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## 大豆根瘤菌AHM2B菌株培养条件的筛选与优化

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摘要: 试验对大豆根瘤菌AHM2B菌株在YMA、TY、PA、BSE共4种培养基中的生长情况进行了比较, 并通过单因素和正交试验确定最佳培养条件。结果表明: 该菌株在BSE培养基中生长较快, 最佳碳源为蔗糖、氮源为酵母粉、pH 8.0、温度为28℃, 接种量为4%。在单因素试验的基础上, 采用正交试验对培养条件中的蔗糖、酵母粉、pH和接种量4个因素进行优化, 得到最佳培养条件为: 蔗糖10 g, 酵母粉3 g, MgSO<sub>4</sub>·H<sub>2</sub>O 0.2 g, K<sub>2</sub>HPO<sub>4</sub>·0.5 g, NaCl 0.1 g, CaCl<sub>2</sub>·H<sub>2</sub>O 0.1 g, Rh溶液4 mL, 豆芽汁1 000 mL, pH 7.0, 温度28℃, 接种量4%。

Abstract: The growth conditions of the Soybean Rhizobium strain AHM2B were compared in the YMA, TY, PA and BSE mediums. The results showed that the strain grew faster in the BSE medium than in the others. The single factor experiments showed that the best carbon and nitrogen sources was sucrose and yeast extract, respectively, pH was 8.0, culture at 28°C, and 4% inoculation volumes. The best culture conditions were obtained by orthogonal test, the results were: sucrose 10 g, yeast extract 3 g, MgSO<sub>4</sub>·H<sub>2</sub>O 0.2 g, K<sub>2</sub>HPO<sub>4</sub>·0.5 g, NaCl 0.1g, CaCl<sub>2</sub>·H<sub>2</sub>O 0.1g, Rh solution 4 mL, bean spouts extract 1 000 mL, pH 7.0, inoculation volumes 4% and culture at 28°C.

参考文献/References:

- [1] 刘保平, 周俊初. 根瘤菌菌剂研究[J]. 湖北农业科学, 2006, 45(1): 57-61. (Liu B P, Zhou J C. Study on rhizobium inoculant[J]. Hubei Agricultural Sciences, 2006, 45(1): 57-61.)
- [2] 李萍, 杨会青, 李泰仑, 等. 费氏中华根瘤菌培养基的选择与优化[J]. 黑龙江八一农垦大学学报, 2007, 19(6): 71-74. (Li P, Yang H Q, Li T L, et al. Medium selection and optimization of Sinorhizobium fredii medium selection and optimization of Sinorhizobium fredii[J]. Journal of Heilongjiang August First Land Reclamation University, 2007, 19(6): 71-74.)
- [3] 卢秉林, 王文丽, 李娟, 等. 自生固氮菌的固氮能力及其对春小麦生长发育的影响[J]. 中国生态农业学报, 2009, 17(5): 895-899. (Lu B L, Wang W L, Li J, et al. Nitrogen fixation ability of azotobacter and its effect on growth of spring wheat [J]. Chinese Journal of Eco-Agriculture, 2009, 17(5): 895-899.)
- [4] 朱剑光, 尉亚辉, 吴艺舟. 花生慢生根瘤菌的分离与鉴定[J]. 生物技术, 2006, 16(2): 45-48. (Zhu J G, Wei Y H, Wu Y Z. Isolation and identify of Bradyrhizobium Bacteriuln- from peanut[J]. Biotechnology, 2006, 16(2): 45-48.)
- [5] 迟玉成, 樊堂群, 禹山林, 等. 慢生型花生根瘤菌培养基优化研究[J]. 花生学报, 2007, 36(4): 25-28. (Chi Y C, Fan T Q, Yu S L, et al. Study of medium optimization of peanut Bradyrhizobium strain[J]. Journal of Peanut Science, 2007, 36(4): 25-28.)
- [6] 吴红慧, 周俊初. 根瘤菌培养基的优化和剂型的比较研究[J]. 微生物学通报, 2005, 31(2): 14-19. (Wu H H, Zhou J C. Medium optimization and inoculant type comparison of rhizobium[J]. Microbiology China, 2005, 31(2): 14-19.)
- [7] 肖亦农, 徐琼. 大豆根瘤菌HH103菌株培养基的筛选与优化[J]. 微生物学杂志, 2011, 31(6): 94-95. (Xiao Y N, Xu Q. Medium screening and optimization for soybean rhizobium (Rhizobium fredii) HH103[J]. Journal of Microbiology, 2011, 31(6): 94-95.)
- [8] 李郑军, 许修宏. 不同地区大豆根瘤菌培养条件的优化[J]. 东北农业大学学报, 2009, 40(11): 11-13. (Li Z J, Xu X H. Optimization on culture conditions of rhizobia in different areas[J]. Journal of Northeast Agricultural University, 2009, 40(11): 11-13.)

[9]Pan B,Smith D L.Genistein preincubation of Bradyrhizobium japonicum cells improves strain competitiveness under greenhouse, but not field conditions[J].Plant and Soil, 2000, 223: 229-234.)

