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Cultivation Practices of Rubber for the Improvement of Livelihood in Tropical Region

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SUMMARY

Rubber is a tropical tree crop which is mainly grown for the industrial production of latex. Like oil palm it requires a high and year-round rainfall with little or no dry season and stable high temperatures; soils should not be particularly rich, but must be deep and well drained. Rubber trees grow mainly in tropical lowlands below 400m altitude, originally covered by a dense tropical rainforest. Dry spells or temperatures below 18° C do not affect vegetative growth but reduce latex yield. Fertilizer demands for the tree are only important in the vegetative development stage when the biomass is built up. Latex is a suspension of rubber particles which have to be coagulated to obtain the rubber.

INTRODUCTION

Since its introduction in 1963 by the State Forest Department, Tripura has become 2nd largest producer of natural rubber in the country, after Kerala, accounting for about 9% of the total production of India. Tripura also has the second largest rubber growing area in the country, after Kerala**.** The rubber plantation in Tripura is almost 125 kilometres away from Agartala the capital city of the state and in every mature rubber plant, there is a coconut cup where the liquid is collected and later it is taken to processing unit. Planting is done during the month of May to August depending upon the rainfall. Bud grafted stumps can be planted directly in the field.

Varieties:

Tjir 1, PB 86, BD 5, BD 10, PR 17, GT 1, RRII 105, RRIM 600, PB 28/59, PB 217, PB 235, RRIM 703, RRII 5, PCK-1, 2 and PB 260.

Soil and climate:

It requires deep and lateritic fertile soil with an acidic pH of 4.5 to 6.0 and highly deficient in available phosphorous. Tropical climate with annual rainfall of 2000 – 4500 mm is suited for cultivation. Minimum and maximum temperature should be ranged from 25 to 34°C with 80 % relative humidity is ideal for cultivation. Regions prone to heavy winds should be avoided.

Planting:

- TIME--Planting is done during the month of May to August depending upon the rainfall. Bud grafted stumps can be planted directly in the field.
- Pit size of 1 Cubic meter are dug and filled up with top soil and compost.
- Spacing--- 6m x 4 m. (416 Plants/ha)
- Apply 12 kg of compost or FYM and 120 g of orgy power rock phosphate + 100 g orgy power soil booster in each pit before planting.

Apply orgy power NPK and Rise + per plant as per schedule given below:

Months after planting	Period of application	Quantity per plant	
		NPK Orgy	Rise +
3	September/October	225 g	5 ml
9	April/May	445 g	5 ml
15	September/October	450 g	5 ml
21	April/May	450 g	5 ml
27	September/October	550 g	5 ml
33	April/May	550 g	5 ml
39	September/October	450 g	5 ml

Note-Drench soil orgy power NPK and Rise + around the base of plant with 5 litre water.
Apply 500 gorgy power NPK and Rise + 5ml in 5 litre water per tree in April/May and another in September/October from the 5th year till the tree is ready for tapping.

Matured rubber trees under tapping:
For matured rubber trees under tapping apply NPK Orgy power at the rate of 900 g and Rise + 10 ml/tree every year in two split doses.

Ethrel treatment:
Ethrel is recommended to increase latex yield of trees. It is applied at 5% a.i. concentration with a brush below the tapping cut to a width of 5 cm after light scraping of the outer bark. The first application may be done after a drought period preferably after a few pre-monsoon showers and subsequent applications may be done in September and November. However, continuous application of Ethrel is not recommended for periods of more than 3 years at a stretch.

Tapping panel dryness (Brown bast):
Syndrome characterized by prolonged dripping of latex with the gradual decline in volume yield, pre coagulation of latex and partial or complete drying of tapping area (10-25 per cent).
Control: Reduce tapping intensity or give a tapping rest for 3 to 12 months**.**

Plant protection:

Pest's management:

Scale insect, Mealy Bug: Spray insecticides like 1ml/lit. Pest kill at fortnightly intervals.

Termite (White ant), Cockchafer grub:
Drench the soil at the base of plants with Pest Go 5 ml in 5 litre water /litre at fortnightly intervals.
Drench soil at the base of plants Orgy power crop guard 5 ml in 5 litre water /litre at fortnightly intervals

Mites: Spray Mite out at 1ml/lit at fortnightly intervals,
Spray Sulphur 50 WP at 2 g/lit.

Diseases Management:

Abnormal leaf fall:
Prophylactic spraying on the foliage prior to the onset of South-West monsoon with, Go fungus magic 1 ml/ Lit at fortnightly intervals.
Drench soil at the base of plants Orgy power plant saver GFM 5 ml in 5 litre water /litre at fortnightly intervals.
Oil based Copper oxy chloride using through aerial application.

Powdery mildew:
Spray Go fungus magic 1 ml/ Lit at fortnightly intervals
Spray Sulphur 2 gm /Lit on young plants.

Bird's eye spot, Leaf spot:
Spray Go fungus magic 1 ml/ Lit at fortnightly interval

Pink disease:
Frequent tree to tree inspection should be done during July – September period for detecting the infected trees and application of Bordeaux paste in the early stages up to 30 cm above and below the affected region. In advanced cases apply Bordeaux paste and when it dries up scrape off the superficial mycelium and damaged bark and apply Go fungus magic 1 ml/ Lit at fortnightly intervals

Patch canker or Bark cankers:
Spray Go fungus magic 1 ml/ Lit at fortnightly intervals.
Drench soil at the base of plants Orgy power plant saver GFM 5 ml in 5 litre water /litre at fortnightly intervals.
The affected region may be scraped to remove all the rooting bark and the coagulated rubber and the wound washed well with Go fungus magic (0.1%). When the fungicide dries up apply wound dressing compound.

Dry rot, Stump rot, Collar rot or Charcoal rot:
Spray Go fungus magic 1 ml/ Lit at fortnightly intervals.
Drench soil at the base of plants Orgy power plant saver GFM 5 ml in 5 litre water /litre at fortnightly intervals.
Clean up affected areas, by washing with orgy power plant saver GFM (0.1%) solution. Scrape out the

fructifications. Affected bark and wood show black lines. Wash the wound again with fungicide solution. When it dries up apply a wound dressing compound. Avoid accumulation of rubber at the base of the trees.

Brown root disease:

Spray Go fungus magic 1 ml/ Lit at fortnightly intervals.

Drench soil at the base of plants Orgy power plant saver GFM 5 ml in 5 litre water /litre at fortnightly intervals. Open up the root system. Completely killed and dried roots may be traced and pruned. Partially affected and healthy roots washed with fungicide (0.1%) solution. Orgy power plant saver GFM fungicide dries up, a thin coating with a wound dressing compound may be given. Refill the soil and drench the base with fungicide solution.

Yield:

Rubber yield steeply increases year by year, reaching a peak after 14 years of planting. In India, the annual yield of rubber is 400 kg/ha from seedlings trees, whereas budded plants yield is 800 kg/ha.

CONCLUSION

Rubber is an important plant not only for world economic strategies but also for the use of living of humankind. The more social development, the more requirements of products made of rubber for people utilization is increasing every day. Natural latex is one of important raw material available for making various kinds of products in heavy industries such as motor and vehicle industry, kitchenware and house ware.

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