



# ENVIS NEWSLETTER



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## STATE FLOWER OF PUDUCHERRY (NAGALINGAM)



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### **ENVIS HUB CENTER**

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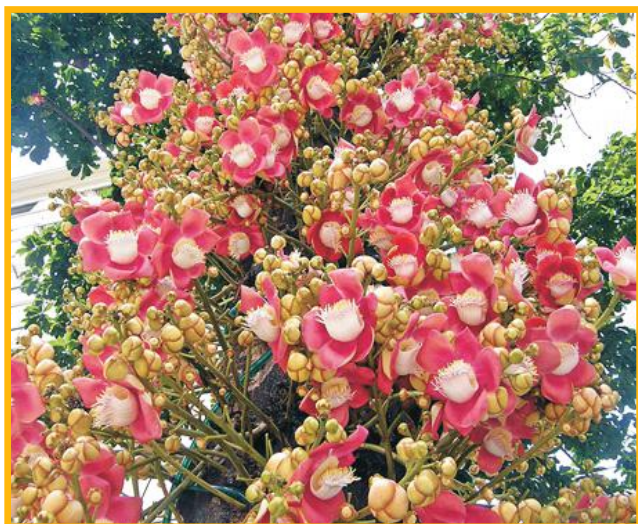
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## State Flower of Puducherry

*Coutoupita guianensis*, commonly known as Nagalingam or Lingam in Tamil and Cannon Ball Tree in English which belongs to the Family Lecythidaceae is the State flower of Puducherry has announced by the Government on 16<sup>th</sup> April, 2007. It is a sacred tree for the Hindus, since the stamina sheath resembles the hood of the Naga, a sacred snake, protecting Shiva Lingam. Hence, the name 'Naga Linga' tree.



### Origin:

The deciduous tree is indigenous to the tropical forests in the Amazon basin in north-eastern South America and also the islands of the Southern Caribbean.

### Geographic distribution:

The tree is planted in gardens elsewhere in India, Thailand, Bolivia, Colombia, Costa Rica, Ecuador, Honduras, Panama, Peru, United States and Venezuela. In India it is grown extensively in Shiva temples in South India and in Indian gardens.

### Agro-ecology:

It is a hygrophyte and heliophyte found most frequently in wet areas of lowland forests and river banks subjected to periodic flooding. Although a plant of moist soils, it thrives under dry conditions also.

### Description:

Grows to a height of 20 metres, the leaves are alternate, oblong-obovate, 20 cm long, entire to slightly serrate and hairy on the veins beneath. Inflorescence is racemose, arising from the trunk and other large branches. It flowers in racemes which is cauliflorous. The flowers have six petals which are large in size. The extrusions of flower stalk can range from two to six feet in length. The pink and dark-red flowers that form on the trunk of the tree are scented like a perfume. Large globose woody fruits are beard directly on the trunk and main branches which look like big rusty cannonballs hanging in clusters, like balls on a string. The fruit contains small seeds in a white, unpleasant smelling white jelly, which are exposed when the upper half of the fruit goes off like a cover. The hard shells are used to make containers and utensils. Fruits are edible and are occasionally eaten, but the smell of the white flesh discourages most people from trying them. Unripe fruit is harmful and might cause an allergic reaction.



### **Pollination:**

The floral shape, colour and fragrance attract many insect visitors but honeybees and carpenter bees are known to be the most important pollinators. The flowers do not contain nectar and hence, pollinators that visit the flowers in search of food usually get hood pollens as a reward. As a bee enters to pollinate the flower, its back rubs against the ring with fertile pollen which allows the bee to carry the fertile pollen to another flower.

During the process, they transfer fertile pollens present on the stamina disc to the next flower thus marking cross-pollination effective. At times when cross-pollination fails, the pattern of arrangement of the two types of stamens in the flower allows self-pollination to occur at a lesser degree.

The colourful petals, white coloured-hood and yellow-coloured apices of stamens also attract pollinators since they are known to reflect ultraviolet light. Fertile stamens are found in a ring around reduced style and stamens. The sterile pollen is located in the anthers. The differences between the pollen of the ring stamens are fertile whereas, the hood pollen is sterile.



### **Dispersal:**

The fruit falls from the tree and cracks open when it hits the ground when mature, often causing the sound of a small explosion. Individual seeds within the "ball" are coated with hair, which is thought to protect the seed when it is ingested and may also help in the passage of the seed through the intestines. Like coconut palms, the trees should not be planted near paths or near traffic-filled areas, as the heavy nut is known to fall without notice.



