



NEWS BULLETIN

Plants and Pollution

ENVIS RP-NBRI

ENVIS RP-NBRI



Vol. 10, October 2019

Pollution Fighting in Diwali

CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

Every Diwali, the use of firecrackers increases air pollution exponentially

[The Telegraph India, 11 October 2019](#)

Now that Durga Puja is over, the next big festival — Diwali — is being eagerly awaited. It will be celebrated at the end of this month. Fortunately, the government has announced just in time that ‘green crackers’, which emit up to 35 per cent less soot and gases, are ready for release in the market. It should be ensured that these crackers are available in most shops and stores at a reasonable price. This will encourage more people to buy them. Every Diwali, the bursting of firecrackers increases air pollution exponentially. One hopes that this year, those celebrating the festival of light will go for the safer option.

Sir — The Supreme Court was quick to set up a special bench for an urgent hearing on the deforestation of over 2,000 trees in the Aarey Colony for the construction of a Metro car shed, and it stayed the further felling of trees until the next hearing. But by the time the ruling came, the area had already incurred a great loss. The government advocate admitted to the bench that whatever had to be cut had already been cut. The Aarey Colony was home to some five lakh trees, 27 tribal villages and various animal and bird species.

This attack on the environment has sparked widespread protests. While many Bollywood celebrities have voiced their concerns about this step, actors like Amitabh Bachchan and Akshay Kumar have expressed their support in favour of the metro project. This reminds one of the time when Lata Mangeshkar, who hardly ever spoke a word in the Rajya Sabha during her..... [Read More...](#)

Call for green and noise-free Diwali

[The Tribune India, 22 October 2019](#)

Diwali is round the corner and children have already started bursting crackers, leaving environmentalists worried.

It is not only about Kullu or Mandi, it is about the entire state. Environmentalists have been urging the people to celebrate a green Diwali.

“Already, a lot of damage has been done to the environment. Every year, a large number of firecrackers are burst on Diwali, resulting in smog,” an expert said.

Experts say smog is harmful for those suffering from respiratory problems. Then there is noise pollution.

Dr Rakesh Kumar Singh, director, GB Pant National Institute of Himalayan Environment & Sustainable Development, Mohal, Kullu district, said climate shift was a grave issue. “One should try not to aggravate the situation,” he said.

“Every year, the sky turns hazy. There is smog all around and pollution levels assume alarming proportions. All this happens because of firecrackers. It may affect the health of children, elderly and patients.” he added.

“I urge people to celebrate a cracker-free Diwali. They should gift saplings to their friends and relatives,” Rakesh said. “Office-goers should go in for carpool. This will keep pollution levels in check. We cannot stop someone from bursting firecrackers, but can educate them about the..... [Read More...](#)



NEWS BULLETIN

Plants and Pollution

ENVIS RP-NBRI
ENVIS RP-NBRI



Vol. 10, October 2019

Green Wall

CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

Clean up your indoor air with green walls, and grow veggies

Israel21c, 06 October 2019

Want to insulate your office from the heat and cold outside, while purifying the air inside from potential toxins? Israeli startup Vertical Field is accomplishing that with sensor-controlled indoor and outdoor “green walls” installed by the likes of clients such as the Israeli offices of Google, Apple, Intel and Facebook.

Indoor air pollution is an invisible but serious problem. High levels of carbon dioxide (CO₂) in offices, classrooms, homes, trains and planes could be affecting our cognitive performance and in more severe cases may trigger inflammation or even kidney calcification and bone demineralization, according to a recent study published in Nature Sustainability.

Guy Elitzur, Vertical Field’s CEO, tells ISRAEL21c that one solution to “sick building syndrome” is to bring healthy and natural elements inside. Plants work their magic by transforming carbon dioxide (CO₂) into oxygen via photosynthesis. Installing a Vertical Field living biofilter in your home or office can remove about 95 percent of the pollutants in a building, the company claims.

Vertical Field’s green walls are not static. Sophisticated sensors measure fluctuating air quality in the building, while cameras track how many people are in a room bumping up the amount of CO₂. When the CO₂ level goes above a certain threshold, Vertical Field can “manipulate the plants in an active way,” Elitzur says, by adding precise amounts of water,..... [Read More...](#)

Don’t bother with a living wall – plant some ivy

The Guardian, 20 October 2019

The concept of the living wall has enjoyed a meteoric rise in popularity in recent years. What was once a design novelty at fancy flower shows has gone mainstream, and most major urban developments now seem to have at least part of their surface coated in a matrix of panels filled with growing substrate, allowing plants to colonise their surface. But, much as I love these technological marvels, there’s a far simpler, more cost-effective way to clothe buildings in a living cloak of green: plant some ivy.

Every time I walk past an incredibly complex watering system being installed and scores of workers on cranes hauling huge panels, I think to myself: “None of this is necessary!” Ivy is a cheaper, easier and far less risky option, and provides many of the same environmental and economic benefits as newfangled substrate-filled panels.

