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Microbial production of hydrogen from sorghum stalk

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Abstract : An aerobic strain of *α -Proteobacteria*AUChE 103, isolated from sorghum stalk storage yard has been identified as a potential hydrogen producer. In the present study, the media components and process parameters were optimized for enhanced hydrogen production. The significant media components namely glucose, malt extract, yeast extract, peptone and NaCl were determined using Plackett-Burman design. These significant variables were then optimized using central composite design. The optimum conditions were found to be : glucose, 19.25g/L; yeast extract, 3.046g/L; malt extract, 1.64g/L; peptone, 5.640 and NaCl, 4.312g/L. Box-Behnken design was employed to optimize the process parameters. Under the optimum conditions a maximum hydrogen yield of 0.91 mol H₂/mol glucose was achieved.

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