

苏云金杆菌(Bt8010)工业发酵过程研究

Study on Bacillus Thuringiensis 8010 Industrial Fermentation Process

投稿时间: 1997-6-3 最后修改时间: 1997-11-1

稿件编号: 19980150

中文关键词: 苏云金杆菌, 发酵, 流加

英文关键词: bacillus thuringiensis, fermentation, fed batch cultivation

基金项目: 国家科委九五重点科技攻关项目

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摘要点击次数: 4

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中文摘要:

研究苏云金杆菌发酵过程诸多参数的变化对提高产品毒力很有意义。在5 L发酵罐对Bt 8010菌株进行培养,对发酵全过程的各参数包括葡萄糖消耗,细胞数和生物量增长,芽孢形成,溶氧和pH值变化等进行了详细的分析,用不同浓度葡萄糖进行培养,并对分批补料培养和分批培养结果进行比较,结果表明:葡萄糖浓度对发酵结果的影响很大。发酵过程的不同阶段,细胞的大小和结构各不相同,流加葡萄糖可以使发酵结果芽孢数达到 1.28×10^{10} 个/mL。

英文摘要:

The change of the parameters plays a great role in Bt fermentation. Bt 8010 was cultured in 5 L fermentor. Factors including glucose consumption, cell numbers, biomass, spore numbers, dissolved oxygen and pH value were described in detail. The results showed that the concentration of glucose in media had a great effect on the spore numbers. The higher amount of spores (1.28×10^{10} / mL) was produced in fed batch cultivation than that in batch cultivation. During different growth phases in batch culture, the size of cells and the oxygen uptake rate (OUR) varied greatly. The highest OUR was observed in exponential growth phase. Therefore, insufficient oxygen supply in exponential phase was probably the main problem in Bt cultivation.

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