Flocculation Bioreactors present several advantages as compared to other high cell density techniques, when regarding design simplicity and energetic costs. There is however the inconvenience of low reaction rates caused by the diffusional limitations due to cell aggregation.

It has been demonstrated that in yeast flocculating systems the use of some polymeric additives enlarges the bridges formed between adjacent cells, thus reducing diffusional limitations in flocs.

Ethanolic fermentations were conducted in continuous flocculation bioreactors both in the presence and in the absence of the anionic polymeric additive Magna Floc LT25. In addition, two different bioreactor designs were tested: an airlift type and an external recycle type, and the influence of aeration and dilution rates in the start-up of fermentations was compared.

The results show that the glucose uptake, biomass growth and ethanol production rates are higher for higher dilution rates and increased in the presence of Magna Floc LT25.
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ABSTRACT BOOKS

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