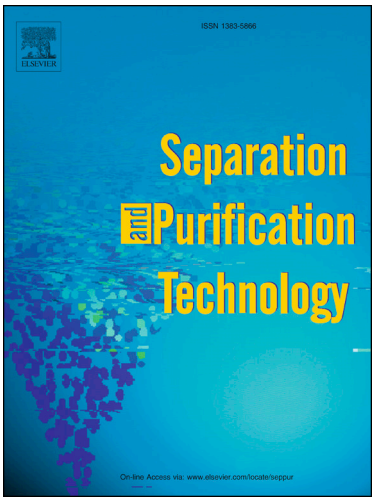

Yeast Flocculation aids the Performance of Yeast Dewatering using Mini-Hydrocyclones

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Yeast Flocculation aids the Performance of Yeast Dewatering using Mini-Hydrocyclones

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ABSTRACT

Conventionally, filtration and centrifugation are used to separate yeast from suspensions. Mini hydrocyclones (10 mm diameter) have previously been shown to achieve limited dewatering of non-flocculating Bakers' yeast. This indicated the potential of the application of hydrocyclones to the concentration of naturally flocculating Bakers' or Brewers' yeast suspensions, where the effective particle size is larger. In this study, the effect of degree of flocculation on the concentration of flocculating Brewers' yeast suspensions was investigated. The separation performance was determined when varying the floc size and feed concentration. Variation in yeast flocculation was achieved by reducing the pH with acetic acid, which produced narrow floc size distributions, with median sizes between 200 μm and 20 μm. The feed yeast concentration range investigated was between 0.6 and 14 g/L.

Stable yeast flocs do not break on passage through the hydrocyclone. Separation improved significantly with increasing floc size. Flocculation allowed enhanced separation, as compared to results obtained for unicellular, non-flocculating *Saccharomyces cerevisiae*. Increasing the feed concentration decreased the recovery of yeast to the concentrated product and the concentration ratio between feed and product. This is in agreement with previous findings for single cellular yeast. An