Hevea Brasiliensis Description

Short description

Hevea brasiliensis, the **Pará rubber tree**, ***sharinga*** **tree, seringueira**, or, most commonly, the **rubber tree**, is a tree belonging to the family Euphorbiaceae. It is the most economically important member of the genus *Hevea*. It is of major economic importance because the milky latex extracted from the tree is the primary source of natural rubber.

Often known simply as the 'rubber tree', Hevea brasiliensis produces a creamy white latex – which was central to the Amazon rubber boom in the late 19th and early 20th century. The tree's rubber helped the Amazon achieve a world monopoly, leading to the growth of cities like Manaus, Brazil, and Iquitos, Peru, until the UK began to grow the seed in its colonies in Malaysia and Sri Lanka. The rubber trade also brought a lot of unhappiness to indigenous people, who were forced to work by rubber barons. The tree grows up to 40m tall, and there are more than 1.9 billion across the Amazon

Rubber tree plantation

Rubber tree seeds

In the wild, the tree can reach a height of up to 100 feet (30 m). The white or yellow latex occurs in latex vessels in the bark, mostly outside the phloem. These vessels spiral up the tree in a right-handed helix which forms anangle of about 30 degrees with the horizontal, and can grow as high as 45 ft.

In plantations, the trees are generally smaller for two reasons: 1) trees grow more slowly when they are tapped for latex, and 2) trees are generally cut down after only 30 years, because latex production declines as trees age, and they are no longer economically productive.

The tree requires a tropical or subtropical climate with a minimum of about 1,200 mm per year of rainfall, and no frost.[1] If frost does occur, the results can be disastrous for production. One frost can cause the rubber from an entire plantation to become brittle and break once it has been refined.

Latex tapping

Main article: Rubber tapping

Rubber tree trunk

Latex being collected from an incised rubber tree and a bucket of collected latex

Harvesters make incisions across the latex vessels, just deep enough to tap the vessels without harming the tree's growth, and the latex is collected in small buckets. This process is known as rubber tapping. Latex production is highly variable from tree to tree and across clone types.

Wood harvesting

As latex production declines with age, rubber trees are generally felled when they reach the age of 25 to 30 years. The earlier practice was to burn the trees, but in recent decades, the wood has been harvested for furniture making.

History

The Pará rubber tree initially grew only in the Amazon rainforest. Increasing demand and the discovery of the vulcanization procedure in 1839 led to the rubber boom in that region, enriching the cities of Belém and Manaus. The name of the tree derives from Pará, the second-largest Brazilian state, the capital of which is Belém.

These trees were used to obtain rubber by the natives who inhabited its geographical distribution. The Olmec people of Mesoamerica extracted and produced similar forms of primitive rubber from analogous latex-producing trees such as*Castilla elastica* as early as 3,600 years ago The rubber was used, among other things, to make the balls used in the Mesoamerican ballgame. Early attempts were made in 1873 to grow *H. brasilensis* outsideBrazil. After some effort, 12 seedlings were germinated at the Royal Botanic Gardens, Kew. These were sent to India for cultivation, but died. A

second attempt was then made, some 70,000 seeds being smuggled to Kew in 1875, byHenry Wickham, in the service of the British Empire. About four percent of these germinated, and in 1876, about 2,000 seedlings were sent, in Wardian cases, to Ceylon (modern day Sri Lanka) and 22 were sent to the Botanic Gardens in Singapore. Once established outside its native country, rubber was extensively propagated in the British colonies. Rubber trees were brought to the botanical gardens at Buitenzorg, Java, in 1883. By 1898, a rubber plantation had been established in Malaya, and today, most rubber tree plantations are in South and Southeast Asia, with some also in tropical West Africa.

Efforts to cultivate the tree in South America (Amazon) were unsatisfactory because of blight.[1] The blight, called South American leaf blight, is caused by the Ascomycota, *Microcyclus ulei* or *Pseudocercospora ulei*.

Environmental concerns

The toxicity of arsenic to insects, bacteria, and fungi has led to the heavy use of arsenic trioxide on rubber plantations, especially in Malaysia.

The majority of the rubber trees in Southeast Asia are clones of varieties highly susceptible to the South American leaf blight--*Microcyclus ulei*. For these reasons, environmental historian Charles C. Mann, in his 2011 book, *1493: Uncovering the New World Columbus Created*, predicted that the Southeast Asian rubber plantations will be ravaged by the blight in the not-too-distant future, thus creating a potential calamity for international industry.