



Production, Sales, Competence since 2001

Market Prospects for Hemp Food and CBD

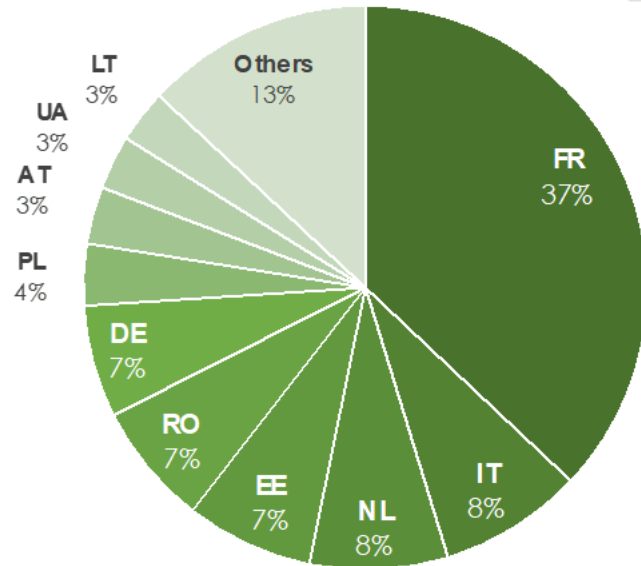
Daniel Kruse

CEO Hempro Int. / EIHA President
CANAPAFORUM, Naples
September 2022



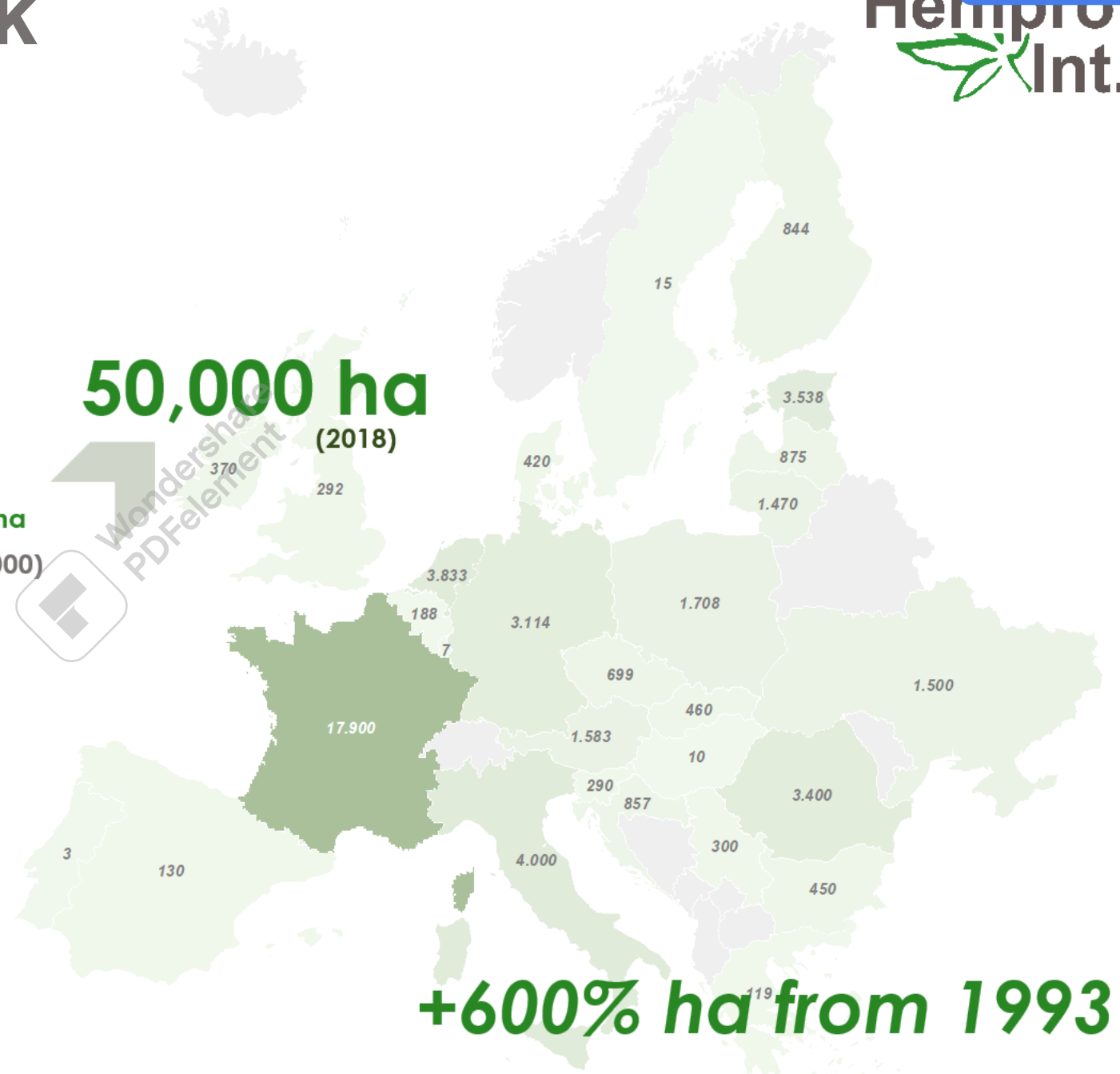
The hemp comeback

400,000 ha
(1940)



