

Information Sheet No. 3-1

Striving for Quality

Basics of a quality management system (QMS)

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Inside This Sheet

1 Quality defined
Process control vs quality management system?

2 The eight quality management principles
What is a quality management system?
Definitions
Ten steps to QMS implementation

3 The three key QMS documents

5 The importance of testing, monitoring and record keeping

6 Training in quality management systems

Important references

Acknowledgement

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Quality defined

Quality refers to a product or service that is fit for purpose, conforms to requirements and within specification.

Manufacturing and marketing of quality composts and products containing recycled organics of consistent quality is a key to gaining market confidence and continued customer satisfaction.

The raw material inputs to the composting process can embody a range of potential risks. Regardless of product specifications, customers have a fundamental expectation that products are safe and beneficial.

Quality, however, is not only concerned with whether a product or service meets the claims made for it. Customer perceptions of your business are based on the product or service you deliver and on the day-to-day contact they have with you and your staff. Your approach to quality may include:

- the speed with which the salesperson responds to a request for a quotation;
- product selection advice and product use information; and
- ensuring that the invoice matches the type and quantity of product delivered

Every contact with every customer contributes to customer perceptions of your company.

A key principle of quality management, or performance based management is effective leadership and the clear and systematic

communication of expectations, responsibilities, and accountability.

Quality management systems should directly target the objectives of the business, and the consistent achievement of customer satisfaction.

This Information Sheet reviews the basics of a quality management system and the important role it can play in a composting operation.

This remainder of the [Information Sheets in this series](#) (3-2 to 3-11), however, focus more on the management of processing and production systems to support the manufacture of recycled organics products of consistent quality.

Process control vs quality management system?

Forget the language for a minute. The point is to manage the key process steps in your production process to enable the reliable manufacture of products of quality.

In the first instance the ROU tends to focus on establishing a system of procedures for these critical control points that combine to deliver performance outcomes. Performance objectives include compliance requirements, risk management requirements and also product quality objectives.

A process control system that manages the critical control points in the manufacturing process is the starting point. This approach can apply to products manufactured to any range of specifications. This approach directly targets operations, and readily articulates into a formal *Quality Management System* (QMS) or formal product certification.

What is a quality management system?

A *Quality Management System* (QMS) is a term applied to a variety of tools that assist an organisation in managing and controlling its processes, inputs and outputs to meet customer requirements.

The International Standards Organisation (ISO) 9000 family of QMS standards provides a generic systems framework to assist organisations to achieve quality objectives.

The QMS approach encourages organisations to consider customer requirements, define the processes and product specifications that meet customer requirements, and to control manufacturing, administrative and management processes to reliably ensure customer satisfaction.

Because customer needs and expectations change, and because raw materials and staff can change, organisations are driven to regularly review and improve their production system.

The benefits of implementing a quality management system include:

- market access: some institutional and large corporate customers require a QMS; others require verified system of production that provides assurance of management of specific risks;
- consistency in service delivery and measurable service outcomes;
- improved operational workflow and efficiency, including less rectification “make work”;
- employee involvement in the organisation’s progress; and
- a marketing edge, differentiation from competitors.

Plate 1. The *Joint Accreditation Scheme of Australia and New Zealand* accredits certification organisations under an international framework (JAS-ANZ); see www.jas-anz.org



A company can have their QMS audited and certified by an independent organisation. JAS-ANZ accredited certifying organisations commonly offer the use of a trademarked certification logo (commonly for a royalty fee) that their customers can use to proclaim independent verification with a standard (eg. the AS 4454 compost product standard; or the ISO 9001 QMS standard).

The JAS-ANZ framework for accreditation of certifying organisations is most relevant for exporters, with some certifiers describing an independently certified ISO 9001 QMS as a “passport for international trade”.

JAS-ANZ accreditation is not necessary, but independent verifiers should have credentials relevant to the service being offered. There are many, many service providers for independent verification of compliance, or independent certification of compliance. Choose a service provider that best supports your company’s business and marketing objectives. Is it worth paying royalties to use a logo that is not recognised by your target market?

Independent verification is an effective marketing tool, showing customers that your organisation has a legitimate QMS in place, and

demonstrating the company’s commitment to quality.

The eight quality management principles

Quality Management Systems are based on eight quality management principles:

1. Customer focus
2. Leadership;
3. Involvement of people;
4. Process approach;
5. System approach to management;
6. Continual improvement;
7. Factual approach to decision making; and
8. Mutually beneficial supplier relationships.

Definitions

Quality

Fitness for purpose; conformance to requirements; within specification.

Quality Management System (QMS)

A set of procedures an organisation establishes to ensure its products will satisfy consumers.

Ten steps to quality management implementation

It takes significant time and effort and ability to develop and implement a QMS. Both executive commitment and the allocation of appropriate resources (including time) are essential.

