



Gelatine Manufacturers of Europe

GME

ATF – 14th ATF Seminar - "Livestock are more than food" - 20 November 2024

GME (Gelatine Manufacturers of Europe)

European association founded in 1974

11 member companies

Together we account for almost 99 % of the European gelatine production & and 68 % global gelatine volumes (including EU manufacturers plants outside of Europe)

Committees:

- Technical
- Regulatory
- Sustainability (WG“Animal Welfare”)
- PR

GME's mission:

- To set and ensure **highest standards of quality, safety and sustainability**
- **Inform and communicate** with customers, authorities and the media, stakeholders at large

For the stability of nature and a functional world, a sustainable industry is a top priority

Gelatine Production in Europe

Belgium

- > PB LEINER VILVOORDE
- > ROUSSELOT GHENT (ACID)

France

- > GELATINES WEISHARDT SA
- > TESSENDERLO-AKIOLIS*
- > ROUSSELOT ANGOULEME
- > ROUSSELOT SORGUE (ALKALINE)

Germany

- > EWALD GELATINE GMBH
- > GELITA EBERBACH
- > GELITA GÖPPINGEN
- > GELITA MEMMINGEN*
- > GELITA MINDEN
- > PB LEINER NIENBURG
- > REINERT GRUPPE GMBH & CO KG

Italy

- > ITALGELATINE S.P.A.
- > LAPI

Netherlands

- > GELITA TER APELKANAAL
- > JELLICE
- > ROUSSELOT SONAC VUREN*
- > TROBAS GELATINE BV

Slovakia

- > GELIMA A.S. (WEISHARDT)

Spain

- > JUNCÁ GELATINES S.L SA
- > ROUSSELOT GIRONA

Sweden

- > GELITA SWEDEN

United Kingdom

- > PB LEINER TREForest



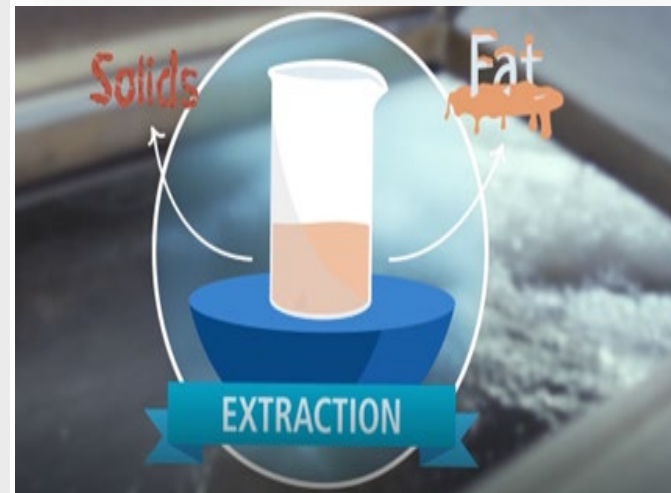
Direct
employments:
+/- 3 000

Gelatine and Collagen peptides

- **Pure natural proteins** obtained from animal raw materials that contain collagen
- **Consist of 84 to 90 % proteins** (composed of 18 different amino acids) and max 2 % mineral salts, rest is water
- **Food ingredient**, no E-number

Production

- **Gelatine** is manufactured by the extraction in water of the collagen present in skins and bones of animals followed by several purification steps.
- **Collagen Peptides (CP)** undergo a gentle, enzymatic process to remove the gelling capabilities of the gelatine



Gelatine and Collagen peptides

Regulations

- **Healthy** products
- **Long tradition**
- **Safe** products:
 - ✓ Confirmed, a.o., by **WHO**, **EFSA** and **US FDA**
 - ✓ EU Regulations:
 - Food hygiene requirements for the production of edible gelatine and collagen peptides
 - Pharma: EMA NfG

[GME: Safety of Gelatine](#)

Safety

GELATIN AND COLLAGEN PEPTIDES ARE SAFE PRODUCTS OF PREMIUM QUALITY. TO ENSURE THIS, EUROPEAN GELATIN MANUFACTURERS MEET THE STRICTEST SAFETY REQUIREMENTS AS SPECIFIED IN OFFICIAL REGULATIONS.

