



## **Our range of Hemp Products**

*Trending products from one of the world's oldest cultivated plants*



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More than 10,000 years ago, people were already cultivating hemp as a grain. In this brochure, you'll read why we think hemp products are anything but stale: They are exceptionally sustainable all-rounders!

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## Sustainability of our Hemp Products

# SUSTAINABLE DEVELOPMENT GOALS

The UN's 17 sustainable development goals came into effect in 2016.

*Contribute to these goals  
with hemp products!*

6 CLEAN WATER  
AND SANITATION



**Groundwater protection:** As hemp grows faster than (almost) any weed and only struggles with pests extremely rarely, herbicides and pesticides are unnecessary. This means the groundwater remains **free of herbicide and pesticide residue**.

9 INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



**Partnership-based collaboration for innovations and development:** Since 2015, we have interacted closely with the German farmers who have supplied us with organic hemp for pressing in our oil mill in Bremen. Our **Hemp Day in January 2020** networked farming and processing for the highest quality.





It is possible to **use the plant as a whole, which is the main idea behind the upcycling trend:**

- From the seeds, oil and press cake are produced. Fine grinding of the hemp press cake results in hemp flour. All products can contribute to high-quality nutrition for humans and animals. Especially the oil finds further applications, for example in cosmetics.
- Hemp fibres can be used as fertilizer.



• Hemp plant **bonds CO<sub>2</sub>**: If the farmer incorporates the hemp plant's biomass into the ground as fertilizer, the CO<sub>2</sub> remains bonded to the hemp fibre. This will **reduce the need for buying additional fertilizers, which are produced in CO<sub>2</sub>-intensive processes.**

• **Lower energy consumption by machines:** Hemp does not need to be chopped or sliced several times. The **CO<sub>2</sub> balance** is good because the field is rarely driven on.

• **Short routes are possible:** We also press **organic hemp from Germany, some of which is locally grown**, using our Lipos Oil Mill in Bremen. Hemp cultivation and the production of hemp products can take place in North Germany over a radius of 400 kilometres.



### **Contributions to insect protection and biodiversity**

- Hemp plants do not need herbicides and pesticides with harmful or unknown effects on insects.
- Hemp produces abundant pollen, which is a **welcome source of food for insects.**

According to scientific studies, organic areas house up to 50% more individuals and up to 30% more species of birds and insects. **Biodiversity is just one of the sustainability issues organic hemp particularly addresses.**



## Hemp from Germany: (not) a crazy idea

*Hemp was the topic of a conversation – accompanied by a nice glass of red wine at the stall of our French partner community Villers-Saint-Paul – between local farmers and me, the director of our Oil Mill Lipos, at the Christmas market 2015 in my hometown of Hambergen. For years, we at Henry Lamotte Oils had been selling hemp products made from Canadian hemp. I thought: **“Hemp from Germany would be perfect for our Bremen oil mill: all-round regional!”** No sooner was it thought and said than it was done. In 2016, the first harvest from Hambergen went through our oil press. There were some challenges to be overcome: From young visitors to the hemp fields searching in vain for intoxicating cannabis through to the failed harvest of a variety of hemp with 3.5-metre-long stems and fibres, which made threshing impossible.*

*The effort was worth it! As several “hemp brothers of the first hour” from Hambergen summarized at the **Henry Lamotte Oils Hemp Day in January 2020**. 20 German farmers discussed face-to-face the opportunities and challenges of cultivating and processing hemp. More and more farmers are now supplying our Oil Mill Lipos **under contract**. Thanks to the cooperation with Naturland, (organic) hemp plants for hemp oil, hemp flour and hemp press cake are now being cultivated on several hundred hectares in Germany. The Osterholz district, in which Hambergen is located, was the second largest production region for hemp in Lower Saxony in 2020. **In 2021, we will press Naturland hemp for the first time.***

