

Composting

A Household Guide

(3rd Edition)



STOPFoodWaste.ie

STOP FoodWaste.ie

Before we begin...

The Stop Food Waste Programme has 2 main aims...

1. Prevention of food waste



2. Promotion of home composting



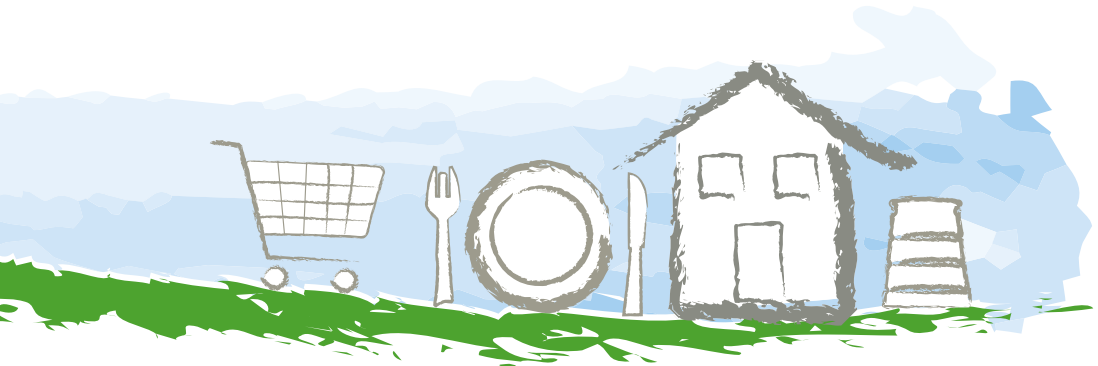
You may ask how these two are linked? Well, it has been shown that people who compost, or have done in the past, tend to generate less food waste in the first place. This is because composting at home makes you more aware of the food you are throwing out.

Not convinced? Give this a try.

If you don't compost your food scraps, or don't have a brown bin, try putting all your food waste into a separate bin for a week – just to see how much you throw out. At the end of the week you may be quite shocked.

IF YOU THINK ABOUT THIS FOOD WASTE IN TERMS OF MONEY, THEN IT IS EASY TO SEE HOW HOUSEHOLDS CAN MAKE SAVINGS OF OVER €700 A YEAR THROUGH PREVENTING THIS FOOD WASTE.





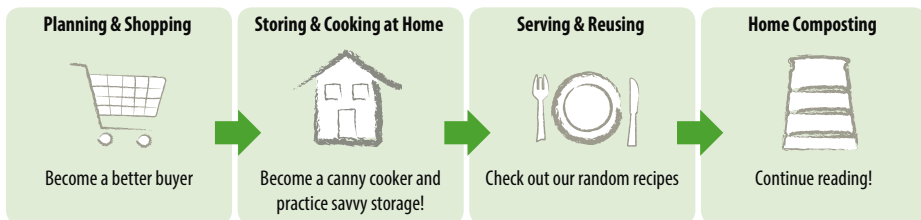
So how can we prevent this food waste?

The first thing to do is consider the different stages of the 'Food Cycle'. The Food Cycle (shown below), outlines the different stages in getting food from the point of purchase to your plate and then managing waste that has been generated along the way.

Stopping food waste starts before you even go to the shops with good planning.

It then continues as you make your way through the shopping battleground and bring your food home where you store and cook it. At each of these stages food waste can be avoided.

The StopFoodWaste.ie website provides advice and tips on how to best manage your food through each of these different stages.



Bin it or bank it... your choice!

In recent years Ireland has made significant progress in tackling food waste with farmers, food producers, supermarkets and restaurants all playing their part. By preventing food waste at home, you will be joining others in the 'field to fork' effort to reduce food waste. This will save you money and also help your local environment.

Visit www.stopfoodwaste.ie for more on these topics and information on dedicated topics (e.g. tips for parents), on training courses and support, information leaflets and a whole lot more. Hope you enjoy this home composting booklet and good luck with the cooking!



Contents

Why compost? 6

The biology of composting and how it works 8

What can be composted? 10

Composting essentials 12-17

Which system is best for me? 18

- HOLDING SYSTEMS AND COMPOST BINS 20

- TURNING SYSTEMS 21

- LEAF MOULD 22

- GRASSCYCLING 23

- MULCHING 24

- BOKASHI 25

- FOOD WASTE TUMBLERS 26

- FOOD DIGESTION CONES 27

- FOOD BURIAL AND TRENCHING 28

- WORMERIES 29

Using your compost 30

Composting and brown bins 31

Frequently asked questions 32

The Stop Food Waste Challenge 34



Welcome to the world of composting.

So what is it all about?

Composting is a natural process of decomposition that turns garden materials and vegetable food scraps into a dark, crumbly and earthy smelling material called compost.

Compost is rich in nutrients and full of life and when used in your garden and on your plants, feeds the ecosystem of the soil and slowly releases nutrients that plants can absorb. Using compost is the foundation of maintaining healthy soil for stimulating all plant growth and creating a beautiful garden.

And even if you don't have a garden, you can still compost. You might have access to a communal green area where your compost can be used or, with some of the new systems now available for city dwellers, you can make your own and use it for your indoor plants.

This booklet provides an introduction to composting and how to do it yourself. It goes through all the different aspects of how composting works including the biology that makes it all happen, the essential conditions that make it work properly and the materials you can and should not add to your composter. Also, the many different compost systems that are used in Irish homes today are outlined along with information on how they work best and the materials (and volumes) they can compost.

For more information on any and all of these aspects of composting visit the composting section of **StopFoodWaste.ie**



Why compost...

So you can reap the rewards!



