



Producing Quality Compost

2012

Fourth Edition

A large, light gray silhouette of a person's arm and hand. The hand is holding a rectangular tray containing several small green seedlings. Behind the tray is a larger, round bucket or container, also partially filled with soil. The entire graphic is rendered in a light gray shade.

Operation and management guide to support
the consistent production of quality
compost and products containing
recycled organics

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THE UNIVERSITY OF
NEW SOUTH WALES



RESOURCE_{NSW}



This package has undergone national peer review by a range of technical and industry experts (see acknowledgments); and has been endorsed by COMPOST NSW and the NSW branch of the Waste Management Association of Australia.



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Preface to the *Producing Quality Compost* Information Sheets

The *Producing Quality Compost* series of Information Sheets have been produced to support the continuing development of the Recycled Organics (RO) industry in New South Wales through a greater focus on operation and management for quality.

Work commissioned by Environment Australia (Environment Australia, 1999)¹ indicated that market acceleration for recycled organics products is dependent on the sale of quality products that meet the needs of specific market sectors. Since the publication of this report and the first edition of *Producing Quality Compost* (Recycled Organics Unit, 2001), significant progress has been made in developing markets for recycled organics products, with markets being developed in intensive agriculture (e.g. viticulture), broad acre agriculture (e.g. cereal), and a variety of large-scale landscaping projects and in urban stormwater treatment to mention a few.

Importantly, the 4th edition of the Australian Standard AS 4454 (2012) Composts, soil conditioners and mulches has now been formalised and released. The ROU was actively involved in the revision as a leading member of the Standards Australian technical committee, and the new standard represents a watershed for the industry.

Wider implementation of verifiable systems of production that manage critical control points in the manufacturing process and the refinement of product standards in the recycled organics sector is providing users with QA/QC framework for high quality, performance based products which can deliver reliable performance for the intended application.

Whilst certification against recognised product standards is increasing, industry-wide adoption of these standards will provide the market with an improved level of confidence in products being made available for sale, and potentially resulting in enhanced demand-side pull of product into the market.

Clear product standards and adoption of these by the recycled organics industry is proving to be an important driver in allowing Local Government to select appropriate technologies and processes to convert compostable organic materials into safe and beneficial products, in a bid to increase the diversion of valuable organic matter from landfill.

Increased use of industry best practice guidelines and national product standards (e.g. those published by Standards Australia) will increase the quality of products manufactured from compostable organic materials. Consistent product quality, effective and consistent product characterisation and labelling all support informed consumer selection and use. This supports accelerated market development, and demand creation in areas where recycled organics products are not traditionally used.

Process control systems are based upon management of the critical control points in the production process, including on-site process monitoring, on-site product testing before distribution, and independent testing laboratories to confirm conformance with product specifications.

Process control is an integral part of a quality management system. A quality management system is a set of procedures an organisation establishes to ensure products comply with specifications and claims, underpinning market confidence and consumer satisfaction.

¹ Environment Australia (1999). *Environment Australia Organics Market Development Strategy*. Report prepared for Environment Australia by Meinhardt (Vic) Pty Ltd, Strategic Multimedia, EC Sustainable Environment Consultants and Environment Resource Management (QLD) Pty Ltd. October 1999.



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These Information Sheets have been developed to complement existing information resources and to provide an easy-to-read overview quality management systems and published product standards.

It gives practical guidance to the development of an on-site testing program to maintain process control, and it also provides a simple overview of the key Australian Standards that are relevant to recycled organics products.

These Information Sheets will continue to assist industry to consistently produce quality, high value compost and products containing recycled organics that meet customer requirements.

I hope you find the updates arising from revisions to the AS 4454 (2012) standard useful.

Thanks,

Angus Campbell

Director, Recycled Organics Unit

How to cite this publication

This publication consists of a series of Information Sheets that are compiled into a set. When citing information from this publication, the set of Information Sheets must be cited (not individual Information Sheets), as shown below:

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Recycled Organics Unit - resources and services

The ROU website provides free access information resources that are used around the world for the safe recovery and management of biodegradable organic materials, and the manufacture and beneficial use of recycled organics products. The ROU also offers direct services for government and commercial projects.