Arne Schwoge – Authorised Officer, Oil Mill Commercial Manager, Seed Procurement



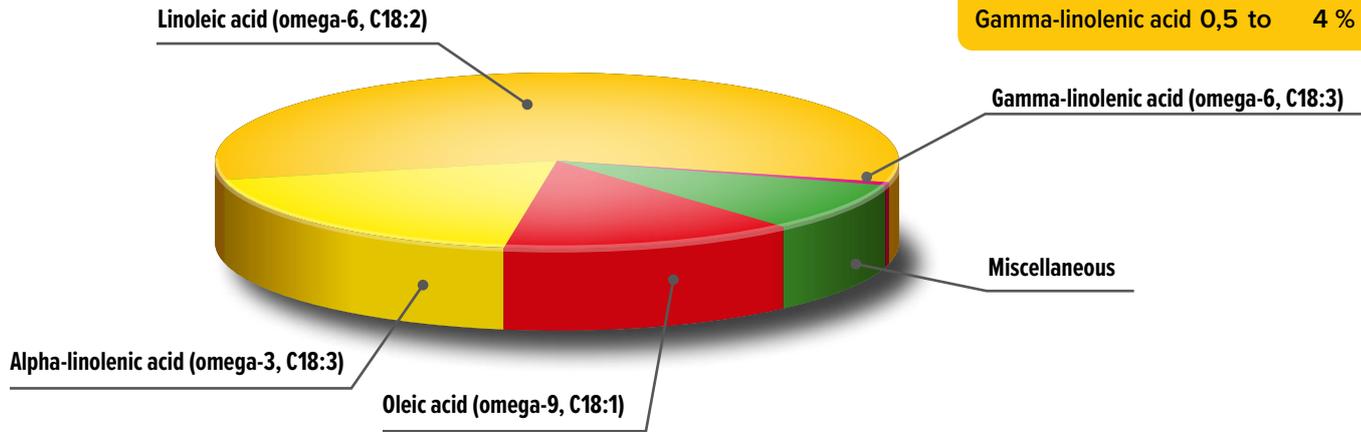
We are always looking for partners for our **crop growing contracts!** If you're interested, please send an e-mail to [arne.schwoge@lamotte-oils.de](mailto:arne.schwoge@lamotte-oils.de) or call **+49 421 5239-46333**.

# Ingredients of Hemp Oil

- Over 80 percent polyunsaturated fatty acids
- High concentration of the essential fatty acids **linoleic acid** (omega-6, C18:2) and **alpha-linolenic acid** (omega-3, C18:3) at a ratio of 3 to 1
- One of the few plant oils to contain **gamma-linolenic acid (omega-6, C18:3) in significant quantities**
- Contains **phytosterols**
- Detailed fatty acid composition:

## Fatty acids

Linoleic acid	50 to 65 %
Alpha-linolenic acid	14 to 25 %
Oleic acid	9 to 18 %
Palmitic acid	4 to 8 %
Stearic acid	1 to 4 %
Gamma-linolenic acid	0,5 to 4 %



# Ingredients of Hemp Press Cake, Hemp Flour and Hemp Protein

- **Five to ten percent residual oil** with the fatty acid ratio typical of hemp oil
- **High content of proteins and fibres**
- **Ideal fatty acid pattern** with essential omega-3 and omega-6 fatty acids
- **Complete amino acid profile with 20 amino acids** – including all nine essential amino acids that the human body cannot produce itself
- **Edestin content of around 65 percent** in hemp protein. As a bioactive globulin protein, edestin is easy to digest, making it well-suited for human consumption.
- **Minerals and trace elements** such as zinc, iron and magnesium
- High content of several **B vitamins and folate**

## Nutritional information<sup>1</sup> for press cakes per 100 grams

	unshelled seeds	shelled seeds
<b>Protein<sup>2</sup></b>	<b>30,7</b>	<b>63,4</b>
Energy	1290 kJ	1406 kJ
	311 kcal	334 kcal
Fat	7,9	5,8
<i>Saturated fatty acids</i>	1,1	0,8
<i>Monounsaturated fatty acids</i>	1,2	0,6
<i>Polyunsaturated fatty acids</i>	5,6	4,4
Carbohydrates	7,4	3,1
<i>Sugar</i>	2,7	3,2
Sodium	<0,025	0,03
Moisture	3,6	7,9
Ash	6,7	12,2
Fibre	43,7	7,7

Vitamin content <sup>2</sup> in 100 g of seeds	
Vitamin C	0,5 mg
Vitamin B <sub>1</sub>	1,275 mg
Vitamin B <sub>2</sub>	0,285 mg
Vitamin B <sub>3</sub>	9,2 mg
Vitamin B <sub>6</sub>	0,6 mg
Folate	0,110 mg
Vitamin E	0,8 mg

Mineral content <sup>2</sup> in 100 g of seeds	
Sodium	5 mg
Potassium	1200 mg
Magnesium	700 mg
Calcium	70 mg
Iron	7,95 mg
Phosphorus	1650 mg
Zinc	9,90 mg
Copper	1,6 mg
Manganese	7,6 mg

