350 participants from 44 countries are expected – don’t miss the oldest and largest industrial hemp event in 2019 worldwide!

TOPICS OF THE CONFERENCE

- Visions and Global Hemp Industry
- CBD as Food Supplement and Pharmaceutical
- Hemp Seeds, Oil and Protein for Food and Feed
- Fibres & Shives for Construction, Biocomposites, Paper
- Country Reports, Agriculture & Processing
- Innovation Award “Hemp Product of the Year 2019”
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REALTIME COMMENTS

Join at sli.do
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MATCH MAKING

Every registered participant has received a link to the match making landing page to activate the match-making tool. After you have been logged in successfully you can directly arrange meetings with other participants of your choice.

• Meet decision makers of the Industry – 1-on-1
• Find new networking and business opportunities
• Arrange meeting place & time with ease
• Manage all your meetings in one simple user-friendly environment
• Get email alerts for meeting requests

You are not yet registered or you have questions about the match making tool? Svenja Geerken will help you:

Svenja Geerken
svenja.geerken@nova-institut.de

YOUR CONFERENCE TEAM

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vanessa.kleinpeter@nova-institut.de
Dear hemp experts,

We look forward to welcome you to our conference. The nova-Institute's hemp conferences can look back on a long history. After I was personally significantly involved in the legalization and reintroduction of the industrial hemp in Germany since 1994, we decided at the nova-Institute to organize the first international conference “BIORESOURCE HEMP” in Frankfurt in 1995. Five years later 300 people interested in hemp came to the conference “BIORESOURCE HEMP” in Wolfsburg in 2000. Six times we organized the conference “N-FibreBase”, which focused on hemp and other natural fibres in biocomposites. In 2008, the last year of the “N-Fibre Base” in Essen, 200 participants came from the composite materials industry.

In 2003, in close cooperation with the newly founded “European Industrial Hemp Association (EIHA)”, the first “International Conference of European Industrial Hemp Association” with only 30 participants took place in a small hotel in Hürth. By 2018, the conference had grown to 330 participants from 45 countries and is now taking place in the heart of Cologne, Germany’s fourth-largest city. Over the years, the conference has developed into the world’s largest conference on industrial hemp and is the worldwide meeting place for the flourishing hemp industry.

In 2019, we redesigned the conference in terms of name (EIHA Hemp Conference) and design in order to freshen it up and set a new attendance record. For the first time there will be parallel sessions, numerous panel discussions and a special focus on CBD, which is currently stuck between great future prospects and Novel Food hurdles in Europe. With us, you will not only learn about the current status, but also learn and discuss current strategies.

We offer a range of professional tools and facilities to help you meet and develop your business contacts. Besides new business contacts and the deepening of existing as well as many new insights, the fun shouldn’t come too short. Beer reception, gala buffet, hemp product award, local Jazz band, hemp slide show and German bowling and various meeting places guarantee a lot of fun, as you would expect from a good hemp conference.

Good times

Michael Carus (CEO), Dominik Vogt and his conference team nova-Institute

P.S.: We are pleased to be able to support the association with this conference: For every standard two-day booking nova supports EIHA with 100 €.
The fee of a booth (6 m²) is 650 EUR (excl. 19% VAT). We provide you a table, table cloths, a pin board, a chair and a power connection. You are welcome to use your own booth system. After booking your booth please submit Mr. Dominik Vogt dominik.vogt@nova-institut.de a printable logo and a company profile.
European Industrial Hemp Association (EIHA)  

EIHA is the industry association of the European hemp industry. Members are companies, which perform the processing or trading of hemp straw to fibres and shives or hemp raw material like fibres, shives, seeds or flowers. EIHA was founded as an association of the members of the European Hemp Industry. Founded in 2005, EIHA today has 30 regular and more than 160 associate members from 35 countries. Further information here: www.eiha.org

<table>
<thead>
<tr>
<th>1st Day, 5 June 2019</th>
<th>2nd Day, 6 June 2019</th>
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<tbody>
<tr>
<td>460 €</td>
<td>410 €</td>
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<td>590 €</td>
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Conference incl. Catering plus 19 % VAT

www.eiha-conference.org

The conference will take place in the Maternussaal of the Maternushaus in Cologne (Germany).

Maternushaus  
Kardinal-Frings-Str. 1–3 | 50668 Köln (Cologne) | Germany

Phone: +49 (0)221 1631-0 | Keyword: nova
frontoffice@maternushaus.de | www.maternushaus.de

www.eiha-conference.org
nova-Institute is a private and independent research institute, founded in 1994; nova offers research and consultancy with a focus on bio-based and CO₂-based economy in the fields of food and feedstock, techno-economic evaluation, markets, sustainability, dissemination, B2B communication and policy. Every year, nova organises several large conferences on these topics; nova-Institute has more than 30 employees and an annual turnover of 3 million €.

