EIHA European Industrial Hemp Association

European Industrial Hemp

Pulp & Paper, Insulation, Biocomposites & Construction, Food & Feed and Pharmaceuticals

The perfect green material – good for the environment

Pictures: Hempro Int. (DE), Hemp Technology (UK) and nova (DE)

Hemp Seeds

- are a nutritional powerhouse
- excellent and unique fatty acid spectrum
- high protein quality

Hemp Fibre

- good mechanical properties
- the perfect reinforcement for your (bio-based) plastics
- good availability at low cost
- no competition with food production

Picture: Hemp Technology (UK)

The European Industrial Hemp Association (EIHA)

More information? Please visit our webpage: www.eiha.org

Fibres

Picture: NPSP (NL)

High carbon capture by Hemp fibre insulation fleece. Picture: Hock (DE)

Applications for Hemp Fibres

Hemp fibres have some of the best mechanical properties of all natural fibres. They are mainly used for speciality pulp & paper, insulation material and for bio-composites in automotive applications.

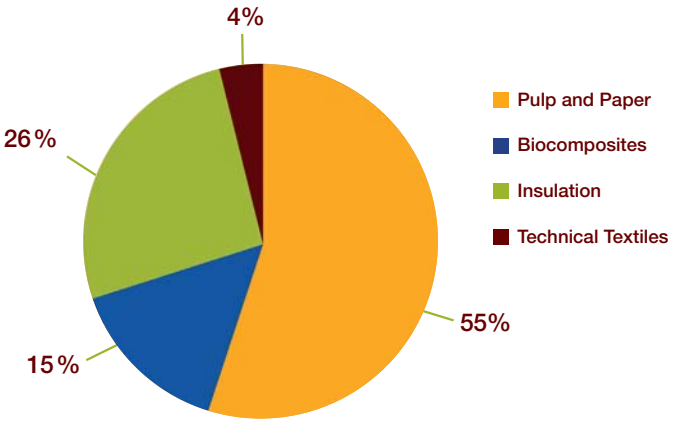
Before the rediscovery of industrial Hemp in Europe in the 1990s, Hemp fibres were mainly (› 95%) used for speciality pulp & paper. Nevertheless in 2014, Hemp pulp & paper with a share of 55% is still the most important market for European Hemp Fibres, supplied mainly by French producers.

Insulation material is the second most important application for Hemp fibres today. Insulation material accounts for 26% of the applications or if you take out pulp & paper nearly 60%. Together with other non-woven applications like mulch fleeces which are used in gardens and agriculture. Cress growing fleeces in some European countries are the dominant medium used for cress cultivation. And other non-wovens such as mats for farrowing pigs, the share of this applications group is 30%.

Biocomposites account for 15% of the applications, without pulp & paper 33%. The only really established biocomposite market is press (or compression) moulding in automotive interior applications with a share of 96% of all biocomposites. This corresponds to more than 3,700 tonnes of Hemp fibre or about 7,500 tonnes of biocomposites (natural fibre content varies between 30 and 70%).

Automotive biocomposites for interior applications are still a growing market and are used for door panels/inserts, trunkliners, spare wheel covers, parcel trays, headliners, A-B-C columns and much more.

Applications for European Hemp Fibre from harvest 2010, in total 26,000 metric tonnes (EIHA 2012)



Cases, natural fibre and polypropylen, compress moulding (Germany).

Pictures: Hempro, Winter & Linotech

Urn, Hemp fibre and bioplastics, compress moulding or injection moulding (Germany).

Picture: nova

Hemp fibre pellets for granule production.

Hemp fibre PP-granulates. Pictures: nova (DE)

Cress mat – Hemp fibre fleece (UK/Germany). Pictures: Hemp Technology (UK)

Hemp is good for agriculture, the environment and enhances regional development

Environment

Hemp fibre

Hemp fibre non-woven

Natural fibre door panel, compress moulding.