Need assistance to establish a facility? To improve compost production capabilities and quality?

ROU has over 20 years direct experience design, development and operation of food/garden/manure organics collection and processing systems, including operator training, procedures and quality manuals.

Are you carbon price ready? Are you clear on your greenhouse risk & opportunity?

ROU has over 10 years experience in corporate greenhouse accounting and management, and in carbon credit offset projects in Australia and internationally via the Kyoto *Clean Development Mechanism*.

To discuss your needs, online contacts at www.recycledorganics.com or email rou@recycledorganics.com

<ul style="list-style-type: none">• Operator training and operating procedures• Compost facility design and arrangement• Production and QA systems: manuals, training, and associated services for certification• Independent verification of standards compliance• Development of compost recipe formulations, products and specifications for target markets	<ul style="list-style-type: none">• Performance assessment of processing technologies (large scale and on-site)• Corporate sustainability strategy• Practical action plans for resource recovery including food waste and compliance solutions• Greenhouse impact assessment and emissions management (CDM and CFI offset projects)
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1. Information Sheets in “Producing Quality Compost”

This package contains a collection of eleven Information Sheets:

- Information Sheet No. 3-1: Striving for quality: basics of a quality management system
- Information Sheet No. 3-2: Quality systems: approaches to quality assurance
- Information Sheet No. 3-3: On-site field testing and monitoring for quality
- Information Sheet No. 3-4: On-site laboratory testing for quality
- Information Sheet No. 3-5: Off-site testing for quality: recommended tests and how to select an independent laboratory
- Information Sheet No. 3-6: Quality of biosolids: risk minimisation during re-processing
- Information Sheet No. 3-7: Manufacturing quality products: introduction to Australian Standard AS/NZS 4422–1996 for playground surfacing
- Information Sheet No. 3-8: Producing quality compost: introduction to Australian Standard AS 4454–2012 composts, soil conditioners and mulches
- Information Sheet No. 3-9: Manufacturing quality products from compost: introduction to Australian Standard AS 3743–2003 for potting mixes
- Information Sheet No. 3-10: Manufacturing quality products from compost: introduction to Australian Standard AS 4419–2003 soils for landscaping and garden use
- Information Sheet No. 3-11: Sampling and sample management for consistent analysis of product quality

2. Who should read the Information Sheets?

The package of Information Sheets has been developed for all stakeholders in the recycled organics sector who wish to gain a better knowledge of the key documents relating to quality management systems, industry best practice, and product standards that significantly influence product quality.

More specifically, the package of Information Sheets have been developed for:

- recycled organics product manufacturers and distributors;
- experienced manufacturers of products from compostable organic materials;
- manufacturers, blenders and suppliers of recycled organics products;
- Resource NSW officers;
- Local Council waste management officers;
- Local Council planning and approvals officers;
- waste educators;
- relevant government policy makers; and
- industry consultants.

3. Other ROU industry support packages

Eight packages are freely available from the ROU website to support recycled organics industry development, these include:

- Package 1: Establishing a licensed composting facility;
- Package 2: Guide to developing a process control system for a composting facility;
- Package 3: Producing quality compost;
- Package 4: Guide to selecting, developing and marketing value-added recycled organics products;
- Package 5: Composting science for industry;
- Package 6: Buyers guide for recycled organics products
- Package 7: How to use recycled organics products;
- Package 8: Occupational health and safety and commercial composting.

All of these packages are freely downloaded from <http://www.recycledorganics.com>

4. Terminology

Terms used throughout this package of Information Sheets have been officially adopted by the NSW Waste Boards (now Resource NSW) in July 2000 in the form of the *RO Dictionary and Thesaurus: Standard terminology for the New South Wales recycled organics industry*, produced by the Recycled Organics Unit. This document is freely downloaded from <http://www.rolibrary.com>

5. Acknowledgements

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- Mr Garry Kimble, Quality Assurance Services and [past] Chairman of COMMPOST NSW.
- Mr Chris Rochfort, Principal, EC Sustainable Environment Consultants.
- The committee of COMMPOST NSW.