

Jatropha Curcas: A Dual Purpose Plant for Bio Fuel and Medicinal Applications

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Abstract: *Jatropha curcas*, commonly known as the physic nut or purging nut, is a member of the Euphorbiaceae family that has garnered significant interest due to its potential as a sustainable biofuel source and its diverse medicinal applications. This hardy, drought-resistant shrub thrives in arid and semi-arid regions, making it suitable for cultivation in poor soils and harsh climates. The plant's seeds, containing approximately 30-40% oil, are primarily utilized for biodiesel production, providing an alternative energy source that does not compete with food crops. Traditionally, various parts of *Jatropha curcas*, including its leaves, seeds, bark, and roots, have been employed in folk medicine to treat ailments ranging from wounds and digestive disorders to skin diseases. The therapeutic properties of *Jatropha curcas* are attributed to its rich phytoconstituents, including alkaloids, flavonoids, saponins, and tannins, which exhibit anti-inflammatory, antimicrobial, and anticancer activities. Notably, the latex derived from the plant contains compounds such as jatrophine, which have shown promising results in cancer treatment and wound healing. This abstract highlights the multifunctional nature of *Jatropha curcas*, emphasizing its potential in both sustainable agriculture and as a valuable resource in traditional medicine, while underscoring the need for further research to fully explore its therapeutic applications.

Keywords: *Jatropha curcas*, Medicinal, Biofuel, Alkaloids, Antimicrobial, Drought-resistant