sustainability for seychelles

SEYCHELLES
COMPOSTING GUIDE

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Introduction

The burning of waste without a permit is an offense under the Environmental Laws of Seychelles. Not only can fires easily get out of hand and destroy property, but it can also produce some harmful smoke, smells and soot residue that can potentially be detrimental to human health as well as the health of the environment. The next best option is to dispose of waste in the public bins. But this will not solve the problem, since the waste is only being moved from your house/business, to the landfill. We need to make the waste disappear!!

Composting is the best option to minimize the amount of waste that is ending up on the landfill. Not only is composting your garden (and household) scraps the ideal way around getting rid of the unwanted leftovers from your home/business, it is also a great way to get in touch with our grandparent's way of doing things!.

The purpose of this booklet is to inspire everyone to live sustainably – whether you live in a flat or on a farm because by choosing to compost, you can divert 50% of your total waste away from the landfill. With the basic principles of the booklet, you will find that composting is easy and fun!

Enjoy the guide.

Dr. Michele Martin
Executive Director | Sustainability for Seychelles

What is compost?

Compost is organic matter (plant and animal residues) which has been decomposed by the action of bacteria and other organisms, over a period of time. It is that rich, brownish/blackish earthy substance that some gardeners would die for. Compost is used to add nutrients to many infertile soils, so as to increase the fertility of the soil, and increase the overall yield of the soil.

Composts are made up of many different kinds of organic matter, such as leaves, fruit and vegetable peelings. All of these different types of materials will decompose and will then become compost. The end product is very different from the original materials.

Composting is simply a natural way of recycling organic materials back into the soil in order for the cycle of life to continue.

Benefits of compost

Compost v/s Chemical Fertilizers

Compost is the best way of nourishing plants compared to using chemical fertilizers. Fertilizers provide nutrients for plants but, do not improve soil structure or quality.

Compost is not washed away through the soil like chemical fertilizers, so the beneficial effects are longer lasting.

Plants that are grown with chemical fertilizers are more attractive to pests because they have more green growth. Compost is a cheap, effective and long-term way of improving the soil to grow better crops.

In addition, composts are better 'planet-preservers' than chemical fertilizers. Composting is a good way to recycle yard waste and food scraps, keeps pests at bay, and, harnesses a host of beneficial micro-organisms that otherwise go unappreciated for their role in the ecosystem

Since healthy plants come from healthy soil, one of the best ways you can build healthy soil in your garden and lawn is by using compost.

More Benefits of Compost

Composting can have incredible benefits for you, your garden, and for our planet!!

- It is cheap, easy to make!
- Allows more air into the soil which improves drainage and reduces erosion.
- Helps stop the soil from drying out in times of drought by holding more water.
- Improves fertility by returning nutrients back into the soil. This can help to produce better yields.
- Reduces soil and crop diseases!
- Lessens the burden on landfills. Compost is an effective way to recycle kitchen and yard waste. Composting can reduce as much as 30% of household waste going into the garbage can.

WHAT TO COMPOST AND WHAT TO NEVER ADD TO YOUR PILE...

What does one to put in a compost pile? Can all household items be placed in a compost pile? The answer is no. Only those household items that are biodegradable can be used for compost. In that sense, all organic matter can be used to make compost, but not all organic matter is necessary ideal.

FOOD SCRAPS: Plant based leftovers such as orange or grapefruit rinds, old lettuce and cabbage leaves, onion skins, stale bread etc. NEVER put bones, dairy products, meat, bones and grease. They attract animals and smell bad!

MANURE: The best manures come from the cud chewers such as cows, goats and animals such as rabbits and chicken. NEVER add human or dog and cat wastes. These contain too many pathogens.

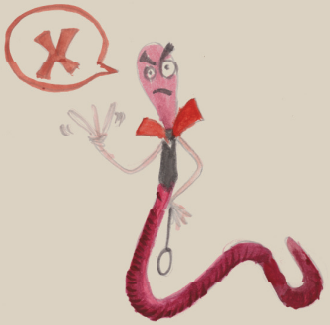
LEAVES: these are considered the most important ingredients for your compost pile. When brown, they are a source of carbon, and when still green, they will provide nitrogen to the compost pile.

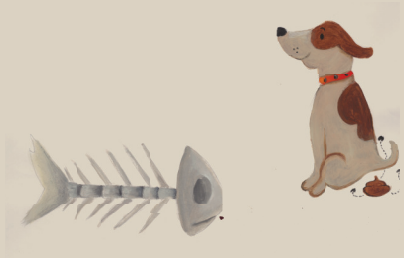
MATERIALS TO INCLUDE IN YOUR PILE

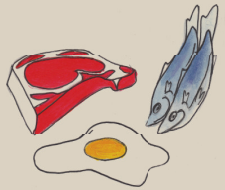
Different items will take varying amounts of time to decompose and form different end products. For example, fruit alone will go slimy and maize stalks will go dry and dusty. It is essential to include a mixture of old and tough with young and sappy materials for a good result.
The table below gives an indication of the type of items which can be put on a compost heap.
This list is not meant to be all inclusive. Some food products should not be included because they can attract pests or compromise the quality of the compost.

MATERIALS TO INCLUDE	MATERIALS TO EXCLUDE
Fruit and vegetable scraps	Meats
Tea bags	Dairy foods
Wool and cotton rags	Bones
Coffee grounds with filters	Fats
Egg shells	Oils
Leaves	Grease
Paper	Pet excrement

MATERIALS TO EXCLUDE IN YOUR PILE







Some items should never be put in your compost as they may attract pests and also contaminate your pile with pathogens. These include animal fats, bones and meats, and feces.

How to compost?

Making compost

Your household produces many materials which can be used to make compost. Making compost makes use of materials that may otherwise be thrown away.