### Phyto-chemical profile:

The phyto-chemical profile is relatively complete subject to some variability in the content of specific chemicals. The plant also contains several chemical constituents with novel structures and possesses bio-active moieties. These include eugenol, linalool, farnesol, nerol, tryptanthrine, indigo, indirubin, isatin, linoleic acid,  $\alpha$ ,  $\beta$ - amirins, carotenoids, sterols, and some acidic and phenolic compounds. Flowers yield an aliphatic hydrocarbon, stigma sterol, alkaloids, phenolics and flavonoids. Leaves are rich in phytochemicals and reported to contain quercetin, saponins and tryptanthrin. The stem extracts of this plant is known to contain flavonoids, tannins, steroids, saponins, glycosides, amino acids, phenols, anthraquinones and triterpenoids.

### Properties:

This plant has been used widely in traditional medicine and considered antibiotic, antifungal, antiseptic, and analgesic. *Almost all the parts of the plant, namely leaves, flowers, fruits, roots, stem and seeds are known to have various medicinal properties.* Studies have shown anti-microbial, anti-oxidant, anti-nociceptive, wound healing, hepatoprotective, anti inflammatory, anti-quorum sensing, anti-depressant, repellent, anxiolytic and antiulcer properties. *The flower is used for pooja and has economic value.*

### Religious significance:

The tree is known for its beautiful flowers and has cultural and religious significance in India. The tree is sacred to Hindus in India, who believe its hooded flowers look like the naga. The tree is worshipped by childless couples in some parts of India.



### Traditional uses:

Traditionally, the leaves are used to cure colds, intestinal gas formation and stomach aches. Juice made from the leaves is used to cure skin diseases and shamans of South America have even used tree parts for treating malaria. The fruit pulp can disinfect wounds and young leaves ease toothache. Fruits have hard shells which are used as utensils or containers. The bark is used to cure colds. Fragrant flowers are used for making scent perfumes and cosmetics. Wood is used for making incense sticks, boxes, toys, rackets, parquet blocks, light artefacts and casting moulds.

## ENVIRONMENT EVENTS

### Activities on World Environment Day 2017 Celebration

The world Environment Day Celebration is held this year in the Amphitheatre of Puducherry Botanical Garden on 05.06.2017 at 05.00 PM. Shri. M. Kandasamy, Hon'ble Minister for Science, Technology and Environment, Shri. R. Kamalalannan, Hon'ble Minister for Agriculture and Shri. A. Anbalagan M.L.A., Shri. D. Manikandan, I.A.S., Secretary to Government (Agriculture), Dr. A. Ramamourthy, Director (Agriculture), Shri M. Dwarakanath, Director (Science, Technology & Environment), were participated in the Programs.

Thiru 'Solvendhar'Suki Sivam, Chennai was invited for giving special lecture on the theme 'Connecting People to Nature'. officers, staff and public participated in the function.

The UNEP has designated June 5 as World Environment Day for encouraging worldwide awareness and action for the environment. Every year World Environment Day is celebrated by this Department on a specific theme to protect nature designated by UNEP. The theme for World Environment Day 2017 is 'Connecting People to Nature'. The theme implores us to get outdoors and into nature, to appreciate its beauty and its importance, and to take forward the call to protect the Earth that we share.

Tree plantation by the Ministers and Directors were carried out in the Botanical Garden. Many corporate were involved in the function, they have actively participated in the celebration by donating free tree saplings to the public.

It is also announced by the Environment Minister of Puducherry that on every birthday peoples can contact the Botanical Garden, Agriculture Department, Department of Science Technology and Environment for providing tree saplings and they can plant it in the Garden on their auspicious day.

Free saplings distribution program of Department of Science, Technology and Environment was launched in the event and free saplings will be regularly given to the public at the Dr. Abdul Kalam Science, Centre and Planetarium at Lawspet.

ENVIS Team has interacted with the public and distributed the plant saplings and made them aware of environment and our nature





## One lakh tonnes of waste polluting Cooum

Construction debris alone constitutes about 86,000 tonnes of trash; boom barrier installed near Ethiraj College

ALOYSIUS XAVIER LOPEZ  
CHENNAI

The Chennai Corporation is in a scramble to clear debris and garbage from the Cooum River after finding that illegal dumping of waste in the waterway has increased significantly, with the total quantity crossing one lakh tonnes.

Following reports of widespread dumping of municipal solid waste and construction debris, the State government has asked the civic body to remove them from the river.

"Clearing construction debris is a major challenge. We will begin to remove all such material shortly," said an official.

More than 86,000 tonnes of construction debris have been found dumped along the river. In addition to it, municipal solid waste amounts to 18,144 tonnes.

"The quantity of construction debris dumped along the river is huge. The Corporation will control people from dumping such material

in the future. We have been asked by senior officials to show consistent progress in clearing debris," said an official.

Officials said teams of corporation workers have started work along many stretches, removing 8,451 tonnes of garbage and 3,5174 tonnes of construction debris.

"We have already fixed a trash boom barrier on the Cooum near Ethiraj College. More boom barriers would be commissioned at nine locations. The estimated cost is ₹86 lakh," said an official.

Many residents have complained to civic officials that waste trapped by the boom barriers have become an eyesore, stressing on the need for clearing of such waste regularly.

