



Hempro Int.

Production, Sales, Competence since 2001

Hemp food: an emerging market

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June 2022

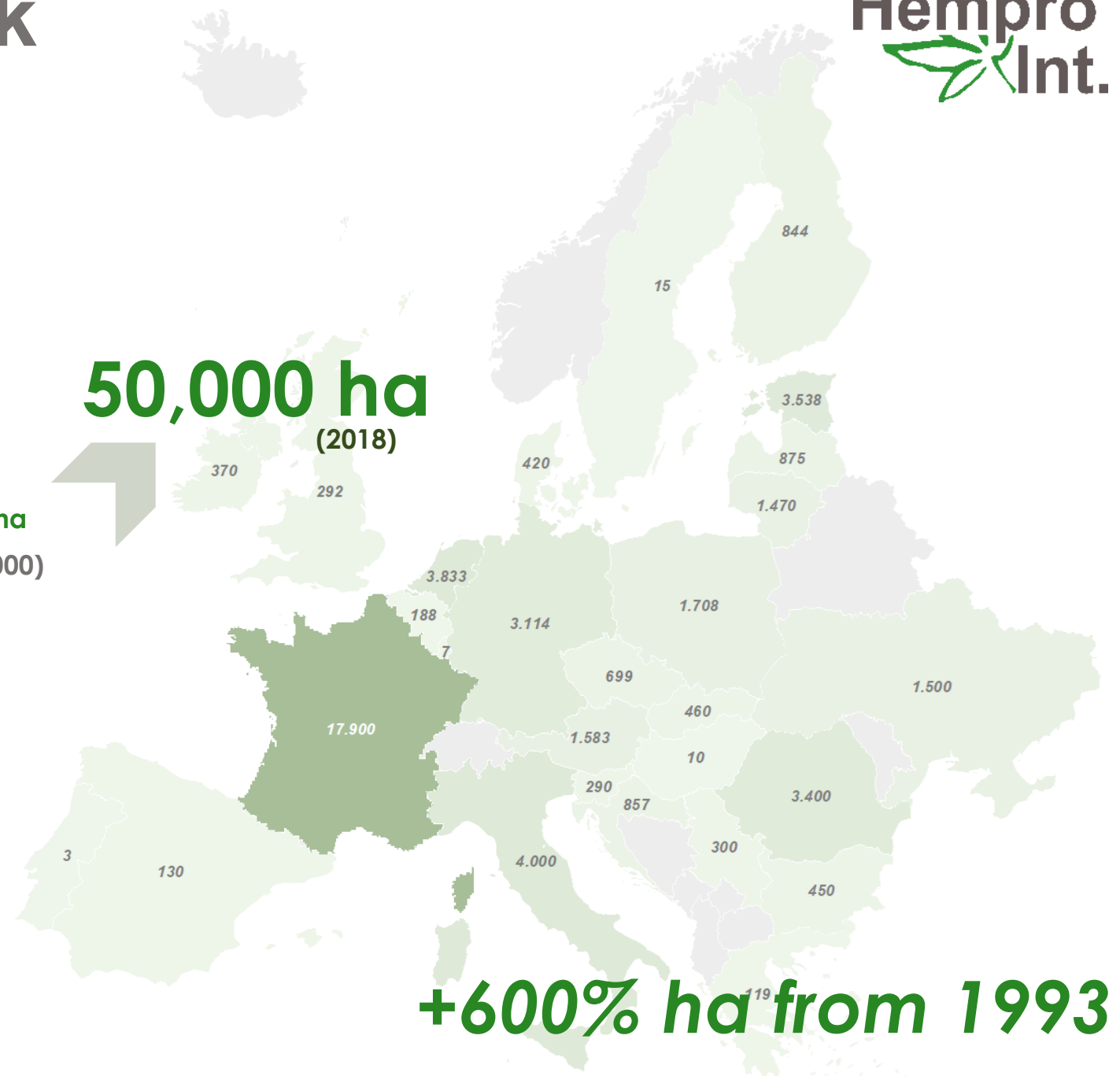
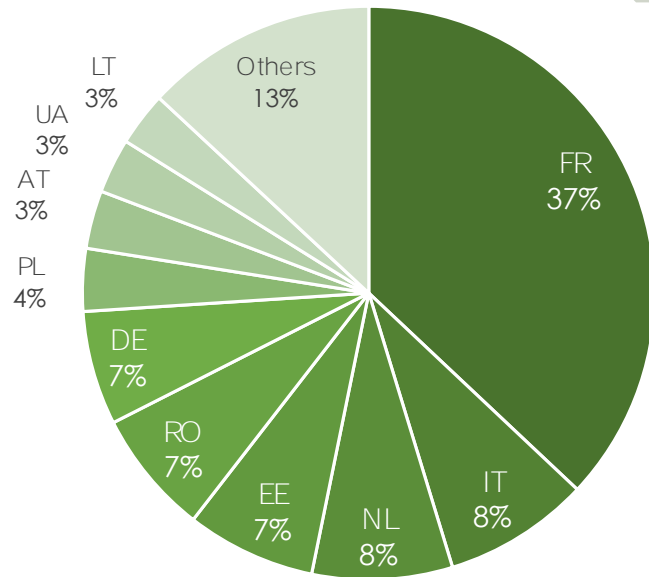


