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Utilization of low-cost substrates for the production of nystose by *Bacillus subtilis* natto cct
7712

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Abstract

Current analysis describes the capacity of *Bacillus subtilis* natto CCT 7712 to produce high amounts of nystose by low-cost substrates available in Brazil, such as commercial sucrose, sugarcane molasses and sugarcane juice. Optimization resulted in a maximum production of 179.77 g L⁻¹ of nystose, averaging 7.49 g L⁻¹ hour⁻¹ of productivity and a 71.73% yield in a medium with 400 g L⁻¹ of commercial sucrose and 0.8 g L⁻¹ of MnSO₄. Fermentations with sugarcane molasses and sugarcane juice also resulted in a satisfactory production reaching 97.93 and 42.58 g L⁻¹ nystose, respectively. High nystose production in a medium with sugarcane derivatives suggests submerged fermentation with *Bacillus subtilis* natto CT 7712 as a promising strategy to produce nystose at industrial level.

Keywords

Bacillus subtilis natto CT 7712, commercial sucrose, nystose, sugarcane juice, sugarcane molasses.

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