



An Taisce

The National Trust for Ireland

COMPOST FOR NATURE

Illustrated by Barry Reynolds

Welcome...

This booklet takes you on a journey of discovering how you can become part of the solution to climate change by embracing natural landscaping or organic gardening techniques. All gardeners have an opportunity to conserve our country's valuable peatland habitats by purchasing peat-free plants and soil additives from local gardening centres, hardware shops and DIY outlets.

What follows is an exploration of the wonders of Irish peatlands and a step-by-step guide on how to start composting at home whether you live in the city or country.

For years, the garden and landscape industry has been selling us peat moss as "compost." In reality, this is an inaccurate use of the term "compost." Peat moss and compost are very different. Peat is produced over thousands of years in a waterlogged bog without air. On the other hand, compost is made in less than a year from the decomposition of plant material in the presence of oxygen. Although both products can be used to improve soil conditions and enhance plant growth, there are some key differences which are highlighted in the table below:

The difference between peat and compost

Quality or Characteristic	Peat Moss	Compost
Nutrients	Peat does not contain any essential plant nutrients.	Compost not only contains 1-2% Nitrogen, Phosphorus & Potassium, but also has an abundance of micronutrients essential for healthy plant growth and disease suppression.
pH- Acidity/Alkalinity	Peat is acidic which inhibits nutrient transfer from soil to plant roots.	Compost is pH neutral which improves nutrient availability within the soil.
Biology	Peat is dead or lifeless	Compost contains a vibrant variety of life that benefits soil with the microorganisms needed to make it healthy and productive
Carbon to Nitrogen Ratio	High in Carbon, peat draws Nitrogen from the soil when it breaks down, competing with plants for this essential nutrient	Low in Carbon, compost releases Nitrogen into the soil for plant uptake when it decays further.
Moisture Holding Capacity	High, peat can hold 6-8 times its weight in water	Medium, compost can hold 1-2 times its weight in water
Particle Size	Fine which can compact and limit both air and water flow within the soil.	Variable which can open up soil structure to improve aeration and drainage

Although peat moss has been used for decades as a soil additive or potting mix ingredient, the table above shows that real compost performs better than peat in all categories except for its ability to hold water.

What are bogs/peatlands?

Peatlands or bogs are wild and open wetlands containing 90% water and 10% dead and decaying plants. Healthy peatlands have a water table within 20cm of the surface throughout the year. Peat is the result of the accumulation of partially decayed plants over thousands of years. The dead plants don't decompose because they grow in waterlogged, slightly acidic conditions where there is little oxygen which prevents bacteria and fungi, the agents of decay, from working. This lack of decomposition results in the peat being a nutrient poor soil type.

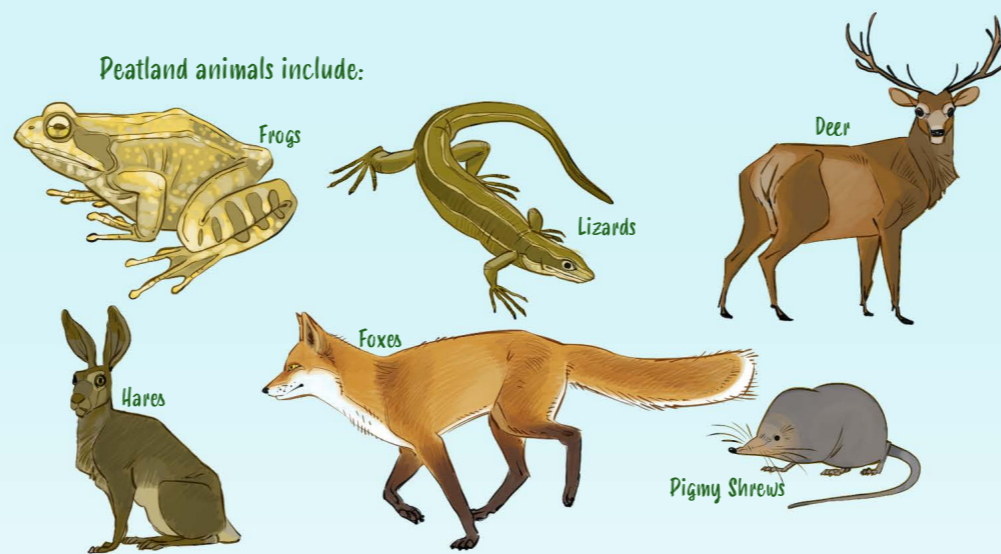
Why are bogs so important?

As intact ecosystems, peatlands can collect and store carbon, absorb and purify water, protect against floods and support a wide range of biodiversity. Peatlands have been described as the 'Cinderella' habitat of Ireland - overworked and valued only for the peat beneath the living surface of the bog. Today, both peatland research and public awareness initiatives highlight how valuable peatland ecosystems are.

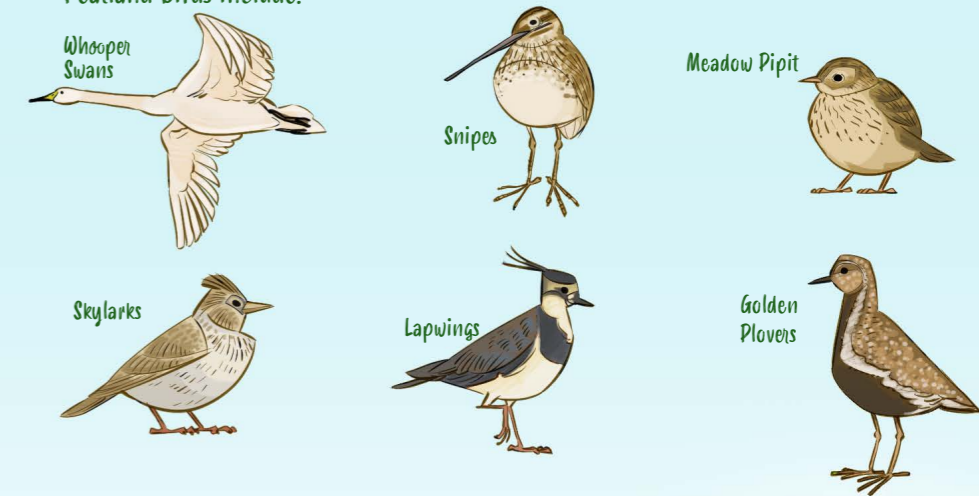
Some of these benefits include:

- A rich and diverse habitat for biodiversity
- Water retention for flood control
- Carbon storage or sequestration to combat climate change
- A food source for wildlife, including endangered species
- Recreation opportunities such as hiking and bird watching
- An inspiration to artists and poets
- A repository of Irish history

