



Jatropha CURCAS:

The prime ingredient in the manufacture of Biodiesel is vegetable oil i.e. sunflower, soya, peanut etc. However, these oils are edible and generally fetch high prices, which preclude them from being used in Biodiesel.

To date Biodiesel has been distilled from spent oil, but insufficient quantities mean that the demand for Biodiesel remains at a premium.

Research pointed the way to JATROPHA CURCAS, also known as the physic nut, which thrives in Zimbabwe and Zambia. It is ideal for the production of Biodiesel and related products; the plant is drought-resistant and frost hardy.

It also produces a higher yield under sub-tropic conditions and, as such, linkages have been established with the KwaZulu-Natal Department of Agriculture and Environmental Affairs (DAEA).

An excellent working relationship has been established between Biodiesel S.A. and the DAEA, leading to the formation of the Jatropha Task Team that is currently undertaking research on the cultivation of the plant.

Environmental concerns



Concerns about Jatropha escaping and posing danger as an invasive species have been assuaged by a long-abandoned experiment at the DAEA experimental farm on the Makhatini Flats in northern KwaZulu-Natal.

A number of homesteads are surrounded by mature trees planted in the mid-1980s as living fences, all of which bear seeds profusely. There is no evidence to suggest that any seed has germinated elsewhere, almost 20 years after the first planting.

Potential uses

Jatropha offers a spectrum of potential uses, apart from the principle imperative of Biodiesel production.

WHOLE PLANT: Erosion control, hedges and crop protection

FRUIT:

SEED FRUIT SHELL: Burning fuel

SEED OIL: Diesel production

SEED CAKE: Soap production, organic fertilizer, chemical production, glycerin and biodegradable cutter bar lubricant (for chain saws).



The physic nut is a drought-resistant plant species which has been widely cultivated in certain African countries as a living fence.

Many parts of the plant are used in traditional medicine. The seeds, however, are toxic to humans, most animals and birds.

Considerable amounts of physic nut seed were produced on the islands of Cape Verde during the first half of this century, constituting an important contribution to the country's economy. Seeds were exported to Lisbon and Marseille for oil extraction and soap production. Currently, global production is negligible.

The physic nut is a small tree or large shrub which lives for up to 50 years and can reach a height of up to five (5) meters if not pruned and kept under control. Growth and yield are determined by rainfall and temperature fluctuations.

Pollination of the physic nut is by insects and mostly by moths because of its sweet, heavy perfume at night.



The seeds are black, about two centimeters long and one centimeter thick. The extracted oil has no mutagenic properties, if handled with care, and poses no danger to workers.



The cultivation of the Jatropha plant lends itself to the economic beneficiation of previously disadvantaged communities and efforts are underway to popularise Jatropha among emerging and small scale farmers through the KZN AgriFoundation (KZNAF), a Section 21 company and an affiliate of the DAEA.

In this respect, Biodiesel S.A. has committed itself to the purchase of all seed from emerging farmers.

It is envisaged that the kernels will be bought and transported to the factory where the oil will be pressed and Biodiesel will be produced.