BioBoost
Accelerating biobased horticulture

Agri-Food waste as resource for green chemicals

Crop	Miscellaneous -
Application area	Fine chemicals
Status	Research stage
Relevant plant compounds	carbohydrates Starch fibres organic acids

Description

PERCAL will exploit Municipal Solid Waste (MSW) as feedstock to develop intermediate chemical products at high yield and low impurity level with huge industrial interest. These will be complementary to the bioethanol (current PERSEO technology), to achieve a cascade valorisation of the MSW components, i.e.:

• Lactic acid (LA) to produce: 1) Eco-friendly ethyl lactate solvents by reactive distillation from lactic acid & bio-ethanol to be used in cleaning products and inks and 2) hot-melt adhesives for cardboard and other non-food applications in combination with maleic anhydride by reactive extrusion.

• Succinic acid (SA) as an intermediate building blocks to production of polyols for the polyurethane industry.

• Biosurfactants by chemical and/or microbiological modification of protein and lipid fraction from remaining fraction of MSW fermentation

Pros and cons

- Circular economy
- Residuals utilised to make a new product

- New product on a very competing market
- Challenges in upscaling the product

Used conversion methods

Mechanical-Physical processes

Extraction

Biochemical processes

Aerobic/ Anaerobic fermentation

Enzymatic conversion

Chemical processes

Hydrolysis

Resources

https://www.percal-project.eu/index.php Initiative website