To plan, develop and implement effective quality systems, a company should follow 10 steps:

1. Appoint a person to be responsible for the implementation of the QMS.
2. Set up an implementation team. Representatives from all sections of the organisation should be members of the team.
3. Establish the objectives and plan for the implementation of the system. Important components include: implementation objectives, initial system review, the management plan and an implementation plan.
4. Create quality awareness.
5. Define responsibilities and organisational structure, including job descriptions and an organisation chart.
6. Develop a quality policy manual, describing management's intent concerning the documented quality management system.
7. Establish employee participation.
8. Prepare and implement procedures and/or work instructions, as well as a document control system.
9. Perform internal and external quality audits to assess the performance of the QMS; and
10. Review. The system needs to be periodically reviewed to ensure its continuing suitability and effectiveness.

Three key QMS documents

There are three main documents that formalise a QMS are:

i. Quality manual

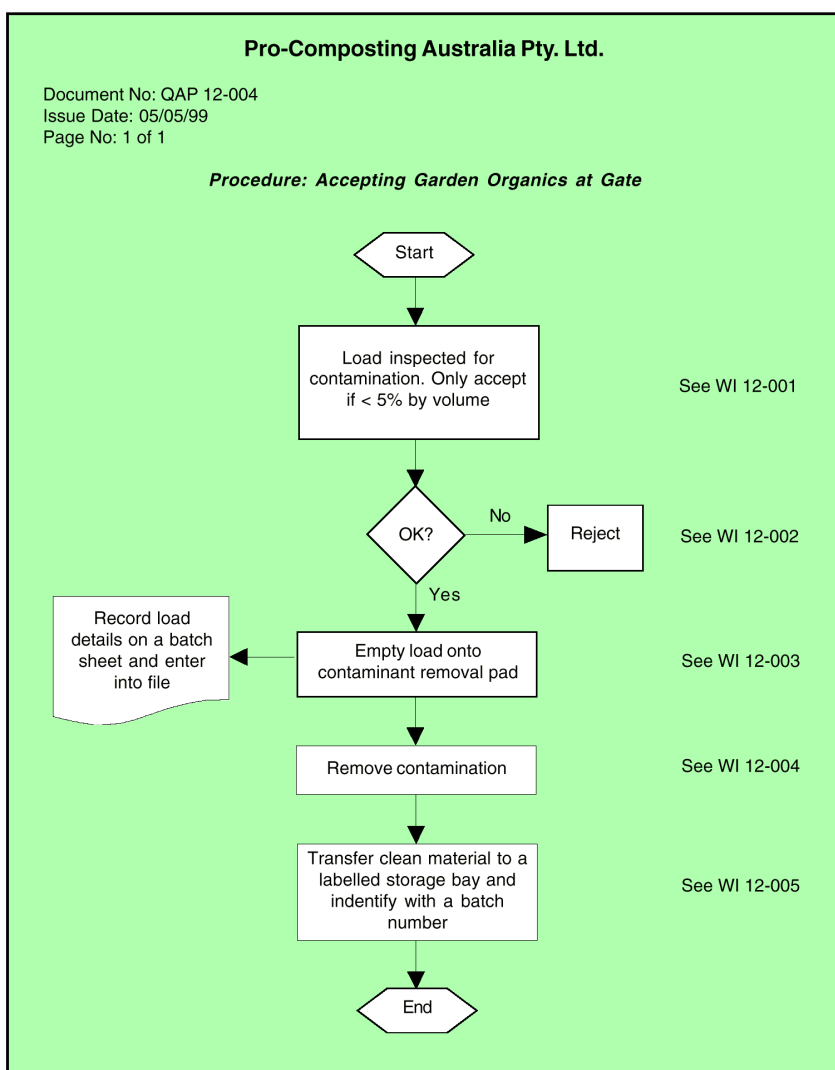
This is a 'high level' document that describes management's intent concerning the documented quality management. It indicates the nature of the business activities undertaken to meet customer requirements. It is a 'map' of what an organisation has to offer in terms of quality to remain competitive in the market place. This document often contains: the quality policy; activities of the business; how the documentation system works; exclusions from the standard; statements of responsibility and

authority; overview of business philosophy and history, and a description of the organisation's work processes and their interactions.

ii. Procedures manual

Procedures describes the performance objectives of the key steps in the manufacturing process in a way that directly controls all critical control points to address customer requirements (within the QMS framework). A procedure generally describes the purpose of the activity; how it operates; and the controls which reduce variability and ensure conforming output. An example procedure for accepting garden organics at the gate of a composting facility is shown in Figure 1.

Figure 1. A procedure for accepting garden organics at a composting facility. This can be expressed as "control of inputs", to the extent required to enable consistent achievement of product quality. WI refers to 'work instruction'. Work instructions outline the detailed steps required for each activity.



iii. Work instructions

Detailed steps required for each activity in a form. In many cases, work instructions may refer back to an equipment manual. The steps required to operate a pH meter, for example, may be appropriately addressed in the equipment manual which came with the device, or to a method documented in a standard. An example of a work instruction is shown in Figure 2.

