrus aurantifolia*. It grows on a tree-like bush that can reach a height of 2-4 m. The plant originates from South Asia. In springtime, the bush shows white, scented blossoms, six months later the familiar, aromatic yellow to greenish fruits have matured. However, the bush bears fruit only after five years.



The ethereal oil is won by water vapour distillation from the fruit and peel. At AURO we use the genuine yellowish ethereal oil of the lime as aromatic substance.

**By the way:** Besides the genuine lime there is also the common lime. The genuine one, *Citrus aurantifolia*, also called key lime or Mexican lime, is smaller than the common lime, sometimes not bigger than a table tennis ball. As opposed to the common lime, it contains many seeds. The common type, *Citrus latifolia*, often bears the name of the region it is native to, e.g. Persian lime or Tahiti lime.



## JOJOBA OIL



The jojoba plant originates from the Sonoran Desert.

## THE MYSTERY OF THE JOJOBA PLANT

The jojoba plant is an evergreen, wild-growing bush that reaches an age of several hundred years and originates from the Sonoran Desert in Mexico's Baja California region. Its taproots are particularly bold and can penetrate up to six metres deep into the ground. With this survival strategy, the plant also ensures that the desert does not dry out. Researchers benefit from these and other characteristics by using jojoba in high-grade moisture regulating products. The so-called jojoba „oil“ is actually not a plant oil but a wax. However, it gets liquid at room temperature already.

The robust plant has a natural sun protection factor of 3 to 4 and is therefore often used as base material for sun blockers. Because of its positive properties, it is also used in home-made cosmetics. It has a particularly high oxidation stability which contributes to the stabilisation of oil mixtures, it increases the elasticity of the skin and protects it reliably and long-lasting from losing moisture. It has also to be highlighted that the jojoba wax is a high-grade substitute for the spermaceti that was won from the sperm whale in former adays.

The oil is also used in Industrial applications, e.g. as base material in lubricants for precision instruments or as raw material in care waxes for furniture or car

polishes. At AURO, we also use the oil-like plant wax in care and maintenance products.

There are male plants with yellow, flamboyant blossoms and female plants with rather ordinary, white blossoms. Within three to six months after the pollination by wind or insects, capsule fruits have matured and open up. They contain wrinkled, olive-shaped seeds that hold the precious wax.

Like hazelnuts, the jojoba seeds can be mixed into the breakfast cereals or even be used to brew a substitute for coffee. This culinary refinement can probably even support your diet.



## BEESWAX



The bee house should be warm and protected.

## BEES, BLOSSOMS AND BEESWAX

Beeswax is a wax produced by honeybees and used by them for building honeycombs. Already in old Egypt, the wax was used for technical but also for cultish or ritual purposes. It is hardly possible to imagine modern-day economy without beeswax. It is a versatile and sought-after natural raw material used in healthcare, cosmetics, candle manufacturing, as coating or separating agent in the food industry, and much else. Of course the wax consumption is also very high in bee-keeping itself because it is the building material for the bees' own home. The hexagonal honeycombs with their honey fragrance remind the viewer of crystals. They serve as the place for birth, living, working, and also as storage space for honey and pollen.

### Production

The production takes place in springtime, from April through July, when there is an abundant supply of nectar. Several honeycombs can then be produced within one week. On a honeyfarm, the process of building honeycombs is accelerated by inserting prefabricated beeswax sheets of 1 mm thickness into the beehive. The original colour of the small wax plates the bees exude is near white. The yellow colouration takes place by uptake of an ingredient of the pollen of the blossoms, the pollen oil, that contains the natural colourant carotin. For the wax production, the bees hang next to each other to form clusters. From the wax glands at their hind ventral scales, they

sweat out the wax in thin platelets with a weight of approximately 0,8 miligram. This means that 1.25 million of these platelets are needed to produce one kilogram beeswax. Before the wax reaches the trade, it is cleaned and bleached to a white wax.

AURO beeswax is a pure, unbleached, smooth wax from best provenances, with controlled low residue level. It is used in AURO's cleaning, care and maintenance products

in the form of mildly saponified beeswax soap. This soap has only weak surfactant characteristics but is a good emulgator that helps to keep the ingredients of a product in a stable emulsion. Moreover, the thin beeswax film that forms after application and partial re-neutralisation has an antistatic effect on the surface to be maintained.

The beekeeper examines the beehives once a week.



## CAMOMILE BLOSSOM EXTRACT



The blooming period of the chamomile starts in May or June and can last until September.