SAVE MONEY

On average, food and garden wastes make up over 1/3 of the contents of your rubbish bin. Wasting food and waste disposal is expensive so by preventing food waste, and composting what you can, you will save money on your bills.



PREVENT WASTE AND CONSERVE RESOURCES

By composting at home, you reduce the need to collect, process, treat and/or dispose of biodegradable materials. This saves landfill space and the fuel needed to move things around.

COMPOSTING AT HOME IS THE MOST ENVIRONMENTALLY FRIENDLY WAY TO MANAGE BIODEGRADABLE MATERIALS AND PUTS THEM TO PRODUCTIVE USE.



PROTECT BIODIVERSITY

Peatlands are home to many wonderful species of flora and fauna. Most potting compost that you buy contains moss peat from Ireland's bogs and peatlands. Using your own compost reduces the need for these products and helps protect biodiversity.

BUILD HEALTHY SOIL



PRESERVE OUR ENVIRONMENT

When food and garden materials end up in our landfills, they rot underground and produce foul liquids, odours and methane (a greenhouse gas 21 times more potent than carbon dioxide).

Composting at home keeps these organic materials out of landfill and helps tackle climate change.

Compost is magical stuff – especially if you have made it at home yourself. It is full of nutrients and life. It improves the soil's fertility, texture, structure and moisture & nutrient-holding capacity. And remember, healthy soils grow healthy, disease resistant plants.

The biology of composting and how it works

Composting is a biological process that requires food (organic materials), water and air. Composting involves a wide variety of organisms which are naturally present in our environment.

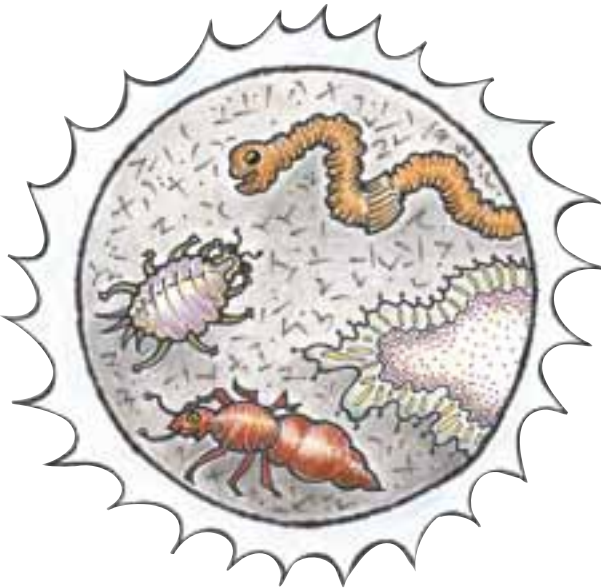
Here is what happens...

In the beginning of the composting process, soil bacteria are the first to start breaking down plant tissue- they are the most numerous and effective decomposers.



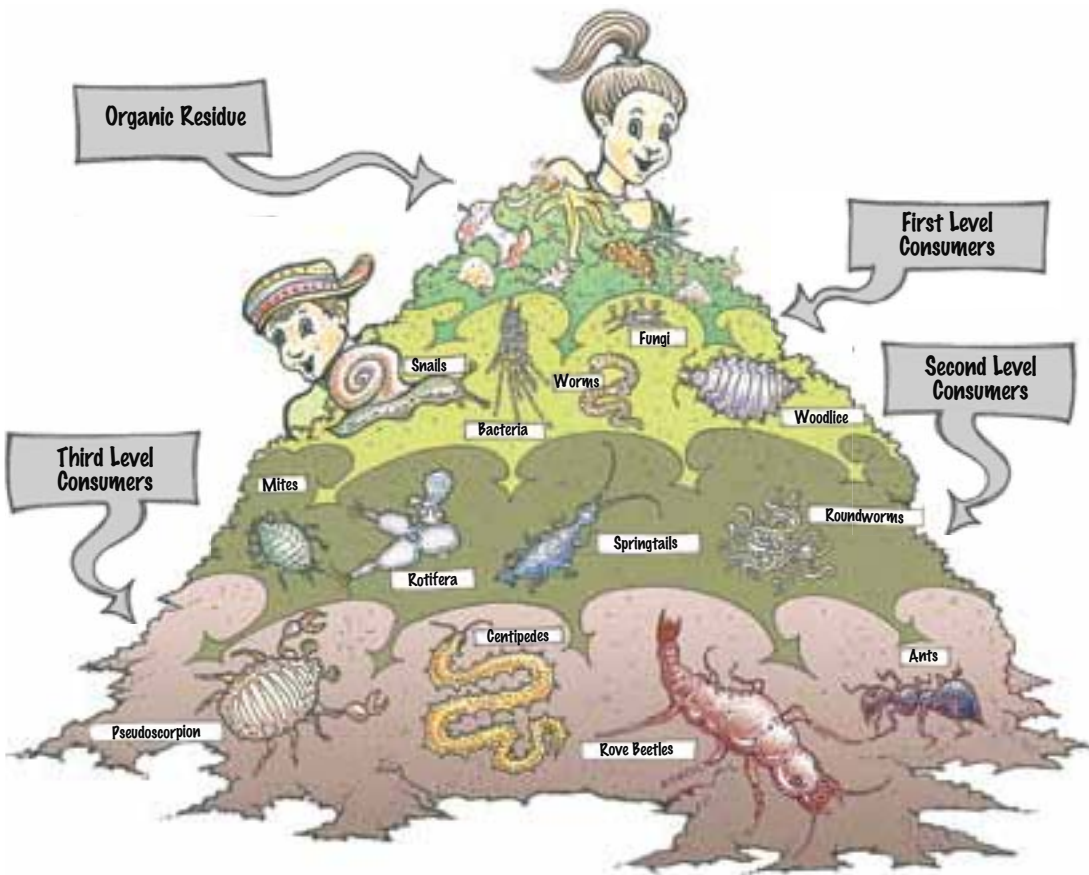
Later on in the composting process other organisms, including protozoa, fungi, moulds, worms, snails and other insects, also take part. No one organism or group of organisms are responsible for composting.

