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BIOTECHNOLOGY & BIOENGINEERING

黑曲霉Aspergillus niger P-6021紫态发酵常山胡柚皮渣产果胶霉

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摘要 The peel of Citrus changshan-huyou, coupled with wheat bran, could be utilized by Aspergillus niger P-6021 in slurry-state fermentation to produce pectinase with suitable enzyme composition for application in apple juice processing. The production of pectinase is improved by additional nitrogen source substances and mineral supplements. The ratio of carbon source substances to nitrogen source substances in the medium also has significant effect on the pectinase production by A. niger P-6021 in slurry-state fermentation. In the optimized medium composition, the maximal enzyme activity could reach 42U.L^-1（polymethylgalacturonase），6.7 U.L^-1（polymethylgalacturatesterase），and 4.3 U.L^-1（polymethylgalacturonate lyase），respectively, after 3 days at 180 r.min^-1 and 30℃. The crude pectinase shows significant effect to improve the yield and clarification of apple juice.

关键词 黑曲霉 发酵工艺 常山胡柚 皮渣 果胶霉 生物工程
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Pectinase Production by Aspergillus Niger P-6021 on Citrus Changshan-huyou Peel in Slurry-state Fermentation

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Abstract The peel of Citrus changshan-huyou, coupled with wheat bran, could be utilized by Aspergillus niger P-6021 in slurry-state fermentation to produce pectinase with suitable enzyme composition for application in apple juice processing. The production of pectinase is improved by additional nitrogen source substances and mineral supplements. The ratio of carbon source substances to nitrogen source substances in the medium also has significant effect on the pectinase production by A. niger P-6021 in slurry-state fermentation. In the optimized medium composition, the maximal enzyme activity could reach 42U.L^-1（polymethylgalacturonase），6.7 U.L^-1（polymethylgalacturatesterase），and 4.3 U.L^-1（polymethylgalacturonate lyase），respectively, after 3 days at 180 r.min^-1 and 30℃. The crude pectinase shows significant effect to improve the yield and clarification of apple juice.

Key words Aspergillus niger; slurry-state fermentation; pectinase; Citrus changshan-huyou; apple juice

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