## A JACK OF ALL TRADES

They are familiar to all of us, the chamomile blossoms with their yellow heads and white blossoms that seem to give us a friendly smile while we walk by. Chamomile blossoms contain ethereal oil and their ingredients have anti-inflammatory and anticonvulsant effects. The popular household remedy settles the stomach and alleviates spasmodic colics. The genuine chamomile is an annual herbaceous plant that reaches a growth height of approximately 15 to 50 centimetres. All parts of the plant have the characteristic chamomile scent. The stems are upright and leafless, their upper part is often highly branched. The genuine chamomile originates from the Middle East, South and East Europe. Today it is found in all of Europe but is also indigenous to North America and Australia. In natural surroundings, the undemanding plant is to be found on fields or by the wayside, on slopes and most of all on cornfields. The false chamomile has a very similar calyx and can therefore easily be confused with the genuine chamomile. However, the false one has only very little ethereal oil and



therefore does not emit the typical scent. It also does not have the healing power of the genuine chamomile.

At AURO, we win the chamomile extract by alcohol extraction from chamomile blossoms.

**Did you know?** The Greek name of the chamomile, *chamaimelon*, means as much as „apple of the earth“. The reason probably is that the leaves of the chamomile have a light apple-like scent. As one of the oldest medicinal plants it was known in pre-Christian times already. It is mentioned in numerous books on cures and medicinal substances. Nordic peoples worshipped the chamomile as a divine plant because its blossoms were so similar to the sun.

## LINSEED OIL

### THE ALL-ROUNDER

It has an aromatic smell of hay that is also described as herbaceous, musty and a bit toasty. The cultivation of oil flax or fibrous flax dates back to the Stone Age already, the sowing and the harvest are also to be seen on Old Egyptian mural paintings. The flax plant delivers the linseed oil as well as the fibres that are spun to linen fabrics. The clear golden yellow oil is won from the linseed, i.e. the ripe seeds of the oil flax. It is contained in many products because of its high amount of saturated and polysaturated fatty acids. It is used in binding agents for the production of paints and lacquers, in foodstuffs and in cosmetics – a truly versatile oil.

#### Linseed oil - decated

The seeds of the small oil flax with its wonderfully blue, sometimes white blossoms get harvested in July or August at the latest. Then the oil is won from the flax seed in a careful procedure by decating in a screw press. The linseed is pressed slowly through the screw press by a cylinder that exerts slight pressure. In this process, the oil temperature reaches a maximum of 40 °C. Higher temperatures would lead to a detach-

ment of other plant components which would impair the quality of the oil. The careful decating process makes linseed oil one of the most precious and most expensive oils. In paint production only decated oils can be used. The remaining parts of the oil flax, e.g. the chaff, straw, and the presscake, are used as cattle fodder or in insulating materials. Nowadays, the oil is pressed in very big oil mills which can lead to higher temperatures. The mucilage extracted in the process gets coagulated by addition of mild acids and is then filtered out.

### MULTIPLE USES

FOR THE PRODUCTION OF OIL PAINTS  
AS PREMIUM NUTRITIONAL OIL  
FOR SKIN REVITALISATION

#### Use at AURO

At AURO we use linseed oil from certified organic farming (cof) because of its outstanding technical and physical properties. The warm lustre, the elasticity, the penetration capability and the moisture-regulating features make this sustainable plant raw material an ideal choice for the binding agents in AURO products.





The seeds of the small oil flax are harvested in July and August.



ORIGIN:  
GERMANY



Organic farm in the monastery complex Dibbesdorf.

## A FARMER'S PASSION - WORKING AL FRESCO

**We visit the organic farm of Bernd Barnstorf-Brandes in the monastery complex Dibbesdorf near Braunschweig. Besides ecological and species-appropriate husbandry of chicken and Highland cattle, the organic farming of potatoes, crops, legumes, buckwheat and linseed forms part of his work. Moreover, the self-produced foodstuff is sold in his own farmshop. We talked with the organic farmer about the characteristics of his profession and the farming of linseed.**

### **What are the advantages of your profession?**

The work is versatile, you are working outside a lot, and there is a big variety of things to do. I love the work with animals and the field work, there is always so much to do that it never gets boring. What I like in particular is the dependency on the weather and the four seasons.

### **Which characteristics are prerequisite and what does a normal workday look like?**

A good professional education is important, e.g. an apprenticeship or studies. Moreover, a good deal of motivation and endurance is necessary. Without „punch“ it will not work. Everyday work is versatile and cannot always

be predicted. Fields are cultivated as the weather and seasonal conditions allow, including the sowing of seeds, regular care and of course the harvest. Other work includes the feeding of the animals, care and maintenance of the machines and the marketing of the produce in the farm-shop. The sorting of eggs, potatoes etc. and office work round off the day.

**Flax, or linseed, is a versatile plant. What happens with the flax after it has been harvested?**

For food production, it is processed into oil or seeds. The oil also gets used in lacquers and paints. The remaining parts of the plant get chaffed and ploughed back in the field.

