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TOPIC:-RUBBER

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Rubber

- ❖ Scientific name - *Hevea brasiliensis*
- ❖ Family- Euphorbiaceae
- ❖ **Origin:-** This Plant is a native of the tropical rainforest of Amazon valley.
- **Morphology:-**
 - ❖ It is a tall tree attaining 20m height.
 - ❖ The trunk is 2-3 m in girth.
 - ❖ Leaf is canopy at the top.
 - ❖ The leaves are trifoliate compound with long Petioles.
 - ❖ Short leaflet.



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➤ **Flowers :-**

- ❖ Flowers are Small, green and sweetly scented.
- ❖ Female flowers are on the top and male, flowers are in the bottom.

➤ **Fruits :-**

- ❖ Fruits are tripetate capsule, containing one seed in each compartment.
- ❖ At maturity it dehisces explosively and noisily.

➤ **Seeds :-**

- ❖ The seeds are scattered at a distance of about 10-12m.
- ❖ Seeds are rich in oil.



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Production:-

- ❖ In 2012, Asia dominated the worlds of supply of natural Rubber accounting for more than 90%. of world production (11445176 metric tones).
- ❖ The 5 largest Production countries are Thailand (3500000 metric tones), Indonesia. (3090000 metric tones), Malaysia (970000 tones), India (805000 tones), Vietnam (863773 tones).
- ❖ other countries and China, Brazil, Philippines, Myanmar , Sri Lanka, Nigeria, and Liberia.
- ❖ The major exporting countries are, Malaysia, Sri Lanka, Vietnam, Thailand, Singapore.
- ❖ In India, the major productions is from Tamil Nadu , Karnataka and Kerala.



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Climatic Condition:-

- ❖ The tree is essential at tropical pant growing with rubber belt about 1126km North and south of the equator.
- ❖ Distributed Rainfall of 175-250 cm per anum.
- ❖ High atmospheric humidity about 24-35°C.
- ❖ Loamy Soil with PH value 4.5-6.0.

Harvesting:-

- ❖ Seeds are viable for short time, so planted immediately after harvesting.
- ❖ Vegetative. Propagation was carried out initially with Stem cutting
- ❖ High yielding clones area produced by double building technique.



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Processing of rubber:-

Rubber processing consists of 4 basic steps:-

1. Mastication
2. Mixing
3. Shaping of the viscous mass(for eg by moulding)
4. Curing (when the polymer molecules become interlinked and the shape is fixed).

TAPPING:-

- ❖ Harvesting in rubber is known as tapping.
- ❖ Tapping is the periodical removal of thin slices of bark to extract rubber latex.
- ❖ It is the process of controlled wounding with the shaving of bark removed. The latex vessels are found in the inner layer of soft bast of the bark.
- ❖ The latex vessels are concentrated in in the soft bast arranged in a series of concentric rings of inter connecting vessels.
- ❖ Tapping is done by skilled men.
- ❖ While tapping, the cambium should not be damaged as otherwise callus formation will take place causing swellings.
- ❖ The rubber trees attain tappable stage in about seven years.
- ❖ The best season for tapping is March or September depending upon girth of the tree.



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- ❖ The latex vessels in the bark flow at an angle of 320° to the right and therefore a cut at higher level from the left to right has to be carried to facilitate opening of a large number of latex vessels.
- ❖ Tapping is done in the early morning, late tapping will cause reduction in the flow of latex.
- ❖ In South India, rubber trees shed their leaves during December- January & immediately again they put forth the new leaves and flowering. During this period the trees are given rest since the yield of the rubber will be poor if tapped. The yield of the rubber steeply increases year by year and the peak is reached at 14-18 years after planting.
- ❖ Then it slowly declines. After 40 years it may not be economical to maintain the trees. The latex yield will vary with the clone, age of trees, fertility of soil, climatic conditions and skill of the tapper.



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Types of Tapping:-

1. Puncture tapping:-

- ❖ Puncture tapping or micro tapping is basically an incision method of tapping. Micro tapping is done with a small needle on a vertical band of stimulated bark. The length of the strip is usually limited to 60 cm and the number of punctures made may be 4 or 5.

2.Slaughter tapping:-

- ❖ Intensive tapping prior to felling of the old trees is called slaughter tapping. It is often done at higher levels sometimes even on branches with the help of ladders and not on the usual renewed bark levels. As the objective of slaughter tapping is to extract as much as latex as possible from the available bark, no consideration is given to the technique, intensity or standard of tapping.



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Economic Importance:-

- ❖ 70% Rubber Production is consumed in the manufacture of tyres, tubes and other articles associated with automobile industry.
- ❖ 60%. is utilized for foot wear and nearly 40% for wire and cable insulation.
- ❖ Other manufacture article, include, fabric, rainy coats and households, hospital supply (hot water bag, surgion gloves, Sheets etc.), toys, eraser, Sports & shoes, belts, rubber bands.
- ❖ Concentrated latex is used for most dipped books, balloons, gloves, contraceptive appliances.
- ❖ Rubber powder and buitment is used for road surfacing.
- ❖ Rubber also found in use of military cloth, pressurized suit for aircraft personal, operating with high elevation, frogmen's suit for divers spending considerable time under water.



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