

# NEWS June 2021



## AgriWasteValue mid-term event : report on

## project progress

The AgriWasteValue mid-term event was held on Tuesday, January 26, 2021, online, during NutrEvent Digital, the European meeting place for innovation in food, feed, nutrition and health. More than 120 people registered to this event, most of them specialists of the different fields (cosmetics, nutraceutics, chemistry, energy and agriculture) concerned by the project. Many academics were also registered.

### Results halfway through the project

Inventory, selection, collection and pretreatment of starting agricultural wastes-sourcing

In order to develop the cascading valorization chain of agriwaste biomass, it is necessary to clearly **identify the wastestream available** in the North West region. A specific attention is paid to agriwaste sidestreams from sources such as vineyards, orchards, tree nurseries and more. Old wine wood, buds from trees and bark trees have been already identified as promising agriwastes for the considered valorization chain as sources of bio-active agents. streams collected are mapped and analyzed by the partners Delphy and ValBiom (<u>https://www.</u> <u>agriwastevalue.eu/en/raw-material</u>). To this day, **487 locations** (sources of agriwastes from vineyards, orchards, tree nurseries, etc.) were added to the digital map: 460 in Belgium, 20 in Netherlands and 6 in France. Data collection is still an on-going task.

A selection of the most promising agriwastes were realized according to the following aspects: seasonability - available amounts - economical aspects. The selected agriwastes were collected from local producers by R&D partners to start the next activities of the project (implementation of the cascading valorization chain and market applications).

#### The article continues on the <u>www.</u> <u>agriwastevalue.eu</u> website :

https://www.agriwastevalue.eu/fr/actualite/agriwastevalue-mid-term-event-report-project-progress-halfway-through

Data collection is a complicated task. The side-

### Synthesis of Biobased Phloretin Analogues: An Access

 $R_3$ 

OH

OH

HCI

**EtOH** 

H<sub>2</sub> Pd/C

**EtOH** 

### to Antioxidant and Anti-Tyrosinase Compounds for Cosmetic Applications

(1)

(2)

by Laurène Minsat, Cédric Peyrot, Fanny Brunissen, Jean-Hugues Renault and Florent Allais

The current cosmetic and nutraceutical markets are characterized by a **strong** consumer demand for a return to natural products that are less harmful to both the consumers and the environment than current petrosourced products. Phloretin, a natural dihydrochalcone (DHC) found in apple, has been widely studied for many years and identified as a strong antioxidant and anti-tyrosinase ingredient for cos-

metic formulations. Its low concentration in apples does not allow it to be obtained by direct extraction from biomass in large quantities to meet

market volumes and prices. Moreover, its remarkable structure prevents its synthesis through a green process. To overcome these issues, the synthesis of phloretin analogs appears as an alternative to access valuable compounds that are potentially more active than phloretin itself. Under such considerations, 12 chalcones (CHs) and 12 dihydrochalcones (DHCs) were synthesized through a green Claisen–Schmidt condensation using bio-based reagents. In order to evaluate the potential of these molecules, radical scavenging DPPH and

anti-tyrosinase tests have been conducted. Moreover, the UV filtering properties and the stability of these analogs towards UV-radiations have been evaluated. Some molecules showed competitive antioxidant and anti-tyrosinase activities regarding phloretin. Two compounds in particular showed EC50 lower than phloretin, one chalcone and one dihydrochalcone.





Work realised by the partners for the project

North-West Europe

#### Download full article on

https://www.agriwastevalue.eu/fr/actualite/synthesis-biobased-phloretin-analogues-access-antioxidant-and-anti-tyrosi-

nase-compounds

### [Video] Virtual demonstration of an extraction of molecules from agricultural and viticultural residues on an industrial scale

Discover the virtual demonstration (in French) of an extraction of molecules from agricultural and viticultural residues on an industrial scale, in the facilities of Celabor, partner of the AgriWasteValue project.

The English subtitled version will be available soon.