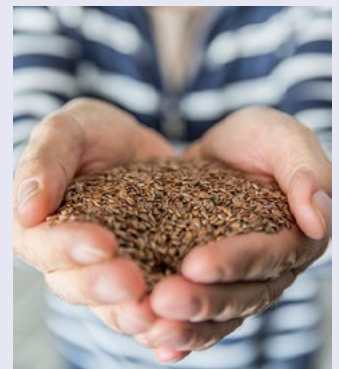
**How often is linseed grown on the same field, is there a crop sequencing that determines which plants are grown and at what time?**

Linseed is grown every fifth or sixth year, the sequence being determined like this: trefoil grass, wheat, potatoes, rye, peas or oat, linseed.



Bernd Barnstorf-Brandes, born 1952, organic farmer since 1984.

**Linseed oil - From sowing the seeds to the harvest**



Left to right: Linseed plants a few weeks after sowing. The buds grow to the size of peas. The blossom colour ranges from a pastel tone to shiny lilac. Harvested seeds before oil pressing.

## Why is it done this way?

The successive building up and degradation of nutrients in the soil provides for a long-lasting high quality of the soil. The change of field crop also minimises the infestation of seeds with weeds, as well as several plant diseases and vermin.

## What do you think is the decisive argument for a sustainable agriculture?

In the long run, biological farming will be the main method to feed mankind and, at the same time, maintain our natural environmental conditions. To this purpose, it will be imperative that we consume less meat and grow less plants as energy sources.

**Mr. Barnstorf-Brandes, thank you for this interview.**



Above: Meeting before work starts

Right: Weeds are removed from the linseed field with a tractable chipper

More informationen (*German*): [www.biohof-bs.de](http://www.biohof-bs.de)

**Seedtime:** End of March through end of April

**Harvest:** July or August

**Blossom colour:** white and lilac

**Area under cultivation:** 3.5 hectares

**Yield:** 3.5 - 5 tons

**DATA:  
LINSEED  
PLANT**



## EUCALYPTUS OIL

### STIMULATION AND RELIEF

More than 600 species are known, and with a height of up to 70 metres the eucalyptus tree belongs to the highest trees of the world. The biodiverse plant genus from the myrtle family originates from Australia and Indonesia. Nowadays, the eucalyptus tree is cultivated in subtropical and Mediterranean areas. It grows very fast and its roots grow deep into the ground where they find even remotest water veins. Since the 17<sup>th</sup> century, it was used in the Mediterranean area to drain marshes and thus dry out the most favourite reproduction areas of the anopheles mosquitoes that transmitted malaria. This was also the reason why the tree was called the „fever tree“. The Australian aborigines considered the eucalyptus to be a kind of all-purpose remedy.

### Use

For a long time already, eucalyptus has been used for the disinfection of medical equipment and for wound treatment because of its antiseptical properties. Nowadays, the ethereal oil of the fresh leaves and the tip of the branches are used in medicinal products especially where



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tus trees and  
and the tip of the  
branches are used in medicinal products especially where

respiratory diseases are to be cured. The yellowish ethereal oil is mainly won by water vapour distillation. Depending on the species, the smell ranges from a light lemon and camphor aroma to a fresh, keen or strong scent. The typical aromatic, ethereal oil is also set free when you just rub an eucalyptus leave between two fingers.

At AURO, we use eucalyptus oil that is won from the leaves of the eucalyptus tree by water vapour distillation. The oil serves as a fragrance and has a slightly preserving effect. It originates from the subtropical areas of China, mainly in the outer east or southeast regions where temperature variations are very small.

**By the way:** The koala bear is the only animal that can tolerate the slightly toxic cyanhydric acid of many eucalyptus species. However, the extracted ethereal oil is not poisonous.





The eucalyptus trees are also called blue gum trees and are native to Australia and Indonesia.

## ORANGE OIL

### THE SCENT OF THE CITRUS FRUIT

Fresh, fruity, sunny and lemon-like, these pleasant attributes spring to mind when an orange is peeled somewhere near. The peel with its ethereal oil perfectly protects the inner fruit. No insect or bird can harm it as long as the peel is intact. Among the citrus fruits, the orange is the one that is cultivated by far the most. Besides Florida, the biggest cultivation areas are Brazil, Spain and South Africa. However, the popular fruit originally came from Asia, then became native in Europe in the 15<sup>th</sup> century, and then was brought from Spain to Haiti by Columbus in the year

1493. From there it was distributed in South America. The German name for orange is „Apfelsine“ and still tells a lot about its origin. „Sina“ means China and „Apfelsine“ therefore means „Chinese apple“.

Indeed the fruit was cultivated in China already 2000 BC. The orange oil with its distinctive scent is used in many ways, be it for flavouring juices, in cosmetics, or in technical applications, e.g. as a natural solvent in paints.



### Extraction of the ethereal oil

The ethereal oils contained in the orange peel (the main substance is limonene) have a deodorising effect. The peels are processed by distillation or decating which produces a traditional plant raw material that is mainly used as biogenic solvent in paints and in cleaning, care and maintenance products. The effect is similar to turpentine from resins but with a more pleasant smell.

