



Devastating bacterium causes incurable disease in Italian olive trees

Xylella fastidiosa, also known as olive quick decline syndrome (OQDS), is now considered the most terrifying bacterial disease faced by olive trees. The disease causes the leaves to wither and dry out, and eventually leads to tree death. The pathogen was spotted for the first time in Puglia (Apulia), Italy in 2013. The bacterium lives in the water-conducting vessels (xylem) of plants and can spread between plants via two methods: xylem-feeding insects, such as leafhoppers and spittlebugs, or through the importation of infected plant material, which is the most likely route of entry. *Xylella* epidemics have been traced to parts of the Americas like Brazil and California, where they have infected grapevines and citrus. The EU has called a state of emergency in order to prevent the further infection of olive groves. The province of Lecce is the most affected, and around a million trees could be endangered across the Salento peninsula. It is believed that culling infected trees and leaving a "cordon sanitaire" are the only possible options to halt the spread of *Xylella*. Olive farmers and environmentalists doubt the science behind the emergency measures, which are disastrous for the ecology and landscapes of Italy's deep south. In December 2015, the Italian authorities opened a criminal investigation to prove whether researchers were involved in transferring this serious disease.

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Grapes are the new weapon in the fight against tooth decay



Photo credit: DulcisVita (via flickr)

Grapes can do wonders for your teeth. Scientists from the University of Illinois, USA have recently discovered a natural compound found in the extract of grapes seeds. This finding could stop people from losing their teeth, strengthen tooth fillings, thereby enabling them to last longer, and prevent tooth decay. The interface between fillings and dentin, the tissue that makes up the bulk of the tooth and lies beneath the hard external enamel, is the vulnerable point in restored teeth. Dentin is made of collagen, a protein found in different tissues in the human body. The scientist discovered that a combination of plant-based oligomeric proanthocyanidins, a class of flavonoids, is able to help damaged collagen repair itself. According to the research team based at the University of Illinois at Chicago College of Dentistry, the extract can toughen dentin. The discovered component can be found in most food, vegetables, and extracts from grape seeds.

Sources:

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Germany and the State of California are working together to tackle climate change

Photo credit: Johan Williams Photography and Film (via flickr)



Germany and California have joined together in an alliance to fight climate change in the wake of President Trump's historic decision to withdraw from the 2015 Paris Agreement. The withdrawal from the multilateral agreement, effective only after the current presidential term has ended, has angered leaders of industry and world politics as well as scientists and activists.

In the "Under 2 Coalition" (<http://www.under2mou.org>), 176 cities, regional governments and states from six continents have pledged to limit dangerous anthropogenic climate change to less than 2 degrees of warming since the beginning of the Industrial Revolution.

Germany is the country with the largest economy in Europe (\$3.5 trillion in 2016), while California is the biggest US state in economic terms (\$2.6 trillion in 2016). In a joint statement with the governors of New York, Oregon and Washington State and the mayors of several US cities, Californian governor Jerry Brown insisted, "We remain as committed as ever to working with our partners around the world to implement the Paris Agreement and achieve our shared goals." German chancellor Angela Merkel regrets the US government's decision to leave the Paris Agreement, but said it would not stop anyone who felt obliged to protect the earth. The federal government of Germany also confirmed that the agreement, which came into being after decades of multilateral debates, would not be renegotiated.

Sources:

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2017 UN World Water Development Report, Wastewater: The Untapped Resource (Official announcement)



Most human activities that use water produce wastewater. As the overall demand for water grows, the quantity of wastewater produced and its overall pollution load are continuously increasing worldwide. Over 80% of the world's wastewater – and over 95% in some least developed countries – is released to the environment without treatment. The 2017 edition of the United Nations World Water Development Report, entitled "Wastewater: The Untapped Resource", demonstrates how improved wastewater management generates social, environmental and economic benefits essential for sustainable development and is essential to achieving the 2030 Agenda for Sustainable Development.

In particular, the Report seeks to inform decision-makers, government, civil society and private sector, about the importance of managing wastewater as an undervalued and sustainable source of water, energy, nutrients and other recoverable by-products, rather than something to be disposed of or a nuisance to be ignored. The report's title reflects the critical role that wastewater is poised to play in the context of a circular economy, whereby economic development is balanced with the protection of natural resources and environmental sustainability, and where a cleaner and more sustainable economy has a positive effect on the water quality.

You can download the full version at <http://unesdoc.unesco.org/images/0024/002471/247153e.pdf>

Quoted from:

Official announcement at <http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/wwdr/2017-wastewater-the-untapped-resource/>