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Plants and Pollution

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Air Quality: effected by residual Crop Burning

NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

PMO panel on Delhi air reviews crop burning options

The Times of India, 05 December 2017

NEW DELHI: With the Sri Lankan cricket team's dramatic protest against playing conditions highlighting the mounting embarrassment over Delhi's pollution, a PMO-headed panel met on Monday and reviewed the need for more accurate real-time monitoring of air quality and measures to control stubble burning.

The monitoring of air quality and pollutants was considered necessary so that the sources of Delhi's bad air could be mapped and understood, and medium-term solutions devised. There has been considerable discussion on the role of vehicular emissions, dust, local coal fires and stubble burning in raising air pollution levels in Delhi-NCR.

The panel, headed by Nripendra Mishra, principal secretary to Prime Minister Narendra Modi, held its first meeting on Monday. The committee, which-draws representatives from the Centre and neighbouring states including the Delhi government, saw Punjab suggesting stronger financial incentives for farmers not to burn stubble.

Sources said the Centre is considering encouraging the use of wheat and paddy straw and bagass (cane residue) for the production of ethanol with farmers likely to earn up to Rs 2,500 per tonne. Another measure is subsidised sale, already offered by Haryana, for purchase of "happy seeder" machines that reduce stubble on the field and allow planting of seeds. The cover of straw can also act as protection against winter frost.

The Centre is also coming around to the view that coal-fired power plants around Delhi in a radius of 100 km might need to be shut down to make a difference to the capital's air quality. Wider use of sprinklers to spray water over a large area to control dust and the introduction of electric buses are other options on the table.Punjab government, which had said it was unable to check stubble burning as farm residue had to be removed, suggested that stronger incentives would help reduce seasonal air pollution in northern India.

Air Pollution: Centre approves Rs 100 crore project to tackle stubble burning

The Economic Times, 28 December 2017

NEW DELHI: Seeking to handle issue of stubble burning in a comprehensive and-coordinated manner, the environment ministry has approved launching of a regional project to tackle the menace that adversely affects air quality and soil health. The project will be implemented in a phased manner under the National Adaptation Fund for Climate Change (NAFCC).

The first phase of the project, costing approximately Rs 100 crore, was approved on Thursday for Punjab, Haryana, Uttar Pradesh and Rajasthan. Initially, awareness generation and capacity building activities will be undertaken to encourage farmers to adopt alternate practices which would also help diversify livelihood options and enhance farmers' income.

"Based upon the performance in the first phase, the scope could be enhanced and more activities can be supported subsequently", said the Union environment secretary C K Mishra who chaired the meeting of the National Steering Committee on Climate Change that approved the project. "The project not only aims to mitigate climate change impacts and enhance adaptive capacity, but will also counter the adverse environmental impacts that arise from (stubble) burning", said the environment ministry in a statement.

It said, "A slew of technological interventions will be undertaken for timely management of crop residue in addition to effective utilisation of existing machineries. Implementable and sustainable entrepreneurship models will be created in rural areas through upscaling successful initiatives and innovative ideas."

The problem of crop residue burning has been intensifying over the years with Punjab, Haryana and Uttar Pradesh being the major stubble burning hotspots.

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Indoor Plants: Need to Live healthy

NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

Houseplants: why every home is better off with these multi-tasking pollution-busters busters

The Telegraph, 17 December 2017

It may be bleak outside, but for many of us the desire to nurture plants remains undiminished. At this time of year, we are more grateful than ever for the presence of houseplants, providing the comfort and excitement of lush, abundant green through the shortest of days, cheerfully seeing us through until we can get back into the garden in spring.

Happily, houseplants are enjoying a revival. They have shrugged off lingering associations with dingy Seventies bedsits and are newly glamorous. This is, in part, because of the hipster effect. Young people, forced by high house prices to leap from rented flat to rented flat, use the portable pot plant to make unfamiliar places feel like home. And because of this new fashionability, unusual varieties are becoming more widely available, either in garden centres or online via sites such as crocus.co.uk, palmcentre.co.uk and patch.garden (London only).

Ian Drummond is an interior landscaper and RHS Chelsea Flower Show gold-medal winner. He has added his luscious green touch to London Fashion Week, BAFTA events and Elton John's parties, and is excited by this revival of interest. "Many people now live in cities with no outside space. We all have this longing to have some green around us, and houseplants are the perfect solution."

