

论文

酵母粉质量浓度对德氏乳杆菌保加利亚亚种KLDS 1.9201分批发酵动力学的影响

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摘要:

比较了德氏乳杆菌保加利亚亚种KLDS 1.9201在不同生长阶段的生长速率和产酸速率, 分析了在乳清培养基中添加不同质量浓度酵母粉(0~20g/L)对该菌株分批发酵动力学参数的影响。结果表明: 不论添加酵母粉与否, KLDS 1.9201的增殖速率和产酸速率均成正比例递增关系。随着酵母粉质量浓度提高到10g/L, KLDS 1.9201生长偶联期的持续时间由6 h缩短至4h, 最高生长速率达到1.28g/L·h, 在3h减速期内产生的乳酸量几乎占总产量的39%。但酵母粉添加量超过20g/L时对菌体生长反而有一定抑制作用。

关键词: 德氏乳杆菌保加利亚亚种 酵母粉 发酵动力学

Effect of yeast extract concentration on the batch fermentation kinetics of *Lactobacillus delbrueckii* subsp. *bulgaricus* KLDS 1.9201

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Abstract:

The influence of yeast extract concentrations ranging from 0 to 20g/L on the kinetic parameters of *Lactobacillus delbrueckii* subsp. *bulgaricus* KLDS 1.9201 by batch fermentation in whey medium was analyzed by comparing the growth and production rates during various growth phases. The results indicated that lactic acid production rate varied in proportion to that of growth during the whole phase under yeast extract supplemented and non-supplemented conditions. When the yeast extract supplementations increased to 10g/L, the duration of the growth-associated phases decreased from 6h to 4h, the highest growth rates of KLDS 1.9201 attained to 1.28g/L·h after 4h growth, and 39% acid production rate occurred during the slow down phase (3h). Growth inhibition was observed when the concentration of yeast extract was more than 20g/L.

Keywords:

*L. bulgaricus* yeast extract fermentation kinetics

收稿日期 1900-01-01 修回日期 1900-01-01 网络版发布日期 2006-10-24

DOI:

基金项目:

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