High-quality materials

- USE OF RAW MATERIALS DERIVED FROM ANIMALS DECLARED FIT FOR HUMAN CONSUMPTION
- CONTINUOUS AND RIGOROUS CHECKS OF ALL MATERIALS



Safe production process

- HIGH-TECH PRODUCTION PROCESS
- CONSTANT MONITORING OF ENTIRE PROCESS
- REGULAR INSPECTIONS BY AUTHORITIES



Natural and safe outcome



CLEAN LABEL PRODUCT

NATURAL EXCIPIENT
CONFIRMED BY ISO'S NATURAL
FOOD STANDARD/
TECHNICAL SPECIFICATION

NON-ALLERGENIC*

* FISH DERIVED BASED GELATINE AND COLLAGEN PEPTIDES LABELLING IS MANDATORY
** SHOULD NOT BE CONSUMED BY PEOPLE WITH ALPHA-GAL SYNDROME

GRAS STATUS

(GENERALLY
RECOGNIZED AS SAFE)



In a nutshell

THE GELATIN INDUSTRY IS ONE OF THE BEST-STRUCTURED AND BEST-CONTROLLED INDUSTRIAL SECTORS IN EUROPE.



GME IS DEDICATED TO SETTING THE HIGHEST STANDARDS FOR QUALITY AND SAFETY.



Sustainability - Circularity



- **Raw material sources** are co-products from the meat and farmed fish processing industries
- **No animals are slaughtered** for the production of gelatine
- **Upcycling:** Gelatine creates value for the community at large by converting by-products into higher value products for our society. Essential ingredients are produced for mainly food and pharma applications. Without the gelatine industry these by-products, would just be used for feed or technical applications, **or destroyed – food waste.**
- **Close to Zero waste:** The by-products from the gelatine and collagen manufacturing – protein products, fats and minerals are used in animal nutrition and certain technical applications such as fertilisers.
- **GME cares about its environmental impact** and is voluntary monitoring on a yearly basis the carbon and water footprints of gelatine
- Products with a **positive impact on overall sustainability and circular economy**

Origin of raw materials

Raw materials fit for human consumption:

1. **Pigskin:** Conventional (and organic) – as by-product from the meat industry
2. **Bovine hides:** By-product from the leather industry
3. **Bovine bones:** By-product from the meat industry
4. **Pig bones:** By-product from the meat industry
5. **Fish skin:** By-product from fish products

Co-products of the Gelatine production and Applications

Co-products from the gelatine production

Main applications

Pigskin gelatine

Fat/grease and processed animal protein (PAP) from pigs

Farmed animal nutrition (except pigs and bovines), oleochemistry, biodiesel, pet food...

Bone gelatine (pig & bovine)

Di-calcium phosphate (DCP)

Farmed animal nutrition (except pigs and bovines), fertilisers or soil improvers

Fish gelatine

Fat and PAP from fish

Pet food, farmed animal nutrition except maritime (not bovines), oleochemistry,...

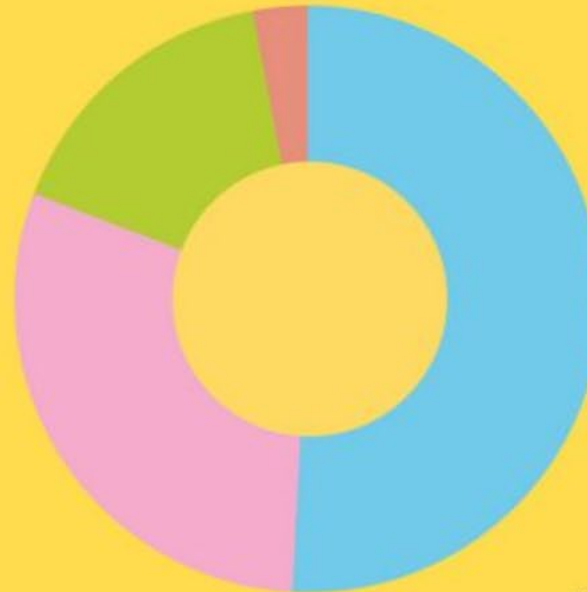
All-rounders in the most diverse sectors

GELATINE AND COLLAGEN PEPTIDES
ARE VERSATILE PRODUCTS
USED IN DIFFERENT
INDUSTRIES.

GELATINE'S MAIN FIELD OF APPLICATION
IS THE FOOD INDUSTRY,
WHERE IT IS A
UNIQUE INGREDIENT.

IT PROVIDES MANY
FUNCTIONALITIES AND
PROPERTIES AND
THEREBY GIVES
PRODUCT DEVELOPERS A
WIDE RANGE
OF OPTIONS.