相似文献/References:

- [1]王卫卫, 关大伟, 马鸣超, 等. 东北地区大豆根瘤菌遗传多样性与系统发育研究[J]. (article.aspx?type=view&id=20130401) 大豆科学, 2013, 32(04):433. [doi:10.11861/j.issn.1000-9841.2013.04.0433]  
WANG Wei-wei, GUAN Da-wei, MA Ming-chao, et al. Genetic Diversity and Phylogeny of Soybean Rhizobia Isolated from Northeast China[J]. Soybean Science, 2013, 32(06):433. [doi:10.11861/j.issn.1000-9841.2013.04.0433]
- [2]刘庆莉, 王金生, 刘丽君, 等. 大豆根瘤菌剂载体的选择及最佳施用浓度筛选[J]. (article.aspx?type=view&id=201402012) 大豆科学, 2014, 33(02):207. [doi:10.11861/j.issn.1000-9841.2014.02.0207]  
LIU Qingli, WANG Jinsheng, LIU Lijun, et al. Chosen of Soybean Rhizobia Carrier and Screening of the Best Concentration[J]. Soybean Science, 2014, 33(06):207. [doi:10.11861/j.issn.1000-9841.2014.02.0207]
- [3]薛晓鸣, 冯瑞华, 关大伟, 等. 大豆根瘤菌与促生菌复合系统筛选及机理研究[J]. (article.aspx?type=view&id=201104017) 大豆科学, 2011, 30(04):613. [doi:10.11861/j.issn.1000-9841.2011.04.0613]  
XUE Xiao-yun, FENG Rui-hua, GUAN Da-wei, et al. Screening and Analysis for Efficient Co-inoculation System of Soybean Rhizobia and Plant Growth-promoting Rhizobacteria[J]. Soybean Science, 2011, 30(06):613. [doi:10.11861/j.issn.1000-9841.2011.04.0613]
- [4]吴明霞, 陈锡雄, 阮少江. 响应面法优化啤酒糟培养基生产蛋白饲料的研究[J]. (article.aspx?type=view&id=201205034) 大豆科学, 2012, 31(05):842. [doi:10.3969/j.issn.1000-9841.2012.05.034]  
WU Ming-xia, CHEN Xi-xiong, RUAN Shao-jiang. Optimization of Microbial Media of Brewer Spent Grains of Protein Feed by Response Surface Methodology[J]. Soybean Science, 2012, 31(06):842. [doi:10.3969/j.issn.1000-9841.2012.05.034]
- [5]肖文丽, 关大伟, 李俊, 等. 采用gfp和rfp基因标记评价大豆根瘤菌竞争结瘤能力[J]. (article.aspx?type=view&id=201003002) 大豆科学, 2010, 29(03):366. [doi:10.11861/j.issn.1000-9841.2010.03.0366]  
XIAO Wen-li, GUAN Da-wei, LI Jun, et al. Evaluation on the Competitiveness of Strains of Soybean Rhizobia Marking with gfp and rfp Genes[J]. Soybean Science, 2010, 29(06):366. [doi:10.11861/j.issn.1000-9841.2010.03.0366]
- [6]柏宇, 关大伟, 李力, 等. 耐高氮优良大豆根瘤菌株的筛选与鉴定[J]. (article.aspx?type=view&id=201406013) 大豆科学, 2014, 33(06):861. [doi:10.11861/j.issn.1000-9841.2014.06.0861]  
BAI Yu, GUAN Da-wei, LI Li, et al. Screening and Characterization of Superior Nitrogen-Tolerance Soybean Rhizobia[J]. Soybean Science, 2014, 33(06):861. [doi:10.11861/j.issn.1000-9841.2014.06.0861]
- [7]燕平梅, 畅晓晖, 薛文通, 张慧, 王玉国. 小黑豆组织培养的研究\*[J]. (article.aspx?type=view&id=200501003) 大豆科学, 2005, 24(01):12.  
Yan Pingmei, Chang Xiaohui, Xue Wentong, Zang Hui, Wang Yuguo. STUDY ON TISSUE CULTURE OF XIAOHEIDOU ZDD2226[J]. Soybean Science, 2005, 24(06):12.
- [8]李杰, 陈丽华, 李希臣, 朱延明. 一种应用luxAB基因标记大豆根瘤菌的新方法[J]. (article.aspx?type=view&id=200303003) 大豆科学, 2003, 22(03):172. [doi:10.11861/j.issn.1000-9841.2003.03.0172]  
Li Jie, Chen Lihua, Li Xichen, Zhu Yanming. A NEWMETHOD TO LABEL SOYBEAN RHIZOBIA USING luxAB GENE[J]. Soybean Science, 2003, 22(06):172. [doi:10.11861/j.issn.1000-9841.2003.03.0172]
- [9]常从云, 孙克用, 李奇真, 等. 豆—根瘤菌共生固氮乙炔还原活体测定方法的研究[J]. (article.aspx?type=view&id=198904009) 大豆科学, 1989, 8(04):357. [doi:10.11861/j.issn.1000-9841.1989.04.0357]  
[J]. Soybean Science, 1989, 8(06):357. [doi:10.11861/j.issn.1000-9841.1989.04.0357]
- [10]汪清胤, 黄永芬, David W. Emerich. 大豆根瘤菌( Bradyrhizobium japonicum) 苹果酸脱氢酶(mdh)基因的插入失活[J]. (article.aspx?type=view&id=199301008) 大豆科学, 1993, 12(01):52. [doi:10.11861/j.issn.1000-9841.1993.01.0052]  
[J]. Soybean Science, 1993, 12(06):52. [doi:10.11861/j.issn.1000-9841.1993.01.0052]

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