### MULTIPLE USES

#### IN AROMATHERAPY

#### IN PHARMACEUTICALS

#### IN COSMETICS

The natural orange oil that is used at AURO is an ethereal oil that is won as a byproduct of the orange juice production in South America. The „snap test“ shows that the oil can mainly be localised in the peel. Snap a piece of peel and see the oil squirt out along the break line. The production of orange oil leaves big amounts of pesticide-free peel remains that can perfectly be used as animal food.


At AURO, the orange oil is used in many cleaning products. The distilled, strongly fragrant parts are used in perfumes or in aromatherapy, the less fragrant terpene bases as solvent for resins and oils.



**ORIGIN:  
BRAZIL**

Orange trees are small to middle-size evergreen trees with a growth height of up to ten metres.

## SHELLAC



Shellac is used for the production of lacquers that are particularly suited for violins and plucked musical instruments.

### THE RESINOUS SUBSTANCE OF THE SMALL LAC INSECT

Until the early 1960s, shellac was used to produce gramophone records. Nowadays it is still used for many purposes, e.g. in polishes, for the conservation and care of wooden furniture, or in medicinal compounds. The female lac insect is only one to two mm in size but plays a vital role when it comes to winning shellac. She taps the twig bark of the butea gum tree or other species and processes the plant juice into a resinous substance that is called lac.

The lac insect *Kerria lacca* lives on the butea gum tree, poplars and other species on the Indian subcontinent. The scale insects are bred on the lush, young shoots of the tree so they can feed on its sap. The female members of the colony-forming animals tap the bark of the twigs and take up

substantial amounts of the plant sap that is also called phloem sap.

The sap of the host plant is processed and then exuded as a secretion that forms a stable encrustation on the twig surface. The resinous layer also protects the breed of the insects from extreme temperatures and from natural enemies. The harvest takes place twice a year. The twigs with the lacquer, also known as stick lac, get cut off and the resin is separated from the leaves. After repeated washing and remelting, the lac is



extended to a thin layer. After drying, this layer breaks which produces the so-called leaf shellac.

There is the dark red garnet shellac, the yellow lemon shellac and many more varieties. The one best suited for the paint and lacquer industry is the clear shellac. The excretions of 300.000 lac insects are needed to win one kilogram of shellac.

At AURO, shellac is mostly used as an elastic binding agent for quick-drying lacquers and in cleaning, care and maintenance products. Shellac as a raw material considerably ameliorates the degree of gloss and the surface hardness of wooden floors and furniture. Moreover, the hard resin supports good film formation and is highly UV-resistant. Shellac is the sustainable and biodegradable alternative to the ecologically harmful petrochemical paints that are often used for application on wood.



## LEMON GRASS OIL



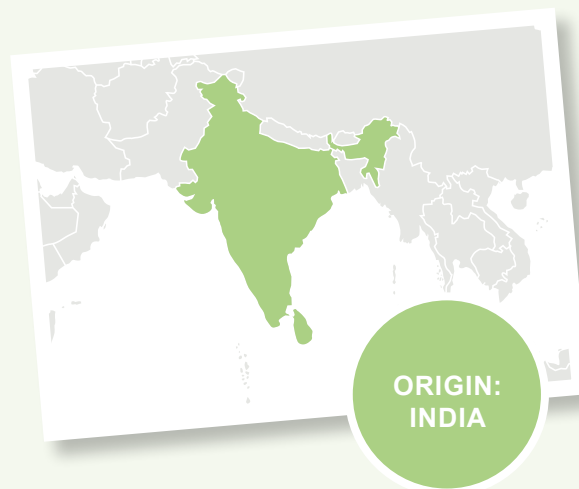
### MORE THAN REFRESHING

Lemon grass is native to tropical regions, e.g. to India, Africa, Indonesia or South America. Due to its intense smell, lemon grass is one of the most popular fragrances. Be it as a spice in the kitchen, as aromatic oil in perfumes or cosmetics, or in medicinal compounds: the ethereal oil has a fresh smell and a stimulating effect. The evergreen, herbaceous plant belongs in the family of sweet grasses and can reach a height of 50 cm to 2 m. Nowadays, it is grown

in bigger areas under cultivation in order to win and process high amounts of ethereal oil. The light yellowish oil is won by distillation of the leaves.

Because of its stimulating properties, the oil is often used in refreshing bath supplements or in massage oils. A positive side effect is that it cleans and lifts the skin. The oil cannot be used undiluted, however, because in its pure form it might lead to skin irritation. The refreshing scent is also believed to put people in an optimistic mood, to dispel black thoughts and fretfulness and replace them with confidence.

At AURO, we use the lemon grass oil of the tropical grass *Andropogon flexuosus* that is native to East India. According to our product composition, the distillate is added as last ingredient to give numerous AURO cleaners their stimulating scent.



