

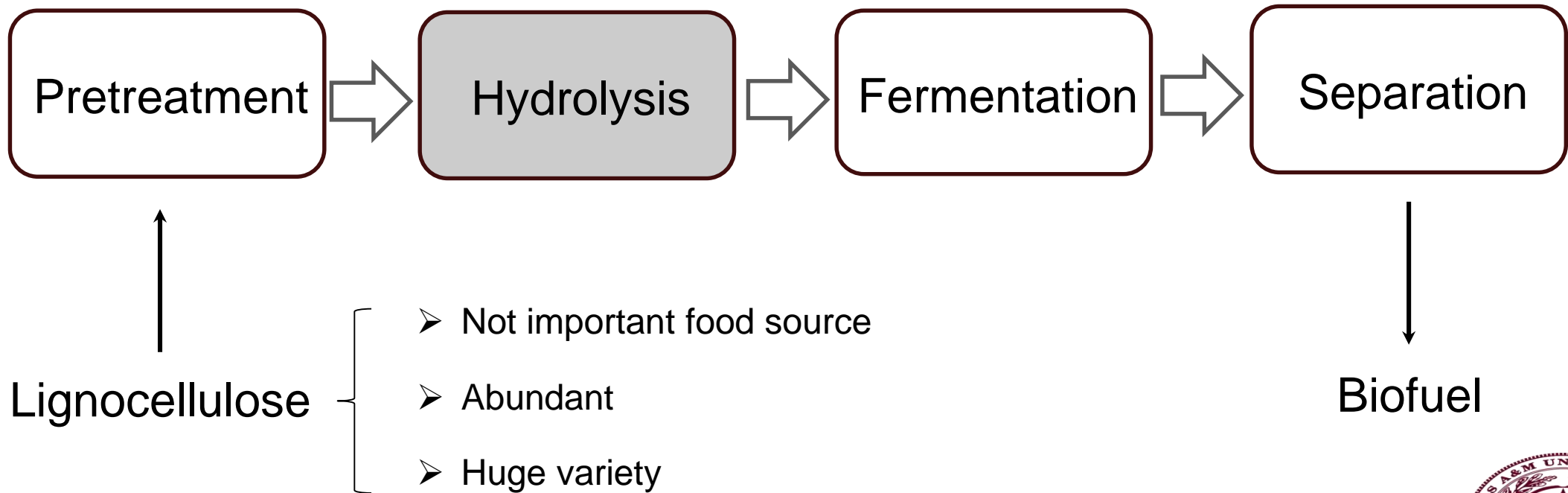
COUNTERCURRENT SACCHARIFICATION



Introduction

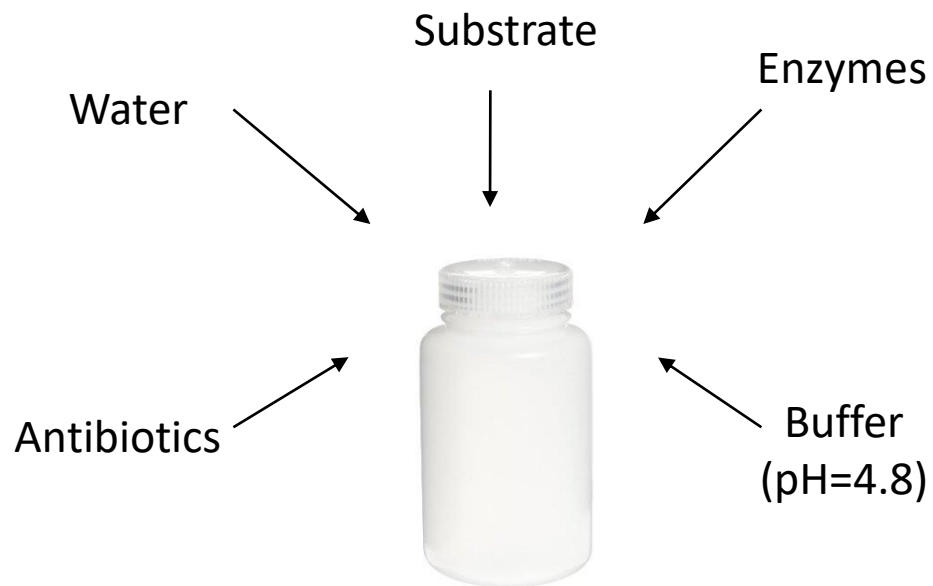
Cellulosic ethanol production

~30% of the total costs



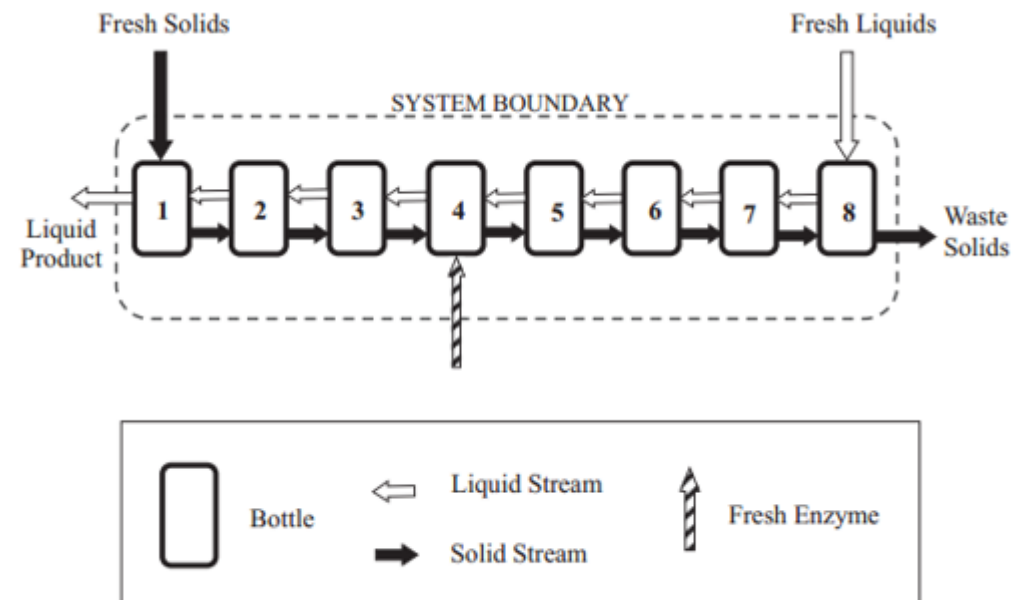
Introduction

Traditional Batch Saccharification



- High product inhibition
- High enzyme loadings are usually required to reach high conversions

Novel Countercurrent Saccharification



- Low product inhibition
- Make full use of substrate and enzymes
- Significantly reduce the enzyme loadings and lower the cost of sugar and biofuel production

Introduction

Comparison of countercurrent to batch

To compare the enzyme requirement on an equal basis, batch and countercurrent saccharifications have the same:

- (1) Conversion – Total conversion (100%) was used.
- (2) Product concentration (50, 75, and 100 g/L)
- (3) Reactor volume – This ensures the same capital cost.