Pictures: nova

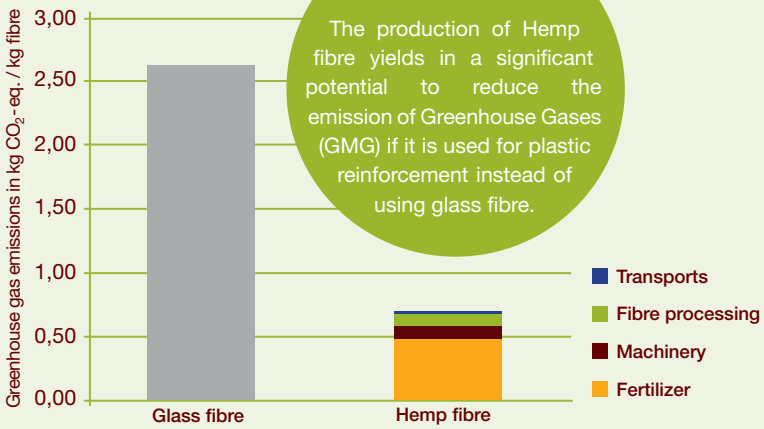
The environmental friendly cultivation of the Hemp crop *(Cannabis sativa L.)* is a key driver for economic success and the future expansion of sustainable Hemp products:

- Due to its vigorous growth and disease resistance, Hemp can be grown without the use of any agrochemicals, this is rare in agriculture today.
- In times of increasing monocultures, Hemp is an enrichment for agro-biodiversity, a true rotational crop.

The processing of Hemp into its main products and by-products such as fibres and shivs requires no chemical additives and no water. Where Hemp is used in applications it has brought considerable ecological benefits.

Global warming

The production of Hemp fibre yields in a significant potential to reduce the emission of Greenhouse Gases (GMG) if it is used for plastic reinforcement instead of using glass fibre.



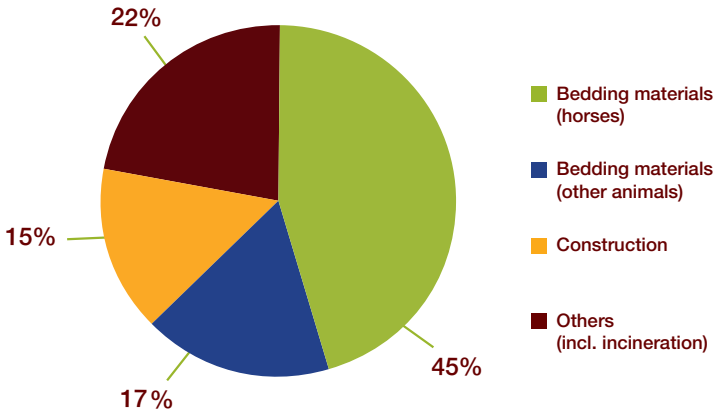
Shivs

Picture: Hemp Technology (UK)

Applications for Hemp Shivs

High performance bedding material for horses and other animals like chickens is today the most important market for Hemp shivs. Hemp shivs can absorb moisture up to 4 times their dry weight. They are effective for much longer in the stable or poultry house compared to other materials thus saving working time. After use Hemp bedding rots down quickly into an excellent compost.
Of the total Hemp shiv applications equine bedding has a market share of 45% and other bedding 17%.
An interesting new and increasing market is using Hemp shivs in combination with lime for construction. Here the market share for shivs is currently 15%. Over the last few years hundreds of private houses have been built in France, the UK and Ireland with this new material, which can be sprayed into a timber frame construction. The material is easy to handle, price competitive, shows good insulation properties for a construction material and it appears to be crack proof, a good attribute for earthquake risk areas. Eco-construction experts especially are seeing great potential in Hemp-Lime-Construction.
Small amounts also go to the particle board industry. Hemp shivs can been used to produce light weight particle boards (half the density).

Applications for European Hemp shivs from harvest 2010, in total 44,000 metric tonnes (EIHA 2012) in total 26,000 metric tonnes (EIHA 2012)



Pharmaceutical applications

THC, the well known cannabinoid responsible for the psychotropic as well as several pharmaceutical effects, exists only in very low concentrations in industrial Hemp (< 0.2%). In recent years, interest has been increasing in the therapeutic potential of another cannabinoids, which do not have any psychoactive effects. Even high doses do not cause any relevant side-effects. Cannabidiol (CBD) is the primary cannabinoid of industrial Hemp, present in concentrations in the range of 0.5 to 2% in the upper third of the plant. There is potential for therapeutic use in a large number of diseases and symptoms. These include anxiety disorders such as post-traumatic stress disorder, psychosis, epilepsy, dystonia, diabetes, cancer, inflammatory diseases and Alzheimer's. In addition it may have an effect on skin diseases, hepatitis, obesity as well as ADHD (attention deficit/hyperactivity disorder). CBD can be utilized parallel to Hemp fibres and shivs, giving an extra income.