He also thinks we are using plants more creatively as integral parts of our interiors, possibly because of the influence of social media sites such as Instagram. "I see more and more green walls, but the systems can be expensive, so people create their own ways of achieving that look using wooden crates, wine boxes, planting into them and stacking them."

Many of us are feeling the lure of the large, too. The vogue for huge houseplants has never been stronger.Caro Langton, who, with Rose Ray, is the co-author of House of Plants and co-owner of RoCo, an indoor plant installation business, says, "How many of us can afford really great art?

10 Best Houseplants To De-Stress Your Home And Purify The Air

The Huffington Post, 07 December 2017

If you want functional decorations, look no further than the houseplant.

Some well-placed greenery can not only brighten a space but also purify the air -- and they're also helpful in creating a more relaxing, restful ambiance in any room.

We know that spending time in nature is linked to reduced stress levels and tension relief. What's more, in a 2008 study, Dutch researchers found that hospital patients with indoor plants in their rooms reported lower stress levels than patients without them.

That's why we've rounded up 10 beautiful houseplants that are easy to take care of and effective at increasing oxygen and clearing out toxins for cleaner breathing air, some of which even have the NASA stamp of approval. Try adding one to your bedroom or office space for a little dose of zen.

Aloe Plant

The gel of the aloe plant has a number of healing properties, from soothing skin burns and cuts to detoxing the body, and it can also help to monitor the air quality in your home.

Baby Rubber plant

Rubber trees are good for cleaning the air and are one of the easiest plants to grow, as they thrive even in dim lighting and cooler climates. The low-maintenance plant is a powerful toxin eliminator and air purifier.

Peace Lily

The beautiful peace lily plant is a wonderful low-maintenance flower to keep in the home. Peace lilies do well in shade and cooler temperatures, and they can reduce the levels of a number of toxins in the air.

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Ozone Layer Depletion

NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

The Unreal Effects of Ozone Layer Depletion

Peakoil, 02 December 2017

Ozone layer depletion is probably at the top of the list of events that have the potential to wipe humanity out from the earth's surface. It is the prime cause of increasing global temperature – which at this rate does not augur well for humankind. But, thankfully, concerted efforts over the years from scientists, researchers, activists, and concerned citizens have seen governments around the world commit to controlling global warming through cutting down on greenhouse gas emissions which in itself is an excellent achievement that has slowed down the impact of an increasingly warm planet.

But, even with all these gains made so far, we're still in the woods – the devastating impact of global warming is becoming an increasing reality. With the reckless abandon of how millions of tons of other greenhouse gases such as Carbon dioxide, Nitrous Oxide, and so on still get released into the atmosphere, one can only pause to ponder whether humanity is designed to self-destruct.

According to a 2015 report published on the website of Environmental Protection Agency (EPA), from 1970 to 2014, the use of fossil fuels – which is, by the way, the most significant contributor of CO2 into the atmosphere – has significantly increased by about 90 percent. Now, what makes this data interesting is the fact that over 78 percent of these emissions are due to fossil fuel combustions – think of the fumes from your car exhausts – and from industrialization.

A further break down of the data shows all the human activities contributing to the generation of greenhouse gases and their share. Electricity and Heat generation accounted for 25 percent of global greenhouse gas emissions and is the most significant single man-made source of global greenhouse gas emission – these activities include the burning for coal, natural gas, and oil for heat and electricity.

Industrial processes accounted for 21 percent of all the global greenhouse gas emission.

Researchers share perspective on key elements of ozone layer recovery

PHYS.ORG, 14 December 2017

Each year, ozone-depleting compounds in the upper atmosphere destroy the protective ozone layer, and in particular above Antarctica. The ozone layer acts as Earth's sunscreen by absorbing harmful ultraviolet radiation from incoming sunlight that can cause skin cancer and damage plants, among other harmful effects to life on Earth. While these different compounds each release either reactive chlorine or bromine, the two active ozone-destroying ingredients, during a series of chemical reactions, the molecules have a range of different lifetimes in the atmosphere that can affect their ultimate impact on the ozone layer and its future recovery.

