

Biotransformation of renewable raw materials into lactic acid

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Lactic acid in the form of pure L(+) enantiomer can be gained by fermentation using appropriately selected microorganisms. Biotechnological conversion of organic raw materials into lactic acid using microorganisms, typically lactic acid bacteria, is usually based on the biotransformation of renewable resources especially agro-industrial residues or waste from the food industry, including agricultural byproducts, waste from the dairy industry and other sugar waste, to higher value product with a wide range of applications [13].

Conducted research demonstrating a well-defined optimization process of developed biorefinery pilot plant performance with many aspects influencing on fermentation process like substrate type and source, fermentation medium composition, stirring, significant limits of particular chemical individual concentrations involving substrate and product as well as biomass content. The presented results concern the developed fermentation technology carried out on a pilot scale, which is an essential step enabling an in-depth investigating of the crucial aspects of the process as the scale of production increases. Data allowed to perform the necessary process optimizations providing a developed solution to be scaled-up on an industrial scale.

References

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