A wooden sign with the words "LEMON GRASS" written in black, uppercase letters is mounted on a wooden post. The sign is positioned in the center of a field of lush green lemon grass plants. The grass has long, narrow, blade-like leaves that are densely packed together. The background is filled with more of the same grass, creating a textured, green environment. The lighting is natural, suggesting an outdoor setting during the day.

# LEMON GRASS

Nowadays, lemon grass is grown on big agricultural areas.  
The light yellow ethereal oil is won by distillation of the leaves.

## PLANT ALCOHOL



### STRAIGHT FROM THE ORCHARD MEADOW

Alcohol has its origin in a combination of sugar, yeast, fungi and warmth. Like many other important discoveries, the origination process of alcohol was found as a serendipity. Alcohol develops in overripe fruits and alcoholic fermentation takes place everywhere in nature where certain conditions come together. The fermentation of sugars like glucose, fructose or maltose to alcohol is triggered by yeasts or fungi which are practically present everywhere in the air. Fermentation can take place at different temperatures. The term alcohol supposedly stems from the Arab word „al khol“ which means „something fine“. The first consumption of alcohol reaches far back into the history of mankind and often had religious or ritual functions. Nomads produced alcohol from milk, Germanic peoples

made their mead from fermented honey whereas the Romans fermented grapes to wine. In the 11<sup>th</sup> century, alchemists succeeded in producing alcohol by specific distillation for the first time. This process, the distillation of fruit and crops with sugar and yeast, led to a stark increase of alcohol consumption. Alcohol, also called ethanol or ethyl alcohol, is nowadays produced from many different substances in various production methods. It is used for consumption but also for technical uses, e.g. as thinner or additive in fuels.

AURO produces alcohol by fermentation and distillation from starchy plants like potatoes. The alcohol is used as thinner, e.g. in shellacs, and also as additive in cleaning, care and maintenance products.

Under certain conditions, alcoholic fermentation takes place everywhere in nature.



ORIGIN:  
GERMANY



## DAMMAR



The plant resin dammar is won from the tree called *Shorea wiesneri* by notching the lower part of the trunk.



## A LIGHT YELLOW RESIN WITH A STRONG BONDING FORCE

The resin from the dammar tree is one of the most beautiful and precious plant resins on earth. It is harvested from the Asian deciduous trees that grow mainly on the Sunda Islands. The most important source is the *Shorea wiesneri*, a tree that also provides the much-loved meranti wood. The plant resin can also be found in other tropical deciduous trees growing in Indonesia, the Philippines, Borneo or East India. The word „dammar“ itself holds some mystery, it originates from Malaysia and means as much as light, resin or torch. The German designation for dammar resin is „Katzenaugenharz“ (cat’s eye resin). The clear to yellowish resin with its fine, ethereal scent is believed to have mood elevating characteristics, it is even said to heal melancholia. It is used for curing and as incense, and the vernacular has it that the white smoke sharpens the perception and can even turn a person into a clairvoyant.

One special use for the plant resin dammar is its use as a natural binding agent. The resin is known in Europe since the 19<sup>th</sup> century already and has been used in manifold ways, e.g. in the production of light, clear enamels and glues or as a traditional additive in artist’s paints like tempera or oil paint. In AURO’s floor care products, for example, it has the task to emulsify ingredients like linseed oil, orange oil and drying agents. The solvent contained in the

liquid oil evaporates during the drying process and leaves a coating that is firmly linked to the substrate.

### The extraction of the exotic dammar resin

The natural plant resin forms unenforced and comes out of the trees of these exotic deciduous trees in great quantities. The pieces have an irregular, tear-like form and are approximately 3 cm big. If they are separated into pieces, they splinter easily but leave smooth shivers. It can be pulverised to an odourless powder. The pieces, however, smell finely of the ethereal oils they contain.



The impressive pieces that are won from the trunks are water-clear, sometimes with a yellowish or reddish white hue. There are different ways of winning the finest specimens: The resin that has formed unenforced can just be gathered but it can also be tapped from the tree. The latter procedure intensifies the resin production of the tree. Deep cuts are made in the tree so the resin can gather there until the cuts close again. The form of the resin pieces shows how they were won. If they have the form of a pear or a club they were not gathered from a cut tree but have emitted from the tree in their natural way. Another method is to dig out the resinous compound that can be found under the soil surface in the root area of dead trees.



Meranti tree, notched for resin extraction.

## A VISIT TO THE SUMATRA RAIN FOREST

One of our long-term deliverers of raw materials and AURO's Head of Production, Helmut Nieder, decided to travel to Indonesia in order to find the light yellow pieces of resin called dammar that are won from the Meranti tree. The dammar pieces are used as binding agent in the production of ecological paints and lacquers. After arrival in their jungle camp, they visited several areas in the thick rain forest where Meranti trees were to be found. Here is the account of Mr. Nieder's journey.



