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N A T U R A L A N S W E R S

Seaweed may eradicate deadly DDT from soil

By Richard Macey

People eat it with their sushi and put it on their gardens as fertiliser. Now it has been discovered that seaweed can combat chemical pollution. Researchers have found that sprinkling the right amount of powdered seaweed on contaminated soil can accelerate the breakdown of the deadly chemical DDT. The powerful insecticide, introduced in the 1940s as a “wonder chemical”, was widely used in Australia before being banned in 1967. Almost two decades later thousands of the sites around the country remain contaminated.

Hunting for an effective way to clean up DDT, the scientists, working with the CSIRO, Flinders University, the University of Adelaide and the University of Newcastle upon Tyne, explored the properties of seaweed. They discovered the right dose of seaweed caused 80 per cent of the chemical to vanish in six weeks. Researcher Megharaj Mallavarapu, an associate professor at the Centre for Environmental Risk Assessment and Remediation at the University of South Australia, said the seaweed worked by helping the micro-organisms in the soil attack the toxin. The organisms have enzymes that convert DDT into substances that deteriorate quickly. The scientists found that the high level of sodium in seaweed disperses any clay in contaminated soil allowing the micro-organisms to easily reach the insecticide. Their results were published in the *Journal of Chemical Technology and Biotechnology*. The seaweed’s high levels of carbon also feed the micro-organisms allowing their populations to boom.

DDT also was used in combination with other deadly chemicals such as arsenic. “In cattle dips they used arsenic and DDT together,” said Professor Mallavarapu. “It is persistent in these soils because very high levels were used and the other chemicals in the mixture kill micro-organisms. There are still about 1600 cattle-dip sites in the country still contaminated with DDT.” DDT was still being used in malaria-infested developing countries to fight mosquitoes.

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