NEWS BULLETIN

Plants and Pollution

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Plant: purify pollutant air

NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

Here are the 5 best air-purifying household plants to improve air quality in your home

Times Now News, 06 November 2018

As the air quality in the National Capital continued to worsen, the situation remains grim for people living in Delhi-NCR. In view of high pollution levels in the city, doctors have warned residents to stay indoors and avoid outdoor physical activities as much as possible to reduce the harmful effects of toxic pollutants.

However, health experts also warned that the air one breathes inside the house contains particles that are harmful to health, which means the air quality inside your house can be as perilous as outside. Fortunately, there are a few things you can do to help reduce air pollutants inside your home, such as keeping indoor plants that convert the carbon dioxide we exhale into fresh oxygen.

Hence, they can also remove toxins from the air we breathe. NASA revealed that houseplants can absorb harmful toxins from the air, especially in enclosed spaces with little air flow.study was observational and hasn't yet shown a causal link, we saw significant changes in the heart, even at relatively low levels of air pollution exposure.

On Monday, November 5, 2018, pollution levels breached the 'hazardous' category mark in Delhi two days before Diwali. News agency ANI tweeted that the Air Quality Index (AQI) around Mandir Marg recorded PM 10 levels at 707 and PM 2.5 at 663, while PM 10 levels were 681 and 676 around Jawaharlal Nehru Stadium and Major Dhyan Chand National Stadium, respectively. Fine particles that can penetrate the lungs and cause respiratory problems, including asthma. Certain household products such as paints, as well as pet allergens and cooking gas can be additional sources of air pollution. And here are five plants that can help purify the air in your home.

Air Pollution: Best air-purifying plants for your home

Skymet Weather, 14 November 2018

The air quality in Delhi-NCR region continued to worsen making the situation grim for people living in Delhi. In view of high smog levels in the city, doctors have cautioned residents to stay indoors and avoid outdoor physical activities as much as possible to reduce the damaging effects of poisonous pollutants.

However, health specialists have cautioned that the air one inhales inside the house contains particles that are unsafe to wellbeing, which implies the air quality inside your home can be as dangerous as outside.Luckily, there are a couple of things you can do to help decrease air contaminations inside your home, for example, keeping indoor plants that convert the carbon dioxide we breathe out into new oxygen.

Also known as money plant, the pothos is an ideal household plant that evacuates airborne toxins, for example, benzene, formaldehyde, carbon monoxide and xylene. Apparently one of the simplest houseplants to develop, the pothos are a long-developing, verdant vine that can achieve 40 feet or more in tropical wildernesses. This is another famous household plant that is exceptionally efficient at evacuating indoor air poisons, for example, benzene, formaldehyde, and xylene. Boston Ferns are moderately simple to develop and want to clean the air from a cool area with high humidity and indirect light. Frequently these plants are developed in hanging crates or comparable conditions.

An obtrusive species that gives a natural way of removing for expelling harmful specialists, English Ivy can help remove toxins, for example, benzene, formaldehyde and trichloroethylene from the air, killing the impacts of wiped out building disorder - a condition commonly set apart by headaches and respiratory problems. Also known as bamboo palm, golden cane palm, areca palm, yellow palm, or butterfly palm, Dypsis lutescens is a types of blooming plant in the Arecaceae family.

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Forest fire

NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

Amazon forests failing to keep up with climate change

Science Daily, 08 November 2018

The team, led by University of Leeds in collaboration with more than 30 institutions around the world, used long-term records from more than a hundred plots as part of the Amazon Forest Inventory Network (RAINFOR) to track the lives of individual trees across the Amazon region. Their results found that since the 1980s, the effects of global environmental change -- stronger droughts, increased temperatures and higher levels of carbon dioxide in the atmosphere -- has slowly impacted specific tree species' growth and mortality.In particular, the study found the most moisture-loving tree species are dying more frequently than other species and those suited to drier climates were unable to replace them.

Lead author Dr Adriane Esquivel Muelbert, from the School of Geography at Leeds, said: "The ecosystem's response is lagging behind the rate of climate change. The data showed us that the droughts that hit the Amazon basin in the last decades had serious consequences for the make-up of the forest, with higher mortality in tree species most vulnerable to droughts and not enough compensatory growth in species better equipped to survive drier conditions."The team also found that bigger trees -- predominantly canopy species in the upper levels of the forests -- are outcompeting smaller plants. The team's observations confirms the belief that canopy species would be climate change "winners" as they benefit from increased carbon dioxide, which can allow them to grow more quickly.

