

The Story of Malaysian Natural Rubber

Dalsouple France, normally sources latex supply from the open market but a large amount would originate from Malaysia.

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As far as I can ascertain it is quite accurate in it's information.

Enjoy this educational transcript on how Dalsouple obtains the material to produce perhaps the finest natural rubber flooring in the world today- **DalNaturel**.

Extract:

How the rubber industry began

Of all the wonderful tales brought back by Christopher Columbus in 1496 after his second voyage to the New World, none was stranger than the tale of a ball, which bounced. The people of Haiti made these playballs from the gum of a tree.

Although they did not realise it, Columbus and his crew were the first Europeans to see this unique substance – rubber. It did not get its name until much later – in 1770, an eminent English chemist, Joseph Priestley, noted the ability of this substance to 'rub out' pencil marks, and ever since it has been called rubber in the English language. This is curious, because 'rubbing out' has never been an important use of rubber.

In spite of the interest it aroused very little use was made of the new discovery. This was mainly because no one knew how to prevent the rubber becoming sticky in summer and brittle in winter.

In the early nineteenth century, all this changed. In 1820, Thomas Hancock, an Englishman invented a machine, which would soften, mix and shape rubber. It was then possible to dissolve rubber and start making useful products. By coating cloth with the rubber solution it could be made waterproof; the first 'Mackintosh' was made in 1823. Soon after there was another important discovery, this time by an American. In 1839, Charles Goodyear found by

accident that raw rubber could be improved by heating it with sulphur. The new material produced, called vulcanized rubber, was no longer affected by changes in temperature.

As other inventors found uses for rubber the demand grew. Some of the first products to be made from rubber were hose, conveyor belts, flooring and footwear – these still use rubber today. In the middle of the nineteenth century rubber came from South America, where the hot wet climate suited the wild rubber tree, but it was very difficult to collect it from the dense jungle. It soon became obvious that more rubber would have to be grown elsewhere to meet the demand.

In 1876, Sir Henry Wickham, at the request of the India Office, collected and shipped from Brazil 70,000 seeds from the wild rubber tree. These were rushed to Kew Gardens in London and planted in specially prepared hot-houses. The small number, which survived, were taken in 1877 to Ceylon and later to Malaysia and other countries of South-east Asia.

The rubber tree quickly flourished in Malaysia; large areas of jungle were cut down and planted with rubber trees. Henry Nicholas Ridley, who was appointed Director of the Singapore botanic gardens in 1888, was one of the pioneers of those times and did perhaps more than anybody to encourage planting of this new crop.

By the end of the nineteenth century there were 2500 hectares of rubber in Asia. Shortly afterwards Henry Ford started making his famous motorcar and the demand for rubber – to make tyres – rocketed. The trees in the South American jungle could not possibly produce enough rubber and so the new plantations of Asia found that the world wanted all the rubber they could produce, and more. By 1910 there were ½ million hectares of rubber planted and the countries of Asia had now become the main suppliers of rubber.

With the spread of motoring to every country in the world, even today's enormous acreage of rubber (about 6 million hectares in all) cannot supply enough. There is not enough natural rubber to go around. Scientists have developed man-made rubbers from

petroleum. These are often mixed with natural rubber. For some products, however, only natural rubber can be used.

More rubber from better trees

Peninsular Malaysia – comprising 12 of the 14 states in the Malaysian federation – is among the world's most important rubber growing areas. Rubber is also grown in Sabah (formerly North Borneo) and Sarawak, which, known together as East Malaysia make up Malaysia.

Altogether Malaysia produces almost 20% of the world's natural rubber. A good deal of Malaysia's rubber (over half) comes from thousands of privately owned plots of land called small holdings, which are usually about 2 hectares. The rest is grown on big estates owned by various companies; each can cover over a thousand hectares. Altogether, Malaysia has 1.7 million hectares of rubber.

In recent years most of the older trees have been replaced by newer varieties which yield up to ten times as much rubber, thanks to scientific cross-breeding and careful cultivation.

If you were a rubber tapper you would have to get up very early in the morning, as the rubber latex flows more easily before the heat of the day begins. Latex is a milk-like fluid contained in tiny cells situated beneath the outer bark of the rubber tree. The latex is obtained from the tree by tapping that is cutting away a thin shaving of the bark about 2 mm thick. This cut, which is made with a special tapping knife, pierces the cells and the latex oozes slowly out to a collecting cup placed below. The tapper needs great skill with his knife as the tree is easily damaged if the bark is cut too deeply.

In two or three hours the flow of latex ceases. By the time the tapper has cut his last tree for the day the latex collecting cup of the first is ready to be emptied into a larger container. When all the cups have been emptied the full containers are taken to the factory, where the latex is turned into raw rubber.

