



# Know Your Waste

## ORGANIC WASTE

### What is Organic Waste?

Organic waste consists of any biodegradable matter from plants or animals. In our homes, this generally includes kitchen scraps (e.g. fruit and vegetable peels, coffee grounds, eggshells), spoiled food (e.g. leftovers, food past use-by date, stale bread, mouldy vegetables), and garden waste (e.g. branches, grass, and leaves).



# Why is Organic Waste an Issue?

When disposed of in landfills, organic waste decomposes and releases methane, a powerful greenhouse gas that warms the earth 82.5 times more than CO<sub>2</sub> ([GAIA, 2022](#)). Reducing methane emissions is an important part of slowing the rate of global warming.

The eThekweni Municipality is quickly running out of landfill space, with organic waste making up approximately 52% of the total capacity (Moodley et al, 2022). This not only strains limited landfill space but also leads to significant financial costs.

## Solutions for Organic Waste

There are two main biological processes used to treat organic waste: aerobic (with oxygen) and anaerobic (without oxygen). At a household level, composting is an effective way to tackle climate action, taking a significant step towards climate resilience. Benefits of composting include reduced methane emissions, rejuvenated soils, and improved water retention.

### Aerobic

Aerobic composting utilises oxygen and microorganisms to break down organics.

**Compost Bins:** A simple and effective way to compost organic waste at home with various options available, including open structures, traditional bins, tyres, pots, or rotating drums.

**Vermi-composting:** This method uses earthworms to assist in the decomposing process, and produces a rich organic soil amendment and a liquid called 'worm tea'.

**Windrows:** A great option for composting large quantities of organic waste if you have the space to do so.

## Anaerobic

Anaerobic processes break down organics in the absence of air.

**Bokashi:** A method that uses a sealed bucket with a tap, and a bran inoculum mixture to create an 8-week pre-composting process.

**Biogas:** This method creates a sustainable source of energy as well as a nutrient-rich byproduct that can be used in your garden.

## Tips for Success

Composting is relatively easy, but a little technical know-how makes it even easier. Don't worry, you'll learn as you go! Here are some handy tips to help you create quality compost:

### Microbiome Magic

Composting is all about the tiny micro-organisms (microbes) - bacteria, fungi, and yeast - that break down organic waste. Boost your microbes by adding cow dung, rotten veggies and fruit and topsoil from under a tree. Use matured compost to kick-start a new heap, or buy/make inoculums (microbe colonies) for a head start!

### Moisture – Not Too Wet, Not Too Dry

Aim for 50% moisture. Too wet, and your compost won't get enough oxygen and could even have a foul smell; too dry, and the microbes become inactive! Control moisture by mixing in dry materials like leaves, sawdust, or wood chips, or adding water.

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## **Breathe Easy – Oxygen Is Key**

Aerobic composting needs oxygen! Turn your compost weekly, or use a forced or passive aeration system for larger heaps. Adding wood chips or dry leaves helps air circulate, providing the oxygen your compost needs. A bad smell can also be caused by too much compression and adding more oxygen can help reduce this.

## **Carbon and Nitrogen – The Right Balance**

The right carbon/nitrogen (C:N) ratio fuels microbes to break down organic waste. It's helpful to experiment with this ratio to find out what works best for your compost, depending on what you add (or feed) your compost. Start with a 1:1 ratio, then add more carbon if needed. Nitrogen-rich materials include cooked food, meat leftovers, and fresh grass clippings, while carbon-rich materials include dry leaves, wood chips, paper, straw and twigs. If your compost emits an ammonia smell, you could have too much nitrogen, so try adding carbon-rich materials.

## **Temperature – Keep It Just Right**

Composting happens in two temperature phases: mesophilic (20°C to 45°C) which is the more common range for household composting, and thermophilic (40°C to 70°C). The higher the temperature, the faster the rate of decomposition. If the temperature rises too much, this can kill all the beneficial microbes, so spread your compost heap to allow more aeration and cooling. If the temperature is too low, your compost heap is either too small, too dry, or isn't getting enough air. Try increasing the size, sprinkling some water, or turning your compost regularly.

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## Oh rats!

Fresh food and meat discards can attract unwanted pests and rodents. To stop this, cover the fresher discards with semi-composted materials. Use natural pest repellents (neem oil, lemongrass oil, camphor oil) outside or around the compost. Turmeric powder can also assist in pest control.

## How Long Will it Take?

The time it takes for compost to decompose depends on your method and the size of your heap. Time cycles typically range from between three to six months.

Information sourced from GAIA, Back to Earth: Composting for Various Contexts (2020). Visit [www.no-burn.org](http://www.no-burn.org) for more insights.