

Waste incentives needed

Australian industries generate a variety of solid, liquid and gaseous wastes and by-products. Most are stockpiled, consigned to landfill, or discharged into the atmosphere, waterways or oceans.

A greater effort is needed to find ways of reducing these wastes, according to a survey report published by CSIRO and the University of Western Sydney.

The report, *Survey of Industrial and Process Wastes and By-products Generated in Australia*, identifies the types of liquid, gaseous and solid wastes produced in Australia.

The survey was conducted by mailing questionnaires to more than 1000 companies with 10 or more employees. Despite a relatively low response rate, (35.4%), the authors believe that the results identify most types of industrial wastes in Australia.

In its conclusion, the report lists the materials that enjoy the highest degree of recycling. These are lead, tin, glass, aluminium and paper.

Liquid wastes are hardly used at present, the report says, and the use of gaseous wastes 'remains a formidable challenge to science and industry'.

A range of solid process wastes suitable for reuse as raw materials in manufacture is identified. These are precipitator and quarrying dusts, ferrous and non-ferrous slags, mine tailings, sand-washing wastes, by-product gypsum, filter earth, foundry sand, coal washery refuse and red mud.

The report says that in Australia, the use of some of the waste materials generated could be encouraged with economic incentives. It suggests that State and Federal legislation is needed to motivate more large-scale or widespread use of wastes by Australian industry. In addition, there is a need to assist companies with waste-management problems.

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Greenhouse gathering

All the big climate change questions - from how and why to when and where - will be tackled at Greenhouse 94, an Australian-New Zealand conference scheduled for October 10-14.

Greenhouse 94, to be held at Wellington in New Zealand, is being organised by CSIRO's Division of Atmospheric Research and New Zealand's National Institute of Water and Atmospheric Research, and is supported by the Australian and New Zealand Environment and Conservation Council.

Papers will focus on the implications of climate change in Oceania. Topics to be considered include the reasons for climate change; the effects of climate change on communities and businesses; the capacity to adapt to climate change; reducing carbon dioxide emissions; national policies and international agreements. Greenhouse 94 will also feature poster sessions, trade exhibitions and displays by various organisations.

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Selecting trees for salt-affected land

Dryland salinity is a massive and growing problem in Australia. A 1992 study put the estimated annual costs to the community of salinity in the seven worst-affected areas of the Murray Darling Basin at \$22 million. In addition, the capital value of agricultural land in these areas was estimated to have declined by a total of \$68 million.

Finding ways to deal with this problem was one focus of CSIRO's recently concluded \$2.2-million-a-year Land and Water Care Project. An important line of attack is the strategic planting of trees for water table control. One research project has identified tree species and provenances that grow in saline conditions and help reclaim sites by lowering the local water table.

Dr Nico Marcar of the Division of Forestry has played a major role in this work. He and his team established field trials - mainly in southern and central New South Wales - to test the performance of trees and shrubs, relate performance to the degree of salinity, and test treatments aimed at improving establishment and growth.

The team has gathered the data generated, and the results of trials conducted by of other organisations, in the multi-purpose tree



Individual trees of the same species vary in their tolerance of salt and waterlogging.

database called MPTDAT. The next step will be production of a booklet for farmers and others with affected land. Marcar expects the booklet will be available in about June, 1994.

and that it will be followed by another on tree-planting in groundwater recharge, rather than discharge, areas.

In a new line of research, Marcar and his team are screening trees of the fast-growing species *Eucalyptus grandis* and *Eucalyptus globulus* for tolerance to salt and waterlogging. They have found significant variation between families in these species.

Trials in the glasshouse aim to identify suitable families or individuals for further evaluation in the field. This work relates to irrigation salinity in areas where high water tables and moderately saline conditions are reducing agricultural production.

The aim is to grow trees that will provide a viable product and improve agricultural crop production. The research is supported by the Rural Industries Research and Development Corporation.

This article appears courtesy of Onwood, a newsletter of research updates from the Division of Forestry and the Division of Forest Products. For more information about the newsletter, and about tree species and provenances, contact Mick Crowe, CSIRO Division of Forestry, PO Box 4008, Queen Victoria Terrace, ACT 2600, (06) 281 8211, fax (06) 281 8312.