Eco-Smart
Food Waste Dryer

The Hygienic, Sustainable and Logical Way To Reduce Food Waste Disposal Costs

www.foodwastedryer.co.uk
The Most Hygienic, Sustainable and Logical Way to Deliver 80% Reduction in Food Waste Disposal Costs

Today, it is no longer acceptable to dispose of food waste at landfill or by flushing it down the drains. Legislation in Scotland, Northern Ireland and Wales already bans this* with England sure to follow suit before long.

Collecting food waste in bins and compactors is messy, costly and smelly, with risks of vermin and hygiene control.

On-site composting is only for the eco-enthusiast or those with grounds and staff to manage the lengthy and smelly process.

Grey water pumped systems involve expensive pipe infrastructure and costly tank emptying while still putting particle waste into drains.

The only hygienic and sustainable solution is to dry food waste. The Eco-Smart dries raw food waste overnight, eliminating pathogens, unpleasant rotting odours, smelly compactors and bin washing and reducing volumes and costs by 80%.

It is the future of food waste disposal and you can benefit from it today.

The Problems of Traditional Food Waste Disposal Methods

Waste Disposal Units
Putting food waste down the drain is already illegal in Scotland, Northern Ireland and Wales. And no wonder. Drains get blocked and must be cleared. Fat traps have to be installed and emptied – a particularly nasty job. Drains must be dosed with enzymes to reduce grease build up. Large supplies of water are required to flush macerated waste through the units and the drains. Huge costs are imposed on water companies to manage the additional strain on the network.

Compactors and Bins
Food waste is messy and smelly. Rotting waste in compactors poses a major hygiene problem with the attraction of vermin and flies. Environmental Health Officers need to be satisfied and pest control measures put in place. Food waste corrodes compactors and increases maintenance costs. Bins needs to be washed frequently. All this requires extra money on top of the cost of transporting the 80% of food waste which is water. Have you worked out how much you are paying for this in your organisation?

Grey Water Systems
You will need to install an expensive holding tank outside and pipework to pump the macerated food waste. You will reduce the food waste disposed of but since you will need a specialist vehicle to collect the slurry, the cost saving is nullified. Food waste still goes down the drain, albeit in particle form. And the tanks needs regular flushing out which costs money in water and time.

Composting
It is a long process: six weeks normally, although some claim less. Wood chips need to be added daily and you will need an outside location and a strong constitution for the smell. It is a natural process but unless you have grounds to spread the product it is only for the eco-enthusiast or the gardner.
Eco-Smart ES-300, St. John's Hospital, Livingston
How the Eco-Smart Food Waste Dryer Solves These Problems

No More Food Waste Down The Drain
Food waste, dried overnight doesn’t go near the drain system. No more fat traps. No blocked drains. No enzyme dosing. No more high water bills to flush food waste away.

No Tank and Pipework Infrastructure
The Eco-Smart is a portable, stand-alone unit. All you’ll need is a power socket and a drain outlet for the clean, evaporated condensed, particle-free water extracted from the food waste. That’s it.

Say Goodbye to Compactors (and Most of Your Bins)
The stench and ‘yuk’ of food waste rotting away in your compactor will be a thing of the past. And the bills to keep the compactor in one piece. And 80% of your disposal costs since you’ll only have 20% of it left once it is dried overnight.

No More Nasty Smells and Vermin
Dried food waste residue is practically odourless and is sterile, having been heated to over 85° for many hours. Dried residue can be safely stored for weeks before disposal if required.

Overnight Food Waste Reduction
Why wait six weeks for your compost to mature when overnight, you can reduce it by 80% and turn it into a soil amendment which can be taken to a commercial composting or anaerobic digestion facility by a food waste collector.
How The Eco-Smart Food Waste Dryer Works

Nothing could be simpler. Think of a sophisticated tumble dryer. Turning the food waste in hot air. Extracting the 80% water content. Leaving a sterile, dry residue, 20% of its former weight.

Load The Raw Food Waste

You can load any food waste you like. Well almost any - avoid large knuckle bones of meat as these may jam the mechanism. But apart from that put it all in. Remember though: it is a food waste dryer so leave out plastic bottles, cling film, cutlery, bags, glass and packaging.

Turn It On

Once you have reached the full mark inside, shut the lid and press the start button. That’s it. The rest is automatic. Hot air around 85° is blown into the sealed chamber and moisture detectors will turn off the machine by itself once the food waste is dry. The water is evaporated and condensed so only sterilised water extracted from the food waste goes into the drain.

Empty It

After typically 12 to 18 hours, raw food waste is reduced to sterile, dry powder much like instant coffee granules, roughly 20% of its former weight. The time taken depends on the exact make-up of the waste. Liquids and starch lengthen the cycle time. Underfilling will shorten it. Place the tub supplied under the discharge door, open it and press the ‘discharge’ button. It takes 10 to 15 minutes to empty. You can store the practically odourless residue for weeks as it is sterile. But most users put it in food waste wheelie bins for removal to a composting or anaerobic digestion facility.
What Happens To The Dried Food Waste?

Most users have the dried residue collected by a normal food waste collector in 120L or 240L wheelie bins. There are then five typical destinations.

**Commercial Composting Facility**
- The most popular and favoured option. Dried food residue contains all the mineral ingredients like nitrogen and potash although the bacteria and pathogens have been removed. At the composting facility, it is mixed with raw food waste and green waste to make commercially saleable compost.

**Anaerobic Digestion Plant (AD)**
- AD plants take dry and wet organic waste and add water and organic polymers to get the optimum mix for the decomposition to produce biogas, a renewable fuel and fertilizer.

**Incineration Facility or Waste to Energy Plant**
- Depending on where you are in the UK, food waste could be incinerated. Older incineration plants are giving way to purpose-built Waste to Energy plants which generate electricity for sale to the grid.

