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Energy Analysis of Irrigated Jetropha Cultivation for Producing Biodiesel

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ABSTRACT

Increase in yield of Jetropha plantation due to irrigation has been investigated considering the energy required to pump out underground water for Jetropha plantation in India. Depth of the water table is the variable. Comparison has been made with unirrigated Jetropha cultivation and increase in yield of bio-diesel has been compared with the primary energy required for operating the water pumps. Analysis has been carried out for areas having low, medium and high rainfalls and with three depths of water tables 20 m, 40 m and 60 m. It has been found that in areas having low rainfall and depth of water table 40 m, the energy balance is negative for first 4 years. Whereas in areas having low rainfall but water table 20 m, energy balance becomes positive in the third year, whereas for 60m depth, it doesn ' t become positive in the fifth year even.

KEYWORDS

Energy Analysis, Energy Balance, Pump Power, Primary Energy Equivalent, Energy Yield Stabilization Matrix

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