APPLICATIONS ESTIMATE 2023



- FOOD:**
51% (280.871 MT*)
- PHARMA:**
30% (164.183 MT*)
- COLLAGEN PEPTIDES:**
16% (90.917 MT*)
- OTHER:**
3% (19.333 MT*)

*THESE FIGURES ARE AN ESTIMATE BASED ON DATA
COLLECTED FROM GME ASSOCIATION MEMBERS.

Key applications

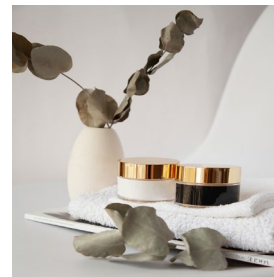
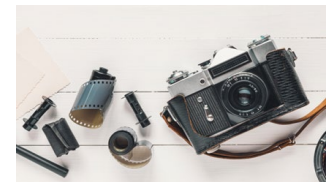
Gelatine and Collagen peptides

Gelatine

- ✓ **Food:** Confectionery, Desserts, Dairy products and Meat, fish and sausage preparations
- ✓ **Pharma:** Capsules hard and soft , Micro-encapsulation, Tablets, Plasma expander, Medical sponges
- ✓ **Others:** Pet food, Matches, Photography & X-ray, Paint ball, Book restorations

Collagen peptides

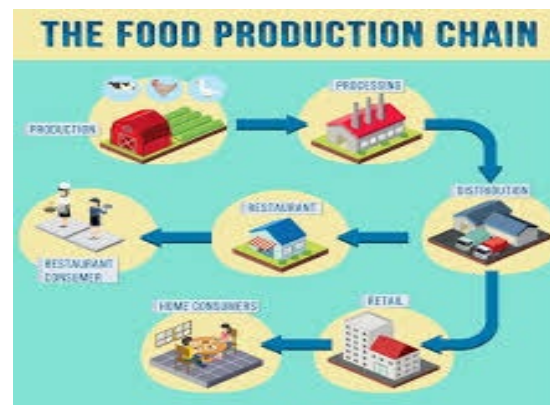
- ✓ Nutraceuticals
- ✓ Nutricosmetics
- ✓ Sports nutrition



Framework Sustainable Food System (FSFS)

GME's view

- GME supports the objective of the **Green Deal, the Farm to Fork and Biodiversity strategies**, but with a scientific evidence approach
- All measures and regulations will affect farmers and meat industry, and **industries along the whole food supply chain**, like the gelatine industry
- Therefore, the **whole supply chain must be considered** when designing sustainability requirements.
- These industries manufacture products used in many **key applications** bringing added value to our society



Framework Sustainable Food System (FSFS)

Challenges

Pressure on the supply of raw materials :

- ✓ **Relocation of business** outside Europe
- ✓ **Increase in imports** of gelatine or collagen peptides and their raw materials
- ✓ **Leading to increased dependencies** on supply chains abroad.
- ✓ Not to forget:
 - High-value ingredient with key applications will be affected (e.g. capsules)
 - The importations from Third countries will not all be in compliance with the CSR of EU

