

## Jatropha Production Technology

*Jatropha curcas* is multi purpose non-edible oil yielding perennial shrub originated in tropical America and West Asia. It has the tendency to produce latex and hence animals do not browse the plant. This is a hardy and drought tolerant crop can be raised in marginal lands with lesser input. The crop can be maintained for 30 years economically. The oil from *Jatropha curcas* can be used as biodiesel blend upto 20%. However, the refined oil is a qualified neat biodiesel.



### Climate and soil

*Jatropha* grows well under subtropical and tropical climates. It can tolerate extremes of temperature but not the frost. It is grown in wide range of soils. For economic returns, a soil with moderate fertility is preferred.



### Variety

No variety has so far been evolved in *Jatropha curcas* through out the world. However, high yielding types collected and evaluated at Tamil Nadu Agricultural University and types from African Countries (Madagascar, Zimbabwe and Cape Verde) are ideal for cultivation.

### Propagation

*Jatropha* is normally propagated through seeds. Well developed plumpy seeds are selected for sowing in the raised nursery beds. Before sowing, seeds are soaked in cow dung solution for 12 hours and kept under the wet gunny bags for 12 hours. Germinated seeds are sown in poly bags 10x20 cm size filled with red soil, sand and organic in the ratio of 1:1:1 respectively.



### Planting

In one acre, 1000 plants can be planted at a spacing of 2m x 2m. Pits of 30x 30 x30 cm may be dug and filled with soil and organic (500 gm FYM + 100 g Neem cake+100 g super) before planting. For better establishment of seedlings, monsoon seasons may be preferred for planting ( June - July, October-November). Seedling drenched with cow dung and urine solution (5:1) @ 200 ml / plant found to perform better.



### Manuring

From second year onwards fertilizers are applied. For one acre 20:120:60 kg of NPK respectively applied during September-October respectively. From 4th year onwards, 150g super phosphate is recommended over and above the regular dose.

### **Irrigation and after cultivation**

Irrigation is a must immediately after planting. Life irrigation should be given on third day after planting. The irrigation at fortnight interval is compulsory to ensure year round production of flowers and harvest of seeds. Weeding may be attended to as and when needed. For early flowering, GA @100 ppm may be sprayed. It also helps better pod development and yield.

### **Intercropping**

Being a perennial crop, intercrops can be raised in between the rows for the first two years. Crops like tomato, bitter gourd, pumpkin, ash gourd, cucumber and black gram can be grown profitably.

### **Canopy management**

The terminal growing twig is to be pinched to induce secondary branches. Likewise the secondary and tertiary branches are to be pinched or pruned at the end of first year to induce a minimum of twenty five branches at the end of second year. Once in ten years, the plant may be cut leaving one meter height from ground level for rejuvenation. The growth is quick and the plant will start yielding in about a year period. This will be useful to induce new growth and yield stabilization there on.

### **Pests and diseases**

Bark eater (*Indarbella* sp) and capsule borer are the two major pest affecting the plant. They may be controlled by spraying Endosulphan @ 3ml/litre of water. Collar rot may become a problem in the beginning and be controlled by spot drenching of 1% Bordeaux to the affected and neighboring plants



### **Yield**

Seedlings produce flowers 9 months after sowing. However plants established through cuttings, produce flowers from 6th month onwards. Wherever *Jatr opha* is cultivated under irrigated condition, the flowering is throughout the year. Economic yield starts from 3rd year end. It is estimated as 3000kg seeds /acre @ 3 kg of seeds per plant). The dried pods are collected and seeds are separated either manually or mechanically. Seeds are dried under sunlight for four days until the moisture is brought to 6-10% before oil extraction.