### What did you like best on the journey?

It was very beautiful to see the differently shaded pieces of dammar resin. The colouration went from dark brown to light brown to light yellow and even white. Both varieties reminded me of rock sugar. We also saw a huge Meranti tree that delivered resin until a year ago. From the trunk, the tree „exudes“ the fresh dammar resin. The pieces can be seen on the stock of the tree. It was very moving to see the young trees and also the very old ones in their immense size.

### What impressed you most deeply?

The air humidity and the temperature in the rain forest. The weather conditions are so extreme that the sweat just runs and runs. Sometimes it rained so hard that the streets, mostly built of sand, were completely sodden. In order to move forward with the pickup truck, there always had to

be a second one as backup to help in case you got stuck in the mud.

### **What was the purpose of your journey?**

We wanted to hold talks with the people in charge locally and get an overview of the situation. Moreover, we wanted to have a look at the Meranti trees that were particularly suited for harvesting resin.

### **Was your search successful?**

Unfortunately, the brown dammar is not suited for use in paint manufacturing. This made the search relatively difficult. With the help of the natives, we eventually found very young Meranti trees that release the fresh white dammar resin that is perfectly suited for our purposes because of its brightness.

### **Different sorts of dammar**



Bright yellow



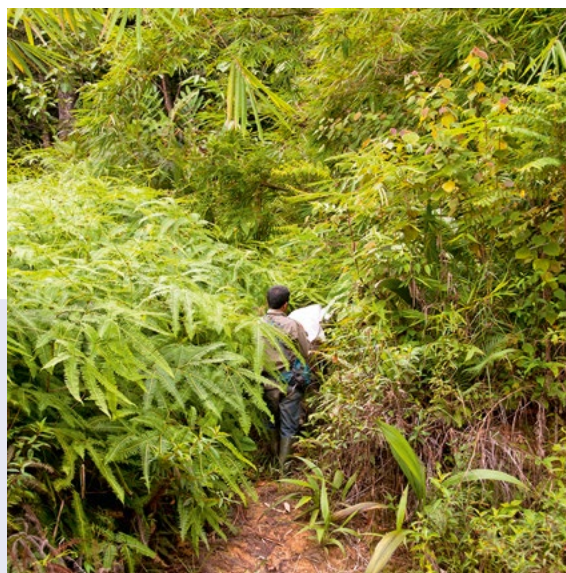
Light brown



Dark brown



White



### **Active work against the destruction of rain forests**

The winning of dammar resin enables the people of South East Asia to use the rain forest sustainably, without overexploitation, and therefore is active work against the destruction of the rain forest. The vital force of the trees is not impaired by notching the stocks which means that the resin can be exuded over a long period of time. This renders resin winning an economical and ecological alternative to logging the trees for wood production. Before the sacks with the valuable resin pieces arrive in our ports, a lot of handwork is necessary: the workers in Asia gather the resin, sort it by size, remove splinters of wood and other dirt particles and package it in sacks before it is shipped by container to customers all over the world.

## SOYA OIL

### AN OIL WITH MANIFOLD OPPORTUNITIES

The smell of soya oil is keen, musty or nutty and is characterised as pleasant. The oil is won from the seeds of the soybean that was cultivated in China as early as 3.000 B.C. and in Korea around 1.000 B.C. The annual plant is a member of the *papilionaceae* family and was originally a byproduct from the cultivation of concentrated feeding-stuffs for livestock farming. Nowadays, this vegetable oil is mainly used in comestible goods like salad oils, margerine or cooking fats. The residues from the soya oil production, e.g. the grist and presscake left from the extraction process, are rich in protein and can therefore be used as animal food. The cosmetics branch uses the fatty acids contained in soya oil in body care products and bath oils.

Oils and fats

cof

from certified  
organic farming

Other applications include the use as quick-drying oil in paints and fillers or in printing inks for newspapers. Soya oil can be won from the soybeans by pressing or by extraction. Pressed soya oil is light yellow whereas

the extracted oil appears brownish-yellow. At AURO, we use the light yellow oil from certified organic farming (cof) as soap in many products.

### A marvellous bean with risky side effects

The soybean constitutes a great danger to South America's primeval forests. Since the 1970s, a real soya boom has developed that is responsible for the disappearance of nearly all of the Atlantic rainforest and big parts of the Cerrado savanna. In the meantime, the soya cultivation areas have advanced deep into the Amazon region although the rainforest soil is not even suited for the cultivation of soya. The use of soya as animal feed and the manifold negative implications for the environment once more show that we are in desperate need of a global-scale sustainable agriculture.





The length of the legume ranges from 2 to 10 cm.  
It holds one to five seeds.

## ROSEMARY OIL



### A VERSATILE PLANT

As a plant dedicated to the Gods, especially to Aphrodite, rosemary played a vital role in ancient history. For a long time, it was a custom for brides to wear rosemary garlands as a token of their faith. It was also discovered that rosemary supports memory retention, therefore pupils in old Rome as well as in Greece wore rosemary garlands.

