

Issue 4
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Australasian Journal of Recycled Organics

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Making Informed Decisions: www.rolibrary.com

The Recycled Organics Unit (ROU) is proud to launch the Recycled Organics Library, a web-based information service by and for the Australian Recycled Organics sector. This service is now online at www.rolibrary.com.

The www.rolibrary.com is a free searchable online catalogue of information resources on:

- the recovery and management of compostable organic materials, and
- the manufacture and use of recycled organics products.

The ROU approached over 200 agricultural, industry, university, government and independent agencies from across Australia with relevant expertise and/or were known to have conducted related work.

www.rolibrary.com compiles over 250 quality information resources (reports, guidelines, audits, "how to" information, processing and product performance trials) from the past decade into a single catalogue, making www.rolibrary.com a key information tool for organics resource management in Australia.

www.rolibrary.com is freely available 24 hours every day of the year to provide you with the most direct access to the most complete range of high quality and relevant information resources produced across Australia.

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Manufacturing quality recycled organics products: Industry guidance manuals

The ROU has developed a series of industry manuals to support the establishment and operation of organic processing enterprises, and the production of recycled organics products of consistent quality.

These popular industry best practice guidance manuals have been nationally peer reviewed by industry and technical experts, and a number have been nationally endorsed by the Waste Management Association of Australia (WMAA).

The packages consist of accessible and user-friendly information sheets, with all information grounded in science and fully referenced, and a comprehensive glossary of technical terms is also included.

The industry manuals have recently been updated for consistency with the revised Australian Standards for *Composts, Soil Conditioners and Mulches* (AS 4454 – 2002), *Potting Mixes* (AS 3743 – 2002) and *Soils for Landscaping and Garden Use* (AS 4419 – 2002).



- *Establishing a Licensed Composting Facility*, Second Edition (2002) provides a guide to siting, designing, gaining planning and licensing consent to establish a commercial composting facility in New South Wales.



- *Guide to Developing a Process Control System for an Organics Processing Facility*, Second Edition (2003) provides a practical guide to developing a process control system for an organics processing and recycling operation.



- *Producing Quality Compost*, Second Edition (2003) identifies quality issues associated with composts and provides a practical guide to managing composting windrows to achieve the consistent production of quality compost.



- *Guide to Selecting, Developing and Marketing Value-Added Recycled Organics Products* (2002) aims to support government and industry to develop new products and new markets for recycled organics products.



- *Composting Science for Industry*, Second Edition (2002) provides an overview of the scientific principles of the composting process including the importance of temperature, oxygen, water, structure, C:N and pH to the performance of a compost pile.



- *Buyers Guide for Recycled Organics Products*, Second Edition (2003) documents the benefits of appropriate use of recycled organics products, and informs the selection of the most appropriate product/s for a range of applications on the basis of quality and fit for purpose criteria.



- *How to Use Recycled Organics Products*, Second Edition (2003) comprises a series of information sheets each referring to a specific type of recycled organic product. Individual information sheets provide practical guidance for the proper use of the product, and are suitable for use by landscape and parks maintenance staff.



- *Occupational Health and Safety and Commercial Composting* (2003) is a practical guide to OH&S for a commercial composting facility and will assist the recycled organics industry to identify and systematically address safety issues (see the article on the following page).

All packages are freely available and can be downloaded from the ROU website at www.recycledorganics.com.



The Industry Guidance Manuals are user-friendly with easy to read information sheets that are fully referenced and contain a complete glossary of terms

OH&S and commercial composting

The Recycled Organics Unit has produced a practical guide to occupational health and safety and commercial composting. This package will assist the recycled organics industry to identify and systematically address safety issues.

The Occupational Health and Safety and Commercial Composting package comprises three complementary volumes:

- *Occupational Health and Safety and Commercial Composting Volume 1: Implementation Workbook* (Recycled Organics Unit, 2003).
- *Occupational Health and Safety and Commercial Composting Volume 2: A Review of Potential Risks of Infection* (Recycled Organics Unit, 2003).
- *Occupational Health and Safety and Commercial Composting Volume 3: Induction Manual for Compost Facility Staff* (Recycled Organics Unit, 2003).

This package has been developed via literature review and consultation with OH&S professionals, medical specialists and industry.

This OH&S package will be complemented by an industry workshop to be scheduled shortly. If interested in attending, please notify the Recycled Organics Unit by sending an email to a.jarman@unsw.edu.au.

Industry vocational education and training

The Recycled Organics Unit has partnered with Agriculture Victoria and the organics processing industry on a national basis to develop national competency standards for the industry.