**ORGANISER**
nova-Institute

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Phone +49 (0)2233 4814 40
Fax +49 (0)2233 4814 50
Email contact@nova-institut.de
www.nova-institut.eu
WORKSHOPS
04 JUNE 2019, ONE DAY IN PRIOR TO THE CONFERENCE

THC/CBD-Workshops, Room Adelheid, 15:00 – 17:30
Limited to Regular Members of the EIHA only (How to become a regular member? Just click here: http://eiha.org/membership-application)

15:00  Bernhard Beitzke, Daniel Kruse
       THC in Food

15:30  Bernhard Beitzke, Daniel Kruse & Boris Banas
       Hemp Extract – Status in Europe

16:00  Bernhard Beitzke, Daniel Kruse & Boris Banas
       EIHA CBD Novel Food Application Concept

18:30  General Meeting of EIHA (Room: Adelheid), for members only

21:00  Social gathering at the Craftbeer Corner Coeln,
       Martinstr. 32 in the Old City of Cologne (www.craftbeercorner.de)
PROGRAMME OF THE CONFERENCE
1st DAY, 05 JUNE 2019

Visions and Global Hemp Industry

Chairperson
Michael Carus
nova-Institut

10:00 Michael Carus
nova-Institut and member of the EIHA advisory board
Welcome and Introduction to the Conference

10:10 Lorenza Romanese
Managing director of EIHA
Lobbying Actions in Brussels on Hemp Food, CBD and CAP Reform – an Opportunity for the Hemp Sector

10:30 Catherine Wilson
CannaWellness and EIHA board member
The Future of Hemp

10:50 Steve Bevan
GenCanna
Global Hemp Economics

11:10 Paul Benhaim
Elixinol Global
Hemp and Cannabis in a Modern and Changing World

11:30 Kehrt Reyher
HempToday
Powering the Industry with Modern Media Tools

11:50 Discussion with all Speakers of the Session

12:05 Lunch Break
Country Reports

Chairperson
Kehrt Reyher
HempToday

13:35  Mark Reinders
HempFlax and president of EIHA
Update on EIHA and the European Hemp Industry

13:55  Ted Haney
Canadian Hemp Trade Alliance
The Canadian Hemp Industry – A Billion Dollar Blueprint

14:25  Thiprada Poonsawat
Kasetsart University
Hemp in Thailand – Current Status and the Coming of Medical Hemp

14:45  Rohit Sharma
Indian Industrial Hemp Association
Indian Hemp Techno Commercial & Market Update

15:05  Michalis Theodoropoulos
KANNABIO Hemp Cooperative
Cooperativism in the Hemp Industry – Prospects and Challenges

15:25  Discussion with all Speakers of the Session

15:40  Coffee Break
Agriculture & Processing

Chairperson
Michael Dickeduisberg
Chamber of Agriculture for
North Rhine-Westphalianova-Institut

16:10 Mark Reinders
HempFlax and president of EIHA
25 years HempFlax – Making the Dream Come True was Hard Work:
High-value Utilisation of all Parts of the hemp Crop:
Fibres, Shives, Seeds and CBD

16:40 Thierry Masi
Laroche Innovations for Cottonisation of Hemp Fibres

17:00 Michael Carus
nova-Institut and member of the EIHA advisory board
Update on Carbon Footprint and Sustainability of Different Natural Fibres for Biocomposites and Insulation

17:20 Discussion with all Speakers of the Session
Innovation Award “Hemp Product of the Year 2019”
(sponsored by HempFlax)

Chairperson
Michael Carus
nova-Institut

Asta Partanen
nova-Institut

17:30 Corinna Clausen
Academy of Design and Crafts Münster
Light Sculptures Monas

17:40 Oana Suciu
BAFA Neu
Absolute Hemp Protein

17:50 Sven Brülke
hanwerk Feinkostmanufaktur
Hanfling – Hanfling Bombay – Hanfling Chorizo

18:00 Bettina Schütz
Hempster
Raw Vegan Shake

18:10 Barbara Novak
Hemptouch
Hemptouch Balancing Face Cream

18:20 Jeremiah Dutton
Triflon
Triflon BioLite – Trolley Case made of PP Hemp Fibre

18:30 Beer on Tap (sponsored by BAFA)

20:00 Dinner Buffet, Jazz Music & The Hemp Project Collective:
Impressions of Industrial Hemp

21:00 Award Ceremony

21:30 Hemp Slide Show

22:30 Traditional German Bowling
PROGRAMME OF THE CONFERENCE
2nd DAY, 06 JUNE 2019

Hemp Construction, Biocomposites and Paper

Chairperson
Asta Partanen
nova-Institut

09:00 Candice Meskin
Quintessential Tips
Hemp Paper for Business and Beyond

09:20 Steve Allin
International Hemp Building Association
The Broad Range of Hempcrete Applications Worldwide

09:40 Carl Martel
Advanced Hemp Technologies
Building an Integrated Energy Storage from Hemp Materials

10:00 Jeremiah Dutton
Trifilon
Trifilon Biocomposites – Advancing Sustainability & Performance with Hemp Fibres

