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Quick guide: to selecting technology for use on-site to improve food waste management

How do you choose?

Businesses are demanding practical options for improve food waste management, but when you want to look at different technologies that could meet your needs, where do you start?

There are a range of technologies that can be used on-site to manage food waste. Such technologies may offer operational efficiencies, improve workplace conditions by increasing safety or reducing odours and flies, and reduce greenhouse emissions by diverting food wastes from landfill – but only if you choose the right technology for your situation.

This information sheet provides a short checklist of considerations that you can use to compare different technologies and models to make sure you get the performance you expect, and the value for money you need.

What information do I need to start

Before going on, you will need the following information about the food waste your business produces:

- How much food waste do you produce each week?
- What type of food waste do you produce?
- What quality outcome or specifications do you need to achieve from on-site management?

The following worksheet is available on-line to help you answer these questions:
 ROU (2009) **Quick guide to improving food waste management: Estimating food waste volume**. Recycled Organics Unit, Internet publication
www.recycledorganics.com/reducefoodwaste.htm

Short listing the options that can work for you

The following criteria can be considered to quickly short list the technologies that can possibly work for your business, and to exclude the technologies that will not work for you.

If you cannot say “yes” to every question in this section, cross the technology off your list.

Selection criteria	can it work for your business
Can the technology reliably process the full range of food wastes produced? (is there evidence of this from existing installations of the technology)	Yes / No
Capacity – is there a model that suits your needs?	Yes / No
Will it fit into the space you have available?	Yes / No

Choosing the best technology for your situation

The following criteria can be considered to compare how well each of your short listed technologies can meet the needs of your business, and to select the most suitable technologies for use. Work through these for each technology so you can directly compare.

You can use the list below to work out which criteria are essential, optional or irrelevant to your priorities. Then develop a standard list of email questions to send to each supplier of the different technologies I which you are interested. Refine the detail of criteria to make it directly relevant to your business, and add additional questions as needed.

#	Selection criteria
1.	<p>Processing capacity</p> <p>a) What is the maximum food waste processing capacity per week of the unit?</p> <p>NOTE</p> <ul style="list-style-type: none"> You need to specify the minimum output quality or specification you require the process to achieve when comparing the processing capacity of different technologies. More material can usually be put through a process, but this will decrease the processing duration and at some point the output quality becomes unacceptable. Specify the type of food waste materials you produce, and ask the supplier the maximum food waste processing capacity, and what quantity of any other materials is additionally required to enable processing of the food waste. Daily processing capacity can sometimes assume a 5 day operational week, for composting and vermiculture technologies request weekly processing capacity.
2.	<p>Environmental performance and safety</p> <p>b) What is the greenhouse budget for the unit per specified quantity of food waste processed (eg. per 1000 kg of food waste processed)?</p> <p>c) How does the technology avoid generation of obnoxious odours?</p> <p>d) How does the technology avoid attraction of pests / flies / vermin?</p> <p>e) What effluents or leachate does the technology produce, how are these contained or managed?</p> <p>f) What are the engineered safety features of the technology?</p> <p>g) Can the unit be left unattended without risk?</p> <p>h) What safety procedures are required to safely operate the technology?</p>
3.	<p>Value: maintenance and durability</p> <p>i) What components wear out, and what is the operational design life?</p> <p>j) What is the maintenance frequency and costs?</p> <p>k) Who can service the unit, is there local or on-site servicing available</p> <p>l) Are components that require servicing / maintenance on the outside of the unit, where they can be accessed for repair/maintenance without requiring unit to be emptied?</p> <p>m) Is there risk of contaminants in the food waste (eg. cutlery, glass, crockery) damaging and part of the technology?</p>
4.	<p>Value: operating efficiency</p> <p>n) What material preparation is required before loading food wastes into the unit?</p> <p>o) What training is required to operate?</p> <p>p) How is the unit commissioned / decommissioned?</p> <p>q) To what extent is operation of the unit manual or automated?</p> <p>r) Does the technology require attendance by staff whilst operating?</p> <p>s) Can the unit run over the weekend unattended?</p> <p>t) Is the unit fully enclosed, or is material discharged whilst unattended?</p>

	u) What labour is required for preparation / operation / clean up for each operation? v) What consumables does the unit use to operate (eg. electricity, water, chemicals...)? w) What quantity of consumables does the unit use per quantity of food waste processed?
5.	Value: cost of purchase x) What is the purchase price per food waste processing capacity (eg 1000 kg per week)? y) Is additional equipment required to enable efficient operation (eg. for loading, discharge, or material preparation required before loading food wastes into the unit)?

Where to from here?

Usually the performance expectations are based on claims made in brochures and by sales representatives. The objective is performance, we don't really want to buy a machine, we want the performance that the machine promises.

To confirm that the technology actually performs as promised, our options are:

- To visit a site where the technology has been installed and is operational
- To talk to people who use the technology for processing similar food waste materials
- To arrange a sample of food waste from your own company for the supplier to process through one of their own demonstration units.

This won't be necessary in all instances, but where you are spending significant amount of money, you want to make sure you are getting what you pay for.

References

ROU (2002) *Best Practice Guideline to Managing On-Site Vermiculture Technologies*. Recycled Organics Unit, Internet publication www.recycledorganics.com

ROU (2005) *Information Sheet No. 5 How much compostable material is produced?* Recycled Organics Unit, Internet publication www.recycledorganics.com/reducefoodwaste.htm

ROU (2007) 3rd Edn.. *On-site Composting Technology Options and Process Control Strategies*. Recycled Organics Unit, Internet publication www.recycledorganics.com

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