## Amino acids per 100 g of seeds

Alanine	1528 mg
Arginine	4550 mg
Aspartic acid	3662 mg
Cysteine	672 mg
Glutamine	6269 mg
Glycine	1611 mg
Histidine*	969 mg
Isoleucine*	1286 mg
Leucine*	2163 mg
Lysine*	1276 mg
Methionine*	933 mg
Phenylalanine*	1447 mg
Proline	1597 mg
Serine	1713 mg
Threonine*	1269 mg
Tryptophan*	369 mg
Tyrosine	1263 mg
Valine*	1777 mg

\*Essential amino acids

The amino acid index is 79 without considering digestibility.

<sup>1</sup>Testing of hemp press cake conducted by an accredited testing laboratory (2017).

Note: recommended daily intake for adults is 0.8 g of protein per kg of bodyweight (WHO).

<sup>2</sup>United States Department of Agriculture (USDA),  
National Nutrient Database for Standard Reference (2017)

# Hemp in foods



## Hemp Oil

### Properties

- Vegan, purely vegetable
- Valuable cooking oil with a nutritionally beneficial ratio of essential omega-6 to omega-3 fatty acids

### Areas of application

- Cold-pressed, Hemp Oil enriches **cold cuisine** with its seedy to nutty flavor – **as salad oil, or for dressings, sauces, marinades and spreads for example**. Hemp Oil gives **protein shakes and smoothies** a full-bodied flavor.
- Carefully refined Hemp Oil is an **odorless and tasteless ingredient** – in **convenience products**, for example – with the beneficial fatty acid ratio typical of Hemp Oil.

## Your contact persons

### Food industry – Europe

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# ***Hemp Press Cake, Hemp Flour and Hemp Protein***

## **Properties**

- Vegan, purely vegetable
- Seedy to nutty flavor
- High biological value due to the favorable amino acid profile ([see page 7](#))
- Highly compatible and easily digestible thanks to the special form of the hemp protein ([see page 7](#))
- The gentle cold pressing of hemp seeds produces oil and press cake ([see page 18](#)). Our hemp flour is obtained through finely grinding press cakes.
- From protein concentrations of 40 percent and up in relation to the dry mass<sup>1</sup>, hemp flour and press cake are sometimes referred to as **hemp protein**. Hemp flour is also referred to as **hemp protein powder**.
- For hemp flour, **protein concentrations of 30, 50, 70 and 80 percent** are possible.

## **Areas of application**

- Fibre-rich ingredient **for cereals and porridge, all types of baked goods, as well as muesli and power bars**
- Thanks to the high protein content **a possible protein supplement for athletes**, for example in smoothies, juices or hemp milk
- **As a low carb supplement in biscuits, cake or breads:** can replace up to around ten percent of the quantity of flour

<sup>1</sup>Guideline from the *Codex Alimentarius* for plant proteins

# Hemp in cosmetics



## *Hemp Oil*

### Properties

- Vegan, purely vegetable
- Medium spread

### Effects

The effects of hemp oil stem from its ingredients ([see page 6](#)) and properties (see above).

- Alpha-linolenic acid (ALA, omega-3, C18:3) and gamma-linolenic acid (GLA, omega-6, C18:3) provide an **anti-inflammatory effect**.
- GLA is considered **itch-relieving**. This is attributed to the fact that it is an important part of the skin and a precursor for synthesizing the hormone prostaglandin E1 with anti-inflammatory and itch-relieving properties.
- **Skin and cell regeneration** due to ALA
- **Moisturizing:**
  - ALA fluidizes the membranes of the skin cells.
  - The body cannot produce linoleic acid (omega-6, C18:2) itself, but needs it for synthesizing ceramide. Ceramides are important parts of the stratum corneum, which reduces Transepidermal Water Loss (TEWL).
  - As essential components of the skin barrier layer, phytosterols also reduce TEWL.