The hemp comeback

400,000 ha
(1940)

50,000 ha
(2018)

10,000 ha
(1960- 2000)



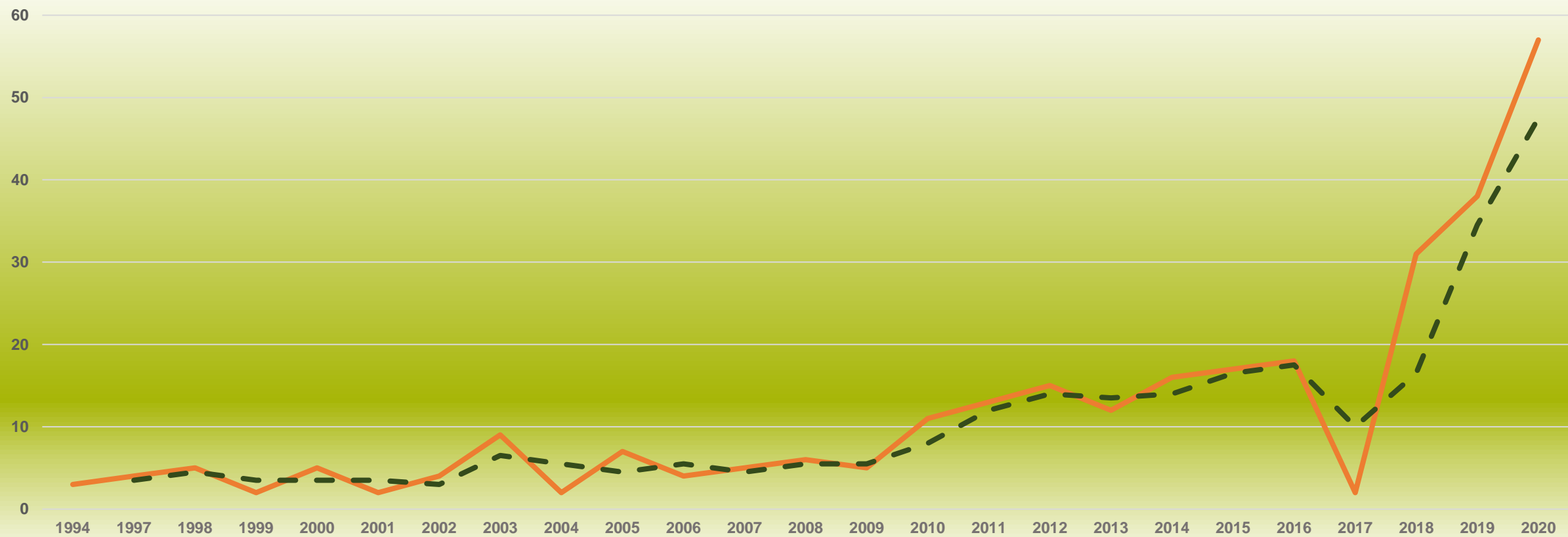
+600% ha from 1993