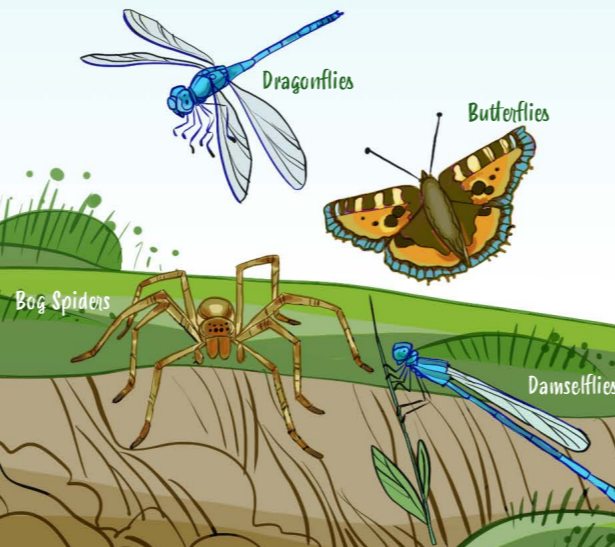
Peatland animals include:



Peatland birds include:



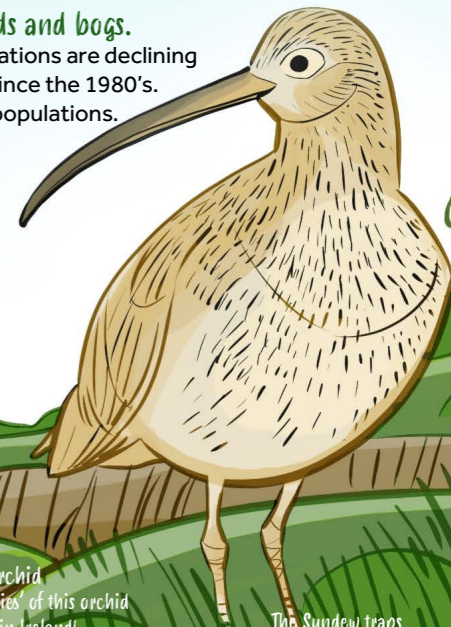
Peatland insects include:



Did you know that peatlands have been called 'climate change champions'? They store more carbon than any other terrestrial habitat in the world, including the Amazon rainforest!

The effect of our extraction from peatlands and bogs.

Sadly, both the Red Grouse and Curlew populations are declining with a 98% reduction in Curlew populations since the 1980's. Birds of prey are also experiencing declining populations. There are less than 200 pairs of the majestic Hen Harrier left in Ireland. Due to habitat loss from peat extraction, peatland biodiversity is in decline and threatened today.



Bog Cotton

Butterwort

Bladderworts

Pipewort

Ling Heather

Cranberry - edible

Blackberry - edible

Marsh Orchid
A particular 'subspecies' of this orchid is found only in Ireland!

The Sundew traps and eats insects



Why have we been using peat?

Hand cutting, drying and use of peat or “turf” for heating and cooking has been a part of Irish culture for centuries. More recently, because of its high carbon content and wide availability, mechanised peat harvesting has been used to generate electricity as an alternative to imported fossil fuels.

It has also been extracted and exported for use as an ingredient in potting mixes and as a soil additive for home gardeners, professional landscapers and horticultural growers despite being poor in plant nutrients.

Professional growers have relied on peat to germinate seeds and grow plants because the qualities of peat are so consistent. It’s a reliable growing media due to its high organic matter, high moisture holding capacity and its general lack of microorganisms or life that could introduce potential pathogens, moulds, fungi or other diseases to vulnerable young seedlings.



Why we shouldn't use peat

However, due to its lack of nutrients, mineral or chemical fertilisers are needed to spur plant growth. These tend to over stimulate growth making plants more susceptible to disease. This in turn requires the use of harmful pesticides that can pollute land and water resources and adversely impact biodiversity and human health. While peat may be useful to get plants started from seed, in reality, using it for gardening, landscaping or horticulture triggers a damaging cycle of expensive and unnecessary chemical use.

Afforestation, overgrazing, burning, drainage and reclamation along with peat extraction have resulted in an overwhelming loss in peatland habitat. Although peatland ecosystems covered almost a fifth of Ireland, most of the country’s peatlands have been diminished or destroyed as a result of intensified peat extraction over the last 60 years.

Unfortunately, we are now beginning to understand the dire consequences of exploiting our peatland resources. Holding as much as 10 times the carbon per hectare than other ecosystems, peatlands can become powerful greenhouse gas emitters when disturbed. Once drained and exposed to air, the carbon contained in peatlands gets oxidised and is converted into carbon dioxide which contributes to climate change. Although drained and disturbed peatlands make up 0.3% of the world’s land mass, they produce 5% of all carbon dioxide emissions caused by humans. This is twice the amount emitted by the world’s entire aviation fleet of 20,000 aircraft.

Embracing soil as a living ecosystem

The good news is that there is another more sustainable way to nurture soil health which is underpinning the emerging organic farming and gardening movements. There is now a recognition that soil is alive with an ecosystem that needs to be supported. This helps raise vibrant plants and produce more nutritious food without relying on toxic chemical inputs. For this to happen, the ecosystem in the soil needs to be fed organic matter to sustain itself and thrive. By using peat-free compost, animal manures, winter cover crops and/or natural, mineral and organic fertilisers, you can build healthy soils for growing productive gardens and beautiful landscapes.

How to garden without peat

Hobby gardeners, professional landscapers and horticulturalists all have an opportunity to protect our remaining peatlands by:

- Avoiding the purchase of plants grown in potting mixes containing peat and using peat-free soil additives, potting soils and “compost” which mostly come from industrially harvested Irish bogs.
- Asking your garden centre to supply plants grown in peat-free potting mixes and to stock peat-free compost.
- Propagating the plants you need from seed at home using a seed starting mix of 1/2 peat-free sieved compost and 1/2 sand; and by making your own potting mix of 1/3 sieved peat-free compost and 2/3 garden soil.
- Composting at home. It’s really easy once you know how. To get started with composting today continue reading to find out more...



What you can do to protect our bogs

Ireland's remaining peatlands are among Europe's most important habitats and most are being protected in Ireland. As a country, we must ensure that peatland habitat is not lost forever. Ireland is taking action to restore peatlands by rewetting and bringing them back to life. It is now illegal to cut turf on some peatlands and Ireland is reviewing the use of peat for home gardening and professional horticultural purposes. Non-governmental groups including An Taisce, Irish Peatland Conservation Council and BirdWatch Ireland are working to raise awareness about the need to protect and regenerate our remaining peatlands.

