

Purdue helping to remove pollutants using poplars

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The news

Purdue University researchers and Chrysler LLC are collaborating on a project using modified poplar trees to eliminate pollutants from a former oil-storage facility near Kokomo.

In laboratory experiments, the trees have been shown to be capable of absorbing trichloroethylene, or TCE, and other pollutants. The pollutants are then turned into harmless byproducts.

The study

Richard Meilan, a Purdue associate professor of forestry and natural resources with Purdue's Hardwood Tree Improvement and Regeneration Center and the Center for Tree Genetics, co-authored a study published last fall that showed poplar cuttings could remove 90 percent of TCE from a solution in one week.

The trees are called transgenic poplars because they have an inserted gene that aids the breakdown of TCE and other environmental pollutants.

TCE is the most common groundwater pollutant on Superfund sites and causes various human health problems when in the water or air.

The study was published in Proceedings of the National Academy of Sciences. To view the online archives, visit www.pnas.org/contents-by-date.0.shtml.

The process

Meilan believes the poplars will be able to absorb the TCE from the site with their roots. Peter's Pond was contaminated by oil stored there in the 1960s. The oil is now within 10 feet of the surface, easily reachable by poplar roots.

There is concern by some that the inserted genes could escape the trees and invade other natural tree populations, but Meilan said he's trying to make sure that isn't the case by removing the trees before they reach sexual maturity.

"It is legitimate to be concerned about transgenic plants, but we are taking comprehensive steps to ensure that our transgenes don't escape into the environment," Meilan said.

TO LEARN MORE

For more on the centers and projects Meilan is involved in, visit the following Web sites.

- Center for Advanced Forestry, www.nsf.gov/eng/iip/iucrc/directory/tger.jsp
- Hardwood Tree Improvement & Regeneration Center, www.agriculture.purdue.edu/fnr/HTIRC

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