Processors

Hemp processors in the European Union

In Europe you can buy Hemp fibre directly from the processor. The following Hemp fibre producers are members of EIHA and together they can guarantee high quality standards and a secure continuity of supply. The seven listed Hemp processors produce on average each year between 10 and 15,000 tonnes of technical Hemp fibre. This is mainly used in natural fibre reinforced plastics and insulation materials. As Hemp is an annual crop this quantity can be easily and quickly increased according to demand.

Hemp fibre, shivs and seed producers:

Assocanapa srl

Supplier of food, clothing, cosmetics, fibre & shivs

Address Via Morello 2/A
10022 Carmagnola (Italy)
Contact Giraudo Felice
Phone +39 (0) 11 9715898
E-mail assocanapasrl@gmail.com
Internet www.assocanapasrl.it

CAVAC BIOMATERIAUX

Supplier of fibres & shivs

Address 12, Boulevard Réaumur BP 27
85001 LA ROCHE-SUR-YON CEDEX
Contact Olivier Joreau
Phone +33 (2) 51 36 51 54
E-mail o.joreau@cavac.fr
Internet www.cavac.fr

Dun Agro B.V.

Supplier of fibres & shivs

Address Raadhuisweg 11
9665 JE Oude Pekela (The Netherlands)
Contact Albert Dun
Phone +31 (0) 597 675 592
E-mail info@dunagro.nl
Internet www.dunagro.nl

HempFlax B.V.

Supplier of fibres & shivs

Address Postbus 142
9665 ZJ Oude Pekela (The Netherlands)
Contact Mark Reinders
Phone +31 (0) 597 615 516
E-mail info@hempflax.com
Internet www.hempflax.com

Hempro Int. GmbH & Co. KG

Supplier of food & clothing & cosmetics

Address Muensterstr. 336
40470 Duesseldorf (Germany)
Contact Daniel Kruse
Phone +49 (0) 211 699 90 56-10
E-mail d.kruse@hempro.com
Internet www.hempro.com

Interchanvre

Association of french Hemp processors

Address 20 Rue Paul Ligneul
72000 Le Mans (France)
Contact Sylvestre Bertucelli
Phone +33 (0) 243 51 15 05
E-mail sylvestre.bertucelli@interchanvre.org
Internet www.interchanvre.com

Planète Chanvre

Supplier of fibres & shivs

Address Bellevue RD402
77120 AULNOY (France)
Contact Philippe Heusele
Phone +33 (0) 96 69 47 726
E-mail heusele.philippe@9business.fr
Internet www.planetechanvre.com

Daughter Company of Planète Chanvre:

BAFA neu GmbH

Supplier of fibres & shivs & hempcrete solutions seeds & planting seeds & oil & CBD

Address Stephanstr. 2, 76316 Malsch (Germany)
Contact Bernd Frank
Phone + 49 (0) 7246 92 57 50
E-mail info@bafa-gmbh.de
Internet www.bafa-gmbh.de

Seeds & Oil

Hemp seeds

Hemp Seed is a nutritional powerhouse

"Hemp seed is a nutritional powerhouse.", says German-American scientist Dr. Gero Leson.
"It is an excellent source of several critical mineral nutrients and vitamins. Its oil has an outstanding fatty acid spectrum; its protein is balanced and easily digested. Moreover well prepared Hemp foods are very appetising. I am convinced that Hemp seeds have a great food potential. Their nutritional composition and culinary versatility are very much in line with several major trends in the science and marketing of food".
In his comprehensive 1993 book on fat nutrition "Fats that heal, fats that kill", Dr. Udo Erasmus concluded "the best-balanced source of essential fatty acids is Hemp seed oil".