10:20 Discussion with all Speakers of the Session

10:35 Coffee Break

Hemp Food

Chairperson
Lisa Haag
MJ Universe

11:05 Rafael Dulon
Hanf Farm
Hemp-based Food: A Worldwide Traditionally Known Source of Human Nutrition is Being Rediscovered

11:25 Daniel Kruse
Hemp Factory and EIHA board member
Modern Hemp Food Processing
11:45  Rebecca Wiegärtner  
Food Industry & Retail Professional 🇩🇪  
*Hemp Food Products – Product Features & Market Trends*

12:05  Catherine Wilson  
CannaWellness and EIHA board member 🇬🇧  
*EU History of Hemp Flowers and Leaves Consumed in Food – it is NOT Novel*

12:25  Discussion with all Speakers of the Session

---

### Parallel session: “Agriculture”, Room Adelheid

**Chairperson**  
Stephan Piotrowski  
nova-Institut 🇩🇪

11:05  Zuzana Finta  
Agromag 🇭🇺  
*Hungarian Variety Sortiment and Changing Market Demands*

11:25  Luca De Prato  
Murdoch University 🇬🇧  
*Genetics by Environment Interactions of Temperate and Tropical Industrial Hemp (Cannabis sativa L) Varieties: Phenological and Cannabinoid Responses to Nitrogen, Day Length and Temperature*

11:45  Jan Marek  
INOTEX 🇨🇿  
*BIO-RETTING- A Single Step Enzymatic Post-Treatment Process Boosting the Bast Fibre Resource Efficiency*

12:05  Skirmantas Nikstele  
Agropro 🇨🇿  
*Selling Hemp Business to a Canadian Investor*

12:25  Discussion with all Speakers of the Session

12:40  Lunch Break
CBD and other Cannabinoids

Chairperson
Lorenza Romanese
Managing director of EIHA

14:30 Hana Gabrielová
Hempoint

Kenzi Riboulet-Zemouli
Knowmad Institut
Approaching Hemp and Cannabis Policies Through the Lens of Sustainable Development

14:50 Feihu Liu
Yunnan University
Overview on the Hemp Industry in China and the Chinese Technology for CBD Production

15:10 Laurène Tran
Harmony
Outlook and Insights on CBD Regulation in Spain, France, and the UK

15:30 Valentina Vaguengueim
CANNABIS COMPLIANCE INC.

15:50 Joscha Krauss
MH medical hemp
Medicinal Cannabis in Germany – A Market Evaluation

16:10 Discussion with all Speakers of the Session

16:25 Coffee Break
<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:55</td>
<td>Franjo Grotenhermen</td>
<td>nova-Institut</td>
<td>News and Perspectives on CBD in Medical Practice and Self-treatment</td>
</tr>
<tr>
<td>17:15</td>
<td>Tim Phillips</td>
<td>Tamarind Media/CBD-Intel</td>
<td>CBD Consumer Segmentation: Who is Using CBD in Europe and Why?</td>
</tr>
<tr>
<td>17:35</td>
<td>Rien Havens</td>
<td>Amrit Labs</td>
<td>Industrial Hemp Extraction, Refinement and Post Refinement Demystified</td>
</tr>
<tr>
<td>17:55</td>
<td>Giuseppe Cannazza</td>
<td>Federcanapa</td>
<td>Pitfalls in the Analysis of Cannabinoids</td>
</tr>
<tr>
<td>18:15</td>
<td>Sebastian Kamphorst</td>
<td>Laia's Proteinhanf/Becanex</td>
<td>Next Generation of CBD Extraction – Low Pressure, Low Temperature (LPLT) Extraction, a Newly Developed Mild One Step Extraction</td>
</tr>
<tr>
<td>18:35</td>
<td>Julie Fry</td>
<td>ASTM D37 Committee</td>
<td>An Update on International Consensus Standards for the Cannabis and Hemp Industry</td>
</tr>
</tbody>
</table>

18:55 Discussion with all Speakers of the Session

19:05 Final come together
330 participants from 40 countries and 20 exhibitors at the conference 2018

Attendees of the Conference 2018

- SME & Startup: 8%
- Academia: 8%
- Larger Companies: 2%
- Others: 82%

Our Conference – a Guarantee for Satisfied Customers

- Networking Success: Good / Very Good, 88%
- Venue Satisfaction: Good / Very Good, 92%
- Overall Satisfaction: Good / Very Good, 88%

Networks of nova-Institute

- Page Views
  - Bio-based News: 160,000
  - International Directory for Bio-based Businesses: 50,000

- Contacts
  - Business Networks: 9,500
  - Industry Contacts: 60,000

Mailing list with 17 topics to choose from (subscribe at bio-based.eu/email)

www.eiha-conference.org
Your reliable and competent partner
for Cannabidiol and Cannabinoids
in B2B and B2C
INNOVATION AWARD “HEMP PRODUCT OF THE YEAR 2019”