Rubber trees are not tapped until about five years after planting; by

then they can produce enough rubber to make tapping worthwhile.

If you were working on your own smallholding you would probably take your latex to a group processing centre to process the latex into sheets or sell it to Mardec, a government agency which processes rubber into technically specified form. The big estates have their own machines. After processing it is sent to one of Malaysia's ports to be shipped overseas. Malaysian rubber goes to every country in the world and is recognized to be the best.

Rubber in industry and the home

Rubber is elastic, flexible, airtight, watertight, long lasting and insulating, to mention just a few of its properties. There are thousands of products, which take advantage of these useful properties. Some will be familiar to you, others less so because many rubber products do their work unseen.

Most of the world's rubber is used in tyres, ever since John Boyd Dunlop invented the pneumatic tyre in 1888. A tyre is not just a hunk of rubber, it is skillfully designed to do its job and it is made, not only of rubber, but also of other materials; fibres, steel and various chemicals. Some tyres use man-made rubber but for the toughest kinds of tyre only natural rubber will do. Aircraft tyres are a good example; these have to take tremendous punishment during landings and take-offs. They get very hot, hotter than boiling water, and natural rubber is always used to stand up to these conditions. The same is true for giant lorry tyres. The tyres on your family car have an easier life and they will have a lot of man-made rubber in them but they will also use some natural rubber in those parts of the tyre where it is needed.

As well as tyres, modern cars and lorries use a lot of rubber in other ways. Engines are mounted on rubber to cut down vibration. Some lorries and cars have rubber springs instead of steel ones. Then there are radiator hoses, windscreen wiper blades, car mats, seals and all sorts of small components such as bushes and gaskets hidden away under the bonnet or in the suspension.

Many motorway bridges are mounted on large blocks of natural rubber to allow the bridge to expand and contract when the

temperature goes up or down. Some buildings are now built on similar rubber blocks to help stop vibration, particularly if they are near railways. In this and many other ways rubber helps to make life quieter and more comfortable.

Throughout the industry, rubber does all kinds of different jobs. Hose to carry liquids; conveyor belts to carry coal, gravel, ores; seals for machinery and so on. The list is endless.

In everyday life you make more use of rubber than you perhaps realise. Did you know that the adhesive on transparent sticky tape is made of rubber? More obvious, many sports balls are made of rubber and the carpets and rugs in your home may have a foam rubber backing underneath. Your shoes may have rubber soles, and, if you travel on London's underground, you may like to know that the escalator handrail is made of rubber and the trains have rubber springs.

Methods Of Latex Rubber Tapping

All natural rubber originates in the Hevea tree, and it starts its journey when the tree is tapped. Trees are rarely tapped more often than once every two days.

A tapper starts the trek around the plantation before dawn. At each tree a sharp knife is used to shave off the thinnest possible layer from the intact section of bark. The cut must be neither too deep, nor too thick. Either will reduce the productive life of the tree. This starts the latex flowing, and the tapper leaves a little cup underneath the cut.

In ordinary circumstances, this latex will normally coagulate into a lump in the bottom of the cup, called 'cup lump.' If the plantation manager wants to make latex, then the tapper must add a stabilising agent to the cup. Usually this is ammonia, which prevents the latex from coagulating.

The tapper returns a few hours later and collects the stuff in the cup -- either cup lump or latex. The double round trip usually finishes at about 2 pm.

FYI (for your information) , the tapper is very often at the bottom of the educational scale. Many are women; illiteracy is high; pay is low. Child care and education is rudimentary at best. Living conditions are quite primitive and latex allergy awareness is

extremely low.

Processing Of Latex - Cup Lump or Liquid Concentrate

If solid rubber is required, the cup lump, together with tree lace (the remnants of the latex flow from the cut down to the cup) and other bits and pieces are collected together and processed. That processing involves quite a lot of heat, which destroys many (but not necessarily all) of the proteins. It ends up as solid rubber.

Depending on the method of processing and the final purity of the material, the industry refers to it either as TSR (technically specified rubber), or sometimes sheet rubber.

When latex is required--which covers about 10 percent of all NR produced--the material is gathered on the tapper's return journey, poured into containers and delivered to a processing station where it is strained and concentrated. At no stage in the process is the latex heated. This means most of the proteins remain in the latex. More stabiliser is added and the latex goes into a centrifuge to remove some of the water, and increase the rubber content of the latex. After centrifuging, the material is known as latex concentrate, and contains roughly 60 percent solid rubber and 40 percent other stuff (water, proteins etc.).

This (latex concentrate) is what is used in the dipping process when making gloves.

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