It is a succession of creatures that makes it all happen. It's a web of life similar to the ecosystem in the soil.



Food Web of the compost pile

Energy flows in the direction of arrows



The compost pile is really a teeming microbial farm.

What can be composted?

The do's and donts of the composting pile

Essentially anything that was once living can be composted. However, to avoid generating odours and attracting pests such as rodents and flies, it's best to limit most composting systems to plant based materials - a vegetarian diet for your composter!

If you have some meat sauce from plate scrapings or dressing on a left over salad, don't worry about it - very small amounts won't cause a problem.

DO COMPOST...

Greens from the garden:

Grass cuttings, garden plants, weeds, potted plants, cut flowers, house plants.

Greens from the house:

Plate scrapings, cooked and uncooked vegetables and trimmings, fruit peels, cores and rinds, tea bags, coffee grounds and filters, baked goods including bread (in small quantities only) rice and other grains, pasta and cereals.

Browns from the garden:

Leaves, twigs, hedge prunings, shredded tree trimmings, straw or hay, pine needles, cones, bark.

Browns from the house:

Newspaper, paper towels, paper napkins, uncoated paper plates and cups, cardboard (clean or soiled) - must be torn up to be used effectively

Remember: always balance **green** materials with **brown** materials



DON'T COMPOST...

From the Garden:

- Diseased plants, leaves or insect infested plants.
- Weeds that spread by root or runner such as ivy, briars, bindweed, or any that have gone to seed (e.g. dandelion, buttercup, dock, thistle).
- Timber or large woody materials.

From the House

- Anything animal based like meat, fish, poultry, dairy (including cheese), oils or grease. This includes bones and shells.
- Vacuum cleaner bags & contents
- BBQ & coal ashes
- Nappies or sanitary towels
- Dog & cat waste
- Chemicals & pharmaceuticals

There are secure systems that if managed properly can process animal based food waste without problems – these are outlined on pages 25-27.

Many compost heaps do not get hot enough to kill off diseased or contaminated garden materials so it is best to keep these out of your compost.

For more information check out our **Frequently Asked Questions** on pages 32 and 33 or visit www.stopfoodwaste.ie

Remember: When in doubt, leave it out!

Composting essentials

The ingredients for good composting!

Composting is a process that involves many different organisms and, like all life forms, these organisms need air and water to survive and thrive. The five essential conditions for successful composting are:

GREEN & BROWN MATERIALS



MOISTURE



PARTICLE SIZE & SURFACE AREA



5

Essentials of Composting

TYPE OF COMPOSTER



AERATION



1. Green and Brown Materials – The Balancing Act!


While there are 5 composting essentials, this one is the most important to get right. Composting organisms thrive on a balanced diet of nitrogen-rich **green** and high-carbon **brown** materials. The **greens** provide protein needed for growth and reproduction while the **browns** supply energy. Fresh green grass clippings are high in nitrogen; dead brown leaves are high in carbon. Separately, these materials may not compost well: grass cuttings tend to compress, turn goopy and smell bad; while leaves by themselves break down very slowly. Mixing them together though is a perfect composting mix. Just like baking a cake, it is important to always balance **green** wet materials with drier **brown** materials. Try half and half to start with and see how it goes for you.

For example, if you want to compost food scraps (which are a **green** material), you will need to balance them with a dry (**brown**) carbon source like autumn leaves, shredded cardboard or paper, straw, saw dust or wood shavings.

Composting food on its own or with grass cuttings (another **green** material) will not work very well and can lead to your compost turning slimy and smelly. If this does happen, add and mix some **brown** materials to balance things out.

The following are the main **green** and **brown** materials that will be discussed throughout this booklet. Each is represented by an icon that will allow you to easily identify which of the compost systems discussed in this booklet is best suited to the materials that you want to compost.

Remember that variety is the spice of the compost pile's life! So mix it up and add as much variety as you can.

GREEN MATERIALS	ICON
Grass - can be composted in small quantities but large quantities of grass on its own can cause issues.	
Plant Based Food Waste - vegetable trimmings, cooked or uncooked vegetables, fruit peels, cores and rinds, tea bags, coffee grounds and filters, baked goods including bread (in small quantities only) rice and other grains, pasta & cereals.	
Animal Based Food Waste - anything animal based like meat, fish, poultry, dairy (including cheese), oils or grease. This includes bones and shells.	
GREEN/BROWN MATERIALS	
Garden Based - garden plants, weeds, potted plants, cut flowers, house plants (many of these are a combination of green and brown and can compost on their own).	
BROWN MATERIALS	
Brown Leaves - these compost on their own (slowly) but are a great resource to have for mixing with green materials	
Home Based - egg boxes, toilet roll cores, used kitchen towel, cardboard boxes, etc. These need to be torn up or shredded to be used effectively.	
Garden Based - leaves, twigs, hedge prunings, shredded tree trimmings, straw or hay, pine needles, cones, bark, saw dust or wood shavings. For these materials to compost well they really need to be shredded or chopped up.	

Blending materials for composting

Very Brown

Brown

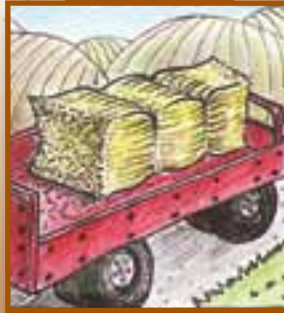
Well



Too Brown = Composts Slowly
 These materials will compost, but only slowly.
 To speed up, mix with **GREEN** Materials.



