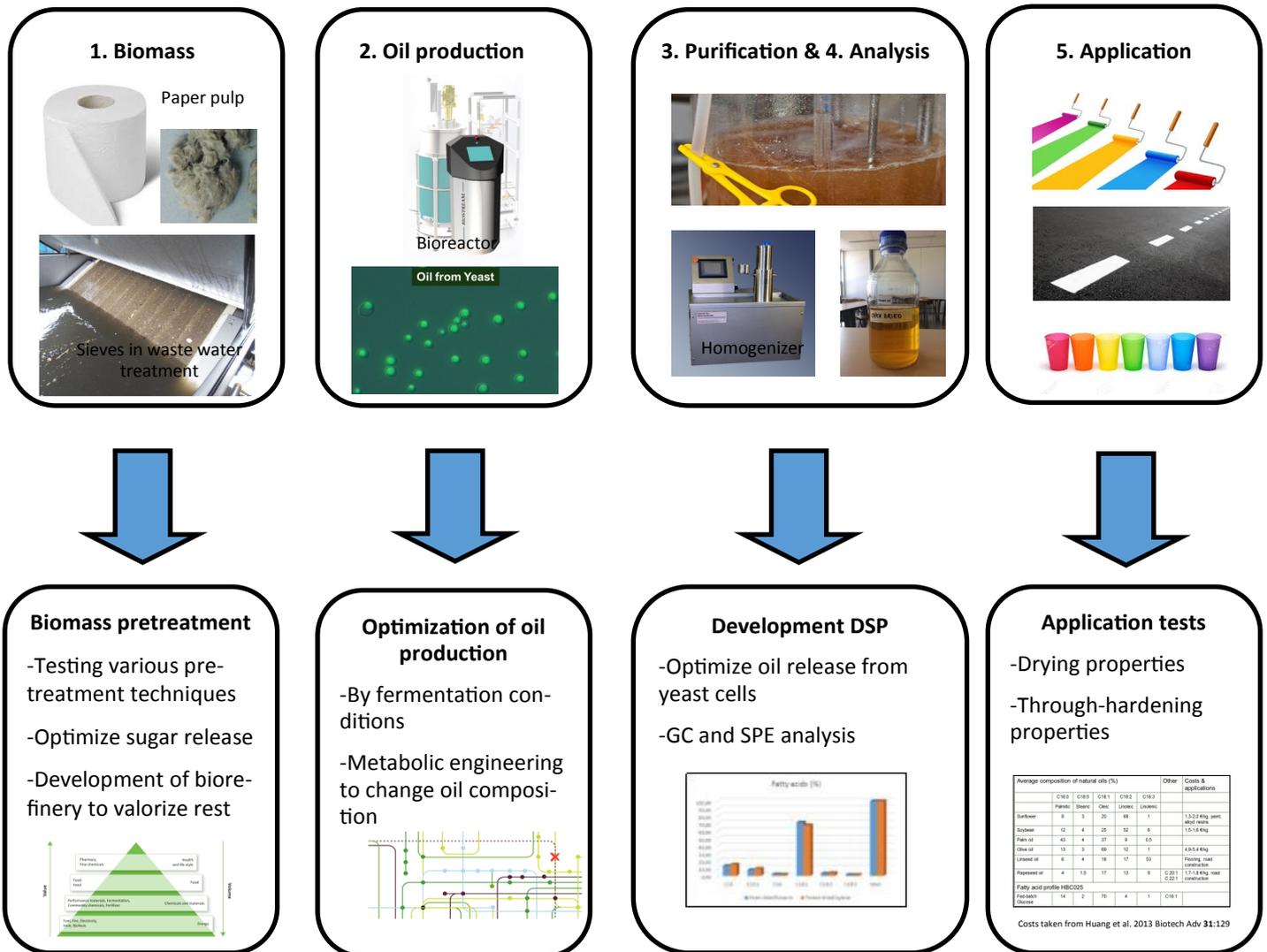


Microbial oil project: from toilet paper to oil for bio-based paint applications

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Background

A bio-based microbial oil can be produced from plant biomass in a green and sustainable way without competing to food crops by using oleaginous microorganisms such as yeast, fungi, bacteria and microalgae. A robust oil producing yeast strain has been selected called *Schwanniomyces occidentalis* (1). The strain grows well on a broad spectrum of sugars and accumulates oil up to 40-45% of its cell dry weight under nitrogen limited conditions. The produced microbial oil can be applied in non-food applications such as paint, roads, floors and coloring agents.



Conclusion

Our results show that the yeast *Schwanniomyces occidentalis* is able to grow well on pretreated paper pulp (toilet paper) obtained from wastewater treatment installations. First tests using the purified oil in combination with soy bean oil in paint were successful. Research at HAN BioCentre currently focusses on the development of an economically feasible fermentation and extraction process. Final aim is a reduction in waste and CO₂ foot print, which will contribute to a more sustainable environment.

References (1) Lamers et al. 2016 Selection of oleaginous yeast for fatty acid production, BMC Biotechnology 16:45

About HAN BioCentre

The central theme of HAN BioCentre is Biodiscovery: the discovery, analysis, production and application of biomolecules. We are in search for new bioactive compounds and screenings assays which can be applied in agriculture, food and health. All our projects are bringing together multiple disciplines ranging from microbiology, fermentation technology and molecular biology to chemical analysis and bio-informatics.

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