### The origin

The name rosemary comes from the Latin *ros marinus* which means „dew of the sea“. It is believed that this is due to the fact that the plant originates from Mediterranean coasts where the dew gathers in the blossoms at night. The herbaceous plant belongs to the oldest, most popular and also most versatile plants. It brings forth various different effects and has a strong, aromatic smell that reminds a bit of camphor but also of a forest.

Long before rosemary was discovered as a spice, it was used as ethereal oil, as edible oil, for vapour baths, or in herbal teas. Rosemary has a vitalising effect on the cardiovascular and neural systems, it provokes appetite and works against fatigue. It is also believed to have an antiseptical effect.

### Use at AURO

We use rosemary oil that is won by water vapour distillation from the leaves of the genuine rosemary plant. It serves as aromatic scent and insect-repelling ingredient.

*„Lavender is to the soul what  
rosemary is to the spirit. “*

(ancient wisdom)



ORIGIN:  
TUNESIA



Rosemary is mainly cultivated in France, Spain, North Africa and the Balkans.

## CARNAUBA WAX



The carnauba palm achieves a height of 15 metres and is also called the „tree of wisdom“.

### WAX FROM THE TREE OF WISDOM

The precious carnauba wax is won from the Brazilian carnauba palm and has recently experienced renewed popularity. The manifold application possibilities of the natural wax and its freedom from any fragrances have contributed to this development. The wax of the young palm leaves is light yellow to green and is used, for example, as an additive to achieve the requested consistency and lustre of anoints, cremes or lipsticks. Approximately 300 years ago, the Tremebé Indians already knew about the manifold ways to use the wax and named the palm that can achieve a height of 15 metres the „tree of wisdom“. The commercial importance of the carnauba

palm was discovered not before the beginning of the 19<sup>th</sup> century. Especially the stem and the wax became export hits.

### Harvesting and extraction of the wax

The greater part of the carnauba wax is won from the young leaves of the palm. The leaves are covered on both sides with numerous small wax scales that are secreted by the leaves as a protective layer in order to avoid evaporation. The precious wax is won by scraping off or by boiling out the leaves. Among the natural waxes, it has the highest fusion point, approximately 85 °C. It is harvested during the dry season. From Sep-



tember through March, six to eight leaves are cut off the palm and laid out to dry and shrink which loosens the wax particles. Afterwards, the wax parts are knocked off or removed with a machine. The presorting of the leaves going by age predetermines the different colour grades of the wax. The older the leaves, the darker is the wax that is won from them. The leaves are either dried and knocked off right at the place of harvest or they are dampened and brought to a factory for processing. A carnauba palm produces only 150 to 180 g of wax per year which amounts to 5 g wax yield from 100 g leave material. In Europe, the wax gets cleaned and bleached in special procedures to produce a carnauba wax free from dirt and water.

At AURO, we use the carnauba wax in cleaning, care and maintenance products. Due to its particular hardness, it lends much better mechanical resilience to softer waxes and provides a beautiful lustre to furniture or floors.



**By the way:** Carnauba palms are particularly resistant against environmental influences. The leaves grow again constantly so that a permanent winning of wax is ensured. The palms do not suffer from the harvesting of the wax which is why this is a really sustainable and ecologically compatible production of raw material.



## BERGAMOT OIL

### FRESH, LIVELY AND FRUITY

The bergamot fruit is a cross between the bitter orange and the citron. It is in cultivation only in Calabria, along a 100 km long small shoreline at the boot toe of Southern Italy. The bergamot oil was mentioned for the first time in the year 1750 and has remained rare and sought-after until today. The exact region of provenance is unknown but it can be assumed that it is of oriental origin. The ethereal oil is used in perfumes and cosmetics as well as in aromatherapy. The extraordinary flavour is to be found only in the peel from which the oil is won. The flesh of the fruit is not edible. The particular characteristic of the peel essence is that it contains more than 300 different aromas and hence has a much bigger complexity than many other natural scents. The clear, fresh and lively bergamot scent is present as overtone in practically all perfumes.

Besides being suited for wonderful flavour blends, bergamot oil serves well to cure colds and fevers through its anti-inflammatory characteristics. The scent of bergamot oil is intensified by the addition of other citrus oils, e.g. the oils of lemons, oranges, tangerines or grapefruits.



The bergamot plant reaches a growth height of approximately four metres. In the blooming period, it bears white blossoms that emit a beautiful scent. They develop into fruits that are harvested between November and February. Only the peels are used for oil production, the procedure being the so-called decating. The colour of the highly fluid oil ranges from yellow to green, its fragrance is sweet and flowery, with a fruity note. At AURO, we use the genuine ethereal yellowish oil from the fruit peel of the bergamot tree (*Citris bergamia Risso*) as aromatic substance

**By the way:** In order to win 1 litre of bergamot oil, 200 kg of fruit have to be processed.





The extraordinary flavour of the bergamot fruit is to be found in the peel from which the oil is won.

