



The Environmental Information System at Eco-Auditing Laboratory, National Botanical Research Institute is focussed on "Plants & Pollution". This is the E-mail Publication that Feature News, Information and Events Related to Plants & Pollution.

The Focus of ENVIS has been on Providing Environmental Information to Decision Makers, Policy Planners, Scientists and Engineers, Research Workers, etc. all over the World.

Eco-Auditing Group is Involved in R & D on Eco-Monitoring, Environmental Impact Assessment, Eco-Friendly Models that are Technologically and Economically Feasible for Phytoremediation of Polluted Lands and Polluted Waters etc.

News

Bacteria turn trees into pollution-eating machines

Once the approach is refined, it could provide an alternative way of cleaning up at least some of the quarter of a million polluted sites around Europe. Today's method of dealing with contaminated soil is known as dig and dump: scoop up the polluted soil and dump it into landfill. A potentially greener and cheaper approach is to use living organisms to either Hoover up the pollutants or break them down. Breaking them down is precisely what was achieved at an old car site in Belgium where groundwater was contaminated with solvents and fuel. There, 275 poplar trees succeeded after six years in scrubbing the soil clean of toluene, a harmful chemical found in paints, gasoline, inks and glues. Trees such as willow and poplar are especially useful: their roots can sink deep down to reach groundwater and suck up pollutants. But the trees do not act alone; pollutant-eating bugs are crucial partners. In many cases, these microbes can be added to the tree roots to help them suck up or break down the pollutant. 'You choose a suitable bacterial strain and add a solution containing a large number of them to a plant at the remediation site,' said Professor Markus Puschenreiter at the University of Natural Resources and Life Sciences in Vienna, Austria. 'They establish in the rooting zone and support accumulation behaviour. They release compounds to mobilise nutrients, but also contaminants.' [Read more...](#)

Date: 14 November 2016

Source: <https://horizon-magazine.eu>

Bacteria could transform trees into industrial chemical scrubbers

Hacking trees by adding bacteria to their roots could help scrub contaminated soil clean of chemicals and metals from industrial spillages and fallouts, a process known as gentle remediation. Trees such as willow and poplar are especially useful: their roots can sink deep down to reach groundwater and suck up pollutants. But the trees do not act alone; pollutant-eating bugs are crucial partners. In many cases, these microbes can be added to the tree roots to help them suck up or break down the pollutant. Strains of bacteria are taken from polluted soils, since this is where pollutant-eating bugs are naturally found. It's often a case of scientists picking the best strains and letting them share genetic material with bacteria naturally living with the trees, a process known as conjugation. There is no need for genetic modification of the bacteria. [Read more...](#)

Date: 17 November 2016

Source: <https://www.geneticliteracyproject.org>

An astounding 102 million trees are now dead in California

Forest managers have never seen anything like it. Across California, an astounding 102 million trees have died over the past six years from drought and disease — including 62 million trees in 2016 alone, the US Forest Service estimates. Once-mighty oaks and pines have faded into ghastly hues of brown and gray. The biggest worry is that these dead, dry forests will become highly combustible when California's annual fire season rolls around next summer. The south and central Sierra Nevada regions, where most of the dead trees are located, are at particular risk of severe wildfires: So how did we get to this point? "When you're talking about tree mortality, it's a whole bunch of things linked together," says David Rizzo, chair of the plant pathology department at the University of California Davis. "The drought is important, but you also have to look at land-use and management decisions that go back a long time." [Read more..](#)

Date: 22 November 2016

Source: <http://www.vox.com>

Ways to deal with the increasing air pollution

On one side there is demonetisation that everyone is talking about, and on the other hand, there are concerns about the increasing dust and pollution levels in the city. Smog, dust and the contaminated air makes breathing difficult and is also harmful for the health. Abdul Ghani, a city-based social activist says, "This increase in air pollution has not happened in a day or two. It has been happening for years and there has been no rainfall for the past so many days. There is no one-time solution to this problem. I was invited for a conference in Delhi and people were talking about inducing artificial rain. That requires a lot of preparation and tonnes of water. The only permanent solution to this problem is planting more trees. Every city should have at least 33.3 per cent green cover but you can hardly find that. A person on an average uses 500 trees in his/her lifetime and doesn't plant even one. There is an imbalance that needs to be rectified. At this rate only droughts will increase all over the country." [Read more...](#)

Date: 26 November 2016

Source: <http://timesofindia.indiatimes.com>

Grass with new genes sucks up pollution from explosives

A new transgenic grass species can neutralize and eradicate RDX—a toxic compound widely used in explosives since World War II. On military live fire training ranges, troops practice firing artillery shells, drop bombs on old tanks or derelict buildings, and test the capacity of new weapons. But those explosives and munitions leave behind toxic compounds that have contaminated millions of acres of US military bases—with an estimated cleanup bill ranging between \$16 billion and \$165 billion. As reported in *Plant Biotechnology Journal*, engineers introduced two genes from bacteria that learned to eat RDX and break it down into harmless components in two perennial grass species: switchgrass (*Panicum virgatum*) and creeping bentgrass (*Agrostis stolonifera*). The best-performing strains removed all the RDX from a simulated soil in which they were grown within less than two weeks, and they retained none of the toxic chemical in their leaves or stems. [Read more...](#)

Date: 17 October 2016

Source: <http://www.thefifthestate.com.au>

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