

Optimising second generation technology for upscaling of Rehap processes

On-going work within the Rehap project has been focused on the development of scaling up processes that convert biomass into high added-value products to pilot and demo scale.

In previous research, [VTT, the Technical Research Centre of Finland](#) developed a technique for the [hot water extraction](#) of tannins from soft wood bark and successfully transferred it to the lab at Bio Base Europe Pilot Plant (BBEPP). At [BBEPP](#), this technique to obtain cellulose and lignin/tannin fractions was performed and evaluated and [successfully scaled-up to pilot scale](#).

In parallel to this development, partners, [TECNALIA](#) have been working on the cellulosic residue generated by the purification of lignin from the woody material, poplar. Tests have selected the best enzymes and hydrolysis conditions that can increase the glucose yield and minimise the production of inhibitors that could affect the course of fermentation at the next step.

Results demonstrate that the use of second generation sugars from agroforestry waste in the Rehap project, obtained after the processing of bark and poplar, is a real alternative to using first generation sugars for the production of 2,3-BDO, successfully reaching one of the projects vital objectives.

In a further project subtask, Rehap is optimising Biochemtex's breakthrough second generation (2G) technology to process lignocellulosic biomasses at pilot and demo scale in order to produce the lignin-rich residue and use it as starting material for the recovery of lignin and sugars for further project research.

In order to optimise the lignin 2G co-product for it to be used in different types of valorisations, as well as improve the power plant and water recycle processes at industrial demo scale, CTXI carried out tests on separating the liquid and solids using polyelectrolytes and evaluating the drying process.

For full results, [read more](#).