Research and publications



Topic: Hemp seed

Publications



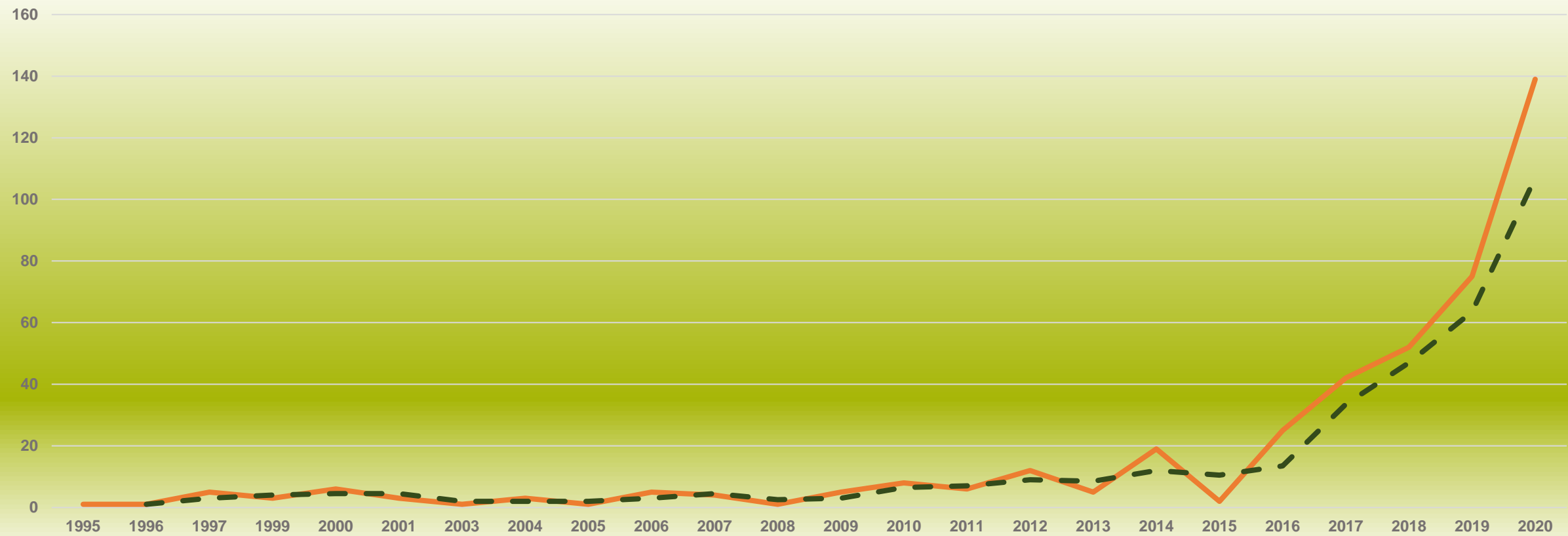
Source: <https://www.ncbi.nlm.nih.gov/>, HempConsult (2021)