This includes its proven ability to cool buildings in warm weather, both passively by shading its surface from the sun’s rays and actively by the loss of heat as water evaporates from their leaves. According to some studies, this can be as much as 28% on a west-facing wall on a hot summer day. What’s more, evergreen climbers can have the opposite effect in winter, acting as an insulating layer preventing loss of heat from the building. In one study, temperatures on an ivy-clad wall were 3C warmer..... [Read More...](#)



NEWS BULLETIN

Plants and Pollution

ENVIS RP-NBRI

ENVIS RP-NBRI



Vol. 10, October 2019

Bioproduct to Environment

CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

Biogarmentry clothes can photosynthesise like plants

Dezeen, 2 October 2019

Canadian-Iranian designer Roya Aghighi has created clothes made from algae that turn carbon dioxide into oxygen via photosynthesis, as a more sustainable alternative to fast fashion.

Named Biogarmentry, the clothes are the proof of concept for a textile made with living, photosynthetic cells. The project has been shortlisted for Dezeen Awards 2019 in the sustainable design category.

In a collaboration between the University of British Columbia (UBC) and Emily Carr University, Aghighi's biofabricated textiles are living organisms that respire by turning carbon dioxide into oxygen.

"Biogarmentry suggests a complete overhaul rather than tinkering at the edges," said Aghighi.

"The living aspect of the textile will transform users' relationship to their clothing, shifting collective behaviours around our consumption-oriented habits towards forming a sustainable future."

To make the fabric for Biogarmentry, *Chlamydomonas reinhardtii*, a type of single-cell green algae, are spun together with nano polymers.

The result, which feels like linen, is "the first non woven living and photosynthetic textile" to be created.

Wearers would need to take care of their garment as they would a plant in order to keep them alive, rather than engaging in the environmentally destructive practice of making synthetic clothes and discarding them after.....

[Read More...](#)

Biosolids: mix human waste with toxic chemicals, then spread on crops

The Guardian, 5 October 2019

By some estimates, Americans send about 300 million pounds of feces daily from the nation's toilets to wastewater treatment plants.

While the water is cleaned and discharged, the remaining toxic sewage sludge stays at the treatment plant, and it's what Sierra Club environmentalist Nancy Raine calls "the most pollutant-rich manmade substance on Earth".

This "biosolid" sludge is expensive to dispose of because it must be landfilled, but the waste management industry is increasingly using a money-making alternative – repackaging the sludge as fertilizer and injecting it into the nation's food chain.

Now the practice is behind a growing number of public health problems. Spreading pollutant-filled biosolids on farmland is making people sick, contaminating drinking water and filling crops, livestock and humans with everything from pharmaceuticals to PFAS.

As more biosolid-linked crises develop, some farmers and environmentalists are calling for a ban on the practice.

In 2019, about 60% of sewage sludge produced by treatment facilities will be spread on farmland and gardens, as well as schoolyards and lawns. Sludge holds nitrogen, phosphorus and other nutrients that help crops grow, so the waste management industry lightly treats it and sells it cheaply to farmers who view it as a cost-saving product.....

[Read More...](#)



NEWS BULLETIN

Plants and Pollution

ENVIS RP-NBRI

ENVIS RP-NBRI



Vol. 10, October 2019

Fern: Pollution Mitigator

CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

Parking Garages Transform Urban Environments with Living Green Walls

Green Roofs, 9 October 2019

Parking garages are a central element in many urban and suburban development projects, ensuring lower congestion and greater access to retail, housing, offices, and more. They are often difficult to construct in a way that both improves the overall design of the developments and meets regulatory requirements for environmental concerns, all while keeping costs reasonable. Living green walls offer an exceptional solution to all of these concerns by improving parking garage aesthetics and environmental impact through the use of living plants in innovative designs.

As a result of urbanization and the corresponding rise of population density in many areas, demand for dense parking solutions – garages and other similar parking structures – has risen as well. Parking structures are a crucial component of community planning. Without them, city streets would be even more congested, and access by car to retail, offices and other buildings in densely developed areas would be limited, thus negatively impacting business. Parking garages afford cities multistory vehicle storage that in turn frees up common areas.

They usually are not, however, very aesthetically pleasing and in fact can often be an eyesore in otherwise elegant and eye-catching modern developments. Many cities today are not only encouraging but also requiring parking structure design to include a façade that enhances the urban environment, establishing Design Guidelines that require parking structures to have façades..... [Read More...](#)

Fight soil pollution with resilient fern, which has been here for millions of years

Desert Sun, 19 October 2019

Phytoremediation is the science of using plants to help clean up pollution. After all, plants are experts at selectively extracting nutrients and minerals from the soil through their roots. So why can't they be used to remove toxins too? Scientists have tested many species for their ability to reduce toxicity in soils, air and water. Among the most important phytoremediation plants are ferns.

This is because ferns are unique. They are relatively primitive, dominating the earth long before seed-bearing plants and flowers appeared. In fact, at one time great forests of monster ferns covered much of the globe, but climate change forced them to evolve into smaller sizes. They reproduce by microscopic spores typically held on the back or edge of the leaves. Each genus of fern arranges their spores in a different pattern, which is one way of distinguishing the all-too-similar species.

Because ferns were around since the age of dinosaurs, they have survived for hundreds of millions of years relatively unchanged. This requires a powerful ability to withstand cataclysmic climate change and survive. The toxins of volcanic eruptions and the cold of ice ages did not make them extinct like so many other plants we know today only by their fossil record.

One of the most important phytoremediation ferns is the Chinese..... [Read More...](#)