

响应面法优化青贮饲料乳酸菌的培养条件

洪梅¹, 刁其玉^{1*}, 闫贵龙², 屠焰¹, 张乃锋¹, 姜成钢¹

(1. 中国农业科学院饲料研究所, 农业部饲料生物技术重点实验室, 北京 100081; 2. 河北北方学院, 张家口 075000)

Optimization of Culture Conditions for Silage Lactic Acid Bacteria via a Response Surface

Technique

HONG Mei¹, DIAO Qiyu^{1*}, YAN Guilong², TU Yan¹, ZHANG Naifeng¹, JIANG Chenggang¹

(1. Key Laboratory of Feed Biotechnology of Ministry of Agriculture, Institute of Feed Research, Chinese Academy of Agricultural Sciences, Beijing 100081, China; 2. Hebei Normal University, Zhangjiakou 075000, China)

摘要

参考文献

相关文章

Download: PDF (796KB) HTML (0KB) Export: BibTeX or EndNote (RIS) Supporting Info

摘要 为更好地提高青贮饲料的质量, 降低微生物接种剂的生产成本, 本研究对采集自德国青贮窖中的主导菌群中一株乳酸菌GLP01进行了分子学鉴定, 并对培养条件进行了优化。通过单因素试验设计研究培养基组成(碳源、氮源)和培养条件(温度、接种量、起始pH等)对GLP01乳酸菌生长繁殖的影响; 采用二次响应面分析方法对GLP01培养条件进行优化, 得到GLP01生长模型, 以及取得模型最优值时各因素的水平。单因素试验结果表明, GLP01的最适碳源是果糖, 最佳氮源是酵母粉; 二次响应面分析确定的GLP01最佳培养条件是起始pH 5.47、培养温度35.3 °C、接种量8.16%。结果提示, 乳酸菌GLP01可以作为微生物接种剂制作青贮饲料, 但青贮效果仍有待研究。

关键词: 青贮饲料; 乳酸菌; 培养基优化; 响应面法

Abstract: To improve the quality of silage and reduce the cost of microbial inoculants, molecular biological assay was carried out on a major strain of lactic acid bacteria called GLP01, which was isolated from a silage cellar in Germany, and the culture conditions were optimized. One-factor-at-a-time approach was used to investigate the effects of different medium components (carbon source and nitrogen source) and different culture conditions (temperature, initial pH, and inoculum size) on growth of GLP01; response surface technique (RST) was applied to the optimization of culture condition to get the growth model and factor levels of the optimal model value. The results showed as follows: the optimal carbon source and nitrogen source were fructose and yeast powder, respectively; the optimal culture conditions of GLP01 were pH 5.47, temperature 35.3 °C, and inoculum size 8.16%. In conclusion, lactic acid bacteria GLP01 can be used as silage microbial inoculants, but the effect remains to be clarified. [Chinese Journal of Animal Nutrition, 2010, 22 (5):1307-1313]

Keywords: silage; lactic acid bacteria; culture medium optimization; response surface technique

引用本文:

. 响应面法优化青贮饲料乳酸菌的培养条件[J]. 动物营养学报, 2010,V22(05): 1307-1313

. Optimization of Culture Conditions for Silage Lactic Acid Bacteria via a Response Surface Technique[J]. Chinese Journal of Animal Nutrition, 2010,V22(05): 1307-1313.

链接本文:

http://211.154.163.124/Jweb_dwyy/CN/10.3969/j.issn.1006-267x.2010.05.027 或

http://211.154.163.124/Jweb_dwyy/CN/Y2010/V22/I05/1307

没有本文参考文献

没有找到本文相关文章

Copyright 2010 by 动物营养学报

Service

把本文推荐给朋友

加入我的书架

加入引用管理器

Email Alert

RSS

作者相关文章