10,000 ha
(1960- 2000)

50,000 ha
(2018)

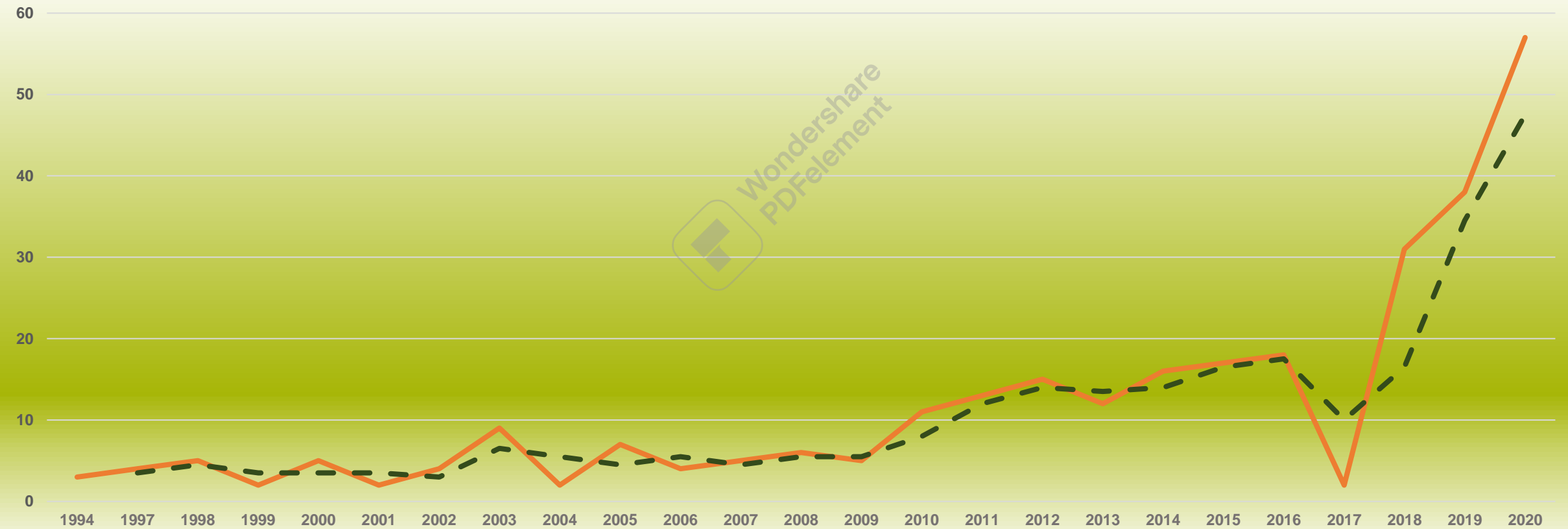


+600% ha from 1993

Research and publications

Topic: Hemp seed

Publications

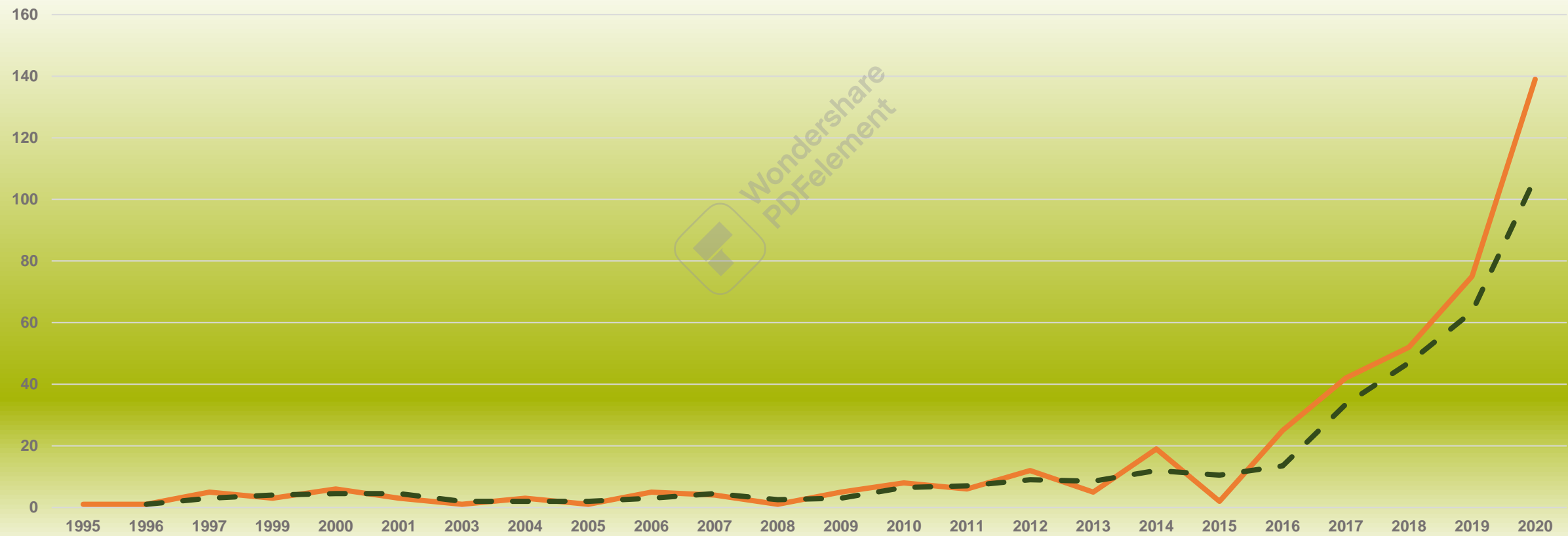


Source: <https://www.ncbi.nlm.nih.gov/>, HempConsult (2021)

Research and publications

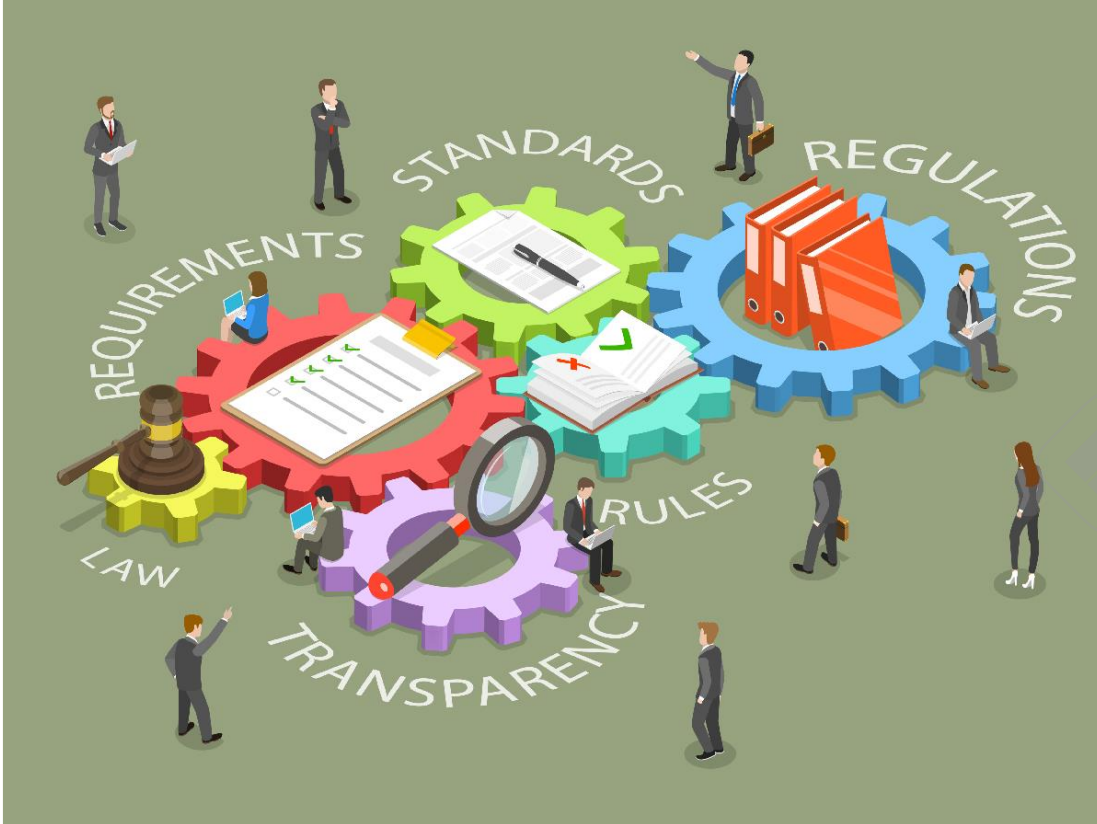
Topic: Hemp oil

Publications



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

Challenges



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

Positive changes for a growing market

Restoration of THC limits in the field to 0.3% in EU
(CAP direct payments applied) from 1/1/23



Higher level are possible

This is not a maximum level for hemp!
Although most Member States consider
it as such, they can still establish higher
levels, e.g.: **CZ**: 1% and **IT**: 0,6%



Positive impact

- **New varieties** can be registered
- More **flexibility** in controls of existing varieties (less chances to exceed limits)
- Better varieties for **seed/grain yield**
- Advantages for **farmers and breeders**



Positive changes for a growing market

Maximum levels of THC in
food (seeds, dry food & oil)
for the whole EU



International comparison of TDI

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

The Acute Reference Dose (ARfD) derived by EFSA and the Tolerable Daily Intake (TDI) recommended on it are unnecessarily low and not supported by scientific evidence.

Based on scientific studies and on experience, a safe TDI / ADI / ARfD / HBGV of delta9-THC can be set at a minimum of 7 $\mu\text{g/kg bw}$ (or 490 μg per day and adult).