## RAPESEED OIL



### GOLD-COLOURED OIL WITH AN OFF-DRY BOUQUET

Rapeseed belongs in the family of crucifers and is distributed in Europe only. It originates from the coastal areas of the Mediterranean region. It is very likely that the golden yellow plant emerged from a cross between the wild turnip and the field mustard, two species that share the Mediterranean as their main distribution area. Rapeseed was first cultivated in the Middle Ages and thus is a still

young crop plant. The fuel for the oil lamps was won from rapeseed and field mustard. Rapeseed oil originally had a high share of bitter-tasting compounds and the critical erucic acid. Therefore it was barely used in food but as lamp oil, lubricant and as base material for the production of soap. It was only when varieties with less erucic acid and bitters could be cultivated in the 1970s and 1980s that rapeseed oil became one of the most important oil plants worldwide. At the end of the 20<sup>th</sup> century, rapeseed had its heyday as nutritional oil and as base material for edible fats.

Rapeseed oil is won in oil mills by pressing or by extraction. Two different techniques are applied: the hot pressing or refining in oil mills, or the decating process in decentralised oil mills. Only the yellow kernel of the fruit is used for oil production. The black shell is removed in order not to let the bitters get into the oil. Compared to the refined oil, the decated rapeseed oil has the advantage that it contains more vitamins, carotines and other fat accompanying substances.



At AURO, rapeseed oil from certified organic farming (cof) is used as soap in many cleaning products.

The blooming period of rapeseed starts in spring-time and lasts about three weeks. During this time, the bright yellow fields can be seen everywhere.



**ORIGIN:  
GERMANY**





**AURO**  
**clean & Care Wax**  
 Feuchte Holzbodentücher  
 Moist cloth for wood flooring

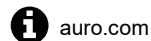






**Picture sources:** AURO archive, unless mentioned otherwise. *Fotolia:* P. 4 denis\_333; P. 7 seb hovaguimian; P. 8 Valentina R; P. 16 (lemon blossom) Christian Jung; P. 17 GOHY73; P. 19 Shaiith; P. 24 Slavica Stajic; P. 25 Bjoern Alberts; P. 35 mbolina; P. 36 Sailorr; P. 37 sripfoto; P. 48 Witold Krasowski; P. 53 luigipinna. *iStock:* P. 49 DS70. *Panthermedia:* P. 11 alfio scisetti; P. 26 Iakov Kalinin; P. 28 Pauliene Wessel; P. 34 alfio scisetti; P. 54 Jakkarin Rongkankeaw; *Thinkstock:* P. 9 DaSza64; P. 10 Taiftin; P. 20 jpkirakun; P. 22 Travis Tackett; P. 23 Cristina Dini; P. 40 satit\_srhin; P. 41 Chris Costello; P. 43 AntiMartina; P. 51 SurkovDimitri; P. 55 Monrudee; P. 57 DanielPrudek. *Roeper:* P. 52 Carnauba palm.

**Text sources:** *Sunflower oil:* wikipedia.org; kidsweb.at; naturseife.com  
*Lavender oil:* Lavendel.net; wikipedia.org. *Coconut fat:* Wikipedia.org; florapower.net. *Castor oil:* rizinusoel.net; wikipedia.org. *Cembra oil:* waldwissen.net. *Lemon oil:* aetherische-oele.net, heilkräuter.de. *Vinegar:* kulinaria.org; seilnacht.com; wikipedia.org. *Lime oil:* wikipedia.org; satureja.de. *Jjoba oil:* beauty-forum.ch; wikipedia.org; welt.de. *Beeswax:* wikipedia.org. *Camomile blossom extract:* wikipedia.org; heilkräuter.de; feenkraut.de. *Linseed oil:* Wikipedia. de; seilnacht.com. *Eucalyptus oil:* wikipedia.org; Gesundheit.de. *Orange oil:* Wikipedia.org. *Shellac:* Wikipedia.org. *Lemon grass oil:* wikipedia.org; nature.de. *Plant alcohol:* chemie.de; wikipedia.org. *Dammar:* A2Trading Ltd.. *Soya oil:* wikipedia.org; gesund.co.at; fazination-regenwald.de; wwf.de; procosara.org. *Rosemary oil:* Wikipedia.org, rosmarinoel.net. Author: Michaela Gross, aetherische-oele.net. *Carnauba wax:* C.E.Roeper, Fa. Kahl & Co, Fischer/Presting; Kleines Handbuch der Wachsindustrie, Halle 1958, Römpps Chemielexikon, Bd. 1 8. Auflage, 1979, Wikipedia.org, carnaubawachs.de. *Bergamot oi:* wikipedia.org; aetherischeoele.net. *Rapeseed oil:* wikipedia.org; proplanto.de.



AURO AG | As of 08/2015 (04.2019 logo) (08.2025 products)

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