Straw/Hay



Hedge/Bush Trimmings



Paper/Wood Chips/Saw Dust



Autumn Leaves



Well



Very Dry

Dry

Well B

MOISTURE

The most common problems that arise with home composting in Ireland relate to too many **green** materials, such as grass cuttings and food waste, in the compost pile or bin. These materials are too high in moisture and nitrogen to compost properly and on their own can become a gooey, smelly mess. That's why it is so important to mix in other materials to balance the **green** and **brown** materials in your compost. **Remember, variety is the spice of your compost pile's life!**

Balanced	Green	Very Green
<p>Well Balanced = Very Healthy Compost This is the composting sweet spot. These materials will compost well on their own.</p> <p>Old Plants</p>  <p>Seeds</p> 	<p>Too Green = Sick Compost These materials DO NOT compost well on their own. They need to be mixed with BROWN materials</p> <p>Food Scraps</p>  <p>Grass Cuttings</p> 	<p>Very Green</p>  <p>Animal Manures</p> 
Balanced	Wet	Very Wet

Composting essentials

The ingredients for good composting!

2. Particle Size and Surface Area

When it comes to composting, the smaller the particle, the faster it will break down. This is because composting works from the surface of materials inwards.



So to speed up composting:

- Chop woody materials up with a sharp spade or shears.
- As you garden, use your pruning shears to cut materials into pieces no longer than 10-20 cm.
- Run over leaves or weeds with a lawn mower, or
- Put woody trimmings through a shredder.

Chopping materials up helps make a better mix when forming your compost heap. Keeping materials smaller also makes it easier to turn the heap later on for faster composting. Ideally you want a mix of fine and coarse materials in your heap, for example small green grass clippings with chopped up brown hedge trimmings.

3. Moisture

All life needs moisture to survive and composting is no different. Too little moisture and the composting organisms die off or go dormant. Too much moisture and the heap can drown and turn slimy. Anaerobic bacteria, which thrive in the absence of air, can then take over and create a bad smell. Ideally the materials should be moist to help the decomposition which starts on the surface of the materials.



Maintaining the proper moisture level is easy:

- Keep your composter in a shady spot so it will not dry out.
- If your compost heap dries out, spray it with water.
- Always cover compost heaps with plastic, old carpet or some plywood to keep the heap from getting too wet from all the rain.
- At the start, if the weather is dry and hot, give the **brown** materials a good spray with water before mixing them into your compost heap.
- Remember, your compost heap should be moist (like a wrung out sponge) but not soaking wet.

ADDITIVES. While compost additives (activators, accelerators, starters, etc.) are often recommended for home composting, they are not essential ingredients. Provided there are sufficient quantities of **green** materials, combined properly with **brown** materials, - then these

4. Aeration

As the material in your composter breaks down, oxygen is used up. Without enough air the composting process will slow down and can become smelly.

Turning or mixing your compost regularly, fluffs up and aerates the materials which allows the organisms making your compost to thrive. Turning once a week during the summer and once or twice month during the winter is plenty. Though not essential, regular turning speeds up the process and improves the quality of finished compost.

Here are a few things to help the aeration process:

- Use a compost tumbler. These are the easiest systems to turn.
- Raise the materials of a compost heap a few inches off the ground by leaving coarse materials at the bottom. This helps air flow and improves drainage.
- For compost bins with a narrow opening on top use a compost spiral or turner.
- Don't add too much material at once – the compost can become compacted which reduces airflow.



5. Type of Composter

There are many different compost systems in use today, but how do you know which one is best for you? The best method is always the one that is most convenient for you and manages the materials you generate. The following pages provide an overview of the main compost systems typically used. They vary from the standard compost bins supplied by local authorities to expensive engineered systems. Of course there are also many home-made systems that work well. So, regardless of your circumstances there's a composter out there for you!



While most of these compost systems produce compost in a relatively slow manner, you can speed the process up by making a Hot Pile. When a large heap of materials (~1m³) is mixed all at once with the optimal conditions for composting – the proper balance of nutrients, air and water – the breakdown of materials is so rapid, that the compost generates heat and can get as hot as 70°C. Heaps of one cubic metre in size or greater also have an ability to hold heat better because they self-insulate. Remember, larger compost heaps require a little more work with turning to introduce air into the middle.

should provide all the activation needed. Compost additives usually contain nitrogen fertiliser, dried enzymes, microbes or other nutrients. These help when starting off or if you want to “kick start” or speed up the process after the winter, but are not essential.

Which system is best for me?

To help you choose the composter that best suits your needs, this table gives an overview of the main things to consider.






There will always be a degree of maintenance and work associated with each of these systems. Most require some initial effort to get started but, once up and running, are relatively easy to manage.

While you can spend money buying a composter it is also possible to make your own at home. Go to the Composting section on www.stopfoodwaste.ie for designs and tips on building your own.

