

## **Biobutanol Production from Date Palm Waste by *Clostridium acetobutylicum***

**Authors :** Diya Alsafadi, Fawwaz Khalili, Mohammad W. Amer

**Abstract :** Butanol is an important industrial solvent and potentially a better liquid transportation biofuel than ethanol. The cost of feedstock is one key problem associated with the biobutanol production. Date palm is sugar-rich fruit and highly abundant. Thousands of tons of date wastes that generated from date processing industries are thrown away each year and imposing serious environmental problems. To exploit the utilization of renewable biomass feedstock, date palm waste was utilized for butanol production by *Clostridium acetobutylicum* DSM 1731. Fermentation conditions were optimized by investigating several parameters that affect the production of butanol such as temperature, substrate concentration and pH. The highest butanol yield (1.0 g/L) and acetone, butanol, and ethanol (ABE) content (1.3 g/L) were achieved at 20 g/L date waste, pH 5.0 and 37 °C. These results suggest that date palm waste can be used for biobutanol production.

**Keywords :** biofuel, acetone-butanol-ethanol fermentation, date palm waste, *Clostridium acetobutylicum*

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