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

Uncertainty Factor 36 \rightarrow 10

TDI / ARfD 1 $\mu\text{g/kg bw}$ \rightarrow 7 $\mu\text{g/kg bw}$

EIHA THC toxicological study on humans will be a game changer to overcome this issue.

Newly adopted max level of THC in food from seed

** + measurement uncertainty (+ 40-50%)*




EU Commission



EU hemp sector



Italy



Switzerland



Canada

	EU Commission	EU hemp sector	Italy	Switzerland	Canada
Seeds	3 mg/kg*	10 mg/kg	2 mg/kg	10 mg/kg	10 mg/kg
Other dry products	3 mg/kg*	10 mg/kg	2 mg/kg	n/a mg/kg	10 mg/kg
Hemp seed oil	7,5 mg/kg*	20 mg/kg	5 mg/kg	20 mg/kg	10 mg/kg

Entry into force: 1st of January 2023

EU regulation & annex on THC in food



Brussels, XXXX
SANTÉ/10670/2021 CIS
(POOL/E2/2022/10670/10670-EN
CIS docs)
[...](2022) XXXX draft

COMMISSION REGULATION (EU) .../...

of XXXX

amending Regulation (EC) No 1831/2006 as regards maximum levels of delta-9-tetrahydrocannabinol (Δ^9 -THC) in hemp seeds and products derived therefrom

(Text with EEA relevance)

EN

EN



Brussels, XXXX
SANTÉ/10670/2021 ANNEX CIS
(POOL/E2/2021/10670/10670-EN
ANNEX CIS docs)
[...](2022) XXXX draft

ANNEX

to the

Commission Regulation

amending Regulation (EC) No 1831/2006 as regards maximum levels of delta-9-tetrahydrocannabinol (Δ^9 -THC) in hemp seeds and products derived therefrom

EN

EN

ANNEX

In Section 8 of the Annex to Regulation (EC) No 1831/2006, the following entry 8.6 is added:

Foodstuffs (*)	Maximum level (mg/kg)
8.6. Delta-9-tetrahydrocannabinol (Δ^9 -THC) equivalents(**)	
8.6.1. Hemp seeds	3.0
8.6.2. Ground hemp seeds, (partially) defatted hemp seed and other hemp seed derived/processed products (**) with the exception of the products referred to in 8.6.3.	3.0
8.6.3. Hemp seed oil	7.5

(*) the maximum level refers to the sum of delta-9-tetrahydrocannabinol (Δ^9 -THC) and delta-9-tetrahydrocannabinolic acid (Δ^9 -THCA), expressed as Δ^9 -THC. A factor of 0.877 is applied to the level of Δ^9 -THCA and the maximum level refers to the sum of Δ^9 -THC + 0.877 x Δ^9 -THCA (in case of a separate determination and quantification of Δ^9 -THC and Δ^9 -THCA).

(**) hemp seed derived/processed products are products derived/processed exclusively from hemp seeds.

EN

1

EN

Positive impact

- **Less RASFF alerts**
- Smooth **trade**
- Common **rules**
- **Legal certainty** and **clarity** = new investors
- Untapping the **EU agri & food market** with a size of **328.1 billion euros (2021)**



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 and supplements of botanical origin

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 (food) raw materials

Future perspectives

- Hemp will become **a major plant protein** for direct consumption and processed vegetarian and vegan food (such as **plant based** meat alternatives in burgers, etc.)
– **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 / shives + seeds + leaves for tea and extraction)
- Great opportunities in **carbon farming** because of **high carbon capture**



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



Hemp leaves benefits – food

- **Caffeine free** and full of vital nutrients:
Calcium, magnesium, iron, carotenes, potassium, sodium, phosphorus, zinc, vitamin E, and carboxylic acid
- **Flavonoids, phenols and chlorophyll**
- Good **bioavailability** and in a **natural compound**
- Ideal **natural food supplement** for vegans and all others who want minerals and nutrients in natural form
- An **excellent regional** and **natural ingredient** for **tea & infusion**
- No **psychotropic effects**



