Growing Jatropha With Bio-Plant and Pro-Plant

Prepare the Seeds

Select the seeds and soak them overnight in water that contains 20 cc of Bio-Plant and 20 cc of Pro-Plant per 20 litres before sowing. This softens the seed coat for easy germination. It will also increase the survival rate of the seeds.

Plant the Seeds in Soil

Planting the Seeds

- Mix the seeds in Bio-Plant before planting.
- Pour water while pressing the seed lightly on the soaked soil.
- Put the seed in a mixture of soil (3 parts), compost (2 parts), manure (1 part) prepared in plastic bags with water.
- Use a soil/manure/compost mixture that has been sprayed with 1 litre of Bio-Plant mixed with 20 litres of water and left for 12-14 days.
- The first shoot can be expected after 6 days.

Watering the Seeds & Saplings

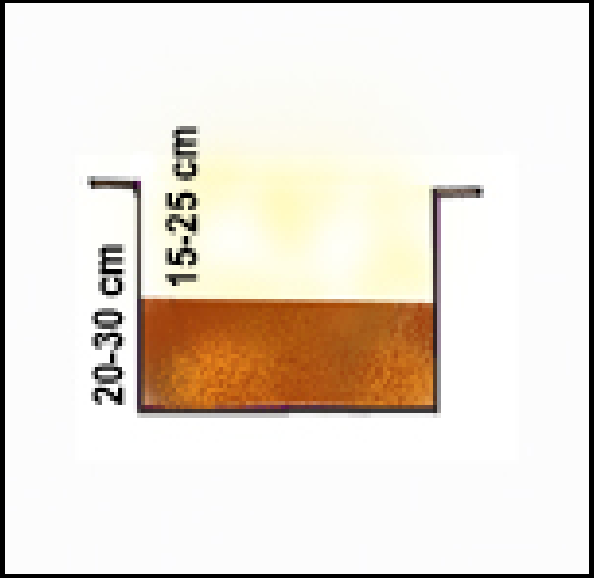
- Water the plants twice a day for seven days.
- Ideally, use water that has been mixed with 20 cc of Bio-Plant per 20 litres.
- Once the leaves appear, spray the leaves with Pro-Plant every 7 days at the ratio of 20 cc in 20 litres of water. This will be enough for about 400 square metres.
- After 2 months, the saplings will be ready for transplanting.