You can help by doing the following things:

- Share what you have learned today with friends and family.
- If you currently use turf, look into more environmentally friendly ways of heating your home. Heat pumps, solar hot water panels or using wood sustainably harvested in Ireland are all better alternatives than burning our peatland heritage. Insulation will also reduce the amount of heating needed and will save you money on fuel.
- Continue your discovery of peatlands by visiting a fen or bog near you and enjoy the fascinating habitat. The Irish Peatland Conservation Council's Bog of Allen in Kildare or Clara Bog Nature Reserve in Offaly offer guided tours and bog preservation workshops- see additional resources section below.
- Become a member of an Irish environmental organisation such as An Taisce or the Irish Peatland Conservation Council Ireland who can bring your voice for peatland habitat preservation and biodiversity conservation to local and national government.

Composting at home

What follows is a comprehensive guide to help you start composting at home. This will decrease pressure on Irish peatlands, help you reduce waste, save you money on your purchase of store bought compost and cut down on your carbon footprint.

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What is composting & compost?

Composting is nature's way of recycling organic matter and nutrients. It is this continuous process of life, death and decay that supports all life on earth. When plants and animals die, they decay returning organic matter, or carbon, and nutrients back into the soil to support new plant life.

Composting is a way to speed up the decomposition process by combining the right mix of materials together and providing ideal conditions for composting organisms to thrive and convert dead materials into compost.

Practically, composting at home is a natural process that turns garden trimmings and plant-derived food scraps into a dark, crumbly and earthy smelling material called compost. Compost is a humus-like material that is rich in nutrients and full of life. When used in your garden, it feeds the soil which slowly releases nutrients that plants can absorb.

Using compost is the foundation for maintaining healthy soil, stimulating plant growth and creating a beautiful garden. Composting is an inexpensive, hygienic and natural way of recycling biodegradable waste materials at home.

In nature, the process of composting can be visualised in a forest

trees grow

Leaves fall to the ground in autumn

Over time, the leaves break down releasing nutrients and organic matter back into the soil to support more tree growth.

Benefits of home composting

Save money

By composting at home, you can reduce your bin charges as well as money spent at the garden centre purchasing expensive soil additives.

Preserve our environment

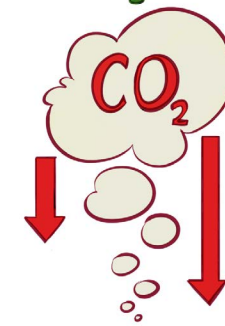
By composting at home, you reduce the need to collect, process, treat and/or dispose of biodegradable materials. This reduces pressure on our peatlands, saves landfill space, reduces the fuel needed to move things around and cuts greenhouse gas emissions.

Reduce waste

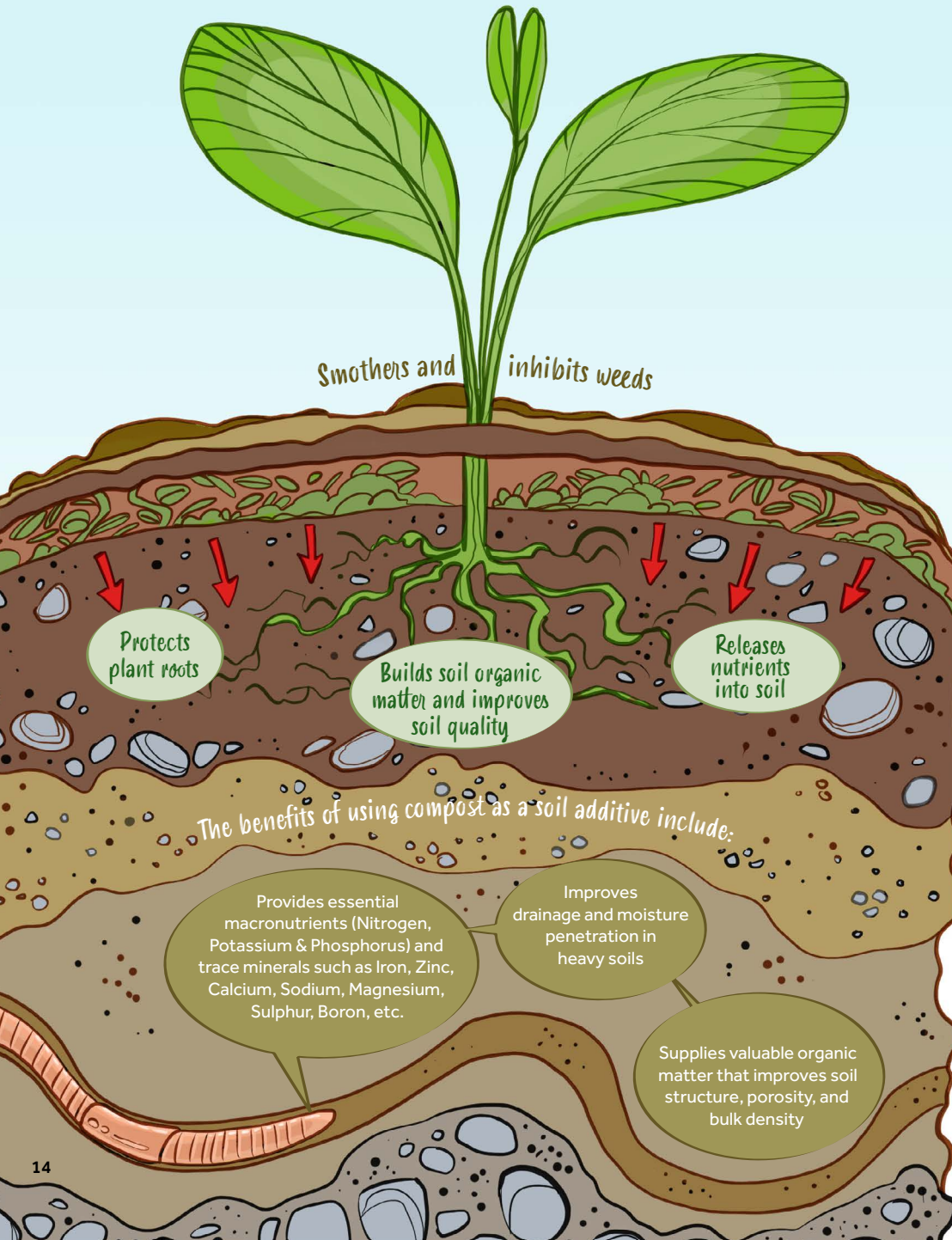
On average, food and garden wastes make up over 1/3 of the contents of our rubbish bins.

