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| <input checked="" type="checkbox"/> Bachelor thesis | <input checked="" type="checkbox"/> theoretical |
| <input checked="" type="checkbox"/> Construction exercise | <input checked="" type="checkbox"/> experimental |
| <input checked="" type="checkbox"/> Master thesis | <input type="checkbox"/> constructive |

Topic: **Reactive extraction of lactic acid – influence of salts, proteins and mineral acids on the extraction efficiency and crud formation**

Reactive liquid-liquid extraction (LLE) is widely investigated for the isolation of lactic acid (LA) from fermentation broths, where LA is transferred from an aqueous feed phase into an organic solvent phase by a reversible reaction. When working with biobased, multicomponent mixtures the different components influence the extraction efficiency, can lead to the formation of stable crud layers (Figure 1 b) at the phase interface, and are potentially co-extracted.

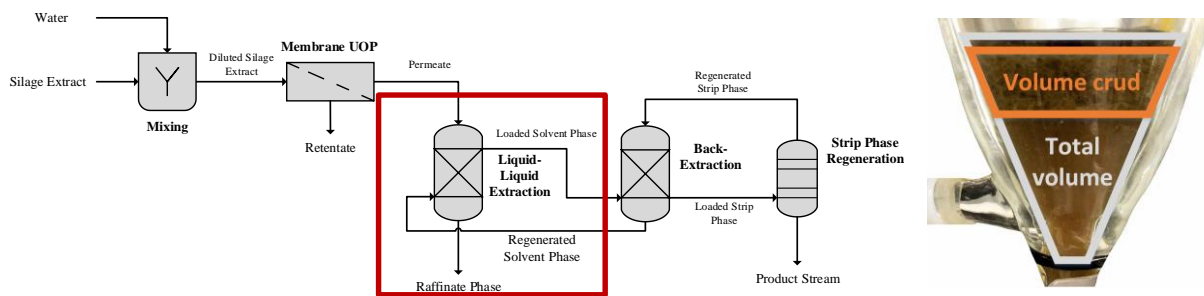


Figure 1: LLE of LA from silage (a) and crud formation in LLE (b).

In this work, the LLE of LA from a model solution and sweet sorghum silage press juice is investigated using different solvent phases. The aim of this work is to investigate the influence of different components present in the feed material, such as salts, proteins or mineral acids, on the extraction efficiency and crud formation. In addition, the co-extraction of these substances/components will be investigated. Another parameter to be investigated is the phase ratio between the feed and solvent phase. This work includes the following tasks:

- Become acquainted with the topic and introduction into the laboratory
- Literature study and experimental planning
- Conduction of extraction experiments and application of analytical methods
- Writing a scientific report

For more information see: <https://doi.org/10.1016/j.seppur.2021.120090>

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