For the second time, the Innovation Award “Hemp Product of the Year 2019” will be granted to the young, innovative hemp industry for finding suitable applications and markets for industrial hemp-based products. Focus of the award is on new developments within these business areas. The winners will be elected at the “16th EIHA Hemp Conference”, 5–6 June 2019 in Cologne, Germany. Six new materials and products out of 30 applications have been nominated. The award is sponsored by HempFlax.
THE “TOP 6” CANDIDATES IN DETAIL

Light Sculptures Monas
The innovative design light sculptures are made of hemp cellulose. For the production of the handmade paper, they used hemp cellulose (Cannabis sativa – Moraceae) and potato flour. The round and damp handmade paper sheets dry directly on the wire frame where it is attached. As the damp fibres links together in a natural way, usage of glue is not necessary. To improve the stability, certain functional characteristics and for paper finishing, paper pulp are mixed with environmentally friendly wall paper paste. Later the mixture and strips of paper are applied in layers. After the drying process, the wire frame is pressed together and is removed.
www.akademie-gestaltung.de

Absolute Hemp Protein
Innovative hemp protein powder contains over 70% complete protein. It has a nutty taste and white color. It is much creamier and mixable with liquids and it doesn’t contain insoluble fibre fraction. The hemp protein powder is naturally white which ensures great bright colors in shakes when mixed with fresh fruit such as strawberries, raspberries or mango. This product is 100% natural and is also available in a certified organic version. Hemp protein powder is an ideal protein supplement for athletic vegetarians and vegans. It is allergen free and a complete protein.
www.bafa-gmbh.de

Hanfling – Hanfling Bombay – Hanfling Chorizo
The Hanfling is an organic, vegan friendly product in three different tastes. Hanfling Nature – Hanfling Bombay and Hanfling Chorizo. This can be eaten as raw or fried such as grilled or toasted. This product needs to be refrigerated with an expiry date of 6 months. They use hemp seeds as the main ingredients as well as self-made hemp-tofu. The product is available in around 100 organic supermarkets in Germany.
www.hanfwerk.de
Raw Vegan Shake

Raw Vegan Shake is a fresh, yummy, organic hemp drink designed to optimize the nutritional benefit of hemp seeds. It is locally produced and comes in four flavors: Chocolate, Chai Latte, Cocos and Vanilla Malt. This shake is ideal for breakfast, as a nourishing snack or as an energy drink and it contains high-quality and valuable essential nutriments. Through a unique production method from Hempster, they have created a product which ticks all the boxes and gives the customer a pleasant, satisfying drinking experience.

www.hempster.se

Hemptouch Balancing Face Cream

Hemptouch Balancing Face Cream is a first ever skin care product formulated with a unique trilogy of industrial hemp extracts such as hemp hydrolate, CBD and hemp seed oil. This innovative face cream combats blemished and acne-prone skin, one of the biggest segments in skin care industry. It brings a brand-new approach to the fight against acne and oily skin, proving that hemp is a powerful alternative to over the counter medicine. Hemp hydrolate has antimicrobial properties, visibly tightens pores and smooths skin texture. CBD extract helps to control excess oil production which prevents blemishes and purifies acne-prone skin. Hemp seed oil with its nurturing omega acids restores healthy-looking radiance. This cream is dermatologically tested, proven to reduce the secretion of sebum.

www.hemptouch.com

Trifilon BioLite – Trolley Case made of PP Hemp Fibre

Trifilon offers a green alternative with BioLite. BioLite is a polypropylene that is reinforced with 30% hemp fibers. Hemp makes some of the world’s strongest natural fibers, the products made with Biolite are light and durable. BioLite’s hemp fibers enhance and improve material properties for many applications. This technology gives manufacturers a way to meaningfully begin working with renewable feedstocks and an excellent one in hemp.

www.trifilon.com
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5 JUNE

VISIONS AND GLOBAL HEMP INDUSTRY:
Global Hemp Economics
with
Steve Bevan, President
GenCanna Global

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STAND 11

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MISSION
HempFlax is a socially responsible and ethical company that gives back to the planet by offering consumers affordable natural hemp products. By actively stimulating the awareness process of entrepreneurs in the world market, we contribute to the sustainability of their company. We embrace the philosophy of the circular economy and will do our very best to comply to this strategy.

VISION
The Hemp plant as a whole, holds a large market share in terms of applications for sustainable solutions in everyday life. This multi-purpose organic solution leads us in our quest to build a healthy planet for generations to come.

APPLICATIONS
New applications for industrial hemp are constantly being developed. HempFlax is committed to the ongoing development and improvement of its products. We therefore recommend that you visit this page from time to time to see what new developments have taken place in the field of industrial hemp.

CONSTRUCTION
Sustainable construction using high-quality hemp materials without harmful substances. Extremely comfortable and healthy living with minimal environmental impact.

INDUSTRIAL APPLICATIONS
HempFlax’s fibre hemp is the sustainable alternative in industrial applications and trendy design. From car parts and scooters to furniture and reusable cups.