Enhance your garden

Compost is magical stuff! It improves your soil's fertility, texture, structure and moisture & nutrient holding capacity. Compost is the key to creating healthy soils that grow vibrant and disease resistant plants.



The benefits of using compost as a mulch

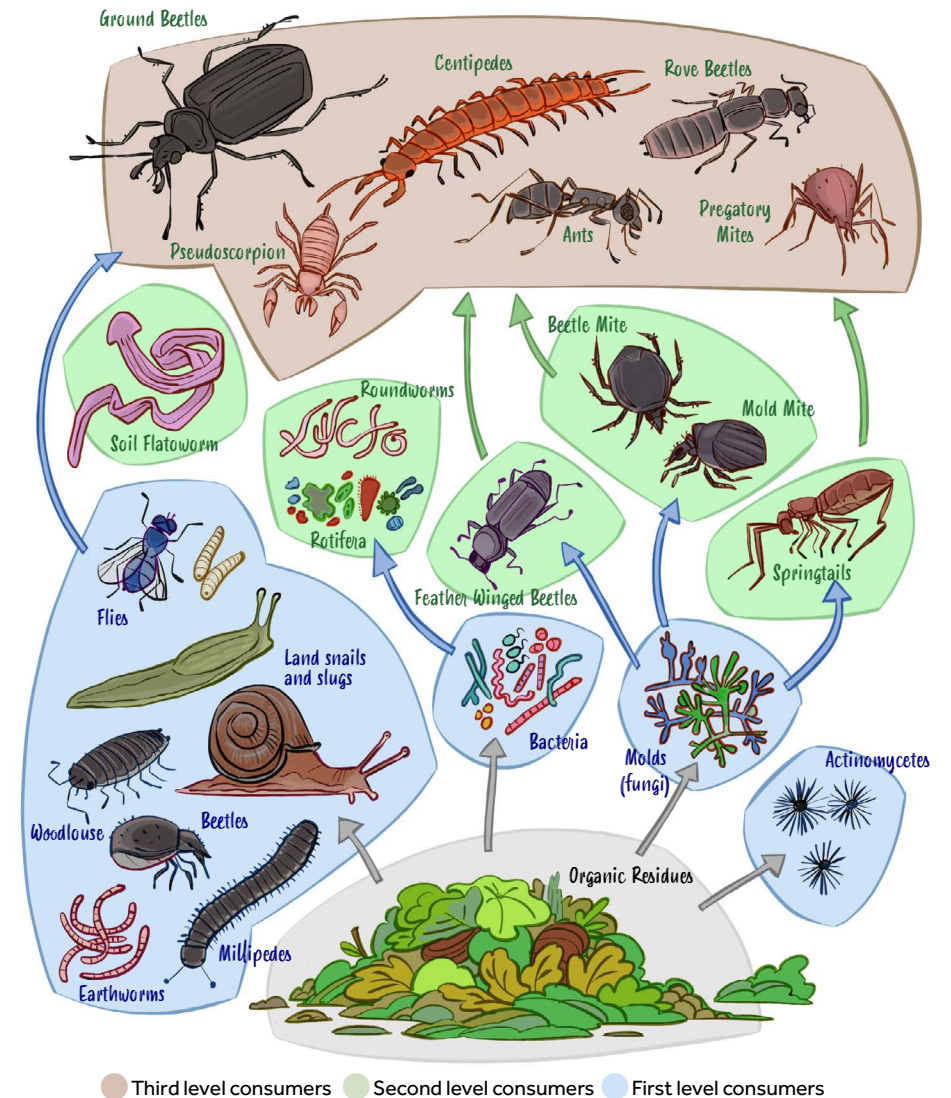


How does composting work?

Composting is a biological process that involves a wide variety of organisms which are naturally present in our environment. In the beginning of the process, air loving bacteria are the first to start breaking down plant tissue. Later on, other organisms, such as protozoa, fungi, moulds, worms and insects, also take part. No one organism or group of organisms are solely responsible for composting, it's a succession of creatures that makes it all happen. It's a web of life similar to the ecosystem in the soil as shown below.

Food web of the compost pile

Energy flows in the direction of the arrows.



The five composting essentials

The compost pile is really a teeming farm of microbes. Like any good farmer, we need to feed our microbial livestock a balanced diet of nitrogen-rich green and high-carbon brown materials and provide them with sufficient air and water. Here are the essentials of composting undertaken at any scale from small home composters to larger on-farm systems:

1. Balanced diet of green & brown materials -

Most materials that come from the garden are already well balanced nutritionally for composting such as weeds, old flowers and vegetable plants, and bush trimmings, and can be composted as they are without the addition of other materials. But there are some materials that are too wet and green to compost well on their own, such as grass cuttings or food scraps.

If we try to compost only food scraps and/or grass cuttings, they can become a gooey smelly mess. To avoid this, the grass and food need to be balanced with other well-balanced or high-carbon garden materials, such as chopped up plants, weeds, bush trimmings, leaves, straw and/or wood shavings. An ideal mix by volume would be half grass cuttings and half leaves. Remember that variety is the spice of a compost pile's life!



2. Moisture

All life needs moisture to survive and the composting organisms are no different. In fact, the composting bacteria live in the moisture that surrounds each piece of material. Without this thin film of moisture, there is nowhere for the composting organisms to live and do their work. On the other hand, too much moisture can drown your pile excluding the air necessary for optimal composting.

If your pile gets too wet, bacteria which thrive in the absence of air, can then take over and create foul odours. Ideally, materials should be as moist as a wrung-out sponge, not too dry, but not too wet or soggy either.



3. Air

Composting bacteria and all other forms of life within your composting heap also need oxygen. As the material in your composter breaks down, oxygen is used up. Without enough air, the composting process will slow down. Aeration can be sustained by making sure there is sufficient structural material in your pile such as bush trimmings or cut up plant stalks.



These create air spaces within the pile and allow it to breathe. Aeration can also be enhanced by mixing or turning your pile on a regular basis to loosen it up again and introduce air. While turning is not necessary, it can speed up the composting process and improve the quality of your finished compost.

4. Particle size and surface area

Composting begins on the surface of the material and works inward. So the smaller the particle, the faster it will decay because there is more surface area for the bacteria to work on. This is why it is important to shred, cut or chop materials as you garden to a size less than 15cm in length.