Hemp bars

Hemp oil

Hemp flour and hulled seeds & Hemp protein powder

Hulled seeds, protein, muesli, flour, whole seeds

Pictures: Assocanapa (IT), CANAH (RO), Hempro Int. (DE) and Wholebake

Hemp muesli

Hemp oil

Pictures: Hempro Int. (DE)

Hemp Seeds and Hemp Oil as Food

Hemp Oil – excellent and unique fatty acid spectrum

Today's Hemp oil is typically a cold-pressed gourmet oil from mature well-dried seeds. Its most unique nutritional feature is the "almost perfect" balance of the omega-3 and omega-6 essential fatty acids plus the presence of two "higher" omega-3 and -6 fatty acids, stearidonic acid (SDA) and gamma linoleic acid (GLA). These offer known health benefits and are found in only a few other vegetable oils – yet nowhere as balanced and tasty as in Hemp oil.

A gross imbalance in the omega-3/6 ratio in the Western diet is now considered an important contributor to the high occurrence of inflammatory, cardiovascular, skin and even mental disorders. As a balanced source of these fatty acids, Hemp oil and seeds can help reduce their occurrence, in good taste.

Hemp Protein – high quality

Hemp seeds and seed cake flour contain a high quality protein. It is easily digestible, and contains all essential amino acids in a balanced ratio that satisfies the protein needs of adults. Commercially available protein flour and powders are high in protein and dietary fibre. They are used in shakes and smoothies, as well as for baking.

Minerals, Vitamins and other Micronutrients

Hemps seeds, nuts and flour also offer a bonanza of micronutrients that are often lacking in our diet. These Hemp seed materials are good or even excellent sources of magnesium, manganese, iron, zinc and potassium – and of several B1, B3 and B5 vitamins. Hemp seeds also contain significant amounts of phytosterols and of tocopherols, i.e. members of the Vitamin E complex. Overall, the nutritional richness and culinary versatility of Hemp seeds and their products make them an excellent basis for a healthy diet and a range of food products.

Typical Nutritional Composition of Shelled Hemp Seeds (per 100 gram)	
Energy content:	580 kcal (2,430 kJ)
Fat:	45 g
Protein:	35 g
Total Carbohydrate:	8 g (Fibre: 6 g)
Ash:	6 g
Selected Minerals and Vitamins (in percent of daily value, DV):	
Phosphorus:	130 %
Magnesium:	150 %
Manganese:	450 %
Iron:	90 %
Zinc:	60 %
Vit B1 (thiamine):	90 %
Vit B3 (niacine):	30 %
Vit B5 (panthotenic acid):	90 %
Vit E (tocopherol):	20 %

Fatty acid composition of Hemp Oil (Varies with hemp variety)	
Unsaturated fatty acids:	**~ 90 %**
Oleic acid (18:1 omega-9):	10 – 15 %
Linoleic acid (18:2 omega-6, essential):	55 – 60 %
Alpha-linolenic acid (18:3 omega-3, essential):	17 – 20 %
Gamma-linolenic acid (18:3 omega-6):	2 – 4 %
Stearidonic acid (18:4 omega-3):	0.5 – 2 %
Saturated fatty acids	**~10%**

European Industrial Hemp Association

EIHA was originally founded as an association of the members of the European Hemp Industry. Regular members include primary Hemp processors in the EU. Associate members may be associations, research organisations, companies and individuals working in the area of Hemp and other natural fibres. Founded in 2005, EIHA today has 10 regular and more than 72 associate members from 25 countries.
John Hobson is the President of EIHA and Michael Carus the Managing Director.

Join EIHA and support the Hemp Industry

EIHA was founded to give industry a voice at the European Commission in Brussels. It has rapidly become a respected industry association that provides effective lobbying and serves as an information bank. The annual EIHA conference (more information at **www.eiha-conference.org**) has become an important event in the industry and an attractive opportunity for members and visitors to meet, learn about developments and exchange views with their colleagues.

More information at www.eiha.org

Board Member (B) and Executive Office (E)

EIHA European Industrial Hemp Association

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Olivier Joreau (B)
CAVAC (FR)

Michael Carus (E)
nova-Institute (DE)

Daniel Kruse (B)
Hempro Int. (DE)

Modern Industry with high social standards.
European Hemp Fibres are available now for your bio-based products!!

Many more companies are involved in the Hemp industry like non-woven, compounding and equipment businesses. Please look for a full list of EIHA-members at: **www.eiha.org**

Responsible for this leaflet:
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