ANIMAL CARE
A-grade litter for large and small animals without the use of chemical additives and processes. Healthy, safe and comfortable for animals and humans.

NUTRACEUTICALS
A healthier and more active living with HempFlax’s food and dietary supplements derived from the hemp plant. Enjoy an increased resistance, be naturally fit.

HORTICULTURE
Healthy and sustainable horticultural products from fibre hemp. Free from contaminants and other harmful substances. Natural growth mats for cultivation and germination.

GENETICS & CULTIVATION
Cultivation seeds plus personalised and major advice. Breeding and propagation without the use of genetically modified organisms (GMO).
From one man’s vision to a groups passion!

In 1994 HempFlax started with 140 ha to revive the postwar industrial hemp industry. Today HempFlax is leading the industry with operations in Netherlands, Germany and Romania!
## Hemp becomes the World's Billion-Dollar Business

Last year, industrial hemp showed record cultivation figures in Europe, Canada and China. In addition, cultivation has begun in the USA. The highest growth in demand comes from the food sector, food additives and pharmaceuticals. But hemp fibres are also increasingly being sold to the automotive and construction industries. The turnover in the industrial hemp sector has meanwhile reached new dimensions, with numerous new companies getting listed on the stock exchange.

### INDUSTRIAL HEMP IN EUROPE
For a long time, the hemp cultivation in Europe was on decline, and only in France it was continuously practiced. The reintroduction of industrial hemp started in Great Britain in 1990, a few years later it also took place in The Netherlands and Germany and finally all throughout Europe. During the brief hype in the 1990s, the area under cultivation rose to 20,000 ha and then fell back to around 8,000 ha in 2011. Only afterwards, the industrial hemp industry really started. After 26,000 ha in 2015 and 33,000 ha in 2016, the area under cultivation rose to around 47,000 ha in the year 2017.

### HEMP FOOD
The growing areas are mainly driven by demand in the food sector. The healthy cannabis seeds have arrived in the mainstream and can be found today in almost all European supermarkets, either pure, in muesli, in chocolate or many other products. Like soya, hemp seeds can be processed into drinks and yoghurts. Oil pressing leaves a protein-containing press cake from which proteins for athletes are extracted. Currently, there is no end in sight to the rising demand.

### CANNABIDIOL (CBD)
A further upswing came with the market launch of the non-psychotropic cannabidiol (CBD), which has mildly calming and focussing effects in low doses, and also medical effects in higher doses. It is extracted from the leaves and flowers of hemp and is used, for example, as a food supplement and in e-cigarettes. Here, too, the demand is high, but cannot be sufficiently met due to a patchwork of national regulations. While discounters successfully sell CBD cigarettes in Switzerland, concentrated CBD is a prescription drug in other EU countries. So far, there are no uniform legal regulations in Europe. As a food supplement, concentrated CBD was classified as a novel food in January 2019 and must therefore probably undergo the approval process.

### PHARMACEUTICALS
Tetrahydrocannabinol (THC) is approved as a drug in virtually all European countries and is commercially produced by the pharmaceutical industry in greenhouses. Strong growth has also been recorded here. As of November 2018, an estimated 40,000 patients had been prescribed Cannabis in Germany. The industry estimates that number could eventually climb to 1 million, and to 5 million total across the European Union. With the annual cost of therapy between €4,500 and €30,000, it’s potentially a multibillion-euro market. Experts predict the German market will reach as much as €6 billion/year in sales over the next 10 years.\(^1\)
Greece legalised cannabis for medical use in 2017 and lifted a ban on growing and producing it in March 2018. The first licenses are expected to produce $211 million in initial investments and soar to as much as $1.15 billion in three years. The first licensed products expected to hit the market at the end of 2019.2

Finally, hemp fibres are used in large quantities for lightweight construction in the automotive industry (e.g. door linings), in biocomposites of all kinds, in insulating materials and for thin, tear-resistant papers (e.g. cigarette and bible papers). The shives, the inner part of the hemp stem, are used as building material and animal bedding. These are established markets with largely constant volumes and only moderate growth. Only political support for bio-based or climate-friendly materials could generate higher growth rates here.
DEVELOPMENTS OF CULTIVATION AREAS OUTSIDE EUROPE

But not only in Europe industrial hemp enjoys considerable demand again. In Canada, a dynamic hemp food industry with steady growth emerged even ahead of Europe. In 2016, 34,000 ha of hemp were cultivated in Canada and in 2017 a new record was achieved with 56,000 ha. In 2018, the cultivation of industrial hemp also began in the USA, where an additional 50,000 ha of industrial hemp cultivation are expected in the next ten years. Furthermore, in China, the mother country of hemp, the plant is reintroduced mainly for the textile industry in order to relieve cotton production and potentially even replace it later. In the northeast of China there are large programs to introduce enzymatically opened hemp fibres into the textile industry. The Chinese automotive industry also uses hemp fibres in lightweight construction. The total area under cultivation in China has risen from 40,000 ha (2016) to 47,000 ha (2017).