Chopping materials up with a shovel, secateurs, machete, or your lawnmower helps make a better mix when forming your compost heap. Keeping materials smaller also makes it easier to turn your pile later on for faster composting. If materials are too big or long, the pile can dry out which stalls the composting process.

5. Critical mass

A composting pile needs to be big enough to hold enough moisture to sustain the composting process. A pile that is too small or flat can dry out in drier summer months which can stall the composting process. In winter months, a small pile may become too wet. If a pile gets too big, air flow can be inhibited which can also slow things down or create bad odours.

The ideal size for an open home composting system is about one cubic metre, although a smaller system within a sealed and covered plastic bin will work as well. For farms with a lot more materials, long triangular piles or windrows that are no larger than 2 meters high will be big enough to hold moisture, yet small enough to encourage passive air flow.



What can be composted?

Essentially anything that was once living can be composted. However, to avoid foul smells and attracting unwanted pests, such as rodents and flies, a vegetarian diet is recommended for your composting system.

Here is a list of materials that can be and can't be composted at home.



DO COMPOST	COMMENTS
Vegetable & food waste	Cooked and uncooked vegetables, vegetable trimmings, fruit peels, cores & rinds, coffee grounds, baked goods (including bread, biscuits and crackers), rice, grains, pasta and cereals. Some tea bags are made with plastic, if unsure these should be ripped open to remove the tea.
Plants from the house	Ornamental house plants, flowers and herbs
Plants & greens from the garden	Grass cuttings, ornamental garden plants, vegetable plants, flowering plants, annual weeds before they go to seed or with flowers removed (e.g. Dandelions), potted plants, cut or deadheaded flowers, moss and bush trimmings
Seaweed & manure from vegetarian animals	Ensure seaweed is rinsed to remove excess salt before adding to our compost pile or garden. Herbivore pet waste (e.g. gerbits, rabbits, guinea pigs, hamsters, birds, horse or cattle manure). Animal manure is rich in nitrogen and needs to be mixed with straw, leaves, wood shavings or sawdust.
Browns from the house	Very small amounts of paper, newspaper, egg cartons, paper towels, paper napkins, uncoated paper plates & cups, and clean or soiled cardboard. All must be shredded, cut up or torn before adding to the compost pile.
Browns from the garden	Autumn leaves, twigs, shredded tree trimmings, straw, hay, pine needles and bark.

What cannot be composted?



DO NOT COMPOST	COMMENTS
Disposable nappies, sanitary towels & wipes	These contain plastic and/or moisture absorbing polymers that will not break down. They may also contain harmful pathogens.
Excrement	Human, dog and cat excrement, including cat box litter, carry harmful pathogens and could spread disease.
Shiny card/bright coloured paper	Some inks contain heavy metals, Some cardboard and shiny papers are plastic coated. Large amounts of newspaper, paper and cardboard should be placed in your green recycling bin or taken to a civic amenity site for recycling.
Hard objects	Stones, glass, plastics and metals, including foil do not break down in a compost pile.
Household & garden chemicals	Most are toxic and will contaminate your compost pile and garden.
Meat, fish, skins, grease, bones & shells	These can attract pests and create foul odours.
Dairy products	Spoiled milk, mouldy cheese and sour yoghurt can attract pests and create foul odours.
Perennial or pernicious weeds	Weeds that spread by root, such as bind weed, ivy, briars and scutch grass, invasive weeds and weeds that have gone to seed should not be composted as these can survive the composting process and be spread back into your garden.
Textiles & clothes	Most are made with plastic fibers that do not break down. All should be donated to charity shops or recycled in clothing banks.
Vacuum bag contents & tumble-dryer lint	Vacuum bag contents and dryer lint contain micro plastics that do not break down and can contaminate your compost pile and garden soil.
Ashes	Ashes from coal, peat, charcoal or wood are very alkaline and could upset the pH balance of your compost pile. All ashes, except from coal, can be added directly to acidic soils as a soil amendment.

Composting systems

There are a variety of composting systems you can use for composting both garden trimmings and food scraps. These are basically divided into two categories: one is a stand alone bin or a holding system and the other involves turning the compost to speed up the composing process.

Holding systems

Holding systems are the most common and are used on a continuous basis. As you generate materials from your garden and household, they are simply added to your bin. These holding systems can take the form of a plastic bin with a lid that are commonly available from most DIY stores, to homemade bins made from roping four pallets together, reusing old timber or plywood to make a composting box or using old fencing to make a circular cage.



The advantages of a holding system are that they are easy to use and do not require a lot of work. The disadvantages are that the pile may not heat up to kill weed seeds or potential pathogens and it takes longer to make compost, typically 1-2 years depending on the materials used. A mix of garden materials will take a year to make good compost while a pile made from just leaves can take up to two years to produce a lovely weed-free compost leaf mould.

Turning systems

Turning systems range from a multi-bin system to a rotating barrel. The key characteristic of these is that composting takes place on a batch basis. This means that a pile or batch is made all at once and then turned in or through the system. Using a multi-bin system, a large pile is made and placed in the first bin and allowed to heat up. Once the heat subsides after 10-14 days, the pile is turned into the second bin. This frees up the first bin for a new pile. After another two weeks, the pile in the second bin is turned into a third bin and allowed to finish or cure. For tumblers, a batch is made and the tumbler is rotated every few days to aerate the composting materials inside. After 2-3 weeks, the contents are emptied for curing and a new batch can then be placed into the tumbler.



The advantages of turning systems, especially the multi bin ones, are that they can handle larger volumes of materials and can be used to make hot compost which can kill weed seeds and potential pathogens. They can also be used to make compost in 2-3 months so they are typically faster in making a high-quality compost. The disadvantages of turning systems are that they are more expensive to purchase or build and they require more work.

Starting your compost pile



1. Choose a site

- Place the bin close to the house with easy access. This makes it quick and easy to add materials to the heap regularly.
- A shady or partially shaded area is best to prevent drying out of materials within the bin and on bare soil or grass.



2. Pick a composting system

- When choosing a bin consider:
 - How much waste you are producing
 - The size of your garden
 - The size of your household
 - Type of material to be composted
- Many DIY stores sell plastic composting bins of various sizes.



3. Adding materials

- A. Pace a layer of twigs or coarse material on the bottom. This facilitates air flow through the materials.
- B. Mix and water a variety of garden materials **outside** of the bin, then add until the bin is about a third full.
- C. Add any **plant** derived kitchen scraps, cooked or uncooked and mix them into the existing materials.
- D. Then add a layer of mixed and moistened garden materials on top.



