INESCOP

FOOTWEAR TECHNOLOGY CENTRE

"Supporting the future of footwear"

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FOOTWEAR TECHNOLOGY CENTRE

THESSALONIKI 2021

Towards a circular bio-economy: high added value protein recovery and recycling from animal processing by-products

BYPROTVAL

LIFE16 ENV/ES/000467

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INESCOP
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BYPROTVAL

Protein recovery and recycling from animal by-products processes

LIFE16 ENV/ES/000467

Consortium

Coordinator: INESCOP FOOTWEAR TECHNOLOGY CENTRE

Partners: Energygreen Gas Almazan S.L., Otivar, Trumpler Creamos buena química

Duración: Starting: 01/09/2017 End: 28/02/2022

Website: http://byprotval.eu

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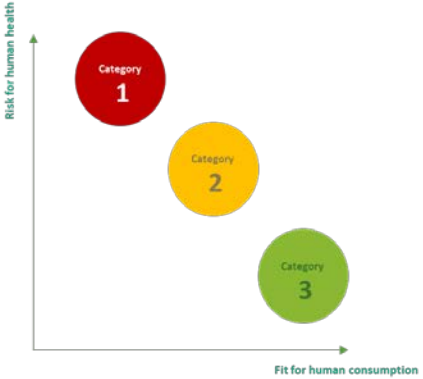
PROBLEM AND IMPACT OF THE RENDERING INDUSTRY

RENDERED PRODUCTS APPLICATIONS

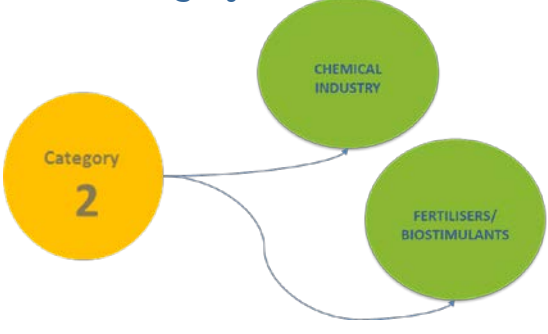
Fats and proteins



All processing is done on segregated lines to prevent contamination between different categories of waste and between different species

LIFE BYPROTVAL's OBJETIVE

Recovery of valuable proteins and their hydrolysates from high-protein-content processing water and from greaves that are generated in rendering facilities - Category 2 ABPs.



LIFE BYPROTVAL's RESULTS

Specific **enzymatic procedures** have been developed for the production different grades of protein hydrolysates :

- **Efficient**: Recovery of up to 75% protein in greaves.
- **Appropriate**: Production of protein hydrolysates with required properties.
- **Resource efficient**: Significant reduction of water and chemicals consumption.
- **Versatile**: Recovering different protein hydrolysates grades by adjusting treatment conditions.

LIFE BYPROTVAL's PILOT PLANT

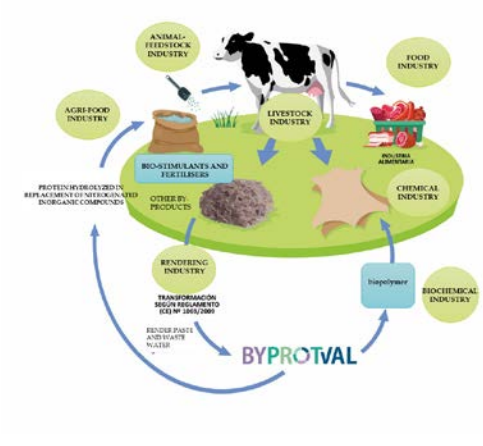
Recovering up to **100 tons of protein** per year

AMINO ACID BASED FERTILISERS/BIOSTIMULANTS

Promising approach in reducing environmental pollution and achieving sustainable agriculture

- Waste reduction, due to the recovery of protein derivatives.
- Sustainable approach for nutrient recovery
- Substitution of mineral fertilisers: amount of mineral N that can be replaced.
- Reduction on GHG emissions during fertilisers' production, due to the substitution of mineral fertilisers: CO_2.
- Reduction on GHG emissions during fertilisers use, due to the substitution mineral N in fertilisers: N_2O and NH_3+NO_X
- Water quality improvement due to the substitution of mineral N in fertilisers: reduction of N leaching.

INDUSTRIAL SYMBIOSIS OF BYPROTVAL



Contribution
to a resource efficient and
circular bioeconomy

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Thanks for your attention

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