WORLDWIDE MARKET VALUE

Industrial hemp had almost completely disappeared after the Second World War, and despite the worldwide prohibition of cannabis as a crop by the United Nations, Canada, China and the European Union are again legally cultivating a total of 150,000 ha in 2018 – in just a few decades hemp cultivation could exceed the millions of hectares and hemp could once again become an important crop. According to the European Industrial Hemp Association (EIHA), the hemp sector, especially the business with hemp extracts, has grown rapidly in recent years. For example, hemp products in the USA reached a market value of 688 million dollars in 2016 and exceeded an estimated global volume of 1 billion euros in 2017. According to EIHA estimates, the European market value is around 120 million euros. Together with the hemp industry in China (textiles, food, cosmetics, CBD) and other countries, the nova-institute estimates the total market value of hemp products in the world in 2018 at around €1.5 billion (without pharmaceuticals).

MEETING POINT OF THE WORLDWIDE HEMP INDUSTRY

The worldwide growing hemp industry meets every year in Cologne for the “EIHA Hemp Conference”, which is organized by the nova-institute in cooperation with the European Industrial Hemp Association (www.eiha.org), with about 150 members from all areas of industrial hemp use.

Author: Michael Carus, Managing Director of the nova-institute (www.nova-institute.eu) in Hürth near Cologne. Carus was Managing Director of the European Industrial Hemp Association (EIHA) for thirteen years (until the end of 2018) and is currently a member of EIHA’s Scientific Advisory Board. He was significantly involved in the reintroduction of industrial hemp in Germany and Europe and has prepared numerous studies on different aspects of hemp use at the nova-institute.

Join EIHA to support the Hemp Industry

- All your questions about Hemp business are passed on to all EIHA members
- Instant access to more than 400 presentations, studies and statistical data
- You will be part of a network of important international Hemp experts:
  - More than 150 companies, associations, institutes and individuals already support EIHA
- Opportunity to support the networking, lobbying and publishing of information on Hemp by EIHA
- You will be supporting the environmentally conscious Hemp Industry

EIHA is involved in all areas of the Hemp Industry, including:
- Hemp Fibres
- Hemp Food Supplements
- Hemp Shives
- Hemp Oil
- Hemp Seeds
- Hemp Cannabinoids

The European Industrial Hemp Association (EIHA)

EIHA was originally founded as an association of the members of the European hemp industry. Companies can only apply for Regular Membership. Only private persons (or NPO) can join as Associate Member. Founded in 2005, EIHA today has more than 150 members.

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 has become an attractive opportunity for members and visitors to meet, learn about developments and exchange views with their colleagues.

Join EIHA and support the Hemp Industry.

Regular membership is restricted to companies. Regular members are invited to join special workshops on CBD, THC and Fibres and they have exclusive access to important documents, e.g. statements from lawyers. Each regular member has 10 votes or more depending on the turnover. Regular members are also member of several special interest groups (CBD, THC, Fibres, Shives). The membership fee is starting from 2,500 € for one year (turnover < 1 Mio. € in 2017) up to 10,000 € (turnover > 20 Mio. € in 2017).

Associate membership: Any private person (or NPO) may become an associate member. Associate members may attend the annual EIHA meetings, having the right to speak, to make proposals and to vote. Each associate member has 1 vote. The membership fee for associate members is 350 € per year (or a larger voluntary contribution).

Apply now: www.eiha.org/membership-application

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PARTICIPANTS OF THE EIHA CONFERENCE

- **350 Participants**
- **44 Countries**

*Data for 2019 are forecasts*
Analysis and evaluation of the opinion of the German Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung, BfR) of 8 November 2018 “Tetrahydrocannabinol levels are too high in many hemp-containing foods – health impairments are possible” No. 034/2018.

Hemp foods containing different components of the hemp plant in their original or processed form are enjoying increasing popularity worldwide. In North America, China and also Europe hundreds of hemp products are on the market and, with their valuable fatty acids and proteins, belong to the trend products of a healthy nutrition.

Since small amounts of the psychoactive tetrahydrocannabinol (Δ9-THC), hereinafter briefly referred to as THC, remain in the food even after the most careful processing, limit or guideline values must be defined that reliably protect the consumers from side effects. As we present in this study, a number of countries such as Australia, Canada and Switzerland have set themselves similar limit or guideline values. These allow producers sufficient leeway to supply consumers with a variety of hemp products, while avoiding any side effects from THC. More than ten years of experience in Canada confirm this.