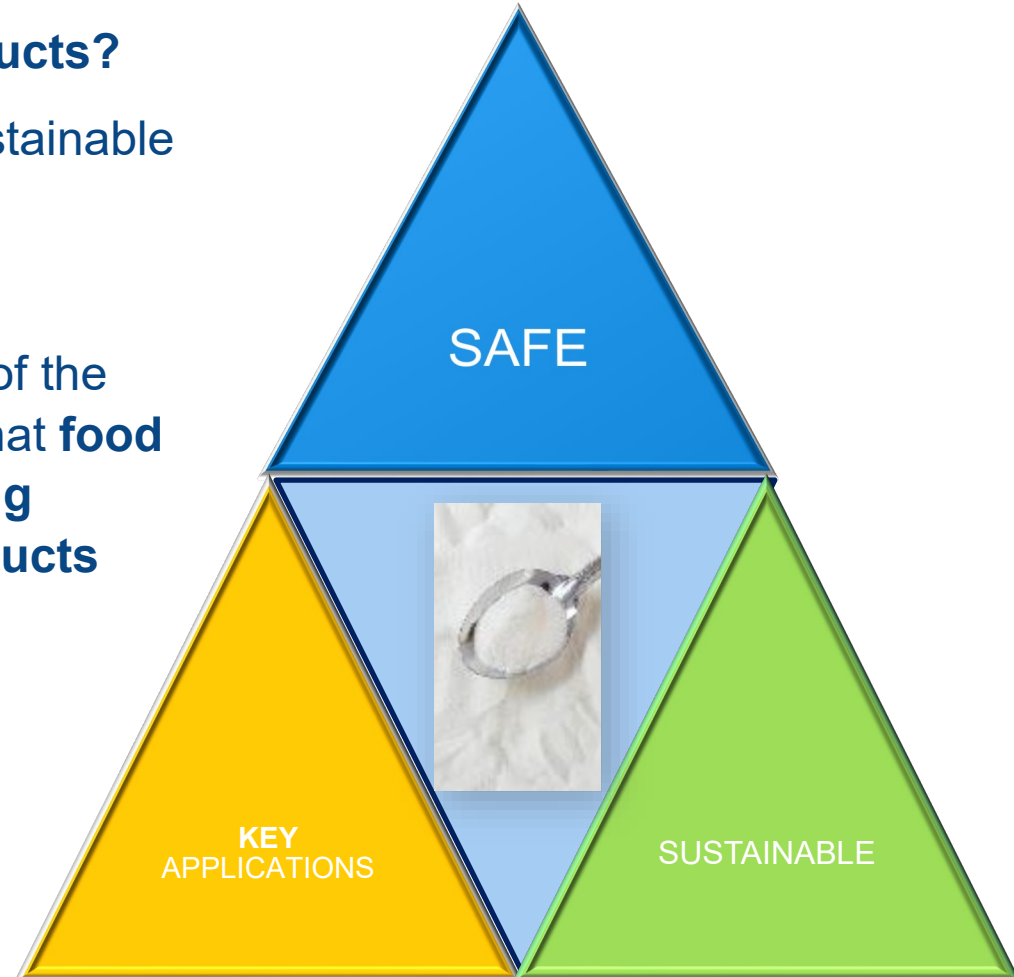


Framework Sustainable Food System (FSFS)

Challenges

Replacement by plant-based products?

- **Is it wise** to replace safe and sustainable products?
- **Is it feasible?**
- GROW (Gelatin representatives of the world) survey 2024: confirmed that **food producers are in favour of using upcycled and sustainable products**



Cefic - GME Secretariat

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- [Gelatine Manufacturers of Europe](#)
- [Cefic is the European Chemical Industry Council. visit us on cefic.org](#)
- <https://specialty-chemicals.eu/about-us/>



Thank you

Questions?