Mostly Garden Materials

Type		What it looks like
HOLDING SYSTEMS & COMPOST BINS	P20	
TURNING SYSTEMS	P21	
LEAF MOULD	P22	
GRASSCYCLING	P23	
MULCHING	P24	

Mainly Food Waste

BOKASHI	P25	
FOOD WASTE TUMBLERS	P26	
FOOD DIGESTION CONES	P27	
FOOD BURIAL/TRENCHING	P28	
WORMERIES	P29	

What it takes	Cost	Quantity of materials	Location & space required	Amount of work to maintain
Mostly garden materials, some food waste	Free to moderate	Limited to size of composter	Small area 1 m ² in garden or yard	A little work to mix and wet materials before placing in composter
Mostly garden materials, some food waste	Moderate to high	Large amount	Large area 3 m ² or more in garden or yard	A lot of work to make large batches and turn materials
Just leaves (they should be wet)	Free to low	Limited to size of composter	Small area 1 m ² in garden or yard	Seasonal work to collect leaves in autumn
Just grass	Free	Any amount	Lawn Any size	Less work than conventional mowing
Leaves, wood chips and shredded trimmings	Free for leaves and chips, high for shredder	Any amount	Garden Any size	Little to a lot depending on need to shred materials

Food waste	Low to moderate	2-3 people per unit	Small area Kitchen, balcony or shed plus outdoor area for burial	Some work to occasionally bury fermented materials
Mostly food waste, some garden materials	High	4-5 people per unit	Small area 1 m ² or more in garden, yard or shed	Some work to add brown materials, turn and empty every 3-4 months
Food waste	Moderate to high	3-4 people per unit	Small area 1 m ² or more in garden	A little work to empty or move cone every 1-2 years
Food waste	Free	Any amount	Moderate area Garden	Some work to dig trenches as required
Food waste	Low to high	2-4 people per unit	Small area 1 m ² balcony, shed or yard	Some work to start, monitor and re-bed system as needed

Which system is best for me?

1. HOLDING SYSTEMS & COMPOST BINS

This is the most common form of composting in Ireland with many local authorities supplying these compost bins at reduced prices. With this form of composting, materials are simply added to the heap, composting area or bin as they are generated. Generally, materials that are added in one season are ready as compost for the next. The speed of composting and the quality of the end product can be improved by chopping and mixing materials as they are being added, monitoring and maintaining the proper moisture levels, operating more than one heap or bin at a time and turning the compost regularly. This type of composting works best if given plenty of air pockets and space for air to flow through so adding twigs, woodchips, straw, and cardboard helps. And always remember: try for a good mix of **greens** and **browns** – these are the essential ingredients.



Suitable Materials:

Soft landscape materials to start with, e.g. grass cuttings, weeds, leaves, old plants, flowers, etc. In holding systems vegetative food scraps can be buried into the composting materials once the compost heap is well established.

Main Advantages:

- Simple, low maintenance system. Better if turned regularly - it will compost faster.
- Ideal for homes with small gardens and for people who do not want to spend a lot of time working on their compost.
- Can also be used to compost turf/sod or leaves on their own.



THIS IS THE SIMPLEST FORM OF COMPOSTING AND IS A SLOW, COOL, NO FUSS WAY OF COMPOSTING.

Please refer to page 13 for more info on green & brown materials

- Grass
- Plant Based Food Waste
- Animal Based Food Waste
- Garden Based (green & brown)
- Brown Leaves
- Home Based
- Garden Based (brown)

2. TURNING SYSTEMS

Turning systems require more space and effort than holding systems, but they can handle more materials and deliver finished compost faster.

Usually a turning system consists of two or three bays made up of planks, pallets, brick, concrete blocks, wire mesh, or any materials that you have to hand. Typically a bay will allow for a compost pile of at least 1m³ – this size maintains high temperatures for quick and effective composting.

To use, fill the first bay with a wetted mixture of **green** and **brown** materials, ensuring that some of the browns are bulky enough to allow plenty of air spaces. After 7-10 days it should be turned into the next bay, mixing the materials thoroughly and adding more water if necessary. Then the pile will heat up again will maintain heat for several more days. Keep piles covered to protect from heavy rain. Repeat process back and forth between bays and you will make high quality compost in a very short space of time.



Suitable Materials:

Soft landscape materials to start with, e.g. grass cuttings, weeds, leaves, straw, sawdust, old plants, flowers etc. Vegetative food scraps can be added into the mix or buried into the materials once the composting has started.

Main Advantages:

- Produces high-quality compost in as little as 8 weeks when done properly.
- High temperatures can kill plant diseases and destroy weed seeds.
- Multi-bin systems are ideal for the avid gardener with lots of space who doesn't mind the work and wants all the compost the system can produce.



PRODUCES HIGH-QUALITY COMPOST IN AS LITTLE AS EIGHT WEEKS WHEN DONE PROPERLY.

Which system is best for me?

3. LEAF MOULD

Making leaf mould is very easy, it just takes leaves, a little moisture and time. It is best to contain your leaves in some way and the most common method is using a ring made of some mesh or wire fencing. Using a stake or 2 to secure it put it in a shaded area so the leaves won't dry out too quickly. The ring can be any size, but 1 metre diameter is reasonable. Then gather as many leaves as you can and tip them into the ring of mesh and you have your leaf mould composting pile!

Alternatively, put the leaves into black rubbish bags, tie loosely, and punch a few holes in the bags to allow air circulation.

The leaves need to be moist for the leaf mould composting process to occur. In an open ring in the garden, the rain will provide plenty of moisture. If the leaves are kept in bags, they need to be moist going in.



Suitable Materials:

Lots and lots of leaves and time!

Main Advantages:

- Leaf mould can be added directly to your garden as a soil amendment or mulch
- It can be used as a mulch material around shrubs and trees
- If you keep the leaf mould next to your compost bin, you will have a ready source of high-carbon **browns** to add to your high-nitrogen **greens** such as grass, veg peelings etc. for balanced composting.
- Leaf mould makes a good bedding material for the worms in a wormery.



LEAVES CAN BE USED TO BALANCE THE GREENS THAT GO INTO YOUR COMPOSTING SYSTEM OR CAN BE COMPOSTED ON THEIR OWN TO PRODUCE LEAF MOULD.



4. GRASSCYCLING

Grasscycling is the natural recycling of grass by leaving grass clippings on the lawn when mowing. Once on the ground, the clippings, which contain 80-85% water, decompose quickly returning valuable nutrients like nitrogen back into the soil.