Hemp as foodstuff and raw material

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





On the European market



On the European market

Carrefour 



On the German market



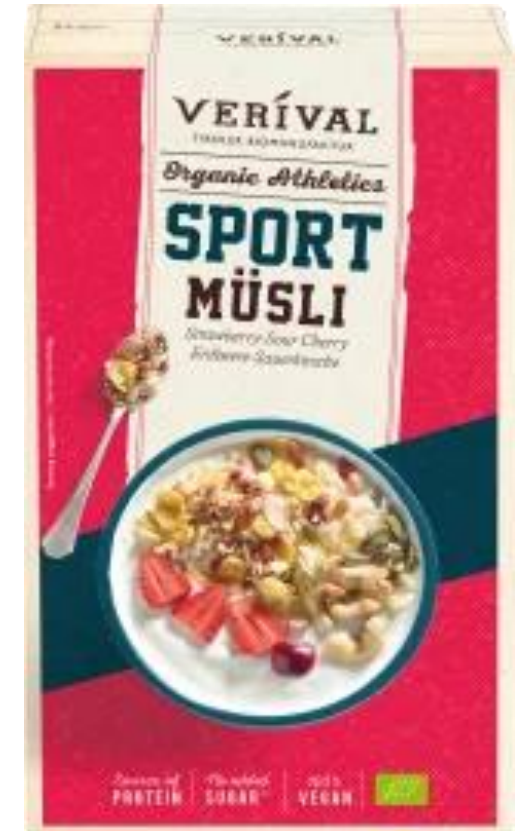
On the European market



On the European market



On the European market



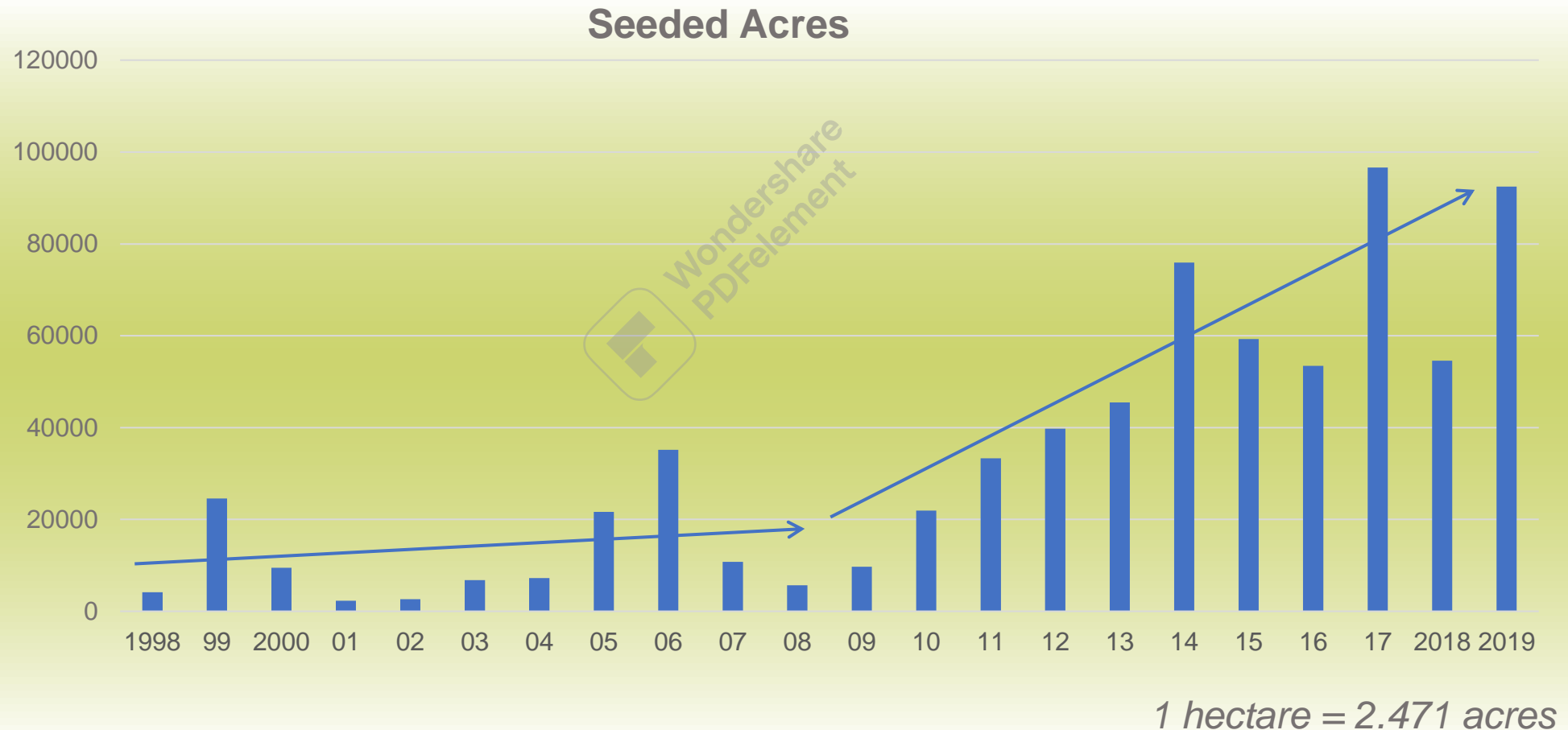
On the European market

ROSSMANN

HempPro Int.

