



overview of the hemp food market

Germany & Europe

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The EU hemp value chain association based on **science and transparency**

the team



+30 EU / non-EU Universities

the structure

SciCo

science

legislation

Board

strategy & priorities

reputation

WGs

Ad
Com

expertise & sector needs

network

resources

Sec

knowledge

Business operators

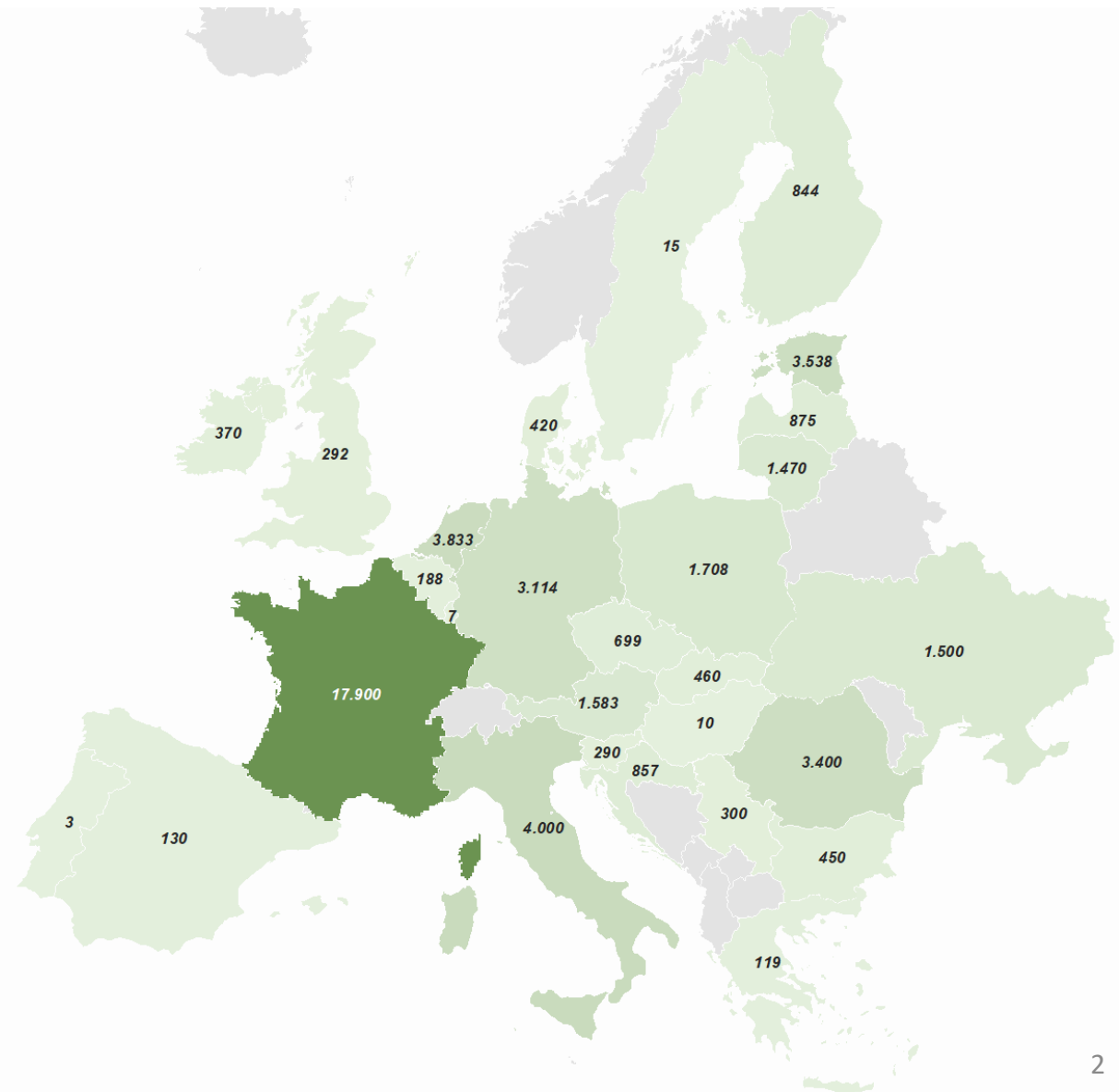
engagement

Hemp surfaces in the EU

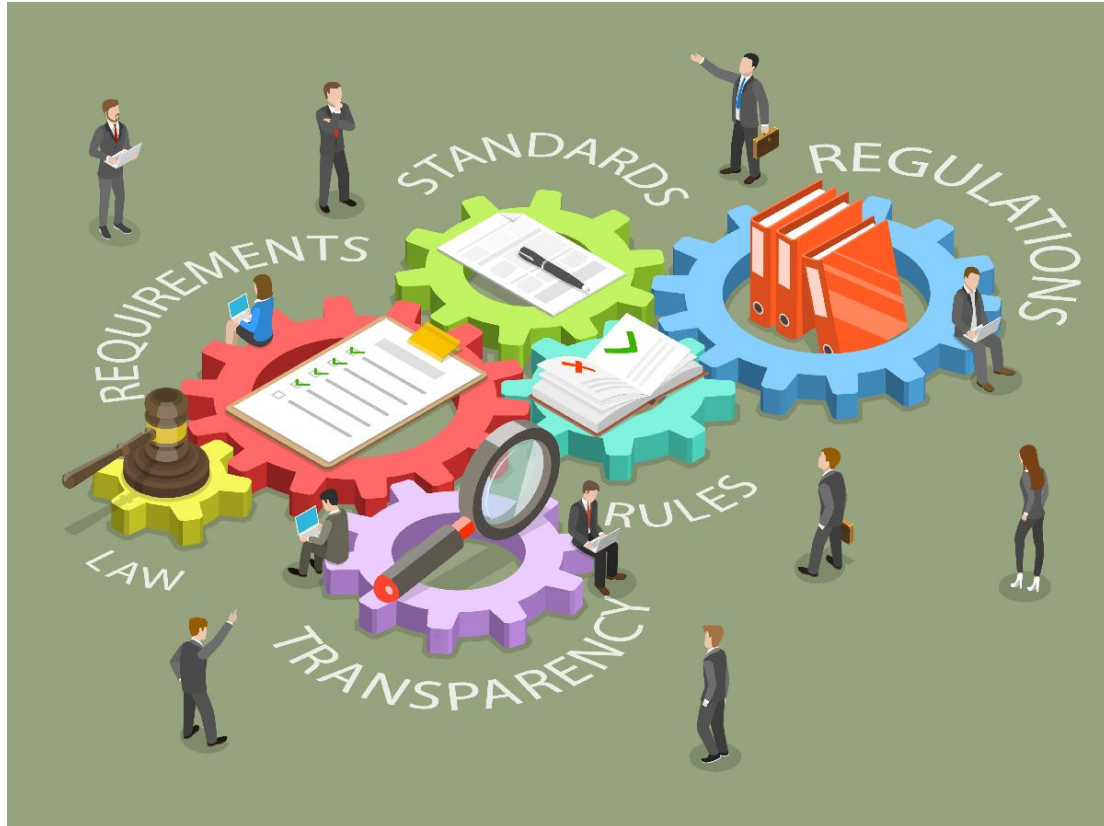
50.081 ha in 2018
+3.3 % (2017)
+70 % (5-years average)
+614 % (1993)

In 2019:

- Further **increase**
- **New** big producers



What challenges are we facing?



- **Legal framework** (Single Convention, narcotics laws)
- Limitations on **marketability** in regard to THC limits in food
- Availability of **seed**: competitive disadvantages due to the European catalogue of varieties in regard to THC limits on the field
- **Harvesting** technology: no standard solutions available
- Availability of **processing factories**

The **WORLD** has changed,
BUSINESS as well:

Environment comes into the equation

*Do more with less, produce less waste, durable and
compostable, offset climate change, go to the essential,
be as green as possible!*

= Green Deal

Hemp: the real Green Deal!