By cutting no more than 1/3 the length of the grass, the cuttings fall to the ground and break down unseen. During the summer months, you should cut the grass this way once a week and cutting the grass when it is dry helps prevent it clumping on the lawn.

Grass-cycling really reduces the amount of time and effort it takes to cut the lawn. People who manage their lawns this way spend on average 1/3 less time managing their grass. To top it all off, leaving cuttings on the ground like this all season provides the same level of nutrients as one fertiliser application per year.



Suitable Materials:

Any lawn area.

Main Advantages:

- If you have a large lawn, GrassCycling will significantly reduce the amount of materials you are handling for collection or for home composting.
- The cuttings reduce the need for both water and expensive fertiliser.
- People who GrassCycle, spend up to one third less time cutting their lawns but remember, don't cut your grass too short. You leave it a bit longer than normal so the clippings are not too big.



THIS IS A SIMPLE METHOD OF CUTTING GRASS AND LEAVING THE CUTTINGS ON THE LAWN-ALTHOUGH THERE IS A LITTLE MORE TO IT THAN THAT!



Which system is best for me?

5. MULCHING

Mulching or 'sheet' composting mimics nature's way of recycling nutrients within our ecosystem. Like a forest floor where leaves, twigs and branches fall to the ground and break down over time, mulch provides a layer of protection for the soil. In addition, the decaying material feeds the ecosystem of microorganisms, worms and insects allowing this diverse community to thrive. As the materials break down further, nutrients are released and become available to plants within the soil.

Mulch is often used in garden paths but more often around perennial shrubs and trees to suppress weed growth, hold in soil moisture, prevent erosion and slowly release nutrients to the soil.



Suitable Materials:

Shredded brushy materials such as tree trimmings or shrub prunings, leaves and unscreened compost.

Main Advantages:

- Mulching is ideal for people with lots of shrubs and trees.
- Use of mulch cuts down on weeding and watering work.
- Provides a welcome habitat for insects and other wildlife.



MULCH IS ANY SUBSTANCE PLACED ON TOP OF THE SOIL TO PROTECT IT AND KEEP WEEDS DOWN – IT'LL MAKE YOUR LIFE EASIER AROUND THE GARDEN.

6. BOKASHI

Bokashi is a good way to deal with your food scraps, especially if you have limited garden space. In an airtight container Effective organisms (EM) are added to the food waste. EM is a combination of naturally-occurring bacteria and yeast which anaerobically ferments organic wastes. All kitchen wastes including cooked food, bread, cheese and uncooked meats can be composted in this way. When finished in the Bokashi system, the fermented or 'pickled' materials are buried in your garden where they break down very quickly. The materials can also be mixed and buried within your compost heap but it is best to bury them in the garden soil.



Suitable Materials:

All food wastes (if chopped up into small pieces they will decompose faster).

Main Advantages:

- It can compost all domestic food waste, though you will need some garden space to bury the 'pickled' materials.
- Because the system works under airless conditions there are few smells so it can be used indoors – though any warm and dry place will do.
- It is a compact system that can be put anywhere, including your kitchen.



ALL FOOD SCRAPS, INCLUDING MEAT AND FISH, CAN BE COMPOSTED USING A FOOD DIGESTER.



Which system is best for me?

7. FOOD WASTE TUMBLERS

Tumblers are enclosed containers that rotate on castors or on an axis. Many are designed especially for managing food waste that includes animal-derived products. They work best with the addition of **brown** materials to balance the wet high-nitrogen food waste.

There are single and double compartment tumblers. Single compartment tumblers are suitable for making a batch of compost from materials that are all added in a short space of time (not months apart). Tumblers with two compartments allow for the continuous addition of materials.

The turning of the materials in the tumbler allows for easy mixing and rapid composting. The best tumblers have wing-like baffles on the inside (similar to those in a washing machine) to help to mix the materials. As tumblers are enclosed they retain a lot of moisture. Tumblers can become difficult to turn if large quantities of wet materials are added.



Suitable Materials:

All food wastes (if chopped up into small pieces they will decompose faster).

Main Advantages:

- Easy to turn if contents are not too heavy.
- Enclosed container keeps out rain and pests.
- Batches of freshly-mixed materials can reach high temperatures which will accelerate the composting process.



THE TURNING OF THE MATERIALS IN THE TUMBLER ALLOWS FOR EASY MIXING AND RAPID COMPOSTING.

8. FOOD DIGESTION CONES

These look like regular compost bins but have an extra buried chamber under the ground. They use heat from the sun to speed up the composting process. Digesters have tight fitting lids and holes or mesh screens in the bottom which provide access to the soil. When digging these systems in always try and place them in a well drained sunny spot.

With these systems you simply add in your food scraps which gather in the underground chamber and decompose out of harms way. Some systems use additives, such as inoculants, enzymes, or nutrients to accelerate break down and stimulate the composting process.



Suitable Materials:

All food wastes can be added but make sure to chop them up so they will decompose faster. These do not handle garden wastes or grass.

Main Advantages:

- Can handle consistent supply of food scraps.
- Only need to empty system every 1-2 years.
- Can be used to compost or digest meat, fish and pet wastes.



ALL FOOD SCRAPS,
INCLUDING MEAT AND
FISH, CAN BE COMPOSTED
USING A FOOD DIGESTER.



Which system is best for me?

9. FOOD BURIAL AND TRENCHING

These are two of the oldest methods of composting vegetative food scraps.

Food Burial

This method simply involves digging a hole in a suitable area and burying food scraps about a foot deep.

Trenching

This involves a three year rotation of burying food scraps in trenches - one for burying, one for growing and one left unused.

The key to both methods is to chop up the food scraps into small pieces and then mix them with some soil before covering. The food breaks down in the ground and, over time, releases nutrients into the soil. As the food scraps are buried, they will not attract pests.