4. Monitor your pile for moisture

- Now you are set, always check the moisture level of your pile when adding new materials.
- If it is **too dry**, sprinkle with water and mix it into the materials.
- If it is **too wet**, add and mix drier brown materials such as leaves or bush trimmings and/or cover the pile. In our wet winters, it may be best to cover the pile.

Troubleshooting composting bins or holding systems

SYMPTOM	CAUSES	SOLUTIONS
Pile has foul odour	<ul style="list-style-type: none"> • Not enough air • Pile too wet • Meat and fish added to pile 	<ul style="list-style-type: none"> • Turn it, add coarse dry stalks, straw, hay, leaves or bush trimmings • Limit food scraps to fruit and vegetables
Clumps of slimy grass, sharp ammonia smell	<ul style="list-style-type: none"> • Too much fresh grass 	<ul style="list-style-type: none"> • Leave cuttings on lawn or allow them to dry for a day or two before collecting them for composting. • Mix in brown leaves, straw, hay, bush trimming, stems, stalks, or wood shavings. Remember the 50/50 rule of mixing green and brown materials.
Pile is dry throughout	<ul style="list-style-type: none"> • Not enough water • Too much woody material • Pile is in sunny location • Pile may be too small 	<ul style="list-style-type: none"> • Turn it and moisten materials • Cover pile • Add fresh green materials • Move bin to a more shady location • Add materials or combine with another pile.
Pile is damp, but woody and not composting	<ul style="list-style-type: none"> • Materials are too big • Lack of green materials 	<ul style="list-style-type: none"> • Chop or shred materials • Turn and mix in a source of green materials such as grass cuttings or animal manure
A swarm of flies greets you when you open the lid	<ul style="list-style-type: none"> • Pile is too wet • Food scraps are placed on top 	<ul style="list-style-type: none"> • Mix in dry materials or add some on top • Bury food scraps within the pile • Cover pile with wet newspaper or a plastic sheet
Rats live in the pile	<ul style="list-style-type: none"> • High protein food waste in pile • Food waste on top • Warm and dry 	<ul style="list-style-type: none"> • Stop adding animal products to bin • Bury food scraps into pile • Turn pile frequently to disturb nesting • Place mesh under or around the base of the pile or bin
Pile does not heat up	<ul style="list-style-type: none"> • Not enough material • Too dry • Not enough fresh green materials • Particles too big • Compacted or too dense - no air spaces in pile 	<ul style="list-style-type: none"> • Make bigger batches • Add moisture when pile is turned • Add fresh green materials when turned • Chop or shred materials • Turn to introduce air and loosen up the pile
Pile has shrunk, but looks undecomposed	<ul style="list-style-type: none"> • Outside of pile is dry, inside is probably composted 	<ul style="list-style-type: none"> • Check in pile for finished compost. • If compost is not ready, turn pile, add water if necessary and allow it to finish • If compost is ready, harvest compost and use undecomposed material to start a new batch.

Tips for individual composting bins



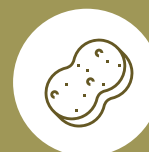
Use a variety of landscape and garden materials to start your pile.



Balance wetter green materials, such as grass cuttings and food scraps, with balanced or brown materials such as bush trimmings or leaves.



Mix and water green and brown materials together on the ground **before** placing them into the bin.



Don't let the pile get **soaking wet** or **dusty dry**. Keep the pile moist as a wrung out sponge.



Mix or turn the pile to speed up the composting process.



Chop food scraps into 3-6cm pieces for faster breakdown.



Always bury food scraps at **least 20-30cm** into the pile: dig in, mix up and cover over.



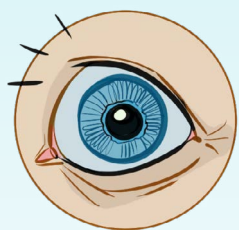
Store fallen autumn leaves for mixing with summer grass cuttings or with winter food scraps.



Do not dump and run! The dump and run method of adding food scraps can attract unwanted pests, such as flies and rodents, and create foul odours.

How do you know when your compost is ready?

Use your senses!



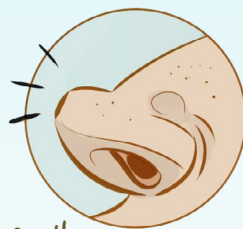
Look

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



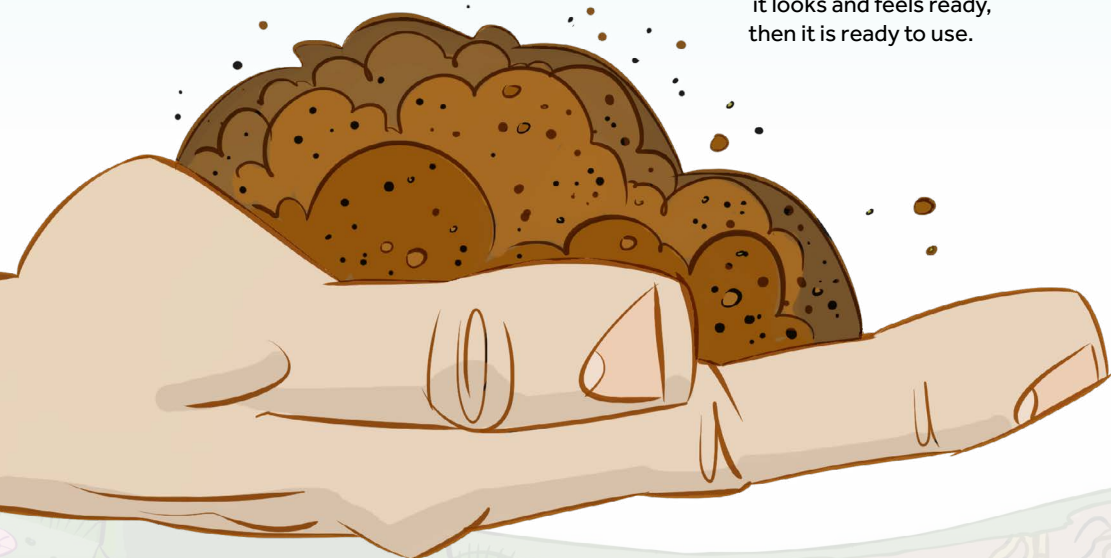
Touch

if the compost is cool to touch, has a texture of rich soil, breaks apart easily and is crumbly to the touch- it feels ready.



Smell

if the compost has a pleasant earthy smell, not a putrid, foul or ammonia odour, and it looks and feels ready, then it is ready to use.



