

# PULP2VALUE

Processing Underutilised Low value sugar beet Pulp into VALUE added products

## Summary

Europe produces around 13 million tonnes of sugar beet pulp each year. Currently, most of this pulp finds its way into low value feed, bio-fertilizer or it is used for creating green fuel gas.

By using multiple extraction techniques, PULP2VALUE will extend the high value products extracted from sugar beet sidestreams, isolating microcellulose fibres (MCF), arabinose (Ara) and galacturonic acid (GalA).

The project will demonstrate an integrated and cost-effective cascading bio-refinery system to refine sugar beet pulp and identify applications for approximately 65% of its mass in high value markets, increasing its current value by as much as 20-50 times.



<http://pulp2value.eu/>

**Type of Action:**  
Innovation Action -  
Demonstration

**Value Chain:** VC3 – agro-based

**Start date:** 01 July 2015

**End date:** 30 June 2019

**BBI JU contribution:** €  
6.589.180

## Objectives

- Demonstrate an integrated and cost-effective cascading biorefinery system to refine sugar beet pulp (SBP) that allows the conversion of 65% of its dry mass into high value products: microcellulose fibers (MCF), arabinose and galacturonic acid.
- For each of these products, value chains will be developed, such as detergents, personal care, oil & gas, paints & coatings (from MCF), flavour and food products (from arabinose) or cosmetics (from galacturonic acid).
- Create local cross-sectoral value chains involving the sugar, chemical and food industries.

## Expected impacts

- Demonstration of 9 new value chains for the processing sugar beet pulp into bioproducts with a market potential of 350.000 tons and 200 million Euro
- Improved valorisation of side streams from production of sugar beet: current valorisation route of beet pulp is mainly towards animal feed and biogas, whereas PULP2VALUE will use 65% of the dry mass of SBP to high-value advanced applications.
- Reduction of carbon footprint through the use of MCF and chemical building blocks instead fossil-based products such as glass or kevlar.

## Achievements & milestones

### Sustainable extraction of high-value products from sugar beet pulp

22 November 2019

A team of BBI JU-funded scientists and business developers have built and successfully demonstrated a biorefinery for separating sugar beet pulp (SBP) into high-value, environmentally friendly products for various markets. [Read more](#)



**Royal COSUN Biobased Products' introduced 100% bio-based rheology modifier, developed during PULP2VALUE demonstration project, for various consumer applications such as liquid laundry products**

*17 January 2019*

Europe produces about 13 million tonnes of sugar beet pulp each year. Our PULP2VALUE project constructed a sugar beet pulp biorefinery to create more valuable products from this side stream. Now some of these products achieved commercial success. [Read more](#)

**Extracting high value products from sugar beet pulp**

*21 November 2017*

One of the many joys about writing about the business of bio-based is learning more about the varied uses of feedstock. Before speaking to Gerald van Engelen and Harry Raaijmakers of agro-industrial cooperative Royal Cosun, who head up the Bio-based Industries Joint Undertakings (BBI JU's) demonstration project, PULP2VALUE, I would have said that sugar beet pulp, when added to hay, was a great winter feedstock for horses, but would have struggled to name other uses. [Read more](#)

- Koninklijke Cooperatieve Cosun UA (The Netherlands)
- Stichting Wageningen Research (The Netherlands)
- Wageningen University (The Netherlands)
- Orineo BVBA (Belgium)
- Nova-Institut für politische und ökologische innovation GmbH (Germany)
- Bio base Europe pilot plant Vzw (Belgium)
- Refresco Gerber UK Ltd (United Kingdom)

## Project coordination

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