Please note that work instructions may be needed for other critical areas of a composting operation. These may include:

- Receipt and inspection, materials identification, removal of visible contaminants, transfer and handling of raw materials; access, unloading areas, vehicle cleaning requirements;
- pre-processing such as shredding, sorting, mixing, pre-wetting materials;
- pasteurization: method and verification/recording;
- composting, including facilities for mixing, turning, aerating, adding inorganic or organic amendments;
- process monitoring and documentation;
- irrigation of compost piles
- managing odour and leachate, drainage and stormwater, storage, treatment, use or disposal of water and leachate;
- assessment of compost piles for release into inventory for sale
- verifying load quantity for sale
- maintenance and calibration of equipment and tools
- maintenance and storage of plant, equipment and chemicals

Figure 2. An example of a work instruction for accepting and rejecting garden organics at the gate of a composting facility. Note that work instructions will differ depending on the type of operation. The example shown below is a step-by-step instruction for carrying out the accepting and rejecting procedure as detailed in

WI NO: WI 12-002		WORK INSTRUCTION Accepting and Rejecting Garden Organics at Gate	
Page 1 of 1		ISSUE DATE 5/5/1999	REVIEW DATE 5/5/2001
<u>Work Instruction: accepting and rejecting garden organics at gate</u>			
1	Accepting and Rejecting Batch		
1.1	If visual contamination is more than 5% (by volume), reject the batch and notify the driver that the garden organics cannot be accepted.		
1.2	Accept the batch if an alternative contractual arrangement has previously been made. See Contracts Folder (Gate Office, Zone 1) to confirm this.		
1.3	If visual contamination is less than 5% (by volume), notify driver that the batch will be accepted.		
1.4	Direct the driver towards the weighbridge and record the tare of the trailer or truck before contamination is removed. Refer to WI 12-004 for further details.		
	END		

The testing, monitoring and record keeping

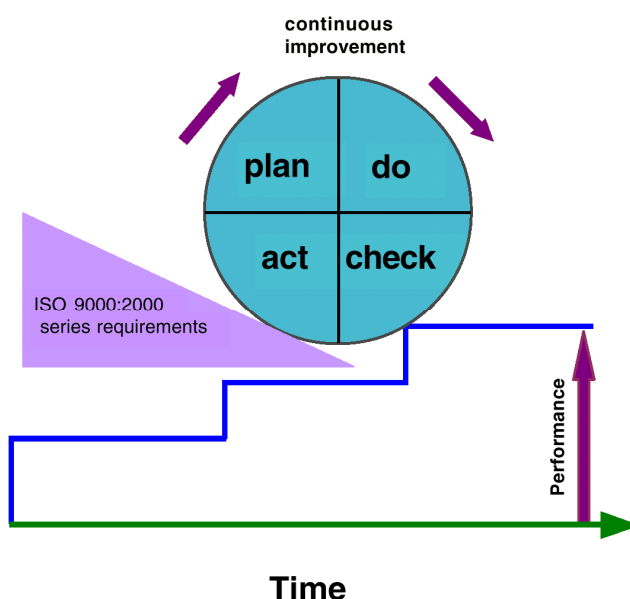
The quality manual, procedures and work instructions outline how critical activities are performed and maintained to ensure that products and/or services of consistent quality are manufactured and delivered.

Process monitoring, product testing and “management review” combine to ensure the system performs correctly and remains relevant to

performance objectives.

Process monitoring and product testing that can be performed on-site by compost manufacturers are detailed in [Information Sheets 3-3, 3-4 and 3-5](#). These methods enable the composting process to be managed within the preferred range, for consistent process; and enable confirmation that product complies with specifications and is ready for sale prior to distribution.

Figure 3. The “Plan-Do-Check-Act” cycle for continuous business improvement.



The on-going performance of a QMS can be maintained by scheduling regular management review, and by having the system independently audited by a third party verifier or certification organisation.

System fine-tuning, improved quality assurance and quality control, and improved customer satisfaction should result from regular maintenance of a company's QMS.

Training in quality management systems

A basic overview of QMSs and how they can apply to composting operations has been provided in this chapter.

Numerous service providers deliver training in QMS. The ROU provides training and support services for the organics recycling sector process

control systems and in 9001 compliant QMS, both for councils and commercial facilities.

The ROU has developed a template based approach for recycled organics facilities to fast track the development and implementation of process control and management systems in a manner that integrates existing components already in place (eg. documented procedures).



Recycled Organics Unit - resources and services

The [ROU website](http://www.recycledorganics.com) 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

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|--|---|
| <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) |
|--|---|

Important references

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