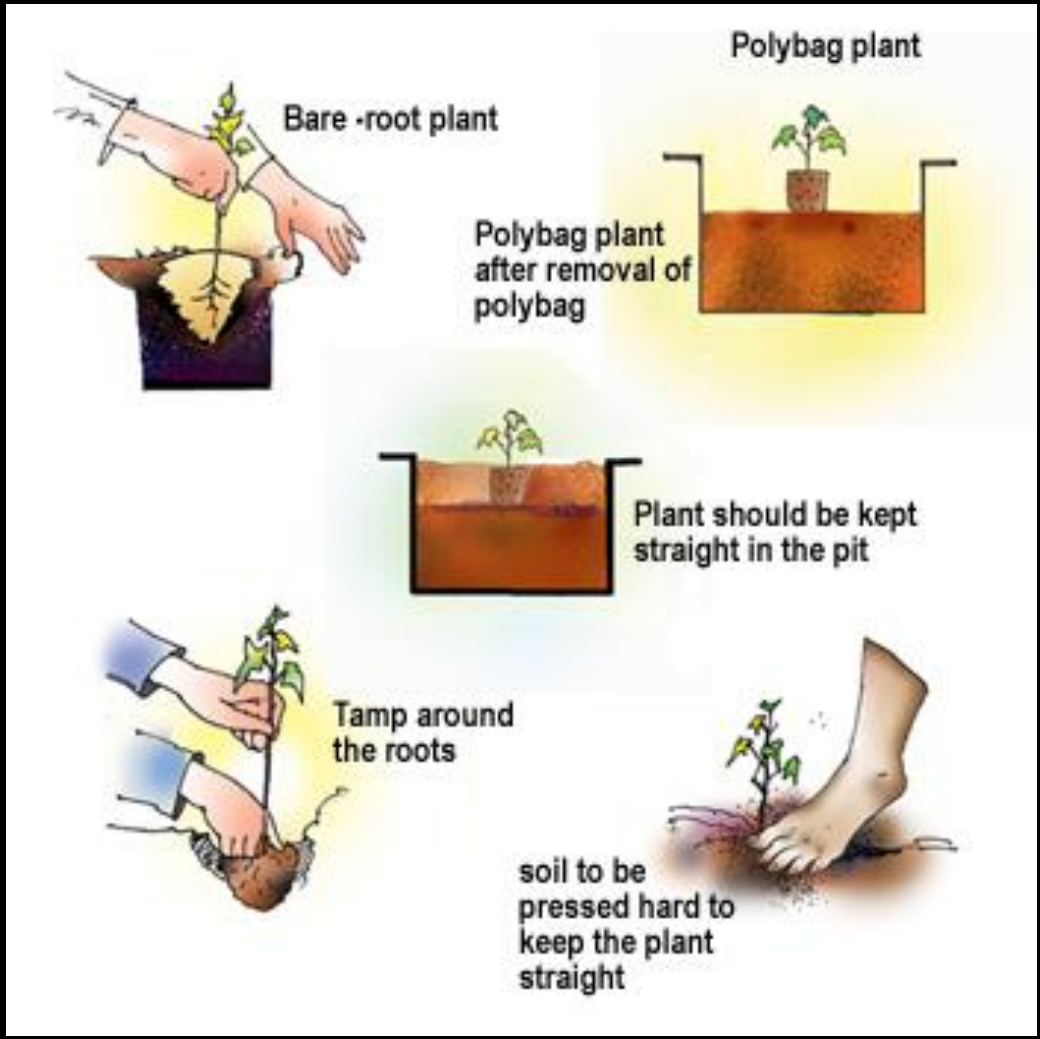
Effect of Bio-Plant on the Roots

The Jatropha Curcas root system formation is directly influenced by the propagation method in such a way that any damage or deformation that has occurred in the roots' early growth cannot be repaired and will last for all the plant cycle, reducing the tree's growth and yield. Bio-Plant ensures strong root development.

Choose sandy soil.

Transplanting the Jatropha





Use Bio-chemical Fertilizer

- The holes should be filled with soil mixed with farmyard manure (about 5-10 kgs per hole) and bio-chemical Single Super Phosphate (half the usual amount of 120 grams) at the time of transplanting.
- Such filling should be to the extent of half the depth of the holes (20–30 cm).

Use Bio-chemical Fertilizer

- Transplant the seedlings in the centre of the hole.
- After the establishment of the plant, apply bio-chemical Urea (10g not 20g) and bio-chemical MoP (Muriate of Potash), 8g not 16g.

Water Using Bio-Plant

- Water the base of the plants with a mixture of 1 litre of Bio-Plant in 1,000 litres every 2 weeks.
- This will add disease protection and increase the multiplication of micro-organisms around the plant.
- Fertile soil leads to earlier flowering and fruiting.

The Effect on the Soil & Yield

- Each month the soil will become more fertile, and each year the yield will increase.
- It requires extra work, but what is the priority? Resting or extra yield and revenue?

The Action of the Micro-organisms

- The microbial fertilizer bacteria colonize crop roots and start to multiply. The bacteria bind with the root hairs and cause root cells to swell, forming nodules.
- Within these nodules, the bacteria work as miniature “nitrogen factories,” pulling nitrogen from the air and converting it into a form the plant can use.

The Action of the Micro-organisms

The micro-organisms sweep up the unabsorbed NPK left in the soil by chemical fertilizers, and provide it to the jatropha trees. They turn it into a form that the trees can absorb.

Whenever chemical fertilizer would normally be applied, use bio-chemical fertilizer.
In this way the farmer can halve the amount used.

