

Plants that can detox waste lands will put poisons to good use

March 4 2013

Common garden plants are to be used to clean polluted land, with the extracted poisons being used to produce car parts and aid medical research.

Scientists will use plants such as *alyssum*, pteridaceae and a type of mustard called *sinapi* to soak up metals from land previously occupied by factories, mines and landfill sites.

Dangerous levels of metals such as arsenic and platinum, which can lurk in the ground and can cause harm to people and animals, will be extracted using a natural process known as phytoremediation.

Once the plants have drawn contaminated material out of the soil, researchers will harvest and then process the plants into materials that can be used more productively.

The conversion process will take place in a [biorefinery](#), which will use specifically engineered bacteria to transform the toxic metal ions into more useful metallic [nanoparticles](#).

These [tiny particles](#) will be used to make [catalytic converters](#) for motor vehicles. They will also be used to help develop cancer treatments.

Cleaning polluted land and rivers could also allow land to be reclaimed and reused, the researchers say.

The project involves scientists from the University of Edinburgh, the Universities of Warwick and Birmingham, Newcastle University and Cranfield University.

Dr Louise Horsfall of the University of Edinburgh's School of Biological Sciences, said: "Land is a finite resource. As the world's population grows along with the associated demand for food and shelter, we believe that it is worth decontaminating land to unlock vast areas for better food security and housing. I hope to use synthetic biology to enable bacteria to produce high value nanoparticles and thereby help make land decontamination financially viable."

Provided by University of Edinburgh

Citation: Plants that can detox waste lands will put poisons to good use (2013, March 4) retrieved 21 June 2024 from <https://phys.org/news/2013-03-detox-poisons-good.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.