



Potential of *Jatropha curcas* for biodiesel production in India

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Increasing population density and the additional decline in availability of productive land due to degradation would further fuel the large-scale migration of people into the already overpopulated metropolis in Asia and Africa in future, unless urgent corrective measures are adopted to increase rural incomes and generate new perspectives in the weaker regions. Economic development in many developing countries has led to huge increases in the energy demand. As most of the countries now enjoying rapid development (China and India e.g. - both countries already rank among the top 5 net CO₂ emitters in the world) are also large petroleum importers, their dependence on external energy sources from highly unstable regions would increase to uncomfortable levels. Energy security has thus become a key issue for many countries. India produces about 25% and imports 75% of its oil requirement. India is the least explored region for oil. India's import bill is about Rs. 1500 billion per annum and consumption is about 2% of world's oil. Moreover, due to uncertain supplies and fluctuations in prices for fossil fuel in international market, the need to search renewable, safe and nonpolluting sources of energy assumes top priority. Non-edible oil bearing trees like *Jatropha* can be utilized either as biofuel or with processing. The use of the tree on wastelands is of vital importance for the human population in developing countries. Biodiesel has drawn attention because it is environmentally safe can be made from renewable sources and prepared locally. Since India is deficient in edible oils, the non-edible oil like *Jatropha* could be the desirable source for India for production of bio diesel. This plant could be grown on wasteland, about 40 million hectare of which is available in India. The crop grows in arid and semi -arid region and requires almost no post plantation management and care. Since, almost all the wasteland is available in rural and economically underdeveloped region, the large scale biodiesel production

has an enormous potential for employment and development of these areas.

Jatropha is a perennial tree living for 40 to 50 years or more depending upon local conditions. The *Jatropha* takes about 2 to 3 years to commence fruiting and another 2 years or more to come to the stage of full bearing. Thus, only after 4 or 5 years the grower will be in a position to reap the reward for his labours. If the original planting material used happens to be poor in quality, it will result in the establishment of a plantation giving poor yields and turn out to be a source of loss to the grower as long as the plantation lasts. He has no other option but to uproot the unproductive and uneconomic trees. These facts will underline the need to plant quality planting material that will ultimately give good yields. Therefore, in the present paper availability of quality planting material with nursery and agro-techniques in *Jatropha* is discussed.