



Waste Management Board of Western Australia

Position Statement

Recycled Organics

February 2008

1 Summary

One of the functions of the Waste Management Board (Board) is to promote the wise use of resources that would otherwise be considered to be waste. Consequently, the Board considers the diversion and beneficial use of organic waste from landfill to be a priority.

Properly composted recycled organic material when applied to home gardens, public parks and road verges or farmland, can improve soil quality and reduce nutrient losses. The Board believes that appropriately selected and treated organic waste should be recycled wherever possible and used to replenish soil organic matter.

Organic matter being applied to residential gardens, and root and leaf crops intended for direct human consumption should be pasteurised by composting before application to land. Raw manures and untreated liquid organic wastes should not be used in these applications.

The Board embraces the notion that separation at source is the preferred strategy for recovering organic waste, particularly garden organics. Composts derived from source-separated organic wastes and single-waste sources are more likely to meet quality requirements for unrestricted use. None-the-less there is also a substantial need for lower quality composts in a range of important applications.

2 What are Recycled Organics?

Recycled organics include a wide range of products manufactured from compostable organic materials such as 'green' waste from parks, gardens and orchards, residues from food production and consumption, residual wood and timber, biosolids from wastewater treatment plants and manures and other residues from agricultural activities.

3 Benefits of Recycled Organics for Soil Improvement

The generally poor quality of WA soils, in particular their low water retention and low cation exchange capacity, is a good reason to use recycled organics. Cation exchange capacity is a general indicator of soil storage capacity for available plant nutrients such as calcium, magnesium, potassium and sodium. The cation exchange capacity of soil is generally determined by the amount and type of clay and organic matter found within it. Whilst increasing this capacity, through the application of recycled organic waste (in the form of compost) as a nutrient source, well-processed compost can:

- supply nitrogen, phosphorus, potassium, magnesium and minor plant nutrients;
- build soil carbon and organic nitrogen;
- increase soil microbial activity;
- increase soil cation exchange capacity;
- increase the soil's ability to hold water;
- improve soil aeration; and
- improve erosion control.

Due to the soil improvement qualities of compost, it is possible to reduce rates of water and fertiliser application. Growers can maximise the benefits of compost and adjust their fertiliser programs to account for the nutrients it supplies.

With anticipated reductions in rainfall as a result of climate change in much of the southern part of Western Australia, application of compost is not only likely to improve soil quality and reduce environmental impacts associated with land use, but also increase the resilience of plant production to climate change.

4 Land Use and the Characteristics of the Recycled Organic Matter

There are three characteristics that should be considered when deciding what form of recycled organics should be used for which type of land use:

- i. If the land is used for the production of materials where microbiological purity is important, then appropriately treated organics should be used;
- ii. Where land use may be sensitive to contamination from materials that exist in urban refuse, then organics that have been separated at source are preferred; and
- iii. Organics should not be applied if the likely contamination in the organics could cause the land to be contaminated.

Not all composts are suitable for all applications. There is, however, a widespread need for lower quality composts and soil improvers (that still meet certain minimum criteria) in various applications. Some examples include landscaping and soil stabilisation associated with large-scale construction projects and road verges, rehabilitation of land disturbed by mining and other activities, rehabilitation of degraded or contaminated land, and as a component of the final cover for landfills, mineral tailings and long-term mine overburden stockpiles.

It is the Board's expectation that compost manufacturers will provide sufficient information and guidance to consumers about the appropriateness of their product for the proposed application, including advice on application methods and application rates.

In order to assist consumers with determining the quality of compost, the Board supports the regular review of the Australian Standard for composts and for product labelling and other industry-driven quality assurance initiatives that are intended to give consumers confidence that the products supplied are 'fit for purpose'.

5 Recycled Organics Where There is a need for High Level Contaminant Control

In order for recycled organics to be of most benefit for soil improvement, they should first be put through a process to create compost. A carefully managed composting process will reduce or eliminate harmful micro-organisms resulting in an organic product suitable for use where high level contaminant control is important. In this process, an organic product undergoes a controlled aerobic (high in oxygen) and thermophilic (high temperature) biological transformation to achieve pasteurisation and a specified level of maturity.

Organic waste that has undergone a proper composting process and meets Australian Standard AS 4454 (2003) for composts, soil conditioners and mulches, should be free from plant and human pathogens due to the pasteurisation process. As a result, the use of biosolids and animal manures as a feedstock to the composting process can be acceptable in appropriate circumstances. The Board considers that organic matter being applied to residential gardens, root crops and leaf crops intended for direct human consumption should be pasteurised by an approved composting process. Raw manures and untreated liquid organic wastes should not be used in these applications.

6 Avoiding Contamination in Recycled Organics

An important source of organics for recycling is municipal (household) solid waste. Municipal solid waste carries some possibility of contamination from miscellaneous materials that may be disposed with that waste. The Board embraces the notion that organic matter that has been separated at source from other municipal solid waste is preferred where the compost will be applied for higher uses such as food production. When separated at source, garden organics are segregated from physical and chemical contaminants in the waste stream, resulting in compost that is more suitable for unrestricted use.

Compost produced from source-separated waste and appropriate single waste sources has a greater chance of meeting the requirements of relevant standards than compost created from mixed waste such as municipal solid waste, and therefore the market for this product is broader. None-the-less, the Board believes that compost produced from municipal solid waste has merit for use in important applications.

Other countries with similar climatic and soil conditions to Western Australia, including Italy and Spain, have demonstrated government support for composting organics and applying the composted material to land, with a focus on source-separation to maximise the quality of the end product.

The Board recognises that an organics source-separation system will be assisted by well planned, ongoing community education programs.