This further suggests that higher carbon dioxide concentrations also have a direct impact on rainforest composition and forest dynamics -- the way forests grow, die and change.n addition, the study shows that pioneer trees -- trees that quickly spring up and grow in gaps left behind when trees die -- are benefiting from the acceleration of forest dynamics.

Lessons for India from the California forest fires

Hindustan Times, 15 November 2018

The forest fires raging in California, United States, is said to be the most destructive wildfire in the state's history, with more than 8,800 structures, most of them homes, destroyed. The final death toll has not yet been announced since the search and rescue operations are still underway. While forest fires are not new to the region, this year the scale has been huge thanks to the hot, dry summer conditions persisting into the autumn. According to the US Drought Monitor, 18% of the state is currently experiencing severe drought, which is exacerbating the seasonal weather patterns that make it difficult to fight fires in the state. Experts have said that climate change is also making conditions more favourable for wildfires in the American West.

This could be true since climate plays a vital role in determining fire patterns and intensity and, in turn, fire influences the climate system through the release of carbon.

Of the 20 largest wildfires in California's recorded history, 15 have occurred since 2000, at a time when forests have become drier and warmer, says a report in The Guardian. Since 1970, temperatures in the west have increased by about double the global average, lengthening the western wildfire season by several months and drying out large tracts of forests, making them more fire prone, the report added.A US government report — Climate Change Impacts in the United States — confirms that increased warming, drought, and insect outbreaks, all caused by or linked to climate change, have increased wildfires. Fire models project more wildfire and increased risks to communities across extensive areas.India's forests are also facing similar challenges. In 2015, there were 15, 937 forest fires in India. In 2017, that number rose to 35,888, a 125% spike over two years, says the 2017 State of Environment Report of the Centre for Science and Environment, New Delhi. In 2017, the maximum number of forest fires were reported in Madhya Pradesh (4,781), followed by Odisha (4,416) and Chhattisgarh (4,373).

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Green Dipawali

NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

This Diwali, Delhiites are gifting green: Plants that filter bad air

The Times of India, 04 November 2018

Air purifying plants are in big demand these days. Nurseries in Delhi say their sales have nearly doubled in the past few weeks because people want to do everything possible to reduce pollution. Some of them are also buying them to gift to others on Diwali, says Padamchand Saini, owner of Joginder nursery in Bakhtawarpur in northwest Delhi.

"We have a separate section for air purifying plants. It includes areca palm, bamboo palm and Sansevieria," he said.

These plants cost anywhere between Rs 150 to Rs 500 or more depending on their size and quality, said Vikram saini, owner of Masjid nursery, Khan market. Many online sites also have separate section for air purifying plants.

"We cannot change the city. Going away for a few days is not a practical solution for everyone either. So, I have decided to do my bit for my children's health by planting these at home," said Mihir Kumar, a resident of Sarita Vihar, who was seen buying over a dozen such plants from one of the nurseries on Saturday. "Some of them are Diwali gifts," he added. Sansevieria, also referred to as mother-in-law's tongue plant perhaps because of its sharp leaves, is the most popular.

There are a few studies to show the science behind the belief that plants help curb pollution. One of them, which proponents the theory and horticulturalists refer to, is done by the National Aeronautics and Space Administration (NASA). It states: "Low-light requiring houseplants, along with activated carbon plant filters, have demonstrated the potential for improving indoor air quality by removing trace organic pollutants from the air in energy efficient building."Dr Sandeep Salvi, director of the Pune-based Chest Research Foundation, says the theory has also been proved through exposure experiments. The microbes in soil and leaves absorb volatile chemicals, thus reducing pollution, says Salvi.

Diwali 2018: Official timing for fireworks and green crackers

Live Mint, 05 November 2018

Diwali celebrations this year will come with certain caveats. Poor air quality across the country prompted the Supreme Court to come up with immediate measures to curb rising air pollution.

From partially banning fireworks to setting the time limit on bursting of crackers, the court has issued guidelines on almost every aspect of the festival.

Here are certain things you must keep in mind before you go out and engage yourself in celebrations this Diwali.