Research and publications



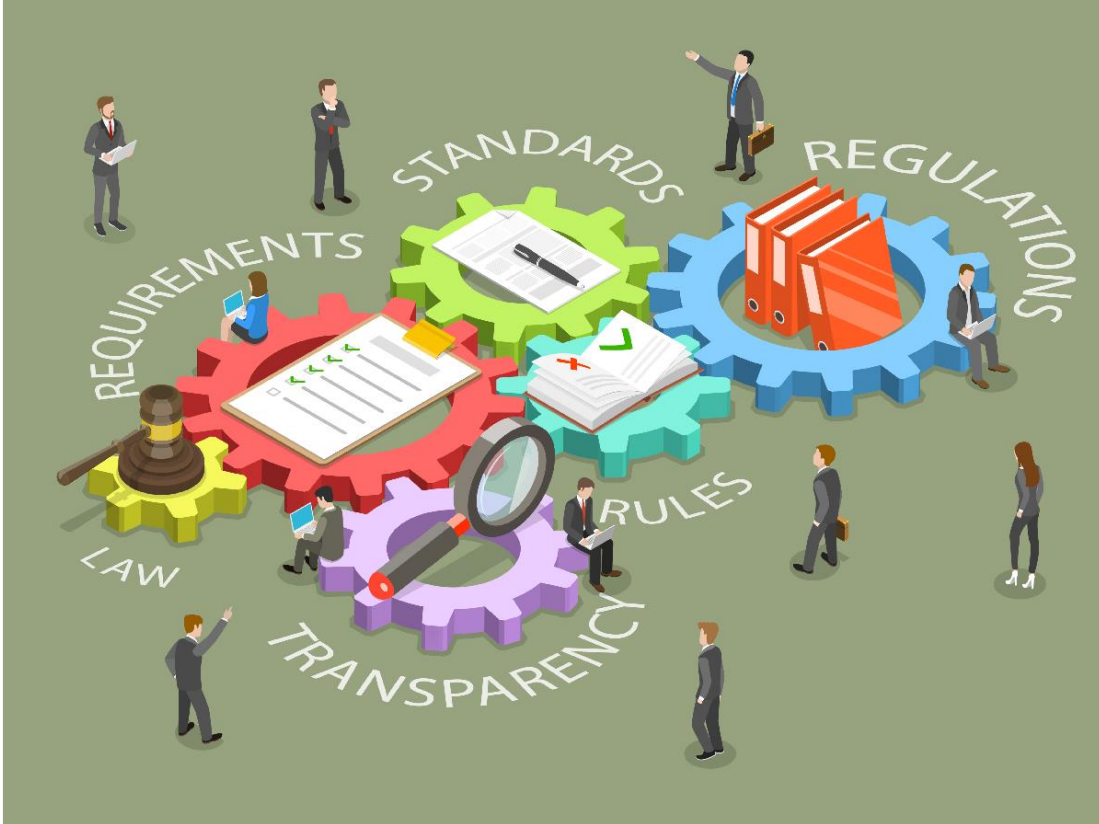
Topic: Hemp oil

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) is unnecessarily low and not supported by scientific evidence.

Based on scientific studies and on experience, a safe TDI / 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 toxicology study on THC will be fundamental to overcome our issues.

Food from seeds

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



	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 will come into force 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

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

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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



