

Report on optimized protocol for bio-BDO and polyester production from OFMSW sugars

Deliverable 4.2

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PUBLISHABLE SUMMARY

This report represents the deliverable 4.2 at M36 within the framework of the SCALIBUR project. The following activities refer to WP4 and specifically to the Task 4.3 "Fermentation into building blocks for formulation of biodegradable polyesters".

The objective of the task is to validate the applicability of OFMSW derived sugars into the obtaining of biobased building blocks via fermentation and related biodegradable and compostable biopolymers and biomaterials for different application sectors.

The technical challenge of this value chain lays in the feedstock characteristics, due to its composition and seasonality.

The following main results have been achieved:

- The protocol for biobased building block production by fermentation, using OFMSW derived sugars, has been defined and optimized overcoming some initial challenges mainly due to the presence of inhibitors, low sugar content and viscosity of the OFMSW sugar feedstock.
- The biobased building block has been validated into polymerization and reactive extrusion process (in combination with starch) to obtain innovative biomaterials for targeted application sectors (films for food and non-food packaging) by obtaining enhanced properties compared to benchmark biomaterials.

The work carried out has allowed to pave the ground towards further upscaling, which will be finalized during the last project period. Optimizations in the formulation of innovative biomaterials for targeted applications will be reported within D4.3 "Preliminary report on demonstration of biopolyesters and its

validation for packaging” and final results will be reported in Final results will be included within D4.4 “Report on demonstration trials of biopolyesters” due at M40.

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