**Soil Amendment**
- Dried food waste residue can be spread on your own grounds and mixed with other soils or compost, depending upon local regulations. The mineral content of the food waste will enhance the soil. The term ‘soil amendment’ is an official description of any additive which is designed to improve the quality of soil.

**Landfill**
- Sadly, most food waste in England is still landfilled but the proportion is declining. Landfill of all waste has been illegal in Scotland since 2014. The rest of the UK is catching up. If you want your dried food waste residue to go to a sustainable destination, speak to your food waste collector and ask to see the audit trail. In this day and age, there is no need to landfill food waste, whether dried or not and you should engage with a food waste collector who will ensure this does not happen.
The Eco-Smart Models

The right machine, or machines for your organisation depend principally on the weight of raw waste generated and the operating hours of your kitchens.

How Much Food Waste Do You Produce?
If you collect food waste in bins count the number of bins. A typical 240L wheelee bin holds 100kg to 120kg. You won’t have weight figures if you use a waste disposal unit, so you will need to weigh it for a period of time before it is disposed of and extrapolate the results. Hospitals typically generate between 200kg and 300kg per bed, per annum.

What Type of Food Waste Do You Generate?
The Eco-Smart works best on a mix of different types of food waste. Starchy waste such as bread, rice, potatoes and pasta should be kept to 30% maximum ideally. Speak to us about your food waste profile if you think it is unusual and we can advise.

Daily Batches, Dried Overnight
The Eco-Smart is a batch-drying unit. Only put it on when full or when you are ready to run an overnight cycle and leave it until the cycle has ended automatically.

Kitchen Operating Hours vs. Weight of Food Waste
Most users choose a unit which will handle the daily weight in around 12 to 16 hours. Look at the tables underneath each machine (right) to work out which machine will handle your daily total and the time taken. Sometimes customers want to split their volume across two machines, particularly if kitchen opening hours are long and a machine must be available to load.

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<tr>
<th>Model</th>
<th>Capacity</th>
<th>Typical Cycle Time*</th>
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</thead>
<tbody>
<tr>
<td>ES1000</td>
<td>335 – 1000kg</td>
<td>335kg: 10-14h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>670kg: 16-20h</td>
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<tr>
<td></td>
<td></td>
<td>1000kg: 20-24h</td>
</tr>
<tr>
<td></td>
<td>Dimensions D x W x H mm</td>
<td>1600 x 2000 x 1750mm</td>
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<tr>
<td></td>
<td>Power Required</td>
<td>3 phase, 415V, 63A</td>
</tr>
<tr>
<td></td>
<td>Power consumption</td>
<td>16.25 kW/hour</td>
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<td></td>
<td>Weight</td>
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<tr>
<th>Model</th>
<th>Capacity</th>
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<tbody>
<tr>
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<td>180-500kg</td>
<td>180kg: 10-14h</td>
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<tr>
<td></td>
<td></td>
<td>350kg: 16-20h</td>
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<td></td>
<td></td>
<td>500kg: 20-24h</td>
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<td></td>
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<td>Power Required</td>
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<td></td>
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<td></td>
<td>Weight</td>
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*Cycle times are not guaranteed and can vary by as much as 30% or more depending on the profile of waste and the fill level. High proportions of liquids and starchy food in excess of 30% of the total can increase times significantly.
<table>
<thead>
<tr>
<th>Model</th>
<th>ES300</th>
<th>Model</th>
<th>ES150</th>
<th>Model</th>
<th>ES80</th>
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<tbody>
<tr>
<td>Capacity</td>
<td>100-300kg</td>
<td>Capacity</td>
<td>50-150kg</td>
<td>Capacity</td>
<td>25-80kg</td>
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<tr>
<td>Typical Cycle Time*</td>
<td>100kg: 10-14h 200kg: 16-20h 300kg: 20-24h</td>
<td>Typical Cycle Time*</td>
<td>50kg: 8-12h 100kg: 12-16h 150kg: 18-22h</td>
<td>Typical Cycle Time*</td>
<td>25kg: 8-9h 50kg: 12-14h 80kg: 18-20h</td>
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<tr>
<td>Dimensions D x W x H mm</td>
<td>1003 x 1303 x 1305mm</td>
<td>Dimensions D x W x H mm</td>
<td>852 x 1102 x 1220mm</td>
<td>Dimensions D x W x H mm</td>
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<td>Power Required</td>
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<td>3 phase, 415V, 32A</td>
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<td>Weight</td>
<td>390kg</td>
<td>Weight</td>
<td>290kg</td>
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Installation, Support and Maintenance

Bergmann Direct are the exclusive distributor for the Eco-Smart Food Waste Dryer in the UK and the Republic of Ireland and are on hand to provide back-up and support from the moment you are considering the Eco-Smart right through to the installation, training and ongoing maintenance.

Installation and Training
We can advise you on the right model for your organisation, where to site it and the power supply you’ll need. Usually, that’s in or near the kitchen or a covered protected area. We will deliver, install, commission and train your staff, including providing details on routine maintenance.

Planned Maintenance
Like all mechanical equipment, it needs to be maintained properly to maximize its efficiency potential and lifespan. Typically, this is a twice yearly visit as part of an annual, three-year or five-year contract. The unit comes with a standard 12 months’ parts and labour warranty which can be extended.

Breakdown Support
In the unlikely event of a breakdown. We are on hand to provide support wherever you are in the UK including Northern Ireland and the Republic of Ireland. Our engineers are manufacturer-trained and we hold stock of parts at our premises in Lincoln so can deal with issues quickly, usually within 24 hours.
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The Eco-Smart Food Waste Dryer is supplied and maintained in the UK and Ireland by Bergmann Direct Ltd.

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