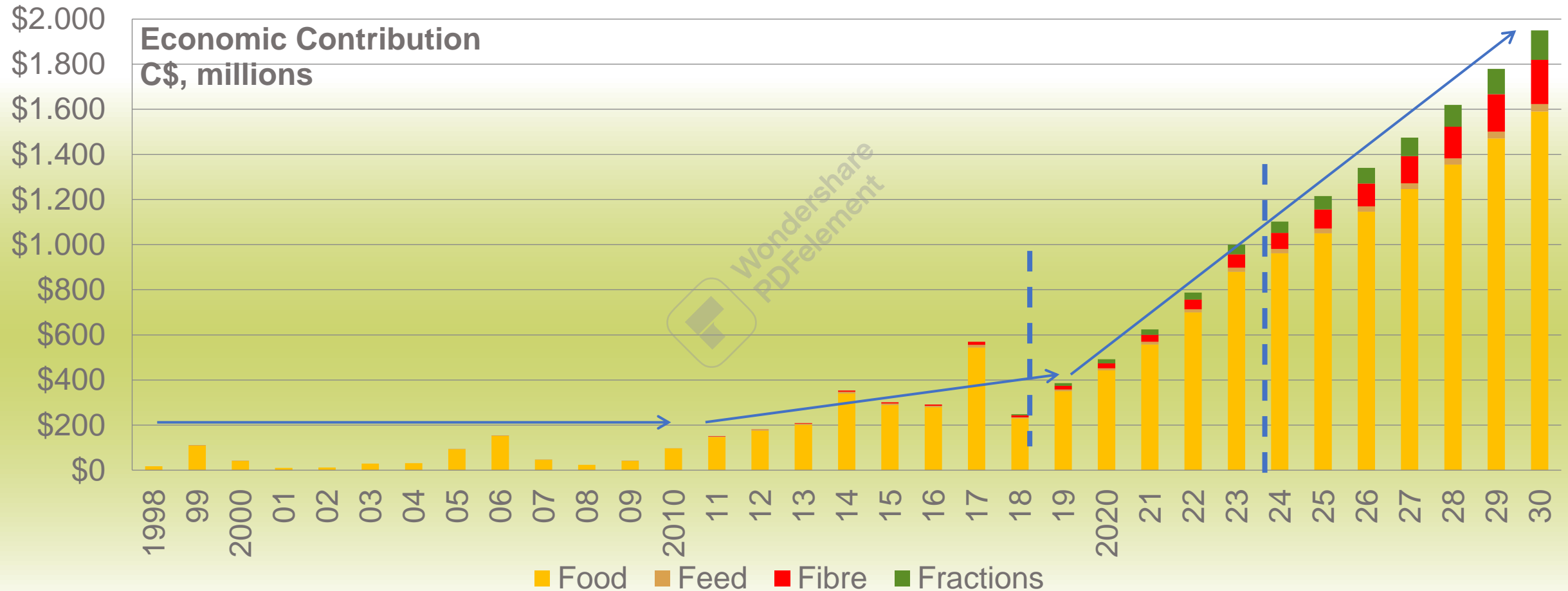


Hemp is expanding in Canada... propelled by food market demand



Source: CHTA / ACCC Canada, 2021

Growing a \$1B hemp industry by 2023: Double Again by 2030



Source: CHTA / ACCC Canada, 2021

...by seizing the value of the whole hemp plant

On the North-American market



EU overview on extracts (CBD)



The product

The **flowers** and **leaves**
of an agricultural crop (*Cannabis sativa* L.)
are used for the **production of extracts/CBD**

