

Zero Waste Scotland – Future of Food



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Partners



Funding Agencies



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For further information please contact:

- www.biorefineryglas.eu
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Biorefinery Glas

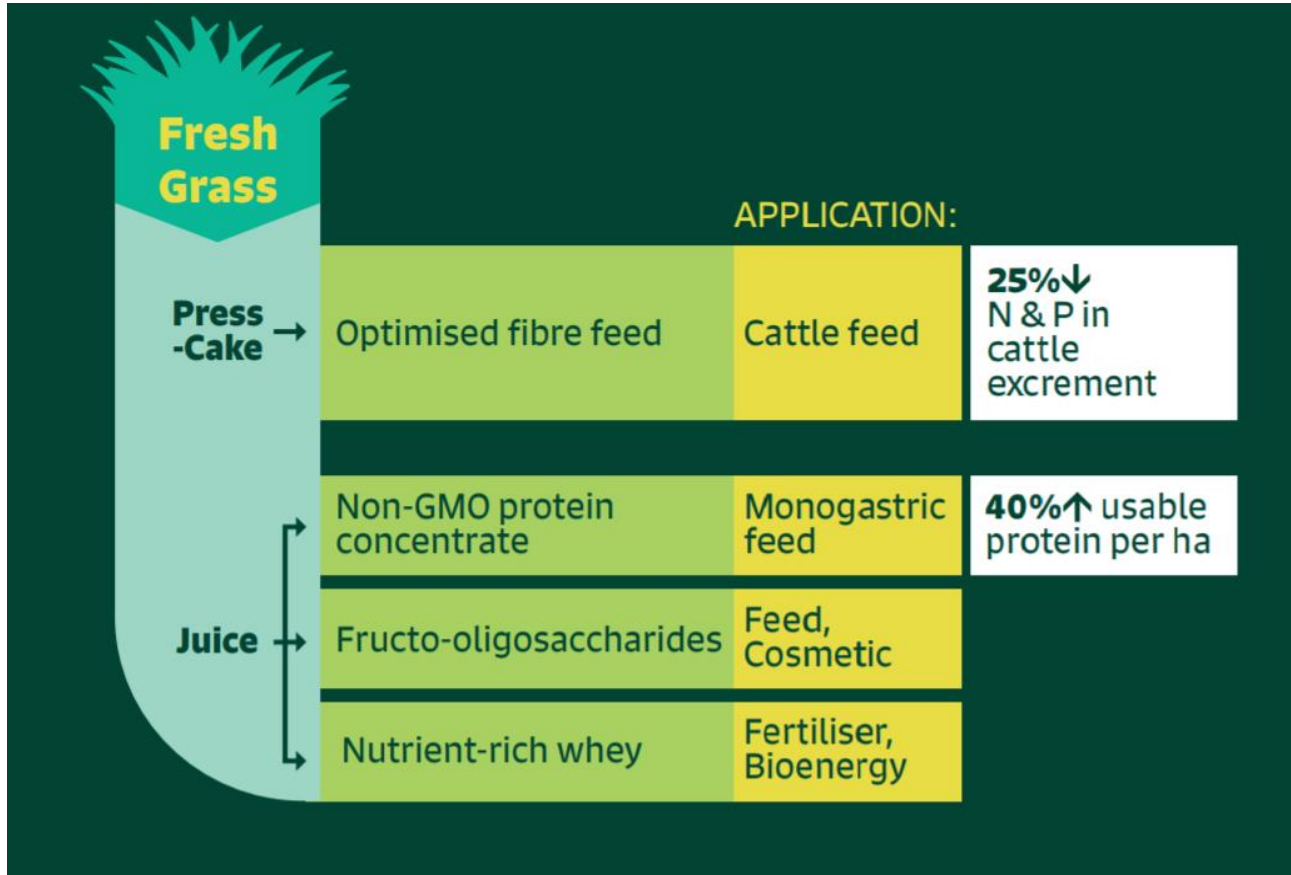
Small-scale, farmer-led green biorefineries