n a Perspective piece appearing in the Dec. 8 issue of Science, NASA researchers discuss the nuances that distinguish three categories of compounds and their impacts on upper atmospheric ozone: long-lasting and human-made compounds, short-lived and human-made compounds, and compounds that are short-lived and naturally emitted from the ocean. All of the long-lasting and some of the anthropogenic short-livedcompounds are controlled by the Montreal Protocol in order to reduce their impact on ozone. The researchers find that long-lasting compounds still dominate the outlook for ozone recovery. This discussion is part of an on-going scientific debate about the impact of short-lived ozone-depleting compounds that stay in the atmosphere for less than six months, whose human-produced emissions have risen. It is relevant to the work being done by the United Nations Environment Programme that administers the Montreal Protocol and its amendments, the seminal global agreement to ban and phase out ozonedestroying compounds. Currently only ozone-depleting substances with atmospheric lifetimes ranging from a year to over 100 years, are controlled because they linger in the atmosphere long enough to reach the upper atmosphere, called the stratosphere. Shorter-lived compounds are unregulated as their impacts are less significant.

"The Montreal Protocol has been a huge success," said atmospheric scientist Qing Liang at NASA's Goddard.

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Climate Change: Current Status

NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

Climate change: government announces Tree Fund

The Observer, 01 December 2017

To mitigate the effects of climate change, government, through the Environment ministry, is set to operationalise the 'Tree Fund'.

The initiative directed at regenerating the country's forest cover and drying wetlands will also help curb greenhouse gas emissions, a major factor driving climate changes, which are threatening the country's ecosystems. "There is some evidence to suggest that climatic changes in Uganda are connected to loss of forest and tree cover. In the last two decades alone, Uganda is estimated to have lost about a quarter (1.3 million hectares) of its forest cover," according to the Advocates Coalition for development. Over the years, similar initiatives have been hampered by limited financial resources. For instance, Section 40 of the National Forestry and Tree Planting Act provided for the Tree Fund, but it has not been operational.

At a recent media briefing, Dr Mary Gorreti Kituttu, the state minister for environment, revealed that the Tree Fund would be in operation beginning 2018. She explained that following discussions at the just-concluded Bonn Climate Change conference (COP23), there is optimism that government would secure the money. "We agreed to consider loss and damage and we also agreed that an institutional mechanism has been put in place to handle it. We are going to operationalise the Fund," she said. Kituttu revealed that at the conference, developed countries pledged financial support. During the 2015 Paris Agreement, developed countries like German, China and South Korea promised to fund developing countries in Africa with $100 million annually to help mitigate the effects of climate change. Kituttu revealed that part of this money would be channeled to the Tree Fund. She further revealed that African governments had requested that the rules for accessing foreign financing be relaxed.

"One would need to come up with a document of over 200 [pages] to get finances and yet the effects of climate change don't wait.

Life on the edge prepares plants for climate change

Science Daily, 19 December 2017

The researchers focused on mustard cress which grows across Europe, Asia and northwest Africa. Surprisingly, Scandinavian plants can cope with extreme drought as well as those from Mediterranean countries. This could be because water in the Scandinavian soil is frozen for many months, making it inaccessible to plants and effectively creating drought conditions. The researchers planted mustard cress seeds collected from over two hundred locations as diverse as North Africa, Spain, central Europe and northern Sweden. After they had germinated under optimal conditions, the plants were challenged with severe drought, and their ability to survive this stress was recorded. Using large-scale genome sequencing information, specific genetic variants could be linked to the plants' ability to survive longer. Combined with climate predictions from the Intergovernmental Panel on Climate Change, the team were then able to generate maps showing the location of genetic variants key to the species' future survival. "I was shocked to touch the soil in the pots of plants from northern Sweden and Spain, finding it completely dry and brittle, while the plants survived with rich, green leaves," says lead author Moises Exposito-Alonso from the Max Planck Institute for Developmental Biology. "I travelled to Sweden, where I observed plants surviving in the same way in their natural environment. It reminded me of seeing mustard cress thrive in the broken clay of dried-out river beds where I grew up in Spain. Many botanists and also others think of mustard cress as being the lab rat of plant biologists, but what few realize is that it lives in extreme environments, making it ideal for studying adaptation to climate change," he says.

Over the next 50 to 100 years, extreme drought events are predicted to become more and more widespread. This is one of the most challenging consequences of global warming for plants and animals. A steady increase in temperatures is already underway, but this and other studies show that reduced rainfall, which will affect plants and humans alike in a less linear way, is likely to have an even greater effect on survival.