



SPAIN



NEWFEED PROJECT:

DEVELOP AND PROMOTE ALTERNATIVE ANIMAL FEEDS BY CONVERTING FOOD INDUSTRY BY-PRODUCTS FROM WINERY, ORANGE JUICE, AND OLIVE OIL SECTORS INTO HIGH-VALUE SECONDARY FEEDSTUFF

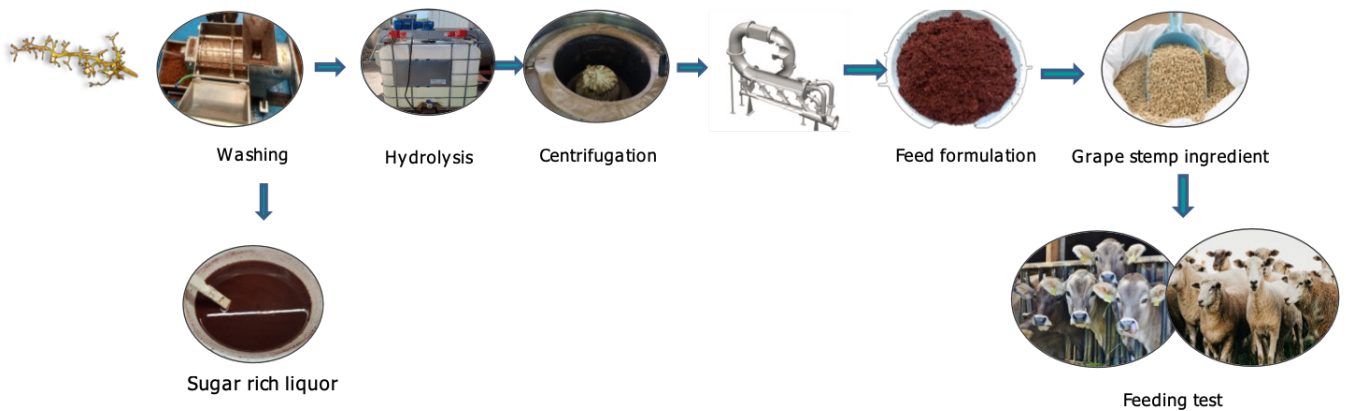


Valorization of Grape Stems as Feed for Ruminants



This case study explores the suitability of using **grape stems (GS)** for ruminants feeding, using both *in vitro* and *in vivo* trials.

Methodology:



The results show that **grape stems** can be efficiently processed and included in ruminant diets without technical issues.

Washing allowed to obtain a liquor rich in sugar with food applications and enhanced drying efficiency and limiting unwanted fermentation (Table 1 Feed ingredient composition).

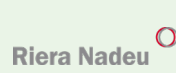
	Hydrolysed sample	Non-hydrolysed samples
Reducing sugars (mg/g)	192.7	234
Polyphenols (mg/g)	29.6	38.0
NDF (%)	47.3	45.0
ADF (%)	47.7	40.6
Lignin (%)	29.9	24.6
Digestibility (%)	41.9	30.3

Feeding trials in **dairy sheep and cows** demonstrated that including up to **10% GS or hydrolysed GS (HGS)** in the diet **did not affect animal performance, milk quality, or consumer acceptance**.

In addition, including **non-hydrolysed grape stems** in the concentrate (10% inclusion) increased milk PUFA, **improving milk fatty acid composition towards a healthier one**.

Overall, **non-hydrolysed grape stems** represent a **cost-effective, sustainable, and environmentally friendly** feed option, contributing to **circular economy objectives** by upcycling agri-food by-products.

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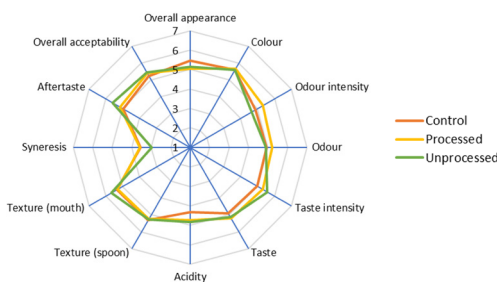
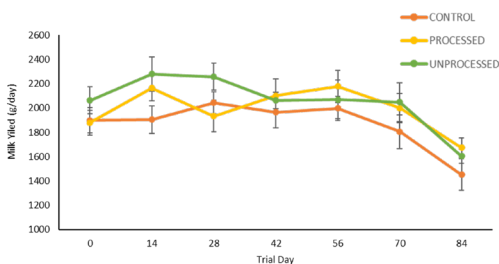
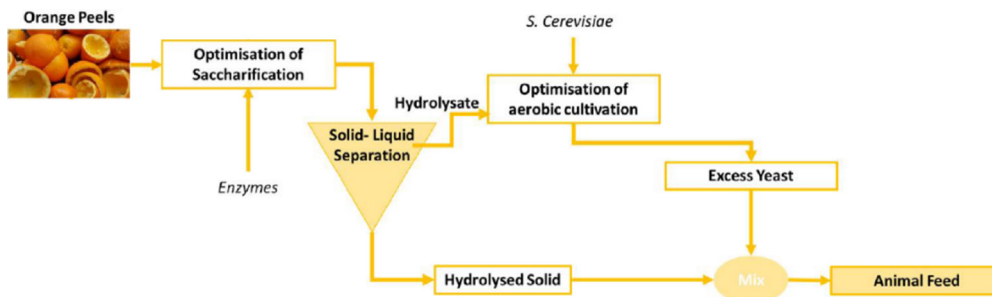
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Valorization of Orange Peels as Sustainable Animal Feed

