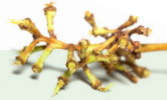


Main goal: Develop and promote alternative animal feeds by converting food industry by-products from winery, orange juice, and olive oil sectors into high-value secondary feedstuff.

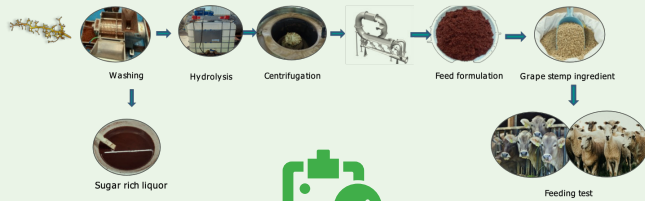


SPAIN



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.



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



Unprocessed GS improved the milk's **fatty acid profile** and offered **greater economic and environmental benefits** by avoiding the additional costs and impacts of bioprocessing.

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.**



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.

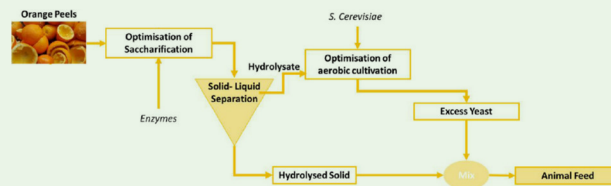


GREECE



Valorization of Orange Peels as Sustainable Animal Feed

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



The results show **notable improvements** in the **nutritional profile and dairy sheep performance**, including higher milk yield and fat content.



Life cycle assessment indicated **lower environmental impact** than traditional feed production and waste management.



The **cost analysis** demonstrate that even the unprocessed feed is **cost-effective**, offering an **affordable, scalable solution** for farmers.



Yoghurt produced from ewes fed with processed or unprocessed orange peels achieved **high consumer acceptability**, highlighting its **strong potential as a nutritious and appealing product.**



Overall, this valorization strategy supports the circular economy, **boosts livestock productivity, and preserves product quality**, offering a sustainable solution for Mediterranean agriculture.



EGYPT



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.



Higher inclusion levels were associated with **reduced feed intake** and affected liver percentage.

Most blood markers, including triglycerides and cholesterol, **remained stable**, suggesting no major metabolic disruption. A **notable drop in cholesterol** suggests a **positive effect** on lipid metabolism.



From both **economic and environmental perspectives**, using olive cake **reduces feed costs** while **supporting waste valorization** and circular economy goals.

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.



Overall, the results indicate that olive cake can serve as a **cost-effective and sustainable feed ingredient**, supporting more environmentally friendly poultry production.

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