## Areas of application

- Natural **moisturizer** in various cosmetic products
- Care for dry, rough, flaky and stressed skin, in **creams and soaps** for example
- Well-suited for supporting in the **care of psoriasis, acne, eczema and dandruff**
- In **best aging** products for face and body
- For **stressed skin** on hands and feet
- Popular with dry hair and sensitive scalps, for example in **shampoos, conditioners** and **hair oils**
- Phytosterols can replace animal cholesterol in formulations.
- Develops well in combination with oleic acid-rich oils like Avocado Oil or Argan Oil

## Cosmetics applications

Skincare: face, body, feet	✓
Hair care	✓
Decorative cosmetics	✓

## Suitability for skin types

Oily skin, prone to impurities	✓
Mature skin	✓
Dry skin	✓

# Hemp in cosmetics



## ***Hemp press cake, hemp flour and hemp protein***

### **Properties**

- **Vegan, purely plant-based alternative** to environmentally harmful plastic beads
- Milling grades between 100 or 500  $\mu\text{m}$  possible with hemp flour

### **Effects**

- Gentle **peeling effect**
- Careful removal of skin flakes and impurities

### **Areas of application**

- Can be used in **peelings and face masks**, similar to the more widely known almond flour under the name almond meal or almond peeling

## **Your contact persons**

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# Hemp in the pharmaceutical sector



## *Hemp Oil*

### Properties

- Vegan, purely vegetable

### Areas of application

- **Supports with high cholesterol values, arteriosclerosis and skin dysfunctions** – suitable thanks to its high content of linoleic acid (omega-6, C18:2), alpha-linolenic acid (omega-3, C18:3) and gamma-linolenic acid (omega-6, C18:3).
- **Capsules for food supplementation** as a common form of administration

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# Hemp in animal nutrition and care



## ***Hemp Oil***

### **Properties**

- Vegan, purely vegetable

### **Areas of application**

- In **food for dogs, cats and horses** based on the beneficial fatty acid composition (for details on ingredients, [see page 6](#))
- Can be used as a **single feed** or in **complete and supplementary feeds**
- In animal care products, for example
  - in **hoof oils** for horses
  - in **balms for dry noses and paws** for dogs and cats
- *For partly transferable information about effects and applications in cosmetics for humans, [see page 11](#)*

## *Hemp Press Cake, Hemp Flour and Hemp Protein*

### Properties

- **Vegan, purely vegetable**
- **High biological value** thanks to the favorable amino acid profile ([see page 7](#))
- The gentle cold pressing of hemp seeds produces oil and press cake ([see page 18](#)). Our hemp flour is produced by finely grinding hemp press cake.
- With regard to human food: From protein concentrations of 40 percent and up in relation to the dry mass <sup>1</sup>, hemp flour and press cakes are sometimes referred to as **hemp protein**. Hemp flour is also referred to as **hemp protein powder**.
- For hemp flour: **protein concentrations of 30, 50, 70 and 80 percent** available

### Areas of application

- In **food for dogs, cats and horses** because of the beneficial fatty acid composition, the amino acid profile and the minerals it contains (for details on ingredients, [see page 7](#))
- Can be used as a **single feed** or in **complete and supplementary feeds** (pressed into sticks for dogs or pellets for horses)
- Hemp flour is used by **anglers** for baiting fish.

<sup>1</sup> Guideline from the *Codex Alimentarius* for plant proteins

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# Hemp in chemistry and technology



## ***Hemp Oil***

### **Properties**

- **Drying** due to the high concentration of unsaturated fatty acids: iodine value 150-170
- **High level of gliding capacity**

### **Areas of application**

- Use in **paints, varnishes and printing inks**
- Raw material for **cleaning agents**

## **Your contact persons**

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# The hemp plant

## Cultivation and distribution

- **The annual hemp plant** (*Cannabis sativa*) was an important crop in many parts of the world for centuries.
- Today, the main cultivation areas are Europe, Asia and America. In Germany in 2020, **around 70 types of hemp are approved for growing under strict conditions**. They have an extremely low THC content (THC = tetrahydrocannabinol) and are therefore not intoxicating.
- Hemp is **very well suited for organic cultivation**. It has considerable sustainability advantages on the field:
  - It grows more quickly than (almost) any weed; diseases and pests are an extremely rare problem. The fact that hemp **does not require any pesticides or herbicides** saves farmers money and protects the environment.
  - Hemp is considered to be a **very good preceding crop** as it suppresses weeds and **loosens the ground** with its deep-reaching and extensive roots.
  - Hemp promotes biodiversity as it is a valuable **source of pollen** for insects.

