

Special Feature

Tracking chemicals in a matter of minutes

Simple test kits for tracking pesticides and herbicides in the environment have the potential to help protect ecosystems near horticultural and agricultural areas.

The kits, developed by a group led by Dr John Skerritt from CSIRO's Division of Plant Industry, are based on enzyme-linked immunosorbent assay (Elisa) technology. It enables on-site analysis for a number of pesticides and herbicides for only a few dollars a sample and takes less than 20 minutes to run in the field.

Enzyme-linked immunosorbent assay is based on the development of antibodies to specific pesticides. It is widely used in medical diagnostics and is the basis of many home pregnancy tests.

To perform a test, drops of river water are added to a tube that is precoated with antibodies. An enzyme reagent is added, and

the tube left for 10 minutes. The tube is then washed under a tap and a colour developer added. If pesticide is present, colour development is inhibited.

Low cost, sensitivity and speed are the key features of the compact Elisa kit, which comprises a minimal reagent inventory, test tubes and fresh water to wash the tubes. Prototype kits have been provided to water managers, environment protection officers and agriculture consultants, for evaluation.

Skerritt and his team are investigating pesticides and herbicides used in the rice-growing, viticulture and citrus industries, as well as the compounds used in the cotton industry. The Elisa kits will give a clearer picture of how long these substances persist in the water and how far they are carried away from their place of application.

This is important, as some insecticides (such as chlorpyrifos used in the rice industry)



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can damage aquatic ecosystems and some herbicides (such as diuron in the citrus industry) can cause damage to other crops.

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Exploring the science of change



If there were a prize for the longest journal title, it might be won by *The journal of issues in technical change, innovation, information economics, communication and science policy*.

The journal's founders, however, having bestowed on their creation this descriptive burden, realised the need for another name of fewer letters, yet no less scholarly connotations. They settled on *Prometheus*.

According to Greek mythology, it was Prometheus who stole the art of making fire from Zeus to give to mankind. Zeus, not known for his kindness toward humanity, punished Prometheus by chaining him to a rock to have either eagles or vultures nibble his liver by day. Spontaneous regeneration occurred by night to provide a fresh feast for the birds each morning, and so Zeus intended the process to continue for all eternity.

In the legend, technology was clearly of fundamental benefit to man, and Prometheus, although never specifically worshipped as a god, was popularly regarded as a bringer of hope, the means by which unjust and uncaring authority could be resisted.

Prometheus the journal aims to help reduce the uncertainty that inevitably accompanies rapid change induced by technology. It provides a forum for the diffusion of information to the community and for debate concerning (as the title suggests) technological change, innovation,

communication, information and science policy. Although other Australian journals publish papers relevant to these issues, *Prometheus* is the only one to deal with them exclusively.

The majority of articles published in *Prometheus* are by Australian academics. Overseas scholars and CSIRO scientists also contribute. Recent issues have covered such topics as women in science in Australia; the adoption of solar water heating in Queensland; biotechnology in Australian agriculture; climate change; scientific fraud and economic liberalisation. Every issue has book reviews.

Prometheus is likely to be of interest to academics, general readers and undergraduates interested in social issues relating to science. Public servants responsible for policy-making and implementation in science, technology, industry, communications and consumer welfare should also find it valuable.

The journal is published twice yearly at a cost of \$35 including postage in Australia, or \$50 overseas by airmail. Single copies cost \$17.50. Contact: The Editor, *Prometheus*, Urban Research Program, Australian National University, Canberra, fax (06) 249 0312.