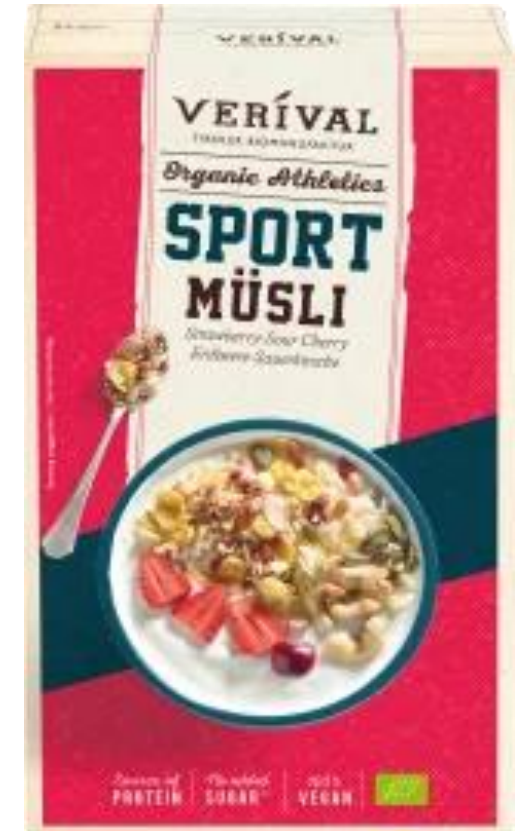
On the European market



On the European market



On the European market



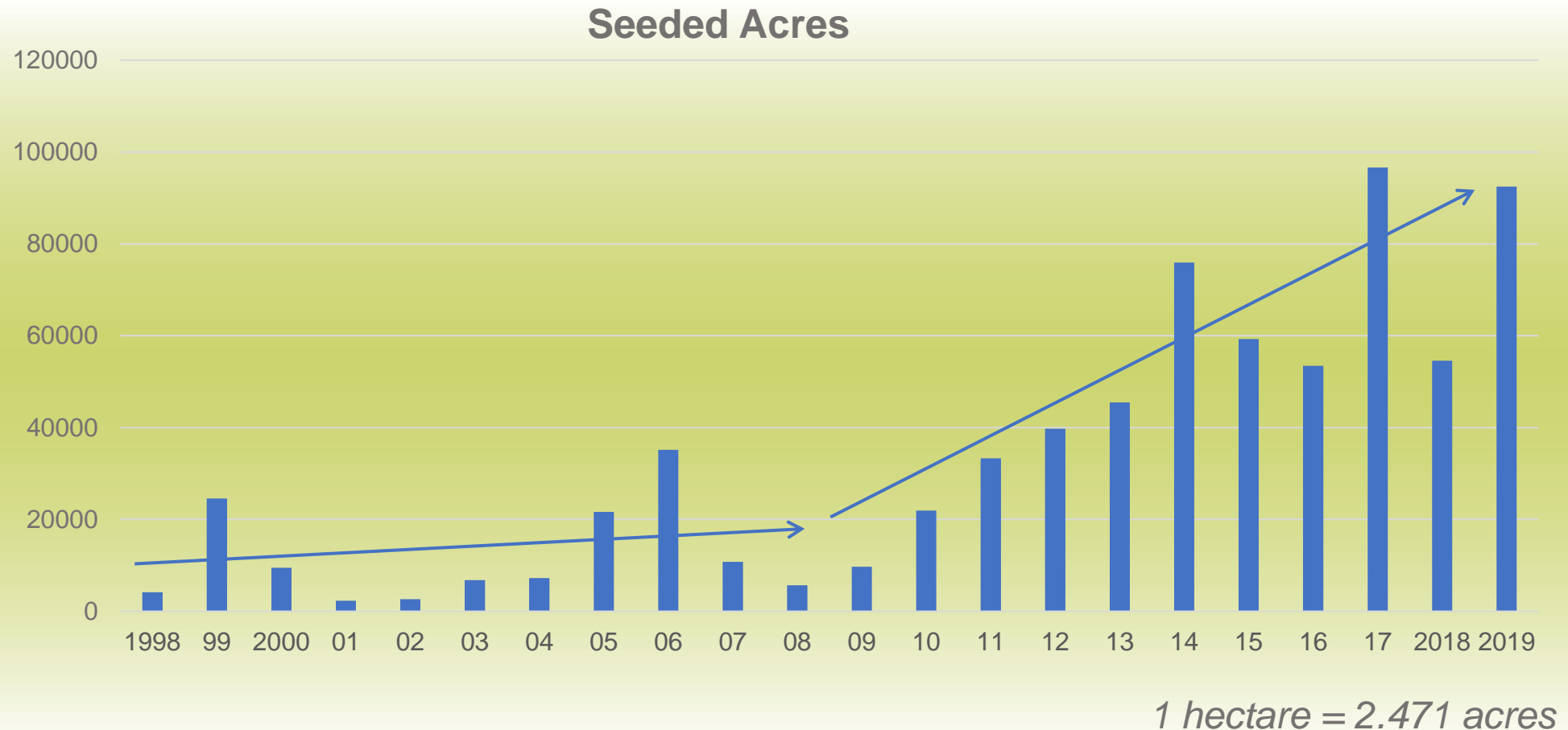
On the European market

ROSSMANN

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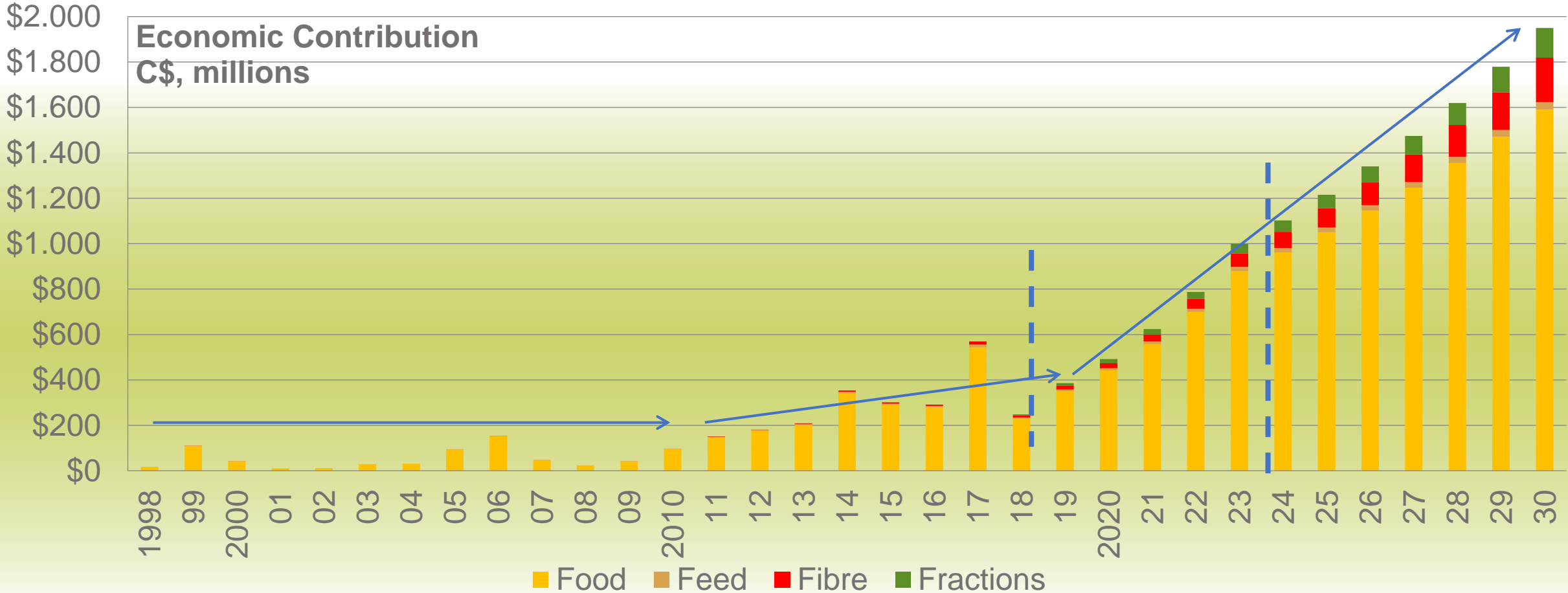


Hemp is expanding in Canada... propelled by food market demand



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





Hempro
 **Int.**

Production, Sales, Competence since 2001

Thank You for Your Attention!

Daniel Kruse

CEO Hempro Int. / EIHA President
June 2022

