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Initial Screening of Fermentation Variables for the Production of Cyclomaltodextrin Glucanotransferase (CGTase) from Local Isolated *Bacillus stearothermophillus* HR1

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This paper presents results on the effect of fermentation variables on CGTase production from Bacillus stearothermophilus HR1. Initial screening of temperature, pH and agitation speed was determined using a 2-level full factorial design. In this study, we have improved the production of cyclodextrin glucanotransferase (CGTase) from Bacillus stearothermophilus HR1 in flasks using the experimental design approach. The regression model generated for the correlation of CGTase with the variables was 99.97% accurate. Results of the screening process indicated that pH and agitation speed were of greater significance compared to temperature. Results suggested that only two variables, namely pH and agitation speed, should be considered in future optimization studies. Temperature was least significant and it was set at 55°C where CGTase production of 10.41 U/ml was slightly higher compared to temperatures of 37°C, 45°C, 50°C and 60°C.

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