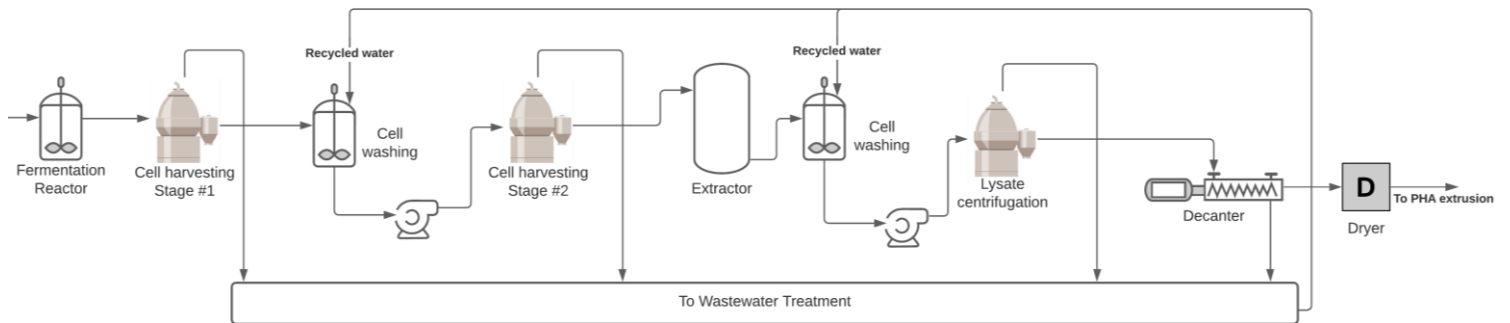


RMC Abstract - Alfa Laval



Due to the recent market growth of bioplastics such as PHA, Alfa Laval developed tailor-made separators specific for this application. A typical PHA production process requires two separation stages: cell harvesting, where bacteria are removed from the fermentation broth, and lysate extraction, where the biopolymer is concentrated after extraction.



The cell harvesting position is particularly interesting for our separators with the Bactofuge™ configuration. This mechanism was developed to discharge bacteria while preserving them. Due to the internal bowl configuration, bacteria are continuously discharged from the heavy phase outlet, avoiding cell ruptures. This is a significant improvement compared to traditional discharges, where solids are intermittently ejected at high speed. The final result is a higher PHA yield, as no biopolymer is lost in the harvesting stage.

The efficiency of the PHA process can be further improved by having separators with hermetic inlet and outlet. This air-free configuration reduces power consumption by 40%, as most of the centrifugal energy is recovered as potential energy. This feature is particularly important in cleantech applications, to both cut costs and minimize the carbon footprint.

Concluding, we believe that centrifugal separation plays a major role in the PHA production process. Alfa Laval has developed tailor-made solution ensuring high yield and power savings while keeping a smooth operation.