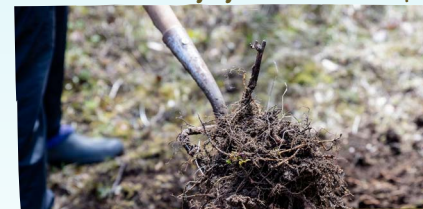
If the composting material is hot, smells strong, or you can recognise the raw materials in the pile, then it is not ready to use and will need more time. Just let it compost a while longer.



How to use your compost

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 finished compost, you may want to sieve it to remove any bulky or undecomposed materials such as large twigs or wood chips. These can be returned to the compost pile for further composting or can be used as a mulch in your garden.

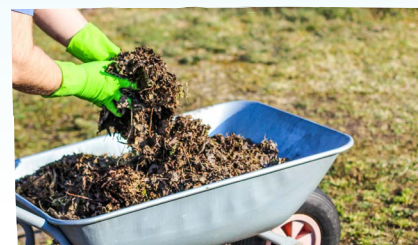
Here are a few ways your finished compost can be used...



Mulch in annual or perennial planting areas by applying 3-6cm to the surface of the soil. Keep away from plant stems.



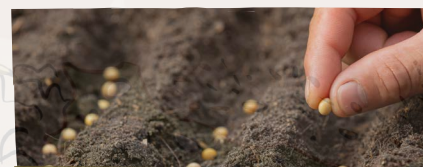
Ingredient in a potting mix of 2/3 garden soil and 1/3 sieved compost.



Sieved compost can be used as a topdressing on lawns or grass areas by spreading thinly and evenly on top.



Soil additive when preparing soil for laying sod or planting annuals, perennials, shrubs and trees. For garden beds, add and mix in 6-8cm of compost into the top 20-30 cm of soil.



Ingredient in a seed starting mix of 1/2 sand and 1/2 sieved compost



Compost tea can be made by soaking a burlap or fibre bag of compost in a drum of water for 2-3 days. The tea is then used to fertilise plants and provide them with micro nutrients to help suppress diseases.

Frequently asked questions...

Q: Can weeds be composted?

A: In slow cold composting conditions, weeds, especially weeds with seeds, can survive. To compost annual weeds, it is best to pick them before they go to seed. If you'd like to compost dandelions that are beginning to flower, simply remove the flower tops, add them to the compost bin and be sure to cut the tap root up with your secateurs. For perennial weeds that spread by root or runner, such as bindweed or scutch grass, if you can dry them out completely in the sun, they can be added to your heap. Otherwise keep these types of weeds out of your compost pile. Invasive weeds, such as docks, horsetail or Japanese Knotweed should not be composted at all. In a hot composting system when a big batch is made all at once, weeds with seeds and chopped up perennial weeds that spread by root can be composted effectively, but achieving temperatures in excess of 60°C requires careful management and turning of the materials so everything is exposed to high heat conditions for effective weed destruction.

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

A: Ashes should not be added to your compost system because they fill in air spaces needed to promote adequate aeration. Additionally, they are alkaline in nature and can upset the near neutral pH balance of your compost heap. 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.

Q: Can I compost pet waste?

A: Waste from herbivore plan-eating pets, such as rabbits, hamsters, guinea pigs, gerbils and birds, can be safely composted at home. Pet waste from meat-eating pets such as dogs and cats should not be composted for use in the garden because of the potential to spread disease. Instead, cat litter can be placed into your black rubbish bin or dog faeces can be flushed down the toilet.

Q: Should I purchase a compost activator?

A: You do not need to buy an activator or inoculant to start your compost pile. All of the bacteria you need are already on the materials you want to compost. You simply need to create the right conditions for them to take off and proliferate.

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

A: Yes. Chopping up materials into smaller pieces, properly balancing green and brown materials, turning the pile to increase aeration and ensuring the compost heap remains damp, not too wet yet not too dry, will all speed up the composting process.

Q: Should I cover my composting system or heap?

A: 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. Remember to monitor the contents of your bin to ensure it does not dry out, especially during drier summer months.

Q: How can I stop flies from swarming from my composting system?

A: Flies are attracted to rotting food on top of your heap. To avoid this, be sure to mix and bury your food scraps within the pile. Then add a layer of mixed garden materials or wet leaves on top. If this problem persists during winter months when garden materials are not available, mix the food into the existing materials and place a layer of wet newspaper on top to create a physical barrier. Also be sure to collect food scraps in a covered container within your kitchen. This will prevent flies from laying eggs into the food prior to you adding them to your composter.

Q: My compost heap smells bad. What can I do?

A: There are a few reasons why your composting system may smell, including:

- The composting materials are too wet
- It contains too high a proportion of green materials such as grass cuttings or food scraps
- It contains food scraps with 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 be sure to cover the system. 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 plant derived food scraps for composting and consider using a brown bin collection service for animal based food scraps and other difficult to manage garden materials such as woody materials and noxious or invasive weeds.

Q: Does my compost need to be turned?

A: No, not necessarily. Many bins work by simply adding materials to the top while harvesting compost 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 composting 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 up within the bin as well.

Q: The material in the composter looks very dry and seems to be doing nothing. What should I do?

A: If the materials in your composting system dry out, composting stalls. Simply add and mix in water to get it going again. Once the materials are moist enough, you can continue to add fresh materials to your bin. Be sure to chop, mix and water garden materials prior adding them to your bin.

Frequently asked questions...

Q: There are lots of worms around the lid of my compost unit. Is there something wrong?

A: Worms in your bin are a good sign. 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.



Q: Are rodents a problem when composting?

A: Yes, they can be, but not if you actively manage your composting system properly. Rodents come to composters looking for food or a place to nest, especially in winter months. They will be attracted by food scraps that are easily accessible, such as those that are placed on the top of your pile, or to any high protein items such as meat, fish, bones or cheese. Compost piles can also be a warm and dry home for nesting. 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 food containing animal products, secure the bottom of the composter with wire mesh, and place it within a well visited area of the garden.



Q: How long does it take to make finished compost?

A: This depends on the system you use, the types of material composted and whether or not you are following all of the basic essentials of composting. In general, if you are using a single bin system, you can expect that any materials you add in one gardening season will be ready the following year. As the compost within a bin will be older as you go down, you can harvest the compost by taking the bin apart and setting it up again next to the composting materials. Then you can fork the fresher materials from the top into the newly placed bin until you get to the finished compost underneath. This helps kick start your new pile and gives you materials in which you can bury your food scraps into.

Q: Why is my compost taking a long time to decompose?

A: This may be caused by adding too much brown material or material which is too large in size. To solve this problem, shred the material and add more green materials. Another cause may be that the compost is too dry. If this is the case, then simply add and mix in some water.