The legal situation in Europe is more complicated and constitutes an obstacle to the further development of the industry. In Europe, there are no uniform limit or guideline values for residual THC contents in food, not even uniform consumption guideline values for consumption. Back in 1997, the German Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung, BfR) (formerly BgVV) established THC guideline values that, until today, represent the strictest international values and have been criticised by experts for years as being too restrictive. When the Federal Ministry of Food and Agriculture (Bundesministerium für Ernährung und Landwirtschaft, BMEL) commissioned the BfR to clarify some fundamental aspects regarding the assessment of the THC content in food at the request of the monitoring authority of a federal state, many scientists and producers hoped for a comprehensive reassessment and adaptation as well as international harmonisation of the guideline values.

These hopes were severely disappointed by BfR opinion No. 034/2018 of 8 November 2018 “Tetrahydrocannabinol levels are too high in many hemp-containing foods – health impairments are possible”. Instead of a comprehensive reassessment, 40 pages explain why the 1997 THC guideline values would continue to apply and that, if they were to be amended, they would rather be tightened than loosened. Germany would thus create clear barriers to the growing hemp industry and make it more difficult for the population to access hemp products as a result of higher prices.
In this situation the European Industrial Hemp Association (www.eiha.org), the industry association of the European hemp industry, asked scientists of the independent nova-Institute to scientifically analyse and evaluate the BfR statement. In cooperation with representatives of the scientific advisory board as well as the executive committee of the association, a 24-page-long evaluation was produced. In the following, the most important results of this evaluation will be summarised.

In the opinion of the scientists, the BfR has taken the easy way out with its statement and defence of its recommendations from 1997. Much has happened since 1997, new scientific findings have been gained and comprehensive experiences with hemp foods have been made in many countries – both have not been adequately considered. Six important scientific studies published after the year 2000 and the detailed EIHA position paper “Meaningful guideline values for THC (tetrahydrocannabinol) in food” (September 2017) were not regarded when reviewing their own risk assessment; they were simply ignored, even though they were known to the BfR. If the new scientific findings were to be considered, a defence of the old guideline values would fall short. It becomes apparent that a comprehensive revision of the recommendations is necessary and that the THC guideline values can be significantly increased without any risk when consuming hemp products – and internationally harmonised.

In order to establish guideline values with a sufficient safety distance to undesirable effects, one must know the LOAEL (lowest observed adverse effect level) or the NOAEL (no observed adverse effect level) and then apply a factor that takes into account the different sensitivities of the consumers. The European Food Safety Authority (EFSA) has issued clear recommendations on the methodological approach.

The BfR applies an uncertainty factor of 20–40 to THC, since no NOAEL is known for THC. Therefore, in addition to the usual EFSA uncertainty factor of 10, the BfR uses a further uncertainty factor of 2–4 for interindividual differences, namely for the extrapolation from the known LOAEL of THC to NOAEL. But according to current scientific knowledge, this is no longer tenable. Due to the more recent clinical experience on active THC, we know today where the NOAEL lies for the large majority of patients. An additional factor of 2–4 is therefore no longer justifiable. Also, the reasoning that there is no sufficient data available on the effects of THC appears to be not very reliable because in the current evaluation of THC twice as many studies are used as in the evaluation of nicotine. In addition, today numerous other studies exist that further support a more differentiated evaluation of THC. If one compares the uncertainty factor of 20–40 with the
uncertainty factors the BfR assigns to other psychologically active substances, the procedure and justification does no longer appear scientifically comprehensible.

For nicotine, opium, but especially for caffeine and alcohol, very low (or no) uncertainty factors are applied, even lower than the recommended standard uncertainty factor of 10 for interindividual differences. For THC, on the other hand, a strict methodology is followed and then further exacerbated by applying an extra factor on top, which is not scientifically tenable. If, for example, the BfR were to apply comparable standards to alcohol as to THC, bread or orange juice would no longer be marketable. And similarly, there would be no more poppy-seed cakes or poppy-seed rolls to purchase if opium was subject to the same procedure for risk assessment as THC.

The BfR risk assessments for the substances mentioned are inconsistent, inscrutable and hardly comprehensible. This systematic unequal treatment of substances with similar effects will not withstand an overarching risk assessment and is scientifically outdated.

There are further errors and inconsistencies in the BfR statement that systematically overestimate THC risks: The studies used by the BfR only use active THC, whereas in reality THC always occurs together with other cannabinoids that can influence the effect of active THC. In addition, all studies used were medical studies and therefore were conducted exclusively on patients, sick persons, who are usually more sensitive than healthy people.

But when assessing “health claims” on food, the EU Commission usually only considers studies that were carried out on healthy volunteers. Clinical studies on sick volunteers generally have the disadvantage that possibly relevant physiological parameters of the volunteers are altered. This scientific principle must of course be observed not only in health-related effects, but also in risk assessment.

The biggest error, however, results from the imprecise distinction between total THC and the active form of THC (\(\Delta^9\)-THC). In most hemp foods, THC is primarily present in its non-active form (up to 90%), which only converts into its active form after prolonged heating. A complete transformation is almost impossible under normal production and preparation conditions of food.

If the guideline values refer to total THC and not only to the active form, the guideline values are systematically set too strict. In other words, the BfR derives much too high active THC contents in food in its approach. This leads to objectively inaccurate results and scientifically completely wrong conclusions for the risk evaluation of THC.