A multipurpose plant that provides
carbon negative raw materials

Future perspectives

- Hemp to become a **major plant protein** for direct consumption and processed veg food – **local, sustainable and healthy!**
- Regulatory evolutions will allow a **stable business environment** and incentivise **investments** in processing facilities
- Research in breeding will further develop the **triple use** (fibre / shivs + seeds + green material for extraction)
- Great opportunities in **carbon farming** because of **high carbon capture**



What is hemp food ?



Today's
focus



ElHA position

=

EU view until January 2019
+ EUCJ ruling

Seed

Dehulled seeds
Hemp flour and protein
Hempseed oil
Hemp processed foods



Flowers & leaves

Infusions
(non-enriched) Extracts



Hemp seed benefits – food



- High-quality, easily digestible and sustainable **protein source**
 - Main proteins: **edestin** and **albumin**. + High levels of **arginine**
- Also contains **fibre, vitamins and minerals**
- **Unique** essential **fatty acid** spectrum
 - over **80%** polyunsaturated fatty acids
 - exceptionally rich source of linoleic, alpha-linolenic, gamma-linolenic and stearidonic acid
 - **optimal omega**-6 to omega-3 **ratio** in oil is (2:1 to 3:1)
- Hempseed oil: one of the **highest quality** oils in the world

Evolution of consumers' life-style



Before using so called medicines as we know it, humans balanced their health with **natural foods** (vegetables, plants, seeds, nuts, grains)



After so many decades of highly **processed food**, consumers are increasingly attracted by what is “**natural**”



Consumers' trends: physical activity, balanced and healthy diet enhanced with functional food, non-allergic ingredients and food supplements → Healthy life-style model



To maintain “**homeostasis**” in challenging modern conditions consumers seek out food supplements of botanical origin

Regulatory hurdles at EU level



1. Outdated and unnecessary low values for **residual THC**
 - *ElHA welcomes the ongoing discussion for a **common EU regulation***
2. Lack of **marketing standards**
 - *ElHA welcomes the inclusion of hemp in **article 75** of the CMO regulation*
3. **Lack of varieties** adapted to southern climates
 - *ElHA welcomes the restoration of THC level on the field to **0,3%***

Regulatory hurdles at EU level



4. **Harvesting and processing** of hemp **flowers** NEED to be authorised because they are not narcotics.
5. **EU definition** of hemp needed.
 - *Hemp, n – a Cannabis sativa L. plant, or any part of that plant, in which the concentration of total delta-9 tetrahydrocannabinol (THC) in the flowering tops is equal to or less than the regulated maximum level, as established by authorities having jurisdiction. The term is synonymous with Industrial Hemp.*

Limits of THC in food



- Amount of undesirable residues ("contaminants"), derived **from the food itself** (the case of hemp/THC) or from the **processing methods**.
- EFSA in coordination with MS and COM are discussing **max intake levels** to protect the consumers from any adverse effect
- Each contaminant has a **LOAEL** (lowest observed adverse effect level) and a **NOAEL** (no observed adverse effect level) to be applied to the contaminant.
- LOAEL and NOAEL will be multiplied by an **Uncertainty Factor (UF)** to obtain the safe value for consumption.

THC in food – method of calculation



- There is **no NOAEL for THC**, therefore for the calculation purpose only the LOAEL is used
- Last but not least ... here is a **comparison** of different UF:

Substance	Uncertainty factor
Alcohol	no UF
Caffeine	no UF
Nicotine	4.4
Morphine & codein	5
Δ^9 -THC	36

... it just does
NOT make sense

Current discussion and positions



Hemp seeds

Ground hemp seeds (hemp seed powder), (partially) defatted hemp seed (press cake, hemp seed flour), hemp seed bran

Hemp seed oil

Maximum level for THC (*) mg/kg



3,5
mg/kg

10
mg/kg

2
mg/kg

10
mg/kg

10
mg/kg

3,5
mg/kg

10
mg/kg

2
mg/kg

n/a
mg/kg

10
mg/kg

7,5
mg/kg

20
mg/kg

5
mg/kg

20
mg/kg

10
mg/kg

Comparison with third countries



Country	TDI $\mu\text{g/kg/bw}$
Canada	14
Switzerland	7
Australia	6
New Zealand	6
EU	1

EIHA toxicology study on **THC** will be fundamental to overcome our issues

The German regulatory hurdles



The German Federal Institute for Risk Assessment (**BfR**) recommends Acute Reference Dose as a basis for the assessment of hemp-containing foods.