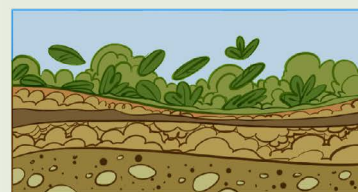
Q: There are a lot of weed seedlings when I spread out the compost. Why?

A: Weed seeds can survive in most composting piles unless a large hot pile is made all at once and you can reach temperatures in excess of 60°C for more than three days. The best solution is to avoid adding weeds with seeds to your composting system in the first place. This can be done if you pick weeds from your garden before they go to seed. This will prevent weeds from germinating from the finished compost you produce and use around your home. If you have weedy compost, simply dig it in deep within the soil so that germinating seeds cannot reach the surface.

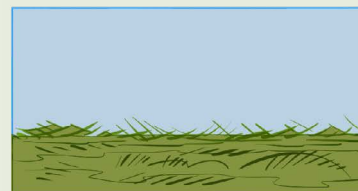


Alternatives to a compost bin

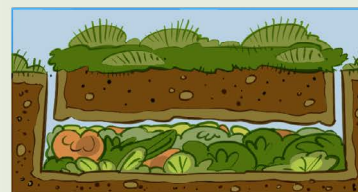
Not all materials can be easily composted on their own, including grass cuttings, food scraps and large wooden branches. There are several alternatives to the conventional compost heap or bin, including:



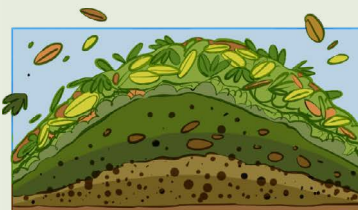
Mulching: This is a simple process of placing organic matter such as shredded bush/tree trimmings or leaves in thin layers on the surface of the soil and leaving it to decompose. This helps the soil retain moisture in drier summer months and keeps weeds down all year around. Also, as materials break down over time, nutrients and organic matter are returned back to the soil, sometimes with the help of earthworms.



Grasscycling: This is the natural recycling of grass by leaving the clippings on the lawn when mowing. Once on the ground, they decompose naturally feeding nutrients back into the soil. Grasscycling works best when the lawn is dry and the grass is not too tall. This may require more frequent cutting in summer months, but you won't need to bag or manage the clippings.



Food burial and trenching: Dig a trench or hole up to 30cm deep. Fill with food waste and chop and mix it into the soil at the bottom of the hole with a shovel. Then cover with the soil removed from the hole or trench. After a few months, the area will be ideal for planting in.



Leaf mould: If you have lots of trees and leaves, making leaf mould in autumn months is very easy. It just takes leaves, a little moisture and time. Wet leaves can be placed into a cage made of fencing, into a dedicated compost bin, in a large covered pile or in sealed black plastic bags. After a year, the leaf mould can be used as a mulch, after two years, you'll have a lovely weed-free leaf mould compost.



Vermicomposting: If you have mostly food scraps, a wormery might be a good solution to produce a high-quality compost. Stackable trays, cans, plastic bins, wooden boxes or an old bath tub can be used to house the worms. But remember to keep a lid or cover on it as the worms like a dark and moist environment. Food is then buried into a moist carbon-rich bedding, usually made of shredded paper/cardboard and leaves. Once the red worms eat the food scraps and bedding, the worm cast compost can be harvested once or twice a year and used on house plants or in your garden.

Further information & resources

Included below are links to organisations and titles of some books that can provide additional information on the contents contained within this booklet:

1. Peatland Conservation

Irish Peatland Conservation Council: www.ipcc.ie

National Parks & Wildlife Service's Peatlands Council that advises on government research and policy: www.npws.ie/peatlands-and-turf-cutting/peatlands-council

Farming for Nature, helping farmers conserve and manage peatland resources: www.farmingfornature.ie/your-farm/peatlands

Clara Bog Nature Reserve, education center for peatland preservation: www.clarabognaturereserve.ie

IUCN UK Peatland Programme, a part of a global and European network to promote research and sustainable management of peatlands and inform international, European and national peatland conservation policy: <https://www.iucn-uk-peatlandprogramme.org>

2. Composting

Composting Ireland, public education, workshops and training for home and community composting: compostingireland.ie

Clean Technology Centre, Munster Technical University, Composting: [A Household Guide \(2009\) ctc-cork.ie/resources](http://AHouseholdGuide(2009)ctc-cork.ie/resources)

Some great books on composting include:

- Let it Rot by Stu Campbell
- The Rodale Book of Composting: Easy Methods for Every Gardener
- Composting for a New Generation by Michelle Balz
- Worms Eat My Garbage by Mary Appelhof

3. Organic Gardening

The Organic Centre in County Leitrim, public education, workshops, training, supplies and demonstration site for organic gardening: www.theorganiccentre.ie

Rodale Institute, promoting regenerative farming and organic gardening for decades in the US: rodaleinstitute.org. Five great organic gardening books from Rodale include:

- Rodale's Basic Organic Gardening: A Beginner's Guide
- Rodale's Ultimate Encyclopedia of Organic Gardening
- Rodale's Vegetable Garden Problem Solver
- The New Seed Starters Handbook
- The Organic Gardeners Handbook of Natural Pest and Disease Control

Other great authors and books include:

- Charles Dowding's Organic Gardening: The Natural No-Dig Way among others
- Elliot Coleman's The New Organic Grower among others
- John Jeavons' How to Grow More Vegetables

4. Home & Community Gardening in Ireland

Grow It Yourself or GIY, a nationwide organisation promoting home gardening helping people grow food and learn about food sustainability: giy.ie

Ireland's biggest free gardening community: www.garden.ie

Royal Horticultural Society of Ireland, an association of 90 gardening, horticultural and floral clubs with a demonstration garden at the Russborough House, plus educational workshops and journal: rhsi.ie

Irish Seed Savers Association, demonstration garden & orchard, workshops, school tours, public seed bank and supplier of heirloom seeds: irishseedsavers.ie

Community Gardens Ireland, a non-profit organisation promoting allotments nationally: cgireland.org

Dublin Community Growers, a non-profit organisation promoting community gardening in the Dublin area: www.dublincommunitygrowers.ie

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Illustrations by Barry Reynolds





An Taisce

The National Trust for Ireland

An Taisce, the National Trust of Ireland, is a membership organisation preserving Ireland's rich heritage, protecting our beautiful nature, and working to slow climate change.

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Join today: membership.antaisce.org

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Rialtas na hÉireann
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