Suitable Materials:

Vegetative food scraps – remember, the smaller the pieces the quicker they will break down.

Main Advantages:

- Simple way to deal with food scraps.
- Decomposes in 1-2 months.
- Enriches soil over time.
- Ideal for allotment gardening. Can be done in conjunction with a rotation system in a veggie patch.



FOOD BURIAL, OR TRENCHING, INVOLVES DIGGING A HOLE OR TRENCH 12" DEEP AND BURYING YOUR VEGETATIVE FOOD SCRAPS.



10. WORMERIES

Worm bins can be a great way to manage food scraps and they produce the highest quality compost. Trays, cans, plastic bins or boxes can be used to house the worms – but remember to keep the lid on as the worms like a dark and moist environment. Food is then buried into a moist carbon-based bedding – usually made of shredded paper, cardboard, leaves, straw, rotted manure, wood shavings and/or sawdust. Once the worms eat the food scraps, the compost can be harvested as often as every few months but more usually once or twice a year. In addition, you can collect the liquid generated (known as worm tea) and dilute it down to use as a fertiliser.



Suitable Materials:

Vegetable food scraps, cardboard and paper.

Main Advantages:

- The worm castings are rich in nutrients and contain hormones that stimulate plant growth. The stuff is magic plant food but should be mixed with soil before placing directly onto plants.
- These systems produce the highest quality compost but require some attention to get the most out of them.
- It is easy to make your own, especially if you have access to some well rotted manure for your worm supply!
- They are a great way to teach children about the wonders of nature.



**WORMS ARE NATURE'S
BEST COMPOSTERS.**



Using your compost

Use your senses to tell when compost is ready:



Look at it: if the compost is dark in colour and it is hard to recognise the original raw materials - it looks ready.



Touch it: if the compost is cool to touch and has a texture of rich soil - it feels ready.



Smell it: if the compost has a pleasant earthy smell, and it looks and feels ready, then it is ready!

If the composting material is hot, smells strong, or you can recognise the raw materials in the pile - then it is not ready to use and will need more time. Just let it compost a while longer.

How do I use compost around my home?

Where there are plants, there is a need for compost. Compost has so many uses you will never run out of ways to use this black gold. Before using your compost it is always best to sieve it to remove any bulk **brown** materials that may still be present.

Compost can be used as a:

- Mulch in annual or perennial planting areas
- Top dressing on lawns or grass areas
- Enhancer when preparing the soil for laying sod, planting annuals, perennials, shrubs or trees
- Ingredient in a potting mix of two-thirds garden soil and one-third compost
- Ingredient in a seed starting mix of half sand and half compost
- A way to make compost tea

TO LEARN MORE ABOUT USING COMPOST AROUND YOUR HOME VISIT WWW.STOPFOODWASTE.IE



Composting and brown bins

Composting and brown bins work well together. If you are using one of them now, it is still worth considering using the other as well. You can use the brown bin for those tricky to compost materials (e.g. meat, fish, dairy, woody prunings or branches) and compost the rest of your vegetative materials at home.

When it comes to using your brown bin there are a few things to remember:



Use newspaper or paper bags to line your bin. Compostable bags are also suitable.



Do not use plastic bags to line your bin. Compostable bags are accepted.



Remove all food packaging before placing food in the bin.

YOUR BROWN BIN CAN TAKE ALL THESE MATERIALS...

 Meat, poultry & fish	 Meat & fish bones	 Plate scrapings	 Leftover pasta
 Fruit & vegetables	 Bread/baked goods	 Leftover cereals	 Leftover rice
 Coffee grounds & tea bags	 Egg & dairy products	 Raw and cooked food	

Composting and using brown bins keeps food waste out of landfill and also highlights how much food you are wasting. Being **aware** of what food ends up in the bin is an important part of reducing food waste and saving money.

Frequently asked questions...

Where should I put my composting system?

Almost all composting systems should be shaded from the sun to prevent them from drying out. Compost piles and bins will work better when placed on bare soil as it allows beneficial organisms easy access. A wormery should be placed in the shade and can be kept in a shed to protect it from extreme weather conditions, and a Bokashi system can be kept in the kitchen. A Green Cone, unlike most other systems, needs to be in a warm, sunny spot.

Can weeds be composted?

In slow, cold composting conditions weeds, especially the seeds, will survive. To compost weeds it is best to pick them before they go to seed and to avoid adding roots or stems from docks, briars, bindweed, ivy or other noxious, perennial weeds.

In a hot composting systems, seeds and chopped-up weeds will be killed by the high temperatures in the centre, but achieving these temperatures requires some management and manual turning of the material.

If you have lots of weeds, it's best to create a dedicated pile in a sunny spot and cover with black plastic. This should dry and heat the weeds enough to kill them.

Is there anything I can do to speed up the composting process?

Follow all of the essentials of composting that can be found earlier in this booklet, including chopping things up into smaller pieces, properly balancing of **green** and **brown** materials, turning the pile to add air, and making sure that materials are moist but not waterlogged to promote optimal composting.

Should I cover my composter?

In rainy Ireland, covering your composter is a great idea. During the winter, a cover stops the materials becoming waterlogged. In summer months, covering the pile keeps moisture in. While many composters come with lids, open piles should be covered with plastic, old carpet, plywood or anything else that works for you.

There are loads of flies in my compost system – what can I do?

Flies are attracted to rotting food on top of your compost. To avoid this, mix and bury your food waste within the existing material in your composting system, or add a layer of **brown** materials such as leaves, shredded paper, or sawdust on top of each layer of food waste.

If the problem persists, leave the lid off for 2-3 hours on a sunny day. Then place a layer of wet newspaper on top of the composting materials and replace the lid.