BIOREFINERY
GLAS



Drivers and Approach



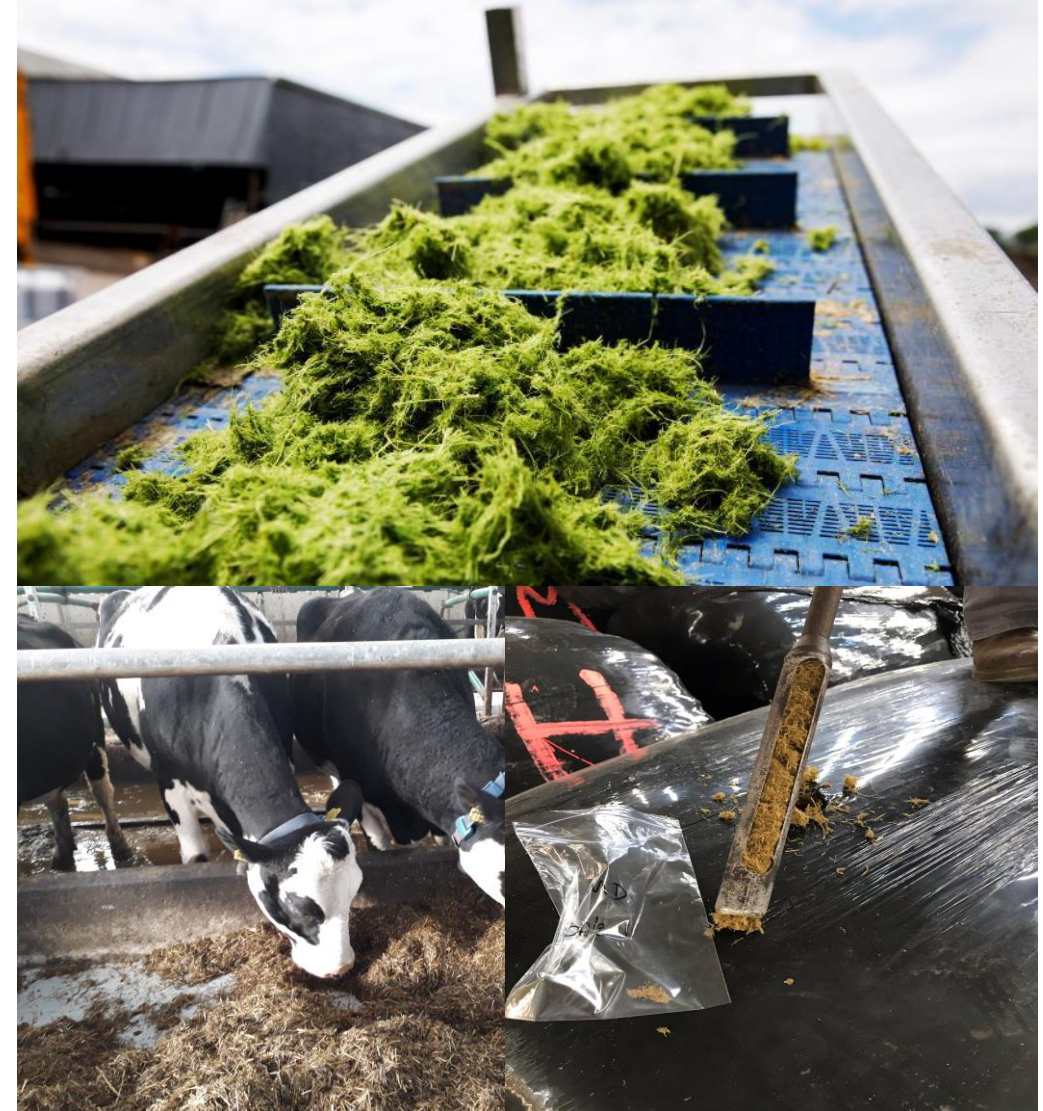
Source: Grassa



Presscake as an optimised feed for cows

- Significantly lower protein and energy content in presscake compare to silage (10% crude protein v/s 16%)
- But no significant difference in milk yield and quality!
- 20% improvement in NUE – more N going to product (milk), less N emissions (excrement)
- Positive presscake results now validated through 3 separate national cattle feed trials (IE, DK, and NL)
- High performance of presscake opens door to better utilisation of grassland
- Preliminary results from first in world analysis indicates some potential to reduce methane emissions also!