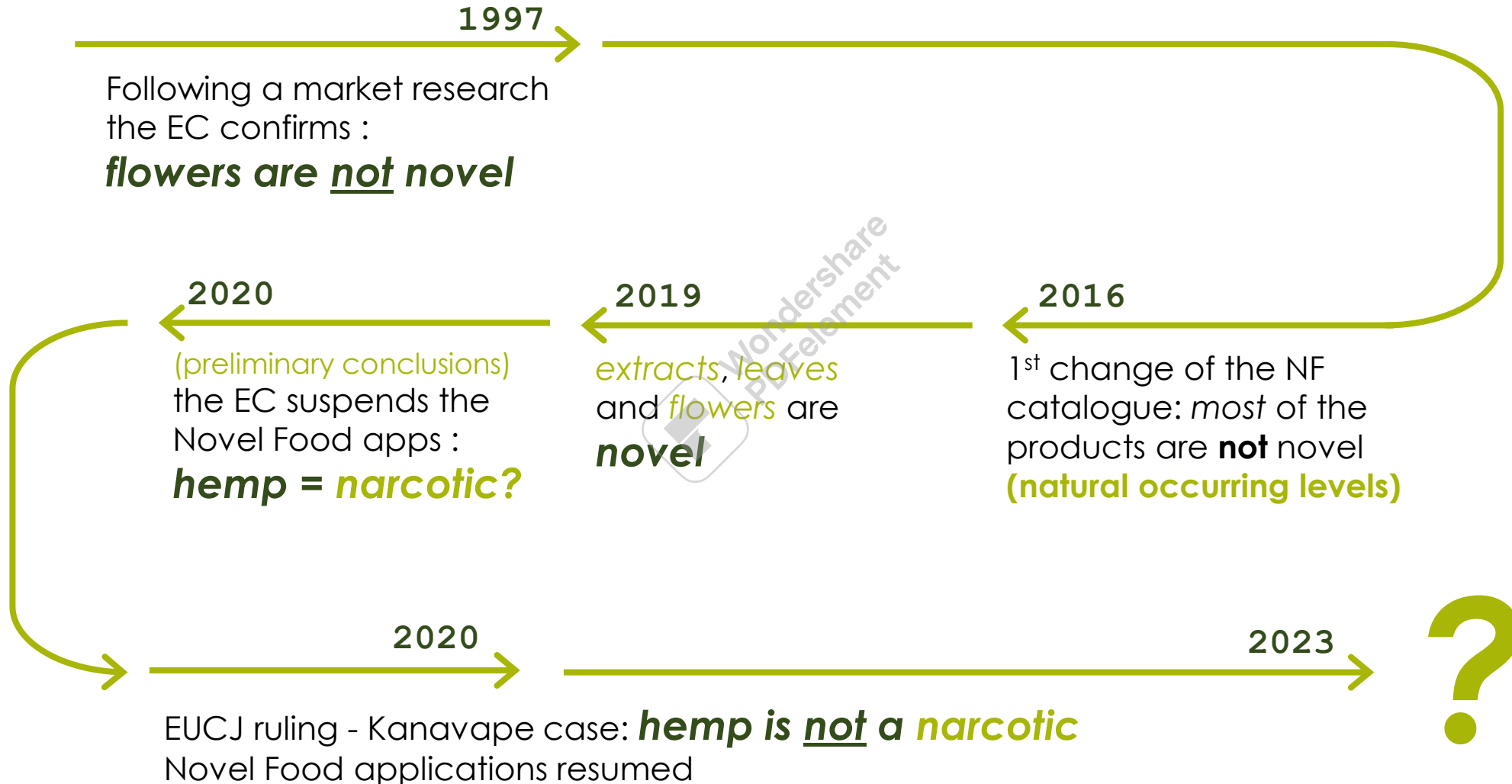


How the product is sold:

A hemp extract or isolate CBD is **diluted** in a
carrier (usually hempseed oil or any other vegetable oil)
or used as **ingredient**



Constantly changing reg. framework



Novel or not ? - EIHA position

Novel Food

(art.10 / EIHA consortium) for *CBD isolate* or *enriched* extracts

Natural occurring level

Traditional food

for *low and natural* concentration

What EIHA is doing?

1. **CBD isolate** (novel)
2. **Synthetic** CBD (novel)
The only THC-free product
3. **Full spectrum** extract
(traditional depending on concentration levels)
Raw/regular or Gold
acid forms of cannabinoids (not only CBD)
waxes, chlorophyll, terpenes, flavonoids