Spray Pro-Plant Every 14 Days

How to Spray Pro-Plant

.

- Spray 20 cc of Pro-Plant mixed with 20 litres of water. Or pour the mixture around the base when the trees are too tall for spraying.
- For a hectare, mix 500 cc of Pro-Plant with 500 litres of water. Spraying more than 500 cc in the water is all right and can only do good for the trees. Spray about 2 litres per tree on the leaves.
- Continue applying Pro-Plant until about 10 days before the seeds are harvested.

Spraying Pro-Plant in Tests Not Starting from Seeds

- Spray Pro-Plant onto the leaves every 10 days during field tests when the tests did not start from the seed stage.

Spraying Bio-Plant in Tests Not Starting from Seeds

- Place 5-10 kgs of organic matter mixed with Bio-Plant (1 litre per 5 tonnes) around each tree.
- Spray Bio-Plant at the base of the trees every 14 days during the field test.

Limitations of Using Chemical Fertilizer for Nutrition

- In high rainfall areas the application of only chemical fertilizers as a nutrient source is inadequate for growing Jatropha because nitrogenous and potassic fertilizers, like Urea and MOP, are prone to leaching losses in a very short time during rainy seasons due to high solubility of such fertilizers in water. However, bio-chemical fertilizer increases soil retention.

Benefits of Bio-Plant & Pro-Plant

- For other benefits of using Bio-Plant and Pro-Plant, please refer to the PowerPoint presentation about the benefits of the bio-fertilizers.

Apply Bio-Plant Regularly

How to Spray Bio-Plant

.

- Spray 20 cc of Bio-Plant mixed with 20 litres of water. Spray about 2 litres around the base of each tree. Not on the leaves.
- For a hectare, mix 500 cc of Bio-Plant with 500 litres of water. Spraying more than 500 cc in the water is all right and can only do good for the trees.
- Continue applying Bio-Plant until about 10 days before the seeds are harvested.


JatrophaCurcasPlantations.com

The Flowering Stage

Apply Bio-Plant During Flowering

- 3 weeks before the flowers appear, spray the soil at the base of the trees every 10 days with 20 cc of Bio-Plant mixed with 20 litres of water.
- For a hectare, mix 500 cc of Bio-Plant with 500 litres of water.

Apply Pro-Plant During Flowering

- From 3 weeks before the flowers appear, spray the leaves of the trees every 7 days with Pro-Plant.

Spraying Tall Trees (Flowering)

Applying Pro-Plant in the Flowering Stage

If the trees are too high, pour Pro-Plant at the base of the trees.


The Fruiting Stage

Applying Pro-Plant in the Fruiting Stage

- Continue applying Pro-Plant until 7 days before the jatropha is harvested.


DILIGENT
tanzania ltd

Summary of Some Benefits

- Fuller seeds because of the treatment.
- Stronger root growth with more roots.
- Rapid multiplication of micro-organisms with increase growth.
- Faster growth from the seed stage.
- Increased natural protection from disease.
- Pro-Plant's minerals are instantly usable.
- Increased Nitrogen because of Bio-Plant.
- Improved flowering and increased fruiting.
- Much lower costs in bio-chemical farming.

Cost Comparison

1. Chemical Farming

- 10 bags per hectare.
- 1 bag costs US$35. Total cost = US$350

2. Bio-chemical Farming A (No Pro-Plant)

- Mix 10 bags per hectare with 10 x 330 cc.
- Cost Savings = 45%.
- Yield = +5% to 10% usually.

Cost Comparison

3. <u>Bio-chemical Farming B (With Pro-Plant)</u>

- Mix 10 bags per hectare with 10 x 330 cc.
- Spray 1-2 litres of Pro-Plant per month per hectare depending on the size of the trees to provide extra nutrition + disease protection.
- The yield will increase very noticeably. A standard increase with ordinary crops for Option 3 is 30%. Tree fruit productivity is often more than this.

After-Sales Assistance Provided

When a sale is made we will demonstrate to the farmers how to use the bio-fertilizers effectively.

The End