

# Tricking termites

A national inquiry into the use of the organochlorine insecticides heptachlor and chlordane has highlighted the need for new methods of termite control. One aim of the inquiry, conducted by the National Registration Authority for Agricultural and Veterinary Chemicals, is to examine the effectiveness, safety and availability of alternatives to these traditionally-used chemicals.

Fortunately, research is showing that there are other ways to control termites. One ingenious, chemical-free system recently commercialised employs granite particles of a specific diameter range (1.7 to 2.4 millimetres) to keep termites out of buildings and their foundations.

Dr John French and Berhan Ahmed from CSIRO's Division of Forest Products and their commercial collaborators, the Mawson Group, developed the system following the success of a similar system in the United States.

Trials showed that for the granite barrier to be effective, particles must be too large and heavy for termites to shift, but small enough to ensure that, when they are tamped into position, there will be no voids for the insects to crawl through. The particles are laid under slab floors or around foundation stumps fixed into the ground.

This system, with the trade name Granitgard, now has national accreditation as a termite control method in all parts of Australia except the tropics. The northern giant termite (*Mastotermes darwiniensis*) found there can force its way through Granitgard at the diameter range mentioned above. However, French says preliminary laboratory results indicate that a blended-grade of Granitgard should prove successful against *Mastotermes*.



Meanwhile, French has been looking at prospects for controlling termite attack on existing buildings using the particles. Experiments involving digging trenches around mock-ups of buildings and filling them with either Granitgard on its own or the granite particles plus chlorpyrifos insecticide have produced encouraging results.

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## Videos explore issues in science

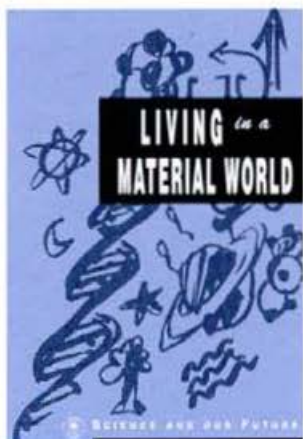
'It's late summer in the cotton fields of Australia. Lines of machines prowl the landscape, relentlessly harvest-ing a billion dollars in export revenue. This is agricultural technology at its most spec-tacular. But nature has a way of humbling all our grand designs ...'

No, it's not a new novel about the trials and tribulations of cotton picking in the deep north of New South Wales. It's the script of a video, a true story about how

science is coming to terms with the cotton industry's worst insect pest, *Heliothis*.

*Heliothis armigera* and *Heliothis punctigera*, two similar moth species, are Australia's most destructive farm pests. Through sprays and lost production, they cost Australian farmers an estimated \$200 million a year and are a barrier to sustainability in the cotton industry.

Scientists are developing a more ecological



approach to controlling *Heliothis*. The technique, called Insect Resistance Management, involves strategies to minimise chemical spraying and is the subject of a new video produced by CSIRO Information Services.

The 30-minute video, *Caterpillars and Cotton*, is the first of five in a new series called 'Science and our Future'. The series investigates contemporary scientific research, showing its impact on our society today, and the effects it

may have on our future. Other titles are *Living in a Material World*, *The Energy Challenge*, *Genetic Engineering - Exploring the Issues and Our Forests*.

Five fascinating stories about materials science are related in *Living in a Material World*. A range of scientific principles are introduced through the latest research in active packaging, advanced ceramics, permanent

magnets, carbon fibre and solid oxide fuel cells. *The Energy Challenge*, as well as explaining scientific principles, explores the relationship between society and scientific research. The costs and benefits of alternative fuels such as LPG and natural gas, alcohol fuel, battery power and hydrogen are outlined.

Presented by Dr Gael Jennings, the video on genetic engineering describes how genes can be transferred from one living thing to another, and shows some applications of the technology. It also raises some of the social and ethical issues related to genetic engineering. *Our Forests* looks at research into sustainable timber production and environmentally acceptable pulp production.

The videos are designed to suit mid to upper secondary level curricula. They cost \$69 each. Contact: Video Education Australasia, 111A Mitchell Street, Bendigo, Vic. 3550 (054) 42 2433, fax (054) 41 1148.