



News

Modified plants to curb climate change

Bioinformatics researchers usually work with mathematical computer models. Over the past months, Thomas Dandekar and his team have been studying whether the metabolic networks of plants can be modulated so as to enable the plants to fix more carbon dioxide. To achieve this, the scientists combined two different methods to modulate the metabolism of the plant cell. By performing complex calculations, they found out that this combination enables plants to absorb five times more carbon dioxide than in the normal state. Now their theoretical calculations need to be tested in practice. Muhammad Naseem, a colleague of Dandekar, is in charge of conducting these experiments. Born in Pakistan, Naseem has a PhD in molecular biology. He works both in Würzburg and at Zayed University in Abu[Read more...](#)

Date: January 21, 2020**Source:** Science Daily**Despite less ozone pollution, not all plants benefit**

Policies and new technologies have reduced emissions of precursor gases that lead to ozone air pollution, but despite those improvements, the amount of ozone that plants are taking in has not followed the same trend, according to Florida State University researchers. Their findings are published in the journal *Elementa: Science of the Anthropocene*. "Past studies of plant damage from ozone have been overly optimistic about what the improving ozone air quality means for vegetation health," said Christopher Holmes, the Werner A. and Shirley B. Baum assistant professor of meteorology in the Department of Earth, Ocean, and Atmospheric Science. Ozone is a gas made of three oxygen molecules. In the upper levels of the atmosphere, it is helpful for life on Earth because it keeps too much ultraviolet[Read more...](#)

Date: January 22, 2020**Source:** Science Daily**Unknown saviors of the environment: Thirty-five men create a forest from barren land**

Prinson Daimari is overwhelmed with pride every time he visits the lush green forest with birds' nests perched on the treetops inside the Bhairabkunda reserve forest in Udalguri district of Assam in North East India. The 52-year-old stands under a canopy of trees and recalls those days when he, along with his 34 colleagues, spent countless hours shoveling the boulders and stones from beneath the earth to make the barren, sandy land fertile. For a first-time visitor, it is hard to believe that the same stretch of land now boasts of a dense forest spread across 750 hectares, rich in biodiversity, with elephants frequenting the area even during the day. "We have virtually spent our prime years in converting a barren and uneven land filled with rocks and stones into a picturesque forest inhabited by venomous[Read more...](#)

Date: January 24, 2020**Source:** Mongabay**Cutting road transport pollution could help plants grow**

A cocktail of gases -- including nitrogen oxides, carbon monoxide, volatile organic compounds and methane -- combines in the atmosphere to form ozone. Ozone at the Earth's surface limits photosynthesis, reducing plants' ability to grow. University of Exeter researchers say cutting emissions of ozone-forming gases offers a "unique opportunity" to create a "natural climate solution." A 50% cut in emissions of these gases from the seven largest human-made sources -- including road transport (the largest emitter) and energy production -- would help plants contribute to "negative carbon emissions," the study says. "Ecosystems on land currently slow global warming by storing about 30% of our carbon dioxide emissions every year," said Professor Nadine Unger, of the University of Exeter. "This[Read more...](#)

Date: January 27, 2020**Source:** Science Daily**Microscopic partners could help plants survive stressful environments**

While some microscopic fungi and bacteria cause disease, others live in harmony with plants, collecting water and nutrients in exchange for carbohydrates, or changing plants' internal and external environment in ways that help plants grow. These benefits help plants tolerate stresses that come from their environment. Dubbed abiotic stresses, challenges such as drought, extreme temperatures, and poor, toxic, or saline soils are among the leading causes of crop loss and decreasing farm productivity. "Plants' abilities to tolerate stress are impacted by the bacteria and fungi that live on or inside them and make up the plant microbiome," said Porter, assistant professor in the School of Biological Sciences. "Just like how microbes in our digestive system help keep us healthy, microbes play an incredibly important role in plant health." Setting out to measure how beneficial microbes affect plants under both normal conditions and stress, Porter and Friesen reviewed 89 research experiments ranging from common[Read more...](#)

Date: January 29, 2020**Source:** Science Daily

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