Background slides

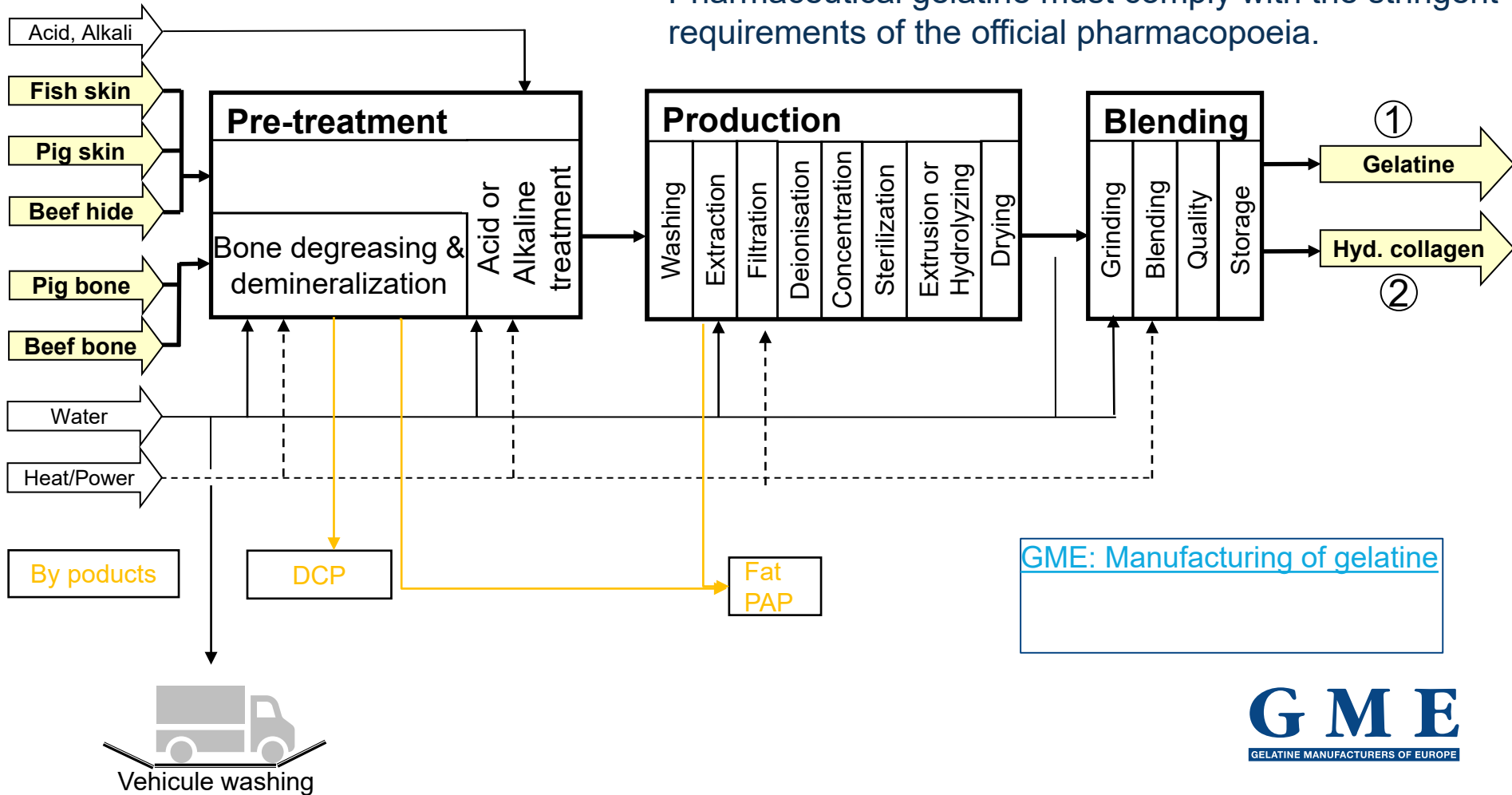
1. **Production processes**
2. **Applications – Gelatine and Collagen peptides**
3. **GME infographic - FSFS**
4. **Facts about the European gelatine industry**

1. Gelatine – Production processes

Raw materials fit for human consumption

Strict regulations:

- Edible gelatine shall comply with EU food law.
- Pharmaceutical gelatine must comply with the stringent requirements of the official pharmacopoeia.



2. *Food Applications*



Key applications

- **Confectionery:** gummies, marshmallows...
- **Desserts**
- **Dairy products**
- **Meat, fish and sausage preparations**

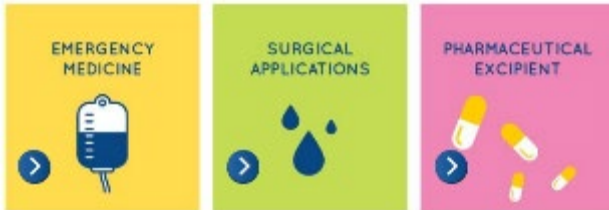
Some unique functionalities

- Gelling
- Ensures a unique melt-in-the-mouth texture and flavour release
- Transparency
- Gives form and stability
- Allows formulations to reduce calories in products

Properties

- Natural, no chemical modification, safe, no additives, no E-number

2. Healthcare - Pharma Applications



Key applications & Advantages

- **Capsules hard and soft** - *Protection, release profile (controlled)*
- **Micro-encapsulation** - *idem*
- **Tablets** - *coating, binder*
- **Plasma expander** - *Expands the circulating blood volume*
- **Medical sponges** - *Absorb the blood, stimulates tissue regeneration*
- **Injectables, vaccines** - *Stabilises the formulation*

Properties

- Natural excipient and safe, not chemically modified
- High biocompatibility
- Dissolve at the right place and in the right speed

2. *Special – Technical Applications*



-
- Pet food: Texture, source of protein
 - Matches: Binding agent
 - Photography & X-ray: Coating
 - Paint ball: Biodegradable capsules
 - Book restorations: Binding agent

2. Collagen peptides Applications

What is collagen?

- Collagen from Grec « kólla » means « glue»
- Main human body protein
- Plays an important role in the functioning of our body

What is collagen?