## Hemp product extraction

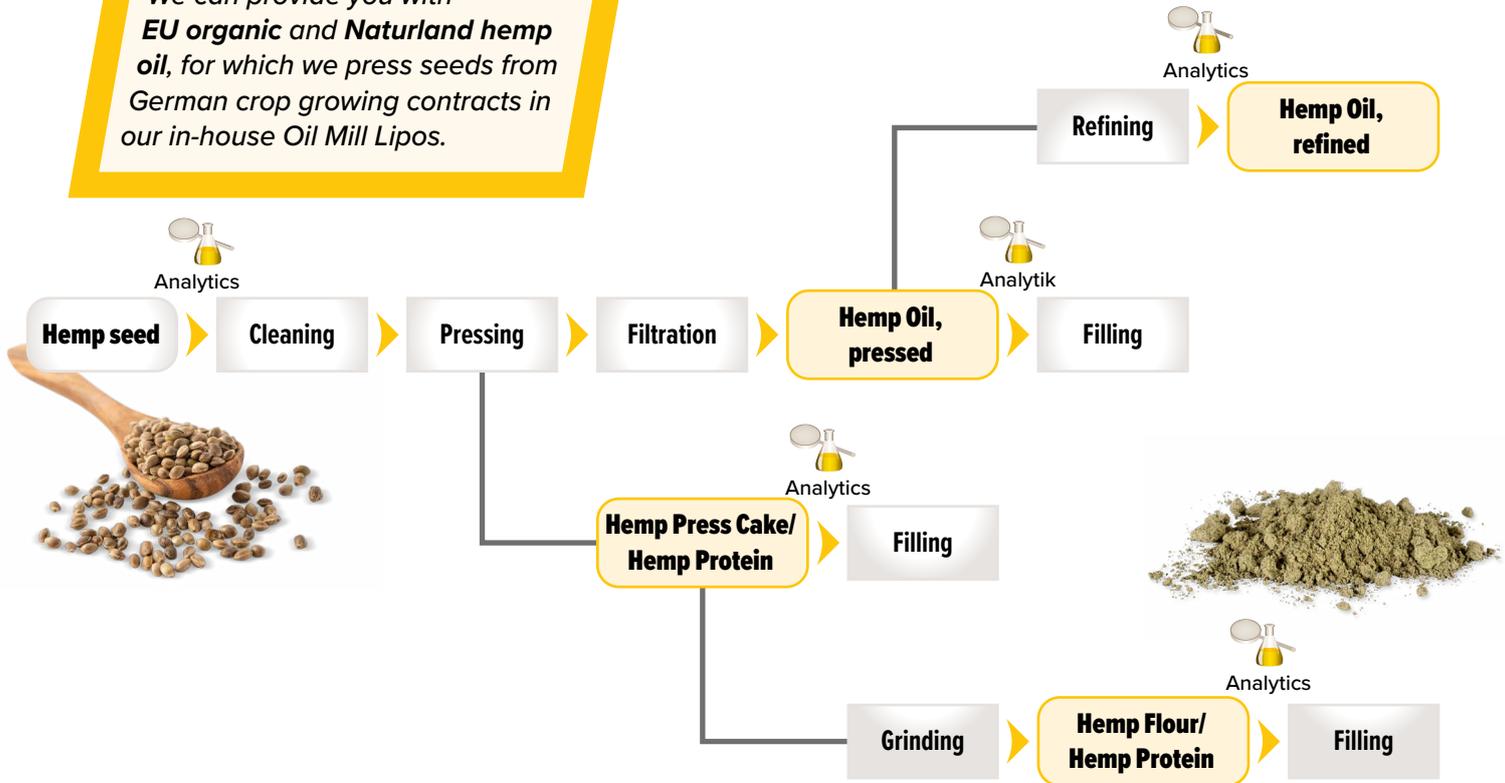
- In Germany, soil preparation and sowing take place between **March and May**. Oilseed forms in August and harvested in **September to October**.
- Most types of hemp are dioecious, which means there are male and female plants. Only the female plants form seeds with an **oil content of around 35 percent**.
- It is possible **to use the entire plant** – all parts are versatile ([see page 4](#)).



*Hemp that we press in our Oil Mill Lipos is grown in hemp fields in Hambergen in neighbouring Lower Saxony.*

# Manufacturing our hemp products

We can provide you with **EU organic and Naturland hemp oil**, for which we press seeds from German crop growing contracts in our in-house Oil Mill Lipos.