The BfR has once again missed the opportunity to comprehensively revise the THC guideline values, to take account of current scientific findings and to harmonise the German THC guideline values.
internationally. The attempt to defend the old recommendations fails because the arguments are based on outdated information, systematically ignoring studies and findings from the last 18 years for a differentiated risk assessment. The lack of a clear distinction between total THC and active THC, which has long been the scientific standard, is also a weak point of the BfR statement that cannot be ignored.

Why the BfR shows such, scientifically not justifiable, severity with the THC in food, while the reference values for comparable substances such as alcohol, caffeine, nicotine and opium are disproportionately indulgent and generous, can at this point only be speculated. Are there lobby interests behind this? Shall competition for established products on the market be prevented? Or is it still a remnant of the fight against the alleged “devil drug cannabis”? Whatever the reason, there can be no speculation about the following conclusion: The measurements and methodologies of the BfR are so different that they cannot prevail. The current risk assessment of THC by the BfR is inadequate according to current scientific knowledge, goes against international experiences and potential harmonisation, and should therefore be urgently revised.

The study was conducted by the nova-Institut and commissioned by the European Industrial Hemp Association (EIHA). Please support EIHA and become a member so that further such studies can be financed.

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You can download the full nova study “Evaluation of limit and guideline values of THC (tetrahydrocannabinol) in hemp foods” for free under: http://bio-based.eu/ecology

If you are interested in the study or in our services for THC and CBD use in food and pharma please visit us at booth 14 at the conference or contact the nova experts directly:

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Fundación CANNA is a non-profit initiative of the CANNA company. Besides educational services, the foundation also offers the following analytical services:

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10 VALUABLE QUOTES ON INDUSTRIAL HEMP

Steve Allin, IHBA
“From Shack to Shopping Mall from Luxury home to Artist Studio, Hemp has been used to create health low energy buildings all over the planet.”

Paul Benhaim, Elixinol
“Natural and Organic Cannabis in all it’s forms is required to assist in the homeostasis of our planet and human systems. How can we learn and integrate with the consciousness of this plant to thrive in our modern world?”

Ted Haney, Hemtrade
“I will present information on the current status of and growth potential for the Canadian hemp industry as it moves toward becoming a $1 Billion industry.”

Sebastian Kamphorst, Laia’s Proteinhanf / Becanex
“With our one-step extraction method we are re-shaping the future of CBD extraction.”

Joscha Krauss, MedicalHemp
“Medicinal Cannabis in Germany – A market evaluation.”

Fei-Hu Liu, Yunnan University
“China hemp industry focuses on cannabidiol (CBD) and is improving the cultivation technology of hemp aimed at flower-and-leaf production.”

Thiprada Poonsawat, Kasetsart University
“Cannabis is a plant that can benefit people, or not; the choice is ours.”

Kehrt Reyher, HempToday
“Maximizing your presence to advance your business goals, and raising the industry’s profile through network development.”

Kenzi Riboulet-Zemouli, Knowmad University
“The Cannabis plant can affect our planet and the sustainability of our societies either positively or negatively. Crucial benefits for the environment, or important harms for the planet, fully rely on the way humankind handles that plant and its policies. Sustainability is key.”

Laurène Tran, Harmony
“This presentation will give a regulatory update on CBD regulation in Spain, France, and the UK and suggest possible regulatory harmonization of CBD at an EU-level.”
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Aurora is coming to Hemp

Aurora Cannabis Inc. is a Canadian licensed cannabis producer, traded on the New York Stock Exchange as ACB.

Agropro is the largest organic hemp grower and processor in Europe. Cultivation area: 3500 hectares (8650 acres).
CBD is becoming a new billion-dollar market worldwide. In the nova session you will learn everything about CBD: how it has a pharmacological effect, how it is produced, what applications it has and, above all, what the legal regulations look like in which countries. While new markets are already emerging in North America and Israel, Europe is still struggling to regulate CBD so that safe and legal products find their customers.

Leading experts from Great Britain, Spain and Germany, all members of the European Industrial Hemp Association will bring you up to date and discuss with you extensively. Join in, learn, discuss and share.

Joscha Krauss, MH MedicalHemp
- Hemp varieties
- Cultivation, harvesting and drying
- Extraction of CBD
- Applications in cosmetics and food supplements

Sebastian Kamphorst, Laia’s Organic
- Production and marketing of CBD

Laurène Tran, Meetharmony
- Legislation in different countries France, Spain, UK, Italy, Austria and Germany
- Presentation of a legal analysis of the CBD market in Europe and France with Allen & Overy

Catherine Wilson, CannaWellness and EIHA board member
- History of Novel Food catalogue, changes in classification of Cannabis Sativa/CBD over the years and current status
- EU labelling requirements & health claims regulations

Participants are welcome to submit their specific topics of interest beforehand or put them up for discussion at the session.