Can ashes from the fire, stove or BBQ be composted?

Ashes should not be added to compost systems because they fill in air spaces in your compost. Additionally, they are alkaline in nature and can upset the near neutral pH balance of the compost. However, wood and peat ashes do contain potassium, a valuable plant nutrient, and can be directly added to acidic soils at planting time to help increase fertility. Coal ashes may contain heavy metals and other toxins so they should not be used for gardening.

What about pet waste?

Wastes from plant eating pets, such as rabbits, hamsters, guinea pigs or birds, can be safely composted at home. Just remember that pet manures are **green** materials, so they need to be balanced with **brown** materials. Waste from meat eating pets such as cats or dogs should not be composted for use in the garden because of the potential to spread disease.

My compost smells, what can I do?

There are a few of reasons why your compost may smell, including:

- The compost is too wet
- It contains too high a proportion of **green**-materials.
- It contains food scraps containing animal products such as meat, fish, skins or dairy products.

In the case of the first two the solution is similar - turn the compost and add some drier **brown** materials and mix thoroughly. If the compost is getting wet due to rain then make sure to cover it.

If you are putting meat or other materials of animal origin into the food scraps to be composted, these could be causing the smell. Collect only vegetative kitchen scraps for composting and consider using a Green Cone system or brown bin collection service for non-vegetative foods.

Does my compost need to be turned?

No, not necessarily. Many bins work by simply adding materials to the top while harvesting materials out of the bottom. Turning allows you to add air and, if necessary, moisture to speed up composting. If the opening of the compost bin is too narrow to turn the pile, simply lift the bin up off the compost, place it next to the compost materials and turn them back into the bin. You can also purchase a spiral compost mixer that acts like a giant corkscrew to mix things within a narrow bin.

There are lots of worms around the lid of the compost unit – is there something wrong?

Worms naturally make their way to the lid of the compost bin so don't worry – they will make their own way back down when they want to. The fact that there are worms in your bin is a very good sign.

Are rodents a problem when composting?

Yes, they can be, but not if you manage your composting system properly.

Rodents come to composters looking for food or a place to nest. They will be attracted by vegetative food scraps that are easily accessible or any high protein scraps such as meat, fish, bones or cheese. Compost piles can be a warm and dry home for nesting, especially in winter months. If you find that rats are nesting in your bin, you can simply turn the pile to disrupt nesting behavior.

To discourage rodents, bury food scraps within composting materials, avoid composting foods of animal origin, secure the bottom of the composter with wire mesh and place it in a well visited area of the garden.

How long does it take to make finished compost?

This depends on your system, the type of material, and whether or not you are following the essentials of composting. In general, holding systems take longer than turning systems. You can expect that any materials you add to a holding system in one gardening season would be composted the following year. For turning systems, compost can be ready in as little as 8 weeks. For wormeries, compost can be harvested in 6-12 months for a box (harvest entire contents at once) or in 1-2 months for a stackable wormery (harvest small amounts at a time). Proper use of Bokashi should speed up the decomposition of food scraps in your composting or burial system too.



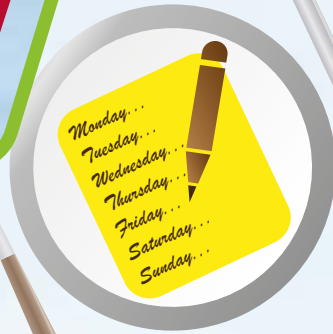
The Stop Food Waste Challenge...

There is no one way to reduce food waste for everybody. To help you figure out what works best for you try the Stop Food Waste Challenge - a 5 step route to less food waste and more money in your pocket.



STEP 1. AWARENESS

Once food waste goes in the bin it is out of sight and usually out of mind. In this first step, become aware of what you throw out, and why you throw it out.



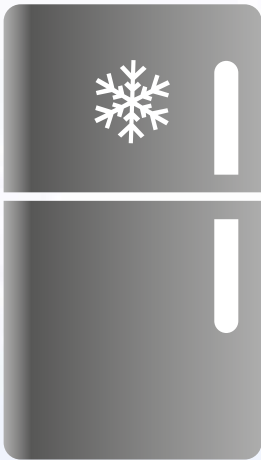
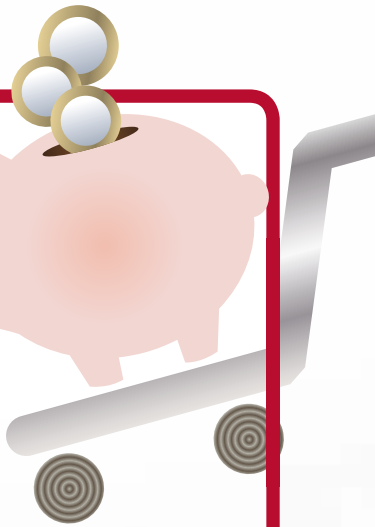
STEP 2. PLANNING

Without planning meals, it is easy to buy too much food which can lead to food waste. Good planning ensures you use the food you already have and don't buy too much when you shop.



STEP 3. SHOPPING

Many of us buy and waste the same foods every week. Changing your shopping habits can be the easiest way to reduce how much food you waste.



STEP 4. STORAGE

Now that you have bought the food make sure to make the most of it. Proper storage can make food last longer and help you make the most of the money you have spent.



STEP 5. COOKING CHALLENGE

How you cook, serve and reuse food has a huge impact on how much food is, or isn't, wasted.



For more on each step please go to www.stopfoodwaste.ie



Happy
Composting!

Composting in your local area

To learn more about composting in your area talk to the environmental awareness officer in your local council. They will have information on composting workshops and can provide you with information on all aspects of composting.

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The STOP Food Waste programme is developed by the EPA as part of the National Waste Prevention Programme