



Growing Jatropha Around The Field

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Cultivation of Jatropha

The plant has the capacity to grow on wasteland and also on any type of topography. The plant can blossom even on stony poor soil. Jatropha can be brought up as monoculture, mixed cropping and even can be grown as a live fence. Being a perennial crop the jatropha plant can yield for about 50 years. The tree can grow well on hot weather with little rain. The plant achieves its complete germination after 9 days from the day of sowing seeds. Adding manures at the time of germination will result in negative effects but adding manures after germination will give the best results. After 9 to 12 months the crops starts yield and the effective yielding is obtained only after 2 to 3 years. In general 6*6, 8*8, and 10*10 spacing can be practiced for better results. Jatropha can grow in medium to dry regions with the annual rainfall raging from 200 to 1000 mm. It can grow at an altitude of about 0 to 500 m with the average temperature 20 degree Celsius.

Factors Affecting Jatropha Yield

Climate, Crop density, Genotype, Inter-cropping, Irrigation, Quality of the soil, Use of fertilizer, Use of pesticide and Weeding are the major factors affecting the yield. In order to get the maximum yield use of inorganic fertilizers should be avoided. But nitrogen can be added during the first few weeks and during the active growing time.

In case of pest problems low impact pest treatment strategies will help the most. If possible make arrangement for drip irrigation frequently in summer, little in monsoon and only fortnight in winter. Expose the plant to maximum sunlight and use the method of intercropping in the first 2 to 3 years.



Botanical Features

Jatropha is a diminutive tree or hedge plant. Jatropha can grow to a height of about 3 to 5 meters. If the conditions are favorable they can grow to a height of about 8 to 10 meters. The plant has a gray bark and they emit white water latex when it is chopped.

Leaves

The leaves of the jatropha plant are large and they appear from green to pale green in color. Alternately to the sub opposite side they have 3 to 5 lobes with spiral phyllotaxis. The leaves of the plant are used to treat many illness and inflammation in the tongue for babies.



Flowers

The flowers are formed lethally i.e. they are formed terminally and individually. Here in jatropha the male and female flowers blossom separately. And the females are little larger than the males. The length of the petiole ranges from 6 - 23 mm and at the leaf axils the inflorescence are formed. In continuous growing conditions an unbalanced pistillate or staminate production of flowers result in a huge number of female flowers.



Fruits

The shrubs are leafless during winter giving the way to produce fruits. If the conditions like soil moisture and temperature are good and sufficiently high the crop can bear fruit

throughout the year. A bunch of at least 10 ovoid fruits can be seen in a single inflorescence. Once the seeds are matured they form a three or bi-valued cocci are formed with fleshy outer layer. The fruits do not have the capacity to drop on their own they provide place for manual harvest without any damage or wastage.



Seeds

After 2 to 4 months from the date of fertilization the capsule changes from green to yellow in color. This indicates that the seeds are matured. The blackish and thin shelled seeds are lozenge and they appear to be small castor seeds.



Flowering and Fruiting Habit

During the dry season the trees are very deciduous and they shed their leaves. And in the wet season flowering occurs. The flowering can be seen throughout the year if the region is humid permanently. After 3 months from flowering the seeds are matured. If there is enough rainfall early growth is possible and the nursery plants will bear their fruits after the first rain itself. Pollination takes place by insects and honey bees play a big part in jatropha pollination.



Jatropha Seeds

Jatropha seeds are thin shelled ones with black color. They have oblong shape. A Jatropha seed resembles the castor seeds. 2 to 3 large black and oily seeds in a single seed shell. The matured jatropha seeds are 2 ½ cm long and they can be easily crushed to extract the oil from

them. Nearly 33% of oil can be obtained by crushing the seeds. The oil of these seeds is used as a biofuel.

Cost of Bio-Diesel

So using jatropha oil as a biodiesel has many advantages. It is an alternative and renewable source of energy and the biodiesel is free from sulphur. Using of biodiesel reduces the pollution. The amount of components present in the petroleum is reduced to half in the biodiesel.

Conclusion

Jatropha curcas L. is a potential biofuel plant especially in tropical and subtropical land. It is resistant to environmental factors such as low nutrient and low moisture soil. All of the plant parts and also its waste have multipurpose uses to generate valuable commercialized product.

References

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