Trials at UCD Lyons Farm

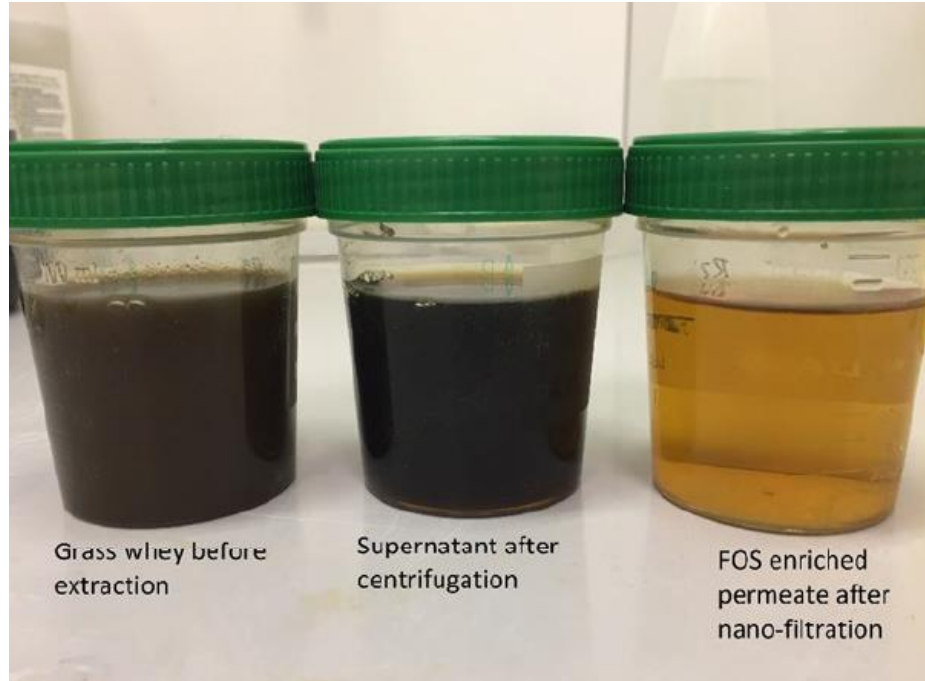


Protein Co-product as Soya Replacement or other applications

- Similar amino acid profile to soybean meal
- Locally produced feed for monogastics
- Reducing environmental consequences of soya and other protein imports
- Good performance to date in feeding trials
- Potential for upgrading into plant protein for humans



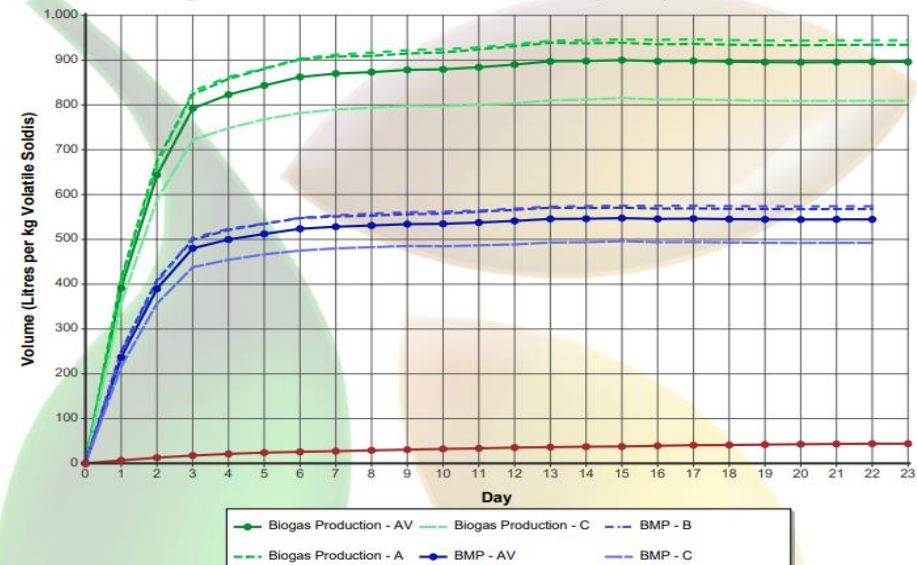
Additional Green Biorefinery Co-products



- Other potential products:
- Oligosaccharides
- Technical fibres
- Amino Acids, lactic acid
- Biofertiliser, biogas



Plot of Biogas and Biomethane Potential (BMP) - Inoculum Subtracted



The future of green biorefineries

- Integration of multi species swards grass
- Getting cooperation from farmers
- Improving range of feedstocks
- Convincing market partners

- **Additional Ongoing Work**
- Conducting attributional LCA
- Economic Analysis under different scenarios
- Spatial analysis to select sites and understand replication potential
- Development of policy recommendations to support small-scale protein factory uptake



Thanks to our Team





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