The mystery that are 'green crackers'

The apex court on October 23 restricted bursting of conventional firecrackers and allowed only 'green firecrackers' to be used on Diwali. Developed by the National Environmental Engineering Research Institute (NEERI) of the Council of Scientific and Industrial Research (CSIR) in collaboration with eight other government laboratories, the 'green crackers', as the name suggests, are not completely eco-friendly.They are said to be 30% less polluting than conventional firecrackers. They have a chemical formulation that produces water molecules, which reduces emission levels and absorbs dust.

Defusing the firecrackers:

It is likely that there will no legal sale of crackers in the Delhi-NCR region because no licences have been issued to retailers as no products comply with the rules laid down by the top court. In a first, a person in Delhi has been arrested for bursting crackers.The Supreme Court has ordered that only "low-polluting" 'green firecrackers' that are within the permitted decibel limits be allowed to be sold. The court has completely banned the manufacture, sale and use of so-called joined firecrackers such as 'ladis'.E-commerce platforms, including Flipkart and Amazon, have been asked not to sell fireworks online. Any attempt to do so will attract the wrath of the court, including monetary penalties.The court has a separate condition for Delhi that crackers will be allowed only in designated spots.

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Plant: Climate Change

NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

Climate change/biodiversity loss: Inseparable threats to humanity that must be addressed together

Science Daily, 15 November 2018

Speaking to government ministers and other high level representatives at a major UN biodiversity meeting in Egypt, Anne Larigauderie, Executive Secretary of the Intergovernmental Platform on Biodiversity and Ecosystem Services, said climate scientists foresee far more land needed for corn and other crops for bioenergy to mitigate climate change in decades to come.

Citing the latest report from the Intergovernmental Platform on Climate Change (on limiting climate warming to 1.5C), Dr. Larigauderie noted that most IPCC scenarios foresee a major increase in land area for cultivating bioenergy crops by 2050 -- up to 724 million hectares in all, an area almost the size of Australia.

"The key issue here is: where would this huge amount of new land come from?" she asked.

"Is there currently such a large amount of 'marginal land' available or would this compete with biodiversity? Some scientists argue that there is very little marginal land left."

"This important issue needs to be clarified, but the demand for land for energy will almost certainly increase, with negative consequences for biodiversity."Dr. Larigauderie made the remarks at the start of the 14th meeting of the Conference of the Parties of the UN Convention on Biological Diversity (COP 14), convened with the Government of Egypt in Sharm el Sheikh, 14-29 November.

Meeting strong climate mitigation goals without massive bioenergy is possible, she added, but scenarios indicate that this requires substantial reductions in energy use and rapid increases in low carbon energy production from wind, solar and nuclear sources.

Safeguarding plant and animal species diversity and the services nature provides is itself key to the mitigation of planetary warming, she said.

Want To Slow Down Climate Change? Plant A Tree

Wbur News, 15 November 2018

Massachusetts should plant more trees, and stop cutting them down, to help avert the worst consequences of climate change, according to a new study.

Massachusetts should plant more trees, and stop cutting them down, to help avert the worst consequences of climate change, according to a new study.

The study, published with a web interface showing state-by-state results, found that proper handling of natural resources could effectively remove 1.2 petagrams of atmospheric carbon dioxide each year nationwide, equal to 21 percent of the current net emissions of the United States.

In Massachusetts, the gains could be even greater, says Laura Marx, a forest ecologist for the Nature Conservancy's Massachusetts chapter, who was not involved in the study.

"Here in Massachusetts right now our forests and lands offset about 15 percent of the carbon emissions that we emit each year," says Marx. "I think we could easily double that."Study co-author Christopher Williams, an environmental scientist and associate professor at Clark University's Graduate School of Geography, cautions that the country will only reach the 21 percent potential, if officials take concrete action to get there.

"While there is significant interest, it won't be easy to achieve that full 21 percent," says Williams. "But it's still important to recognize that this could be a meaningful part of the solution."

More than half of Massachusetts is covered by forest, but the state loses about 7,000 acres of forest each year to development, according to a 2017 Harvard study. Better forest management includes curbing deforestation, planting more trees in urban areas, allowing more time between timber harvests to increase carbon storage and strategic thinning in forests to prevent the risk of huge wildfires.Farming improvements, like cover cropping to store more carbon in soil, could also help.