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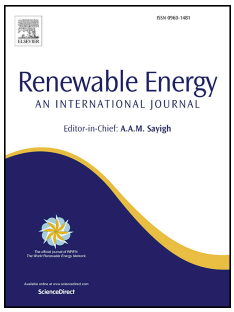

Hydrogen production by *Escherichia coli* using brewery waste: optimal pretreatment of waste and role of different hydrogenases

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H I G H L I G H T S

- Brewery spent grains (BSG) dilute acid pretreatment was developed.
- Optimization of conditions for *E. coli* growth on BSG hydrolysate and H_2 production was improved.
- Hydrogenase (Hyd)-3 and Hyd-4 are responsible for H_2 production.
- Mutations in the genes for Hyd-1 and Hyd-2 led to enhanced H_2 production; cumulative H_2 yield was determined.