This case study explores the optimization of **orange peel** waste through enzymatic hydrolysis, fermentation, and drying, transforming it into a **nutrient-rich, sustainable feed** ingredient for ruminants.

Methodology:



Both processed and unprocessed orange peel feeds **enhanced milk production** compared to the control. Over time, processed feed proved **more effective**, leading to **improved overall production**. Unprocessed feed **significantly increased** milk fat content, indicating a **positive impact on milk quality**.

The cost analysis confirmed that even the unprocessed orange peel feed is an **economically viable** and scalable solution for farmers. Life cycle assessment highlighted a significantly **lower environmental impact** compared to conventional feed production and waste management practices.

Yoghurt produced from ewes fed with processed or unprocessed orange peels, showed **no negative effects on quality** compared to those from a conventional diet.

Sensory evaluations showed no significant differences in flavour, with all samples rated **above average in acceptability**, indicating that animal **product quality remains high**.

Overall, this valorization strategy supports **circular economy principles**, enhances livestock productivity, and **maintains product quality**—offering a comprehensive solution for **sustainable Mediterranean agriculture**.

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EGYPT



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Valorization of Olive Cake as an improved feed ingredient for poultry (broiler chicken)



This case study examines the effects of incorporating fermented **Olive Cake (OC)** into broiler diets, with a focus on growth performance, carcass characteristics, and blood parameters.

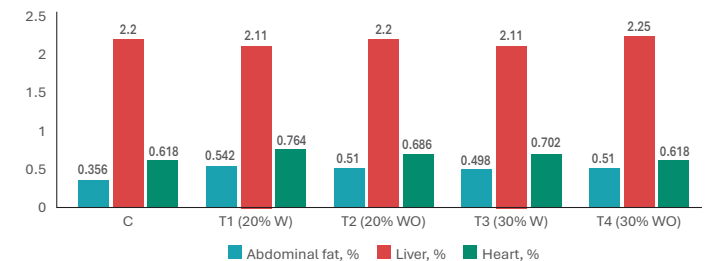
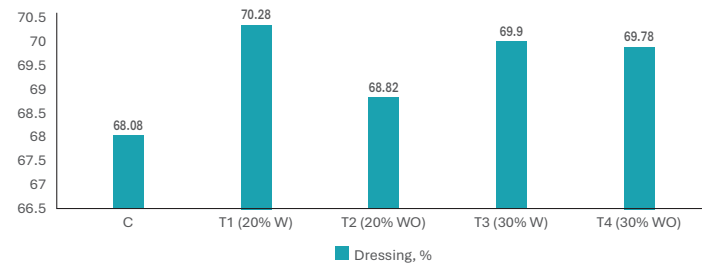
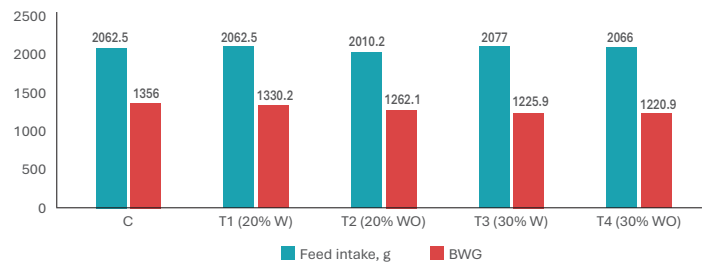
Findings:

The findings highlight that fermented olive cake, with or without the addition of herbs, could serve as a viable alternative feedstuff.

The results indicate that olive cake can serve as a **cost-effective and sustainable feed ingredient**, supporting more environmentally friendly poultry production. Higher inclusion levels were associated with **reduced feed intake** and affected liver percentage.

Most blood biochemical markers, such as triglycerides and total cholesterol, **remained stable**, indicating no severe metabolic disruption. Notably, a significant **reduction in total cholesterol** was observed, pointing to a potential **positive impact on lipid metabolism**.

From an economic and environmental perspective, using olive cake not only helps reduce feed costs but also supports **waste valorization and circular economy goals**. Fermented olive cake shows strong potential as a **sustainable feed alternative** in poultry farming.



Overall, the results from the experimental trials indicate that incorporating industrial by-products into animal feed has a **positive effect** on the **overall quality** of the resulting dairy products.

These findings are **promising** for the future of animal nutrition, promoting a **more sustainable and circular economy approach**.

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