(BfR Opinion No. 006/2021 of 17 February 2021)

In 2000 the German Federal Institute for Consumer Health Protection and Veterinary Medicine (**BgVV**) recommended **guideline values** for maximum THC contents in various food groups.

In **2018**, BfR concluded that these values **no longer correspond to** the current state of **scientific knowledge**.

Instead, the BfR recommends a toxicological assessment of foodstuffs containing hemp be based on the **acute reference dose (ARfD)** derived by the European Food Safety Authority (**EFSA**) in **2015: 1 microgram Δ^9 -THC/kg body weight**.

The German regulatory hurdles



The acute reference dose (ARfD) derived by EFSA is unnecessarily low and not supported by scientific evidence.

Based on scientific studies and on experience, a ARfD (HBGV) of delta9-THC may reach up to 7 µg/kg bw (or 490 µg per day and adult).

The problem:

BfR states that it should be checked for each individual product whether the ARfD can possibly be exceeded. The measured THC content and the estimated amount consumed are used to determine this.

The sector needs a clear EU wide regulation based on scientific evidence!

UF 36 -> 10

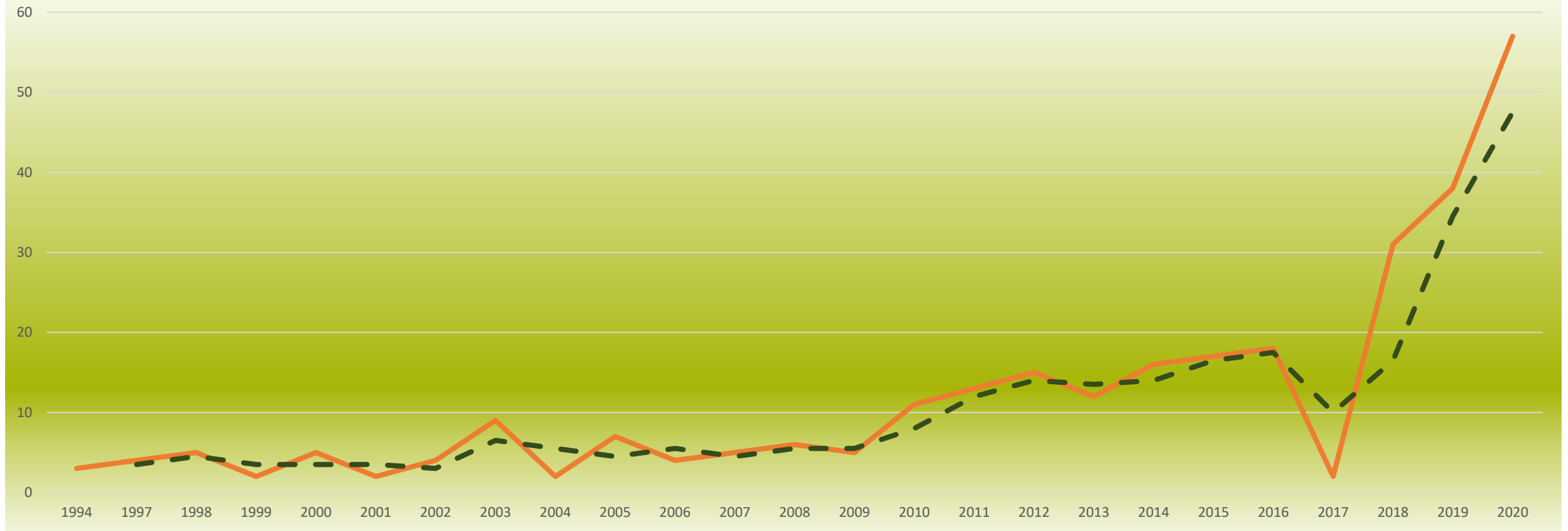
ARfD 1 µg/kg bw -> 7 µg/kg bw

Research and publications



Topic: Hemp seed

Publications



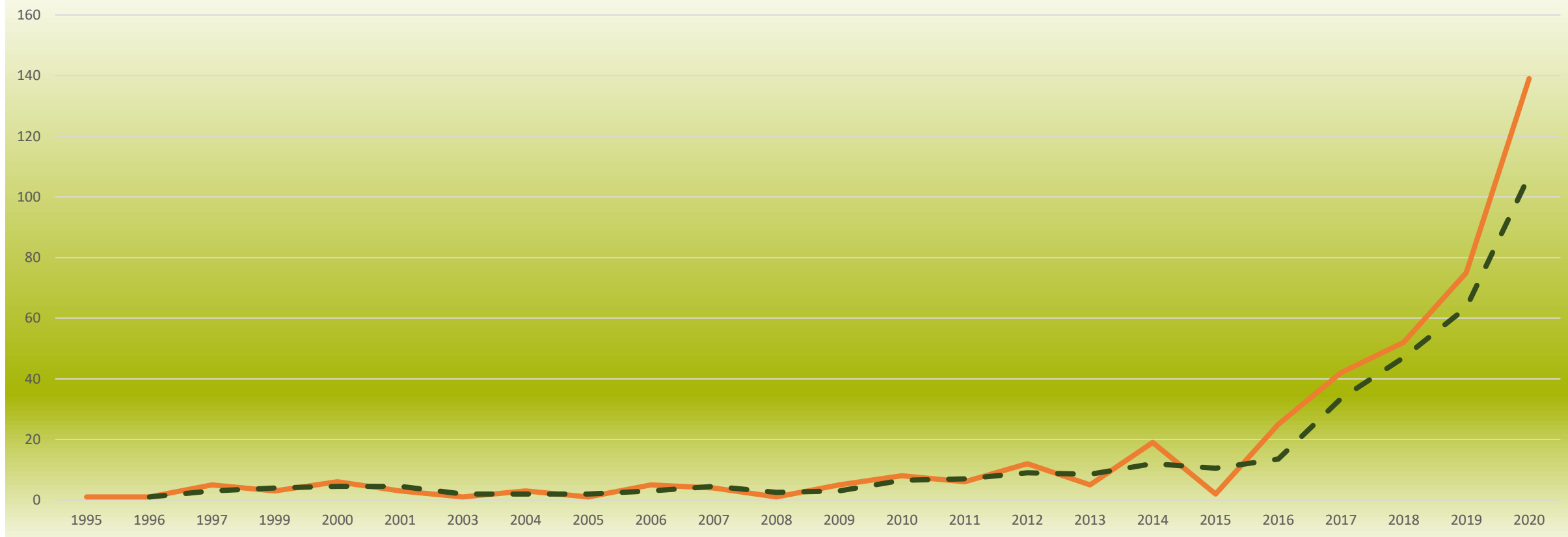
Source: <https://www.ncbi.nlm.nih.gov/>, HempConsult (2021)

Research and publications



Topic: Hemp oil

Publications



Source: <https://www.ncbi.nlm.nih.gov/>, HempConsult (2021)

Hemp as foodstuff und raw material



The turnover with hemp foodstuff and corresponding raw material is **increasing strongly worldwide**. Hempseeds, hulled hempnuts, hempoil and hemp protein powder are becoming more presentable – both in retail as well as in food industry.



On the market



On the market

Carrefour 



On the German market



On the German market



On the German market

ROSSMANN



On the German market





Thank You for Your attention!

Daniel Kruse
CEO Hempro Int. / ElHA President
April 26, 2021