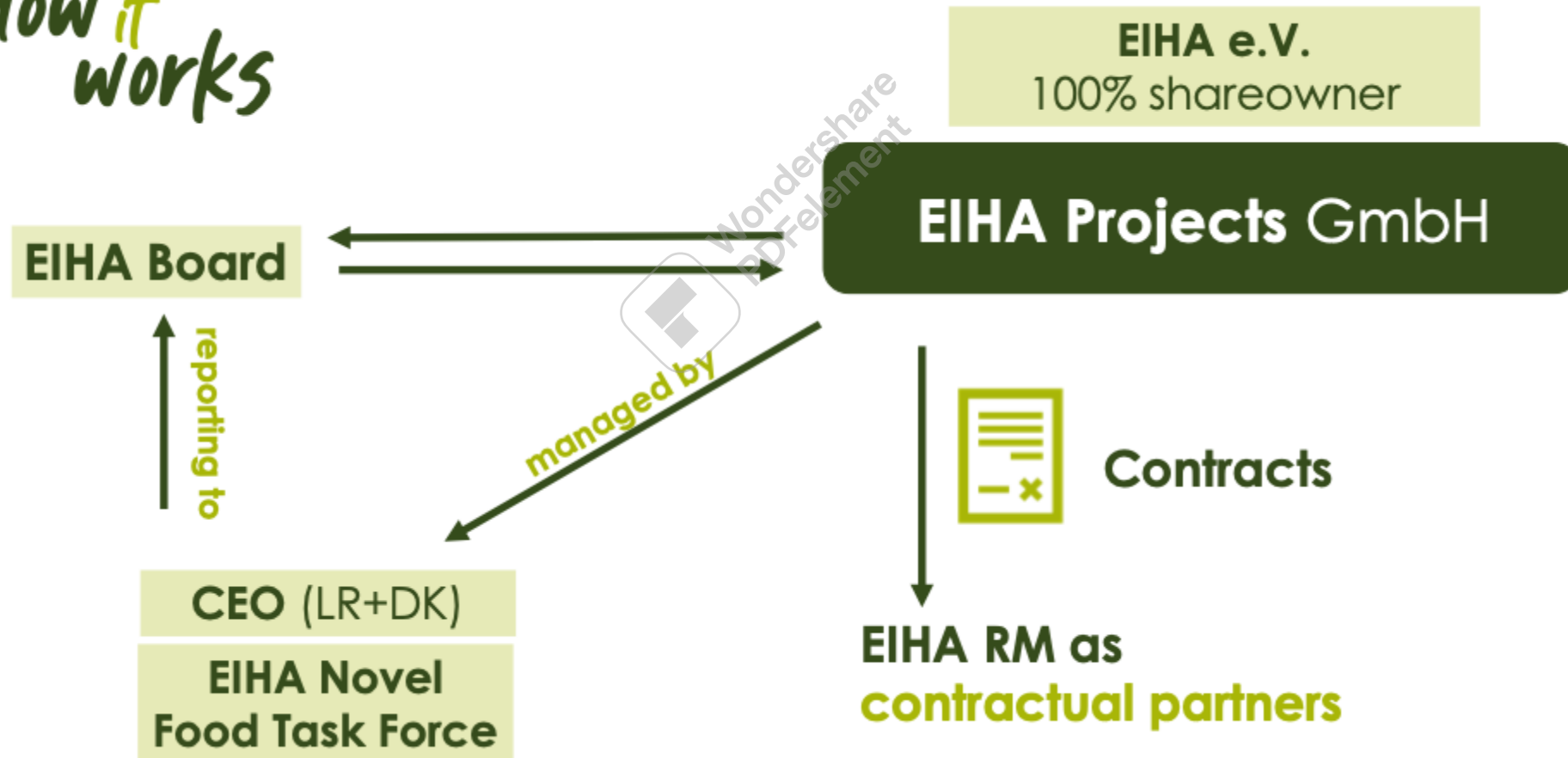


Marketability in the EU as
food supplements
→ Novel Food Application
ongoing

CBD molecule is *the same* everywhere!

ElHA consortium for Novel food application

how it works



The state of the sector

Growing differences among MS promote market distortions and divergence of competitiveness (*: inequalities increase*)

Persistent unclearness refrains investors and food business operators to further support the sector (*: investors turn away*)

CBD isolate imports from USA and China are so much cheaper, the EU as production location has lost this competition.

The EU operators aim at the **full spectrum** products to compete at least with int. competition by “made in Europe”.
(*: EU farmers and processors are losing ground*)

The state of the sector

TODAY

Changing **EU policies**
Diverging **national initiatives**

TOMORROW

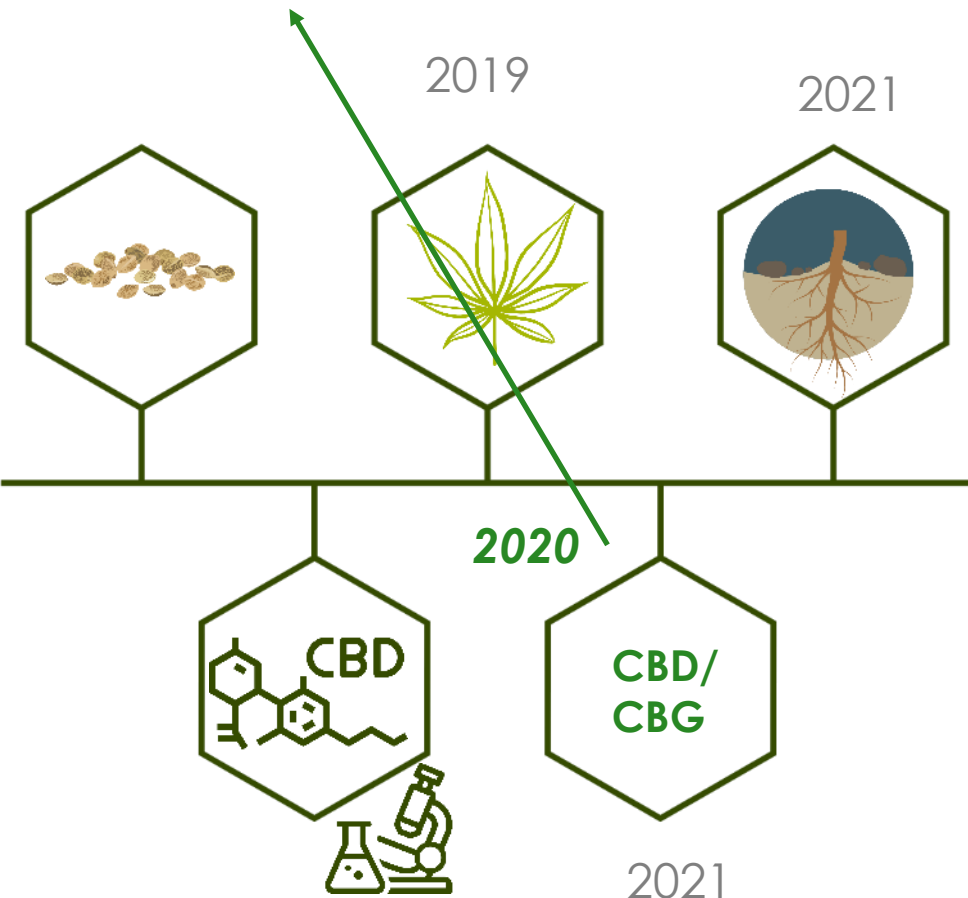
EU policy framework
following the Kanavape ruling

EU overview on hemp ingredients in cosmetics



The state of the sector

C-663/18 (Kanavape Court Case)



Functions:

Hemp seeds oil: *skin conditioning*

CBD: *anti-sebum, antioxidant, skin conditioning, skin protecting*

Leaf extracts: *skin conditioning, skin conditioning – emollient*

Roots extracts: *antimicrobial, antioxidant*



Hemp flowers are still missing!

*EIHA proposal to establish limits of THC in cosmetics:
20 ppm or 20 µg THC/g.*

Hempro Int.

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Thank You for Your Attention!

Daniel Kruse

CEO Hempro Int. / EIHA President
June 2022

