

## **Potential of *Jatropha curcas* L. as biodiesel feedstock in Malaysia: a concise review**

### **ABSTRACT**

Fluctuation in fossil fuel prices and the increasing awareness of environmental degradation have prompted the search for alternatives from renewable energy sources. Biodiesel is the most efficient alternative to fossil fuel substitution because it can be properly modified for current diesel engines. It is a vegetable oil-based fuel with similar properties to petroleum diesel. Generally, biodiesel is a non-toxic, biodegradable, and highly efficient alternative for fossil fuel substitution. In Malaysia, oil palm is considered as the most valuable commodity crop and gives a high economic return to the country. However, the ethical challenge of food or fuel makes palm oil not an ideal feedstock for biodiesel production. Therefore, attention is shifted to non-edible feedstock like *Jatropha curcas* Linnaeus (*Jatropha curcas* L.). It is an inedible oil-bearing crop that can be processed into biodiesel. It has a high-seed yield that could be continually produced for up to 50 years. Furthermore, its utilization will have zero impact on food sources since the oil is poisonous for human and animal consumption. However, *Jatropha* biodiesel is still in its preliminary phase compared to palm oil-based biodiesel in Malaysia due to a lack of research and development. Therefore, this paper emphasizes the potential of *Jatropha curcas* as an eco-friendly biodiesel feedstock to promote socio-economic development and meet significantly growing energy demands even though the challenges for its implementation as a national biodiesel program might be longer.

**Keyword:** Non-edible; Oil; Biodiesel production; Fuel