These competency standards have been endorsed by industry. Official confirmation has now been received that the Rural Training Council Australia (RTCA) has received approval from the Australian National Training Authority (ANTA) to proceed with the formal endorsement of the Commercial Composting Training Package.

As a result, the organics processing industry is on the road to industry recognised training and qualifications, that will help to provide professional training to staff and improve operational capabilities of facilities.

A competency based training program for composting operations has been developed, covering several key competency standards units. Once piloted and evaluated by industry, this program will be made available to TAFE and the VET sector for delivery as a stand-alone training program, or via integration into various horticultural/agricultural training programs.



Industry recognised training and qualifications will produce professional staff and increase operational capabilities.

New staff member at the Recycled Organics Unit

The ROU would like to formally introduce our newest staff member, Dr Girja Sharma.

Girja has over ten years experience managing research and consultancy projects in agriculture and environmental management related to land application of organic materials. Girja has published several research papers in reputable journals and written over twenty consultancy reports for various local and state governments, private enterprises and industry groups.

As a Senior Research Scientist at the Recycled Organics Unit, Girja's primary responsibility is research and development in the agricultural application of composted products.



Tools for buyers and users of quality recycled organics products

Information packages and recycled organics product selector

The ROU has developed a range of tools to support the selection and application of quality recycled organics products in established urban (value) markets.

The tools provide small to large-scale buyers of recycled organics products with the information required to recognise and purchase fit-for-purpose products on the basis of quality.



These tools have recently been updated for consistency with the soon to be released updated Australian Standards for *Composts, Soil Conditioners and Mulches* (AS 4454 – 2002), *Potting Mixes* (AS 3743 – 2002) and *Soils for Landscaping and Garden Use* (AS 4419 – 2002).

information sheets provide practical guidance for the proper use of the product, and are suitable for use by landscape and parks maintenance staff. This package complements the buyers guide and aims to maximise the user benefit and to avoid risks associated with inappropriate product application.

- The *Recycled Organics Product Selector* is an interactive internet-based tool that allows users to specify the functional purpose for which the product is required, and returns a product recommendation based on the various Australian Standards for composts, soil conditioners, mulches, potting mixes, landscaping soils and loose fill playground surfacing materials. The product selector is located at www.recycledorganics.com.



The *How to Buy Quality Recycled Organics* Poster is a valuable source of information for buyers and users of RO products.



- *Buyers Guide for Recycled Organics Products, Second Edition* (2003) documents the benefits of appropriate use of recycled organics products, and informs the selection of the most appropriate product/s for a range of applications on the basis of quality and fit for purpose criteria.



- *How to Use Recycled Organics Products, Second Edition* (2003) comprises a series of information sheets each referring to a specific type of recycled organic product. Individual

Best practice guidelines for on-site vermiculture



A best practice guideline for managing vermiculture technologies in on-site applications is available.

Through a project funded by Southern Sydney Waste Board (now Resource NSW), the best practice guidelines were produced to provide guidance for on-site treatment of compostable organic materials produced by the commercial and industrial (C&I) sector.

The best practice management guide supports the

appropriate and sustainable application of on-site vermiculture technology in the C&I sector. Information has been provided that will inform the vermiculture industry, waste management industry, C&I sector organisations, industry consultants and educators.

This guide gives practical information on selecting and installing a vermiculture unit, feedstock preparation, monitoring and maintenance procedures and using the vermicast product.

The guide is available on the ROU website at www.recycledorganics.com.

Tools for pursuing high volume agriculture markets

RO in intensive agriculture

Intensive agriculture has been identified as a key potential market for a viable organics processing industry. Ten years of applied field trials around Australia have sought to evaluate the performance benefits of recycled organics products to intensive agriculture. These trials have involved a wide variety of composts, soils, crops and climatic conditions.

The vast majority of this research is not readily accessible and has not been subject to peer review. This research requires evaluation and compilation in the context of crops, soils and grower objectives to clearly identify the value of the available research (both methodology and outcomes) to the development of agricultural markets.

The Recycled Organics Unit has reviewed this research for viticulture applications and for fruit/orchard applications in relation to performance outcomes and methodology, thereby providing a sound basis for future recycled organics product development, performance validation and demand creation in priority agricultural markets. The review is documented in the following reports:

- *Recycled Organics in Intensive Agriculture Volume 2 – Viticulture: A review of recycled organics product application field trials in viticulture in Australia* (Recycled Organics Unit, 2003).
- *Recycled Organics in Intensive Agriculture Volume 3 – Fruit and Orchard: A review of recycled organics product application field trials in fruit and orchard production in Australia* (Recycled Organics Unit, 2003).

