

Electric shocks boost plants' production of commercially useful chemicals

March 31 2008

Now for some "shocking" news about plants: Exposing plants to electricity can boost production of useful plant chemicals and may provide a cheaper, safer, and more efficient method for producing medicines, pesticides, and other commercially important plant-based materials, researchers in Arizona and Oklahoma report. Their study is scheduled for the April 4 issue of ACS' *Biotechnology Progress*.

Researchers have known for years that plants can produce a diverse array of substances as part of their natural response to environmental factors such as microbial infection, sunlight, and chemical exposure. To boost levels of plant chemicals for commercial purposes, scientists have often turned to synthetic chemical additives as well as genetic engineering, which can be expensive and potentially harmful. A better method is needed, scientists say.

In the new study, Hans VanEtten and colleagues studied the effects of electricity on the ability of the pea plant to produce pisatin, an antifungal substance. They found that exposing pea plants to certain sub-lethal doses of electric current produced 13 times higher amounts of pisatin than plants that were not exposed to electricity.

The researchers observed similar increases in plant chemicals produced by a variety of other plants when exposed to electricity. There were no adverse effects on the plants.

Source: ACS

Citation: Electric shocks boost plants' production of commercially useful chemicals (2008, March 31) retrieved 18 April 2024 from <https://phys.org/news/2008-03-electric-boost-production-commercially-chemicals.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.