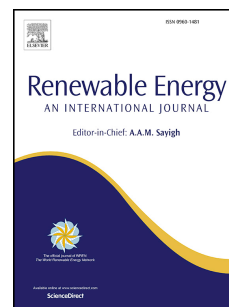


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Hydrogen production by *Escherichia coli* using brewery waste: optimal pretreatment of waste and role of different hydrogenases

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HIGHLIGHTS

- Brewery spent grains (BSG) dilute acid pretreatment was developed.
- Optimization of conditions for *E. coli* growth on BSG hydrolysate and H₂ production was improved.
- Hydrogenase (Hyd)-3 and Hyd-4 are responsible for H₂ production.
- Mutations in the genes for Hyd-1 and Hyd-2 led to enhanced H₂ production; cumulative H₂ yield was determined.

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