The development of performance-based recycled organics products to meet the expressed needs of intensive agriculture markets in terms of ease of use will maximise the cost-benefit advantages to users. The development of application specific performance based products, and associated market development strategies should be grounded in existing information and expertise.

The reports produced by the ROU have already developed standard performance categories and monitoring parameters for consideration in recycled organics application field trials to inform cost benefit analysis and environmental impacts. Such a standard will support the commissioning of product application field trials that meet the strategic objectives of both government and industry.

A fourth volume is in progress to similarly evaluate field trials relating to intensive vegetable production.

Soil testing guidelines

The Recycled Organics Unit has produced an agricultural package to support the expansion of agricultural markets for recycled organics products.

The application of suitable recycled organics products and integration into existing farm management practices should be informed by appropriate soil testing and subsequent nutrient budget calculations.

The package includes a soil-testing regime and nutrient budget calculators as aids for informing soil and crop specific recycled organics product applications.

This package guides processors and/or growers in the sampling and on-site field testing of their soil to inform the selection of suitable recycled organics products.

Appropriate testing allows the benefits from improved organic matter in the soil to be identified, and the tools also inform the complementary addition of organic and/or inorganic soil amendments such as lime and fertilisers over a three year compost application cycle.

These tools allow an equivalent service to be provided for growers for recycled organics product application as that provided by companies such as Incitec for determining inorganic fertiliser applications.

This package consists of four publications titled:

- *Soil Testing Guidelines for Intensive Agricultural Enterprises to Inform Recycled Organics Applications* (Recycled Organics Unit, 2003).
- *Product Specifier and Nutrient Budget Calculator for Organic Mulch Application in Vineyards and Orchards* (Recycled Organics Unit, 2003).
- *Product Specifier and Nutrient Budget Calculator for Soil Conditioner Application in Vegetable Production* (Recycled Organics Unit, 2003).
- *Field Testing Kit Interpretation Guide to Inform Organic Mulch and Soil Conditioner Application* (Recycled Organics Unit, 2003).

The Soil Testing Guidelines and vineyard/orchard calculators are available on the ROU website. The Nutrient Budget Calculators for vegetable production and the Field Testing Kit Interpretation Guide should be available by the end of the 2003 calendar year.



A resource package will soon be available to support the expansion of agriculture as a key market for recycled organics.

Life cycle inventory and assessment for windrow composting

Agricultural markets for recycled organics products are essential for the viability of the organics processing industry, and for the recovery of compostable materials from the solid waste stream.



Lack of demonstrated value (i.e. affordability) is a major barrier to product use in agricultural and commercial horticultural applications. The direct and short-term cost-benefit equation for farmers however does not take into account environmental externalities that are born or realised by the wider community and by future generations.

Quantifying the environmental impacts, including benefits, of the agricultural application of recycled organics products can help to justify the implementation of potential financial incentives to assist in overcoming affordability barriers.

Post application impacts have previously been excluded from life cycle assessment studies. Comprehensive life cycle inventory data relating to post application impacts has been developed by the ROU, and is available for future life cycle studies.

Life cycle assessment methodology can support resource recovery priorities based on science, rather than salesmanship. Consequently, the ROU has completed:

- *Life Cycle Inventory and Life Cycle Assessment for Windrow Composting Systems in Australia* (Recycled Organics Unit, 2003).

LCA preliminary modelling identifies that even when compost is transported 600 km with no backloading, composting represents a net greenhouse benefit.

This report has been reviewed by NSW Agriculture and CSIRO Land and Water. The report will be released shortly through Resource NSW

Australasian Journal of Recycled Organics

The Recycled Organics Unit is establishing a peer reviewed Australasian Journal of Recycled Organics.

This project has been funded by Environment Australia.

The Australasian Journal of Recycled Organics will publish applied research and development into all aspects of the recovery and management of compostable organics and the production and application of recycled organics products.

The focus of the journal is to publicise applied research, commonly referred to in agricultural context as "research into practice".

The Journal will be published quarterly and will contain several peer-reviewed papers, numerous non-peer reviewed short communications (for example, case studies, demonstration trials, programs), listing of newly commissioned research and new publications, industry news, and an editorial column.

The Journal will provide a dedicated vehicle for communicating all relevant information relating to organics recovery to use, and is targeted to the needs of government, local government, research sector, organics processing industry, resource recovery industry, landscaping, horticulture and agriculture industries.

Compost Australia has endorsed the Journal as a key vehicle for communication for the sector.

The first edition of the Australasian Journal of Recycled Organics is planned for release in Autumn 2004.

How to Subscribe

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ROU Technical Services

The Recycled Organics Unit provides a number of expert technical services to support the development of the organics industry. Please email a.campbell@unsw.edu.au to discuss how we can assist with your needs.