# Our Hemp Product Portfolio



		Hemp Oil					Hemp Press Cake, Hemp Protein*			Hemp Flour, Hemp Protein*						
		Hemp Oil, pressed	Hemp Oil, pressed, organic	Hemp Oil, pressed, Feed Grade	Hemp Oil, pressed, Naturland	Hemp Oil, refined	Hemp Press Cake	Hemp Press Cake, organic	Hemp Press Cake, Naturland	Hemp Flour, partially deoiled, 30	Hemp Flour, partially deoiled, 30, organic	Hemp Flour, partially deoiled, 30, FUMt	Hemp Flour, partially deoiled, 50	Hemp Flour, partially deoiled, 50, organic	Hemp Flour, partially deoiled, 70, organic	Hemp Flour, partially deoiled, 80, organic
Pro-cess-ing	Master item number	68920	65920	68918	65924	69400	92902	92937	92967	92945	92948	92951	92977	92980	92984	92990
	Cold pressed	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Fully refined					✓										✓
Certification and conformity	EU organic		✓		✓			✓	✓		✓			✓	✓	✓
	Cosmos	✓	✓	✓	✓											
	Halal	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓		
	Kosher	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓		
	Vegan conformity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	QS for straight feeding stuff (GMP+-recognized)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Origin	Seeds from German cultivation available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Pressed in Bremen available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Container	Canister	✓	✓	✓	✓	✓										
	Barrels	✓	✓	✓	✓	✓										
	IBC	✓	✓	✓	✓	✓										
	Plastic bags						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Bigbags						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Application	Foods	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
	Cosmetics	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓		
	Pharmaceuticals	✓	✓		✓	✓										
	Animal nutrition and care	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Chemistry and technology	✓	✓	✓	✓	✓										

\* According to the Codex Alimentarius, hemp flour and hemp press cake with a protein content of 40 percent or more in relation to the dry matter can be designated as hemp protein. For corresponding hemp flour qualities, hemp protein powder is a common term.



## Our Oil Mill Lipos

Focus on quality right from the very beginning: In 2002, we realized the idea of our own oil mill which we had nurtured for years. In our Oil Mill Lipos, we produce virgin oils, press cakes and flours. This vertical development of our value chain enables qualitative improvements as well as greater transparency and traceability.



**8,000**

*tonnes of pressed raw material*



**90 %**

*organic raw material*

### With the Oil Mill Lipos, we stand for

- direct contact with farmers and thus **direct exchange on quality**, increasing **contract farming** and **initiating the cultivation of special cultures** like poppy or hemp
- **On-site audits** of our suppliers and farmers
- **Gentle processing:** purely mechanical Lipos® cold press and cooling process and two-stage High Purity Filtration



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- **High, consistent quality** thanks to close-meshed in-process control and final approval through our independent quality assurance
- **Certified transparency and quality** by independent third parties, including the IFS Food certification with the result “higher level”.

## ***Our certifications***



Filled with  
**passion**  
since 1925

## Henry Lamotte Oils

Marigold blossoms, shea nuts, linseeds, sunflower seeds: As a leading supplier and producer, we at Henry Lamotte Oils gain from nature's plenty **oils, vegetable butter, wax, seed flours and oleoresins**.

Our customers are located all over the world and originate from the sectors **foods, cosmetics, pharmaceuticals, animal nutrition and care** as well as **chemistry and technology**. We offer several hundred products from **over 90 raw materials** – often created on-site in Bremen, be that in our own production facilities or **in our Oil Mill Lipos**. Around 90 percent of the products we produce there are certified organic oils, press cakes and flours.

At our company headquarters in Bremen, we have a **very well-equipped in-house laboratory** and a department for quality assurance and product development. Our diverse range of products are filled for end users and for industrial purposes on **seven filling plants**. Our **tank farm** capacity exceeds 1,000 metric tonnes.



**45,000**

*t annual sales*



**122**

*million € turn over*



**48**

*countries of origin*



**188**

*employees*

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As a **Hanseatic family-owned company**, we are proud and committed to implement quality, environmental protection and social principles in our value chains. To do so, we rely on close, **partner-like and, where possible, personal dialogue with suppliers, as well as on audits and third-party certification**. Among other things, we have been a member of **amfori BSCI** (Business Social Compliance Initiative) since 2012. Our [Code of Conduct](#) describes how we strive to implement sustainability in our value chains.

Our **customized solutions** are based on our **wide range of products**. Choose from our comprehensive portfolio of possible services: from reliable delivery of your product thanks to our professional supply chain management through to joint product development!



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**Filled with  
passion**  
since 1925



08.2021

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