

Newsletter, Project Biovino

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News about Biovino



POCTEP Biovino is a Spain-Portugal transboundary project, whose objective is to lay the theoretical and technical foundations to establish a biorefinery platform employing winery wastes and by-products.

In this issue you can find the latest results obtained.

Winery wastes: valuable resources (Castile and León, Spain)



In Castile and León there were 79.000 ha devoted to vineyard in the campaign 2019-2020. According to estimations, this activity would produce about 160.000 t vine shoots, 13.000 t grape stalks, 68.000 t grape marc and 5.000 t wine lees. All these by-products and wastes, frequently underused, are an important source of nutrients (sugars, nitrogen or phenolic compounds) with many applications in the chemical, agri-food, nutraceutical or pharmaceutical industries. Would you like to know in which regions are

located these by-products?

More information: [link](#).

Winery wastes: valuable resources (Northern Portugal and Central Portugal)



The association BLC3 - Campus de Tecnologia e Inovação (Portugal) is working on the inventory of wastes and by-products in the winery regions of Minho, Trás-os-Montes, Douro e Porto, Távora-Varosa, Beira Interior and Dão e Lafões.

Thanks to this research, it can be concluded that wine production generates three types of residues, namely, vine shoots, grape marc and wine lees. The classification of winery areas into Protected Designation of Origin (POD) and Protected Geographical Indication (PGI) enabled the detection of important variations in waste production for each wine.

More information: [link](#).

Polyols: erythritol



Erythritol is a natural sweetener with an increasing demand by food industries. Erythritol production using grape must as a feedstock is a novel and interesting possibility, as confirmed by the Centre of Biofuels and Bioproducts of ITACyL (Spain).

The use of low-quality or surplus grape must as a feedstock for erythritol biosynthesis reduces cost processes, while opening new business lines for the wine industry. Process optimization led to erythritol concentrations of 90-100 g/L from rosée must and red must, which is comparable to the yields obtained in industrial processes employing pure glucose.

More information: [link](#).

Alcohols: butanol



The research group of the Centre of Biofuels and Bioproducts of ITACyL (Spain) has worked on butanol production by ABE fermentation from pruned vine shoots. Vine shoots contain approximately 50% carbohydrates in the form of cellulose and hemicellulose. After optimising operation conditions (biomass pretreatment, microbial screening and nutrient supplementation during fermentation), promising butanol concentrations have been obtained (7-9 g/L). These concentrations are comparable to those reported for other agricultural biomasses worldwide

More information: [link](#).

Biogas: Is it possible to use the waste of ABE fermentation?



The biodegradability tests performed by the University of León (Spain) demonstrate that it is possible to use the exhausted broth of the ABE fermentation of vine shoots as a feedstock for biogas production by means of anaerobic digestion. Preliminary results indicate that methane can be obtained in a concentration range of 217-583 L CH₄/kg VS.

More information: [link](#).

Microbial electrolysis cells



The University of León (Spain) is exploring the treatment of liquid organic wastes, such as the exhausted broth from the ABE fermentation of vine shoots. It has been observed that the utilisation of microbial electrolysis cells (MEC) favours biogas production, both in terms of volume and methane richness (the MEC reactor has reached a purity of 80% CH₄), in comparison to traditional anaerobic digestion

More information: [link](#).



Project Biovino

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