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纳豆菌发酵对豆粕脲酶活性的影响(PDF)分享到：

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Title: **Effect of Fermented Bacillus natto on Urease Activity of Soymeal**

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关键词： 纳豆菌；豆粕；脲酶活性；钝化

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摘要： 微生物发酵可一定程度降低豆粕抗营养因子活性，提高豆粕作为蛋白源的利用率。采用2株纳豆菌发酵研究豆粕中脲酶的失活情况。首先测定了其生长曲线，用以指导其发酵条件的优化研究。研究了水/豆粕比例、培养温度、pH、接种量等发酵参数对脲酶活性的影响，结果表明：降低脲酶活性的最优发酵条件为：水/豆粕比例为5:1，pH4.5、温度30℃、接种量5%、种龄为8 h，发酵60 h，豆粕脲酶活性降低93%。

Abstract: Microorganism fermentation could decrease the activity of soymeal antinutrition factors in certain extent, and increase the use efficiency of protein sources.This paper studied the inactivation of urease by fermentation of two strains of Bacillus natto.The growth curves of Bacillus natto were set out and instructed to optimize its fermentation conditions.Effect of fermentation parameters, such as the ratio of water and soymeal, culturing temperature, and inculating amount, on urease activity was investigated.The results indicated that the optimized fermentation conditions were soybean meal as basic material, the ratio of water and material 5:1, pH 4.5, the original temperature 30℃, the inculating amount 5%, the ages of inoculums 8 h and the cycle of

fermentation 72 h.Under the optimized condition, 93% urease activity of soymeal was inactivated.

参考文献/References:

[1]姚晓红，吴逸飞，汤江武,等.微生物混合发酵去除生豆粕中胰蛋白酶抑制剂的研究[J]. 饲料工业，2005，26(15)：14-16.(Yao X H，Wu Y F，Tang J W,et al.Study on resolve the trypsin inhibitor by using mixed culture of microorganism[J].Feed Industry，2005,26(15)：14-16.

[2] Qin G，ter Elst E R，Bosch M W，et al.Thermal processing of whole soya beans：Studies on the inactivation of antinutritional factors and effects on ileal digestibility in piglets[J].Animal Feed Science and Technology，1996，57(4)：313-324.

[3]钟华宣，李铁军，印遇龙,等.热处理对大豆及豆饼抗营养因子和营养价值的影响[J].动物营养学报，1998,10(1)：12-19.(Zhong H Y，Li T J,Yin Y L,et al.Effect of heat treatment on anti-nutritive factors and nutritive value of soybean and soybean meal[J].Acta Zoonutrimenta Sinca，1998,10(1)：12-19.)

[4]陈运铝.豆浆晶生产过程中加热工序使脲酶失活情况的研究[J].食品科学，1993,12：48-50.(Chen Y S.Study on the he deactivate status of urease of soybean milk powder by heating process[J].Food Science，1993,12：48-50.)

[5]沈萍，范秀容，李广武.微生物学实验[M].北京:高等教育出版社，1999：214.(Shen P，Fan X R，Li G W.Microbiology experimant[M].Beijing：Higher Education Press，1999：214.)

[6]李德发.大豆抗营养因子[M].北京：中国农业大学出版社，2003：355-356.(Li D F.Soybean anti-nutrition factors[M].Beijing：China Science and Technology Press，2003：355-356.)

[7]Lonsane B K．Scale up strategies for solid state fermentation systems Process[J].Biochemistry，1992，27：259-273.

相似文献/References:

[1]蔡 燕,周红波,朱金砚.低豆粕用量下脂肪氧合酶好氧催化大豆油的反应研究[J].大豆科学,2013,32(05):683.[doi:10.11861/j.issn.1000-9841.2013.05.0683]

CAI Yan,ZHOU Hong-bo,ZHU Jin-li.Aerobic Catalyzed Lipoxygenation of Soybean Oil with Low Level Soymeal [J].Soybean Science,2013,32(04):683.[doi:10.11861/j.issn.1000-9841.2013.05.0683]

[2]刘少静 ,王多宁 ,刁颖博 ,等.大豆异黄酮纯化工艺研究[J].大豆科学,2013,32(04):535.[doi:10.11861/j.issn.1000-9841.2013.04.0535]