This video was realised in the framework of the Interreg NWE project AgriWasteValue and broadcasted during the workshop "Stratégies d'extraction des molécules à haute valeur ajoutée à partir des résidus agricoles",organised online by Celabor on May 18, 2021.



Available on Youtube : <u>https://www.youtube.</u> <u>com/watch?v=LcyOd-</u> <u>tEHIPg</u>

# Viticulture, a novelty in the panorama of studies in Belgium



Winegrowing is developing in Belgium, or rather **redeveloping**. New varieties adapted to its climatic conditions, opportunity for agricultural diversification, many reasons are favourable to this revival.

The number of vineyards in Belgium has been increasing steadily over the last ten years (which means an increase in vineyard residues for the extraction of molecules of interest!) and the sector is becoming more professional.

If in the past the winegrowers were mainly enlightened amateurs, today large structures are sometimes built on several hectares and produce quality wines. Some Belgian wines regularly win prizes in international competitions.

#### Belgian winegrowers : a need for education

A new profession is emerging in Belgium, that of **winegrower**, behind which lie several facets: knowing how to cultivate vines, knowing how to transform grapes into wine, knowing how to manage a business, knowing how to market its products...

It became important to integrate **the teaching of viticulture** into the curriculum of agronomy students in the Belgian context. This is why the Haute Ecole Provinciale de Hainaut Condorcet is the first and only higher education structure to date to have followed suit.

The proposed training gives students a basic knowledge base in **agronomy** (on plants, soils, ecology, etc.) oriented in the second and third years towards **agribusiness** and **biotechnology**. They will also learn about food processing, fermentation, food chemistry, etc., which can also be used in other sectors (e.g. breweries). In addition to this general training, the "Wine-making techniques" option develops two specific aspects to train future multi-skilled professionals both in the vineyard and in the cellar: the description of the vines and the **management of the vineyard** (viticulture) as well as the transformation of the harvest according to the different fermentation processes (vinification).

In addition, students will be required to carry out work placements in Belgian (or foreign) vineyards to cover all activities at different times of the year: maintenance and monitoring of the vineyard (summer period), monitoring of fermentations (autumn period), pruning of the vineyard (winter period).

### Cosmetic products based on organic vegetables

InVivo, a French union of agricultural cooperatives, launched a range of **moisturizing and antioxidant products** under the Cultiv brand **based on fresh, organically grown vegetables**. The brand, result of an intrapreneurial initiative, also offers food supplements.

### Made and developed in France

The brand's products, which came onto the market shortly before the first containment, are **made in France** from certified organic vegetables, over 99.4% of which are of natural origin. Depending on the commercial specialties, **be-tween 61% and 80% of the ingredients are of French origin**. All products are developed in Eure-et-Loir, in the Cosmetic Valley laboratories, partner of the AgriWasteValue project, whose **extraction techniques consume little energy and which have adopted virtuous practices** such as water recycling and waste composting.

# Shoes made in France from grape pomace

A young entrepreneur, graduate of a Master 2 Business Development at the IAE Bordeaux (France), has launched her own brand of shoes. Called Zèta, she has the particularity to offer 100% recycled, recyclable and vegan sneakers.

The sneakers are largely made from grape pomace from the harvest. The waste from wine production is recovered, crushed and transformed into vegetable leather by an Italian company that has patented the technology. The shoes are then made in Portugal and distributed in France.

### Questioning the system

As a fan of sneakers, Laure, the young entrepreneur, was determined to find an alternative to the shoes offered in fast fashion stores. Her goal: "Use what you already own. 100% recycled materials from waste."



### **Circular economy**

For the raw material, the young woman turned to a fruit: grapes. "We recover the seeds, the residues and the skin of the grapes of the harvest that we crush, that we reintegrate into recycled materials to make a paste that will become leather." The workshops for making sneakers are located in Portugal. The country has specialized in grape leather in recent years.

"By creating Zèta, I wanted to prove that today, using natural or organic materials is no longer enough. Reusing materials at the end of their life without having to generate new waste: that's what the circular economy is all about," explains Laure. And we can only validate the initiative.





### Future events



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