Re-Livestock
RESILIENT FARMING SYSTEMS

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PRACTICE ABSTRACT 5

Case study on 'Testing by-products as low C feeds for beef cattle' - UK

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WP2:
Re-Feeding livestock for resilience

Benefits of Brewers' Spent Grains in Dairy Diets

Utilising agro-industrial by-products contributes to **circular bioeconomy**, offering advantages in terms of **sustainability**, cost-effectiveness, and nutritional value. **Brewers' spent grains** BSG are a by-product of the brewing process, and has commendable nutritional value, in terms of protein and fibre content. Beyond its nutritional efficacy, feeding locally-produced BSG addresses the dual challenges of waste management in the brewing industry and the negative environmental impact associated with importing conventional protein feeds.

Exploring Sustainable Protein Sources in Beef Production

The collaboration between breweries and livestock farmers in establishing efficient supply chains for BSG represents a shift towards a more sustainable agro-industrial framework. For this reason, an animal trial was conducted at the University of Reading, which compares the effect of different dietary protein sources (such as soya bean, local field beans, and BSG) on feed efficiency and methane emissions in indoor beef production systems, while simultaneously being compared to a 100% pasture-fed beef system.

Why is this important? Conducting this study will explore the potential of replacing **imported protein sources**, such as soya bean, with **local alternatives** without affecting (or potentially even improving) the growth rates of beef cattle and reducing their methane emissions. It aligns with the principles of a circular economy, seeking to optimise the **use of resources** and minimise **agricultural footprint**. Furthermore, understanding how various diets and production systems influence beef production and methane emissions is crucial for assessing the overall environmental sustainability of beef production. Results from this study will be made available during 2024.

Figure 1. Holstein × Angus crossbred steers in the barn.

Figure 2. Methane emissions were recorded using the GreenFeed automated head chamber system.

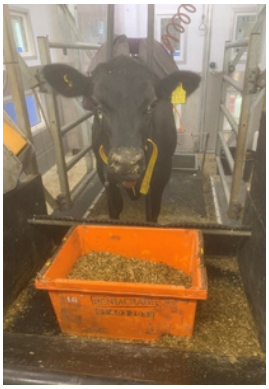

Figure 3. Steers within each group were selected to undergo additional digestibility and methane assessments.