LIU Shao-jing,WANG Duo-ning,DIAO Ying-bo,et al.Optimization on the Purification Technologies of Soybean Isoflavone [J].Soybean Science,2013,32(04):535.[doi:10.11861/j.issn.1000-9841.2013.04.0535]

[3]朱 劲,单人为,李 琴,等.豆胶用大豆蛋白水解液的制备[J].大豆科学,2014,33(01):107.[doi:10.11861/j.issn.1000-9841.2014.01.0107]

ZHU Jin,SHAN Renwei,LI Qin,et al.Preparation of Soybean Protein Hydrolysate for Soybean Protein Adhesive [J].Soybean Science,2014,33(04):107.[doi:10.11861/j.issn.1000-9841.2014.01.0107]

[4]郭树国,王丽艳,李成华.基于响应面法的豆粕挤压系统参数优化[J].大豆科学,2012,31(02):295.[doi:10.3969/j.issn.1000-9841.2012.02.029]

GUO Shu-guo,WANG Li-yan,LI Cheng-hua.Optimization for System Parameter of Soybean Meal Extrusion using Response Surface Methodology[J].Soybean Science,2012,31(04):295.[doi:10.3969/j.issn.1000-9841.2012.02.029]

[5]刘玲,王红,刘苗.豆粕固态发酵产活性肽的发酵条件优化[J].大豆科学,2011,30(06):997.[doi:10.11861/j.issn.1000-9841.2011.06.0997]

LIU Ling,WANG Hong,LIU Qian.Optimization for Solid State Fermenting Condition of Producing Soybean Peptides from Soybean Meal Powder[J].Soybean Science,2011,30(04):997.[doi:10.11861/j.issn.1000-9841.2011.06.0997]

[6]李玉珍,肖怀秋,杨 涛,等.响应面优化低值豆粕液态制备多肽工艺[J].大豆科学,2012,31(04):649.[doi:10.3969/j.issn.1000-9841.2012.04.028]

LI Yu-zhen,XIAO Huai-qiu,YANG Tao,et al.Response Surface Methodology for Optimization of Soybean Peptide Production Technology from Low-valued Soybean Meal[J].Soybean Science,2012,31(04):649.[doi:10.3969/j.issn.1000-9841.2012.04.028]

[7]刘中华,赵锦慧,梁少君.微波辅助提取豆粕中大豆异黄酮[J].大豆科学,2012,31(06):993.[doi:10.3969/j.issn.1000-9841.2012.06.029]

LIU Zhong-hua,ZHAO Jin-hui,LIANG Shao-jun.Microwave-assisted Extraction of Soybean Isoflavone from Soybean Meal [J].Soybean Science,2012,31(04):993.[doi:10.3969/j.issn.1000-9841.2012.06.029]

[8]钱森和,厉荣玉,魏 明,等.二元复合菌固态发酵豆粕制备大豆肽的研究[J].大豆科学,2011,30(01):131.[doi:10.11861/j.issn.1000-

9841.2011.01.0131]

QIAN Sen-he,LI Rong-yu,WEI Ming,et al.Preparation of Soybean Peptide from Soybean Meal by Solid-Stated Fermented with Binary Compound Strains[J].Soybean Science,2011,30(04):131.[doi:10.11861/j.issn.1000-9841.2011.01.0131]

[9]纵昊飞,陈霞,赵贵兴,等.豆粕生物肽的生产工艺研究[J].大豆科学,2010,29(01):101.[doi:10.11861/j.issn.1000-9841.2010.01.0101]

LIU Hao-fei,CHEN Xia,ZHAO Gui-xing,et al.Processing Technology of Biologic Peptide from Soybean Meal[J].Soybean Science,2010,29(04):101.[doi:10.11861/j.issn.1000-9841.2010.01.0101]

[10]陈乃松,杨志刚,崔惟东,等.酶制剂体外酶解豆粕中抗营养因子的研究[J].大豆科学,2008,27(04):663.[doi:10.11861/j.issn.1000-9841.2008.04.0663]

CHEN Nai-song,YANG Zhi-gang,CUI Wei-dong,et al.Enzymes Hydrolyzing in Vitro Anti-Nutritional Factors in Soybean Meal[J].Soybean Science,2008,27(04):663.[doi:10.11861/j.issn.1000-9841.2008.04.0663]

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