### Eviction drive

So far, the civic body has carried out evictions along 4.86 km of the river. Eviction drive would be carried out along the remaining length

of 16.47 km of the river shortly. Boundary of the river along a total of 3.37 km has been marked so far. At least 20.55 km of the river is yet to have a clear demarcation of its boundary.

Officials said construction of retaining wall is expected to reduce dumping of waste in the river. However, the work continues to be delayed even after the coastal regulation zone (CRZ) clearance has been obtained a few months ago.

The Corporation has completed work on just 1.52 km of the river in the area not covered under CRZ, completing pile, column and beam work. But work on masonry and grill has been completed along only 380 metre of the river.

The work started last year in areas not covered under the coastal regulations. More than 9.2 km of the river under CRZ and 13.2 km of the river not falling under CRZ would get a wall this year, an official said.



Floating filth: Teams of corporation workers have started clearing tonnes of garbage from the Cooum river. \*M. PRABHU

## Government to ban use of plastic bags below 51 microns

Plans to rope in women SHGs to manufacture alternative materials; spot fine to be imposed on traders violating rules



In public interest: Social Welfare Minister M. Kandasamy holding a meeting with officials to discuss about the ban on plastic carry bags in Puducherry on Wednesday. \*S.S. KUMAR

STAFF REPORTER  
PUDUCHERRY

After a failed attempt, the territorial administration will once again try to impose a ban on manufacture and use of plastic bags below 51 microns.

Announcing the decision at a press conference here on Wednesday, Social Welfare Minister M. Kandasamy, who also holds the portfolio of Science, Technology and Environment, said after taking into account the environmental hazard caused by plastic, the government has decided to ban plastic below 51 microns.

The manufactures and traders would be given six months time to shift to altern-

ate products, post which the government would impose fine on manufacturers and traders who use plastic carry bags, he said after chairing a meeting of officials from various departments.

If manufacturers or traders were found to be using the material after the ban comes into force, the government would impose a spot fine and prosecute the violators.

As per the Food Safety Act, hoteliers are not supposed to pack hot items in plastic items due to potential health hazards. The government has advised hoteliers to abstain from packing ready to eat food items in butter paper and instead they should use

plantain leaf for packing hot food items, he said.

The government would rope in women-run self help groups to manufacture alternative materials.

It is not the first time that the territorial administration had embarked on a mission to ban plastic items below 51 microns. In 2009, the government issued an order banning the material but it did not succeed due to poor implementation.

To a question on port operations, the Minister said works are going on as per plan and the government would announce the date of commencement only after completion of dredging.

## Air pollution wipes out benefits of exercise

Study: Toxic Air Stiffens Arteries, Impairs Lung Function In Elderly

Alex Matthews-King

Traffic pollution poses health risks for older people and unborn babies according to two separate studies published on Wednesday.

Research in the journal The Lancet has found that the dose of air pollution older people received when taking a two hour walk in a congested city street stiffens the arteries and impaired lung function.

Walking is the sort of low impact exercise recommen-

ded by the NHS for older people to improve their cardiovascular fitness, but the study found that the impact of air pollution negated this.

The study tested 119 people aged over sixty, 40 of whom were healthy, 40 with a medically-stable lung condition, COPD, and 39 with stable ischaemic heart disease. Participants spent two hours walking along traffic-heavy Oxford Street, which is one of the most polluted spots in the UK, or in Hyde Park. Air pollution levels were monitored



BREATHING TOXIC

before and during their walk, and each participant's lung capacity and arterial stiffness was measured before and after. In healthy participants the walk in Hyde Park led to a 7.5% improvement in the amount of air they could expel in one breath and improvements in blood flow which persisted up to 26 hours after exercise.

But after walking on Oxford Street there were only minor improvements in lung capacity, while the measures of arterial stiffness actually got worse which the study associated with "greater exposure to black carbon soot and ultrafine particles from diesel exhaust." The study sug-

gests that short-term exposure to traffic pollution prevents the cardiorespiratory benefits of physical activity during that time. "When you walk, your airways open up... and your blood vessels dilate, or open up... and these effects can last for a few days. When you do this in a polluted place, these effects are much smaller, so you've lost the benefits of exercise," said Fan Chung, professor of respiratory medicine at Imperial College London, who led the study. "When you exercise in polluted areas, you breathe in more, and you get more of the particles and gases getting to your lungs," he said.

"However, this should not

be seen as a barrier to many older people for whom walking is the only exercise they do. We suggest that, where possible, older adults walk in parks or other green spaces away from busy roads," he added.

A separate study published in The BMJ suggested that pregnant mothers exposed to higher levels of air pollution are more likely to have a baby born at lower birth weights. But professor Kevin Conway, emeritus professor of applied statistics at The Open University, warned that The BMJ study could not definitively conclude that it was the air pollution causing low birth weight in these cases. THE INDEPENDENT & AGENCIES

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