COLLAGEN PEPTIDES (CP), ALSO NAMED HYDROLYSED COLLAGEN OR COLLAGEN HYDROLYSATE, ARE PURIFIED NATURAL PROTEINS, DERIVED FROM ANIMAL RAW MATERIALS.



ABOUT 28 DIFFERENT TYPES OF COLLAGEN ARE IDENTIFIED. TYPE I COLLAGEN IS THE MOST COMMON TYPE OF COLLAGEN AND MAKES UP 90% OF THE COLLAGEN IN THE HUMAN BODY.

Main applications & Advantages

- Nutraceutical
- Nutricosmetics
- Sports nutrition



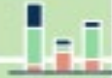
COLLAGEN PEPTIDES ARE
**EASY TO
INTEGRATE IN
ANY KIND OF
FOOD OR DRINK**



Scientific studies

3. GME's contribution - FSFS

Economic



CIRCULARITY

- PRODUCTION CREATES **SUBSTANTIAL VALUE** AS A SIDE STREAM IN THE MEAT CHAIN
- **UTILIZING VALUABLE BY-PRODUCTS** IMPROVES RAW MATERIAL SUPPLY
- » FOR A MORE **SUSTAINABLE FOOD CHAIN** AND A **CIRCULAR ECONOMY**

EMPLOYMENT IN RURAL AREAS

THE EUROPEAN GELATINE INDUSTRY DIRECTLY EMPLOYS APPROX. 3.000 PEOPLE.

INDIRECT EMPLOYMENT INCLUDES: THE BUILDING INDUSTRY, CONSULTANTS, CATERING, CLEANING, SECURITY, OUTSIDE MAINTENANCE, INTERIM PEOPLE, INBOUND AND OUTBOUND TRANSPORT ETC.

TRADE

MANUFACTURING OF GELATINE IN EUROPE CONTRIBUTES TO **REDUCING THE DEPENDENCY OF IMPORTED PRODUCTS** FOR KEY APPLICATIONS.



Environmental



TACKLING FOOD WASTE - RESOURCE EFFICIENCY - SUSTAINABLE FOOD CHAIN

THE INDUSTRY HANDLES **RESOURCES SENSIBLY**, THANKS TO THE **OPTIMISATION OF RAW MATERIALS** FROM THE MEAT INDUSTRY THAT OTHERWISE WOULD BE DISPOSED OF.

BY-PRODUCTS - PIG, BOVINE AND FISH BONES, HIDES AND SKINS DERIVED FROM ANIMALS FIT FOR HUMAN CONSUMPTION - ARE **CONVERTED INTO HIGH VALUE NATURAL PROTEINS:** GELATINE AND CP.



UPCYCLING

- PRODUCTION OF GELATINE AND CP ACHIEVES **HIGHEST LEVEL OF UPCYCLING**
- PRODUCTS SERVE IN **FOOD, NUTRITION AND PHARMA** INDUSTRIES
- » GELATINE PRODUCTION IS **BASICALLY CLOSE TO NO WASTE**

CFP AND WFP MONITORING

GME CARES ABOUT THE **ENVIRONMENTAL IMPACT** AND IS **MONITORING ITS CARBON AND WATER FOOTPRINT** ON A YEARLY BASIS.

Social



NO ANIMAL IS RAISED FOR GELATINE MANUFACTURING

SAFE PRODUCTS

THE PRODUCTS ARE **SAFE*** AND HAVE A **LONG HISTORY**.

HEALTHY AND BALANCED DIET

A **HEALTHY DIET** INCLUDES BOTH **PLANT AND ANIMAL-BASED FOOD**. GELATINE AND CP ARE **NATURAL PROTEINS**:

- NOT **CHEMICALLY SYNTHESIZED** AND CLASSIFIED AS **FOOD STUFF** AND **THUS CLEAN LABEL WITH NO E-NUMBER**
- CONTAIN **NO CHOLESTEROL, SUGAR OR FAT**, CAN HELP **IMPROVE FOOD NUTRITIONAL PROFILE**
- **SUITABLE FOR MULTIPLE KEY FOOD, NUTRITION AND PHARMACEUTICAL APPLICATIONS**
- CP HELP **IMPROVE JOINT, BONE AND SKIN HEALTH**



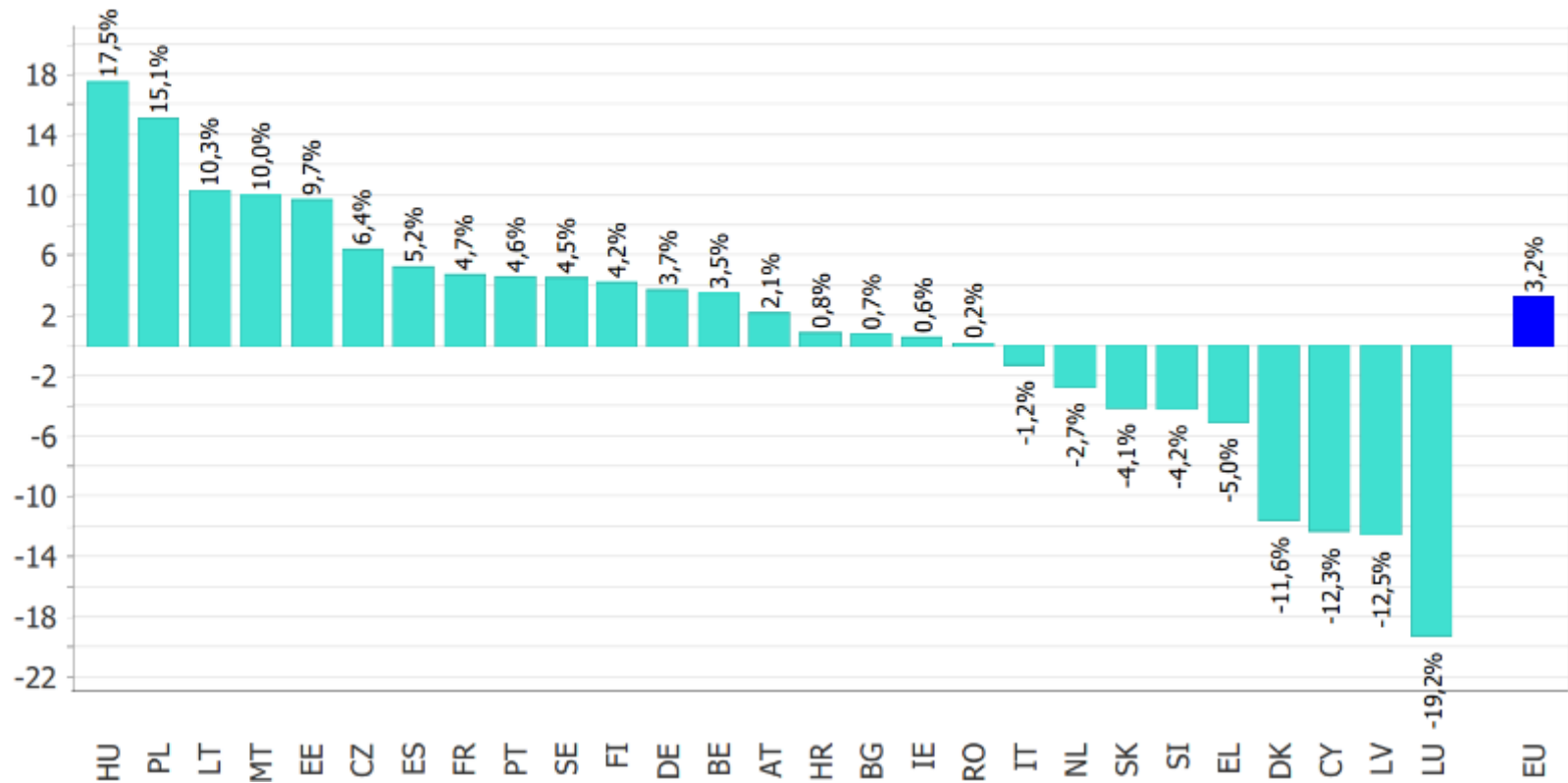
4. *Facts about the European gelatine industry*

- **Yearly production in 2023 of porcine gelatine by GME members: 105 000 – 110 000 Tonnes.**
 - ✓ 210-230 millions pigs are necessary for this production (3/4 kg of pigskin by animal)
 - **In comparison with the yearly pig production (source DG AGRI):**
 - ✓ European production : 237 millions of pigs (2022) – (250 in 2021)
 - ✓ European production : 220 millions of pigs (2023)
 - ✓ European production : estimation 218 millions of pigs (2024)
- ⇒ **The main part of the number of slaughtered pigs in Europe (non exported) are upcycled by the European gelatine /collagen production chain.**
- ⇒ **The need of raw materials sourced locally is very important.**

4. Changes – in Pig slaughtering

2024/2023 (Jan-Jan) - Eurostat

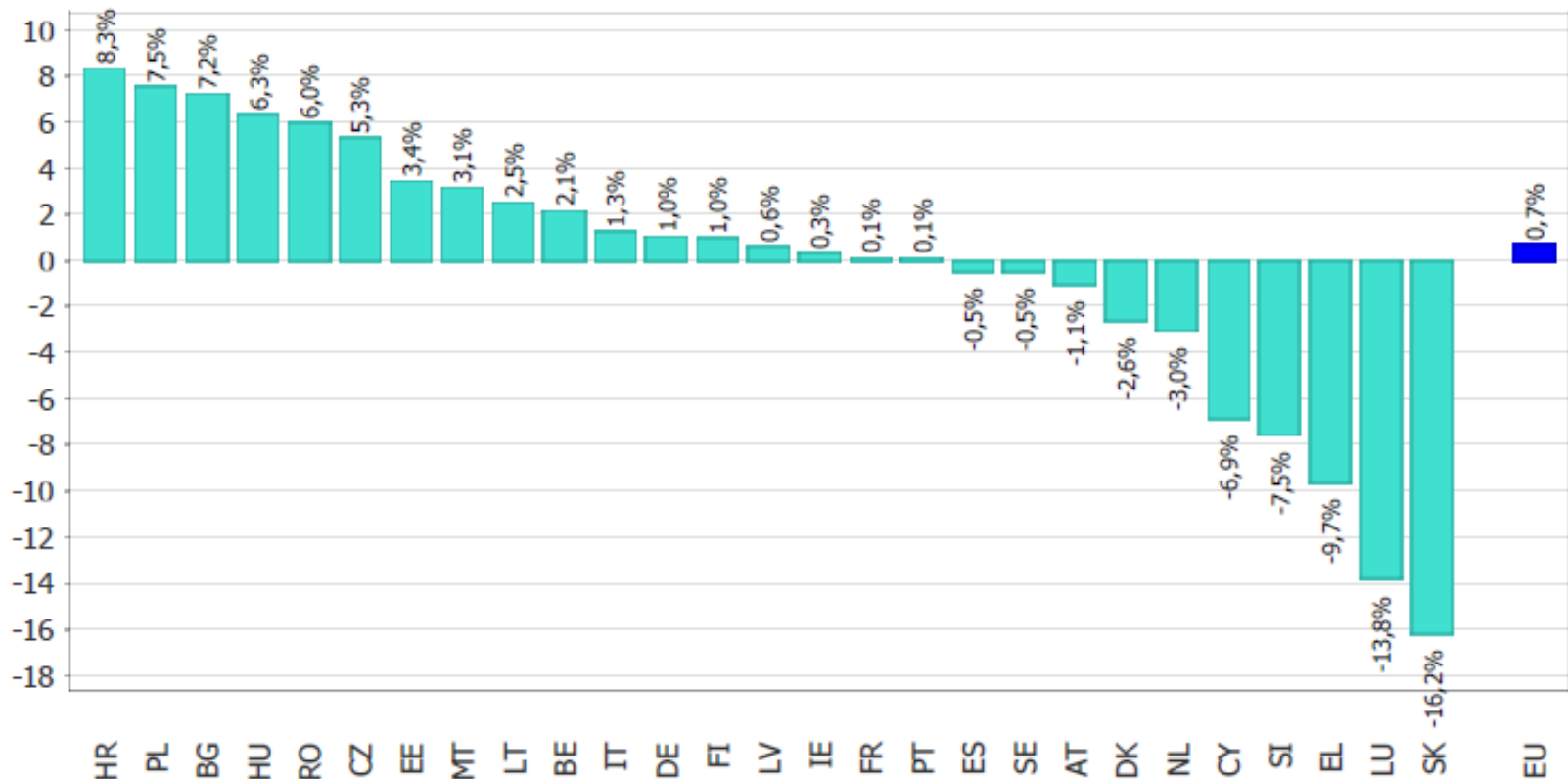
Changes in EU pigmeat slaughter ('000 Heads)
2024/2023 (Jan - Jan)



4. Changes – in Pig slaughtering

2024/2023 (Jan-Aug) - Eurostat

Changes in EU pigmeat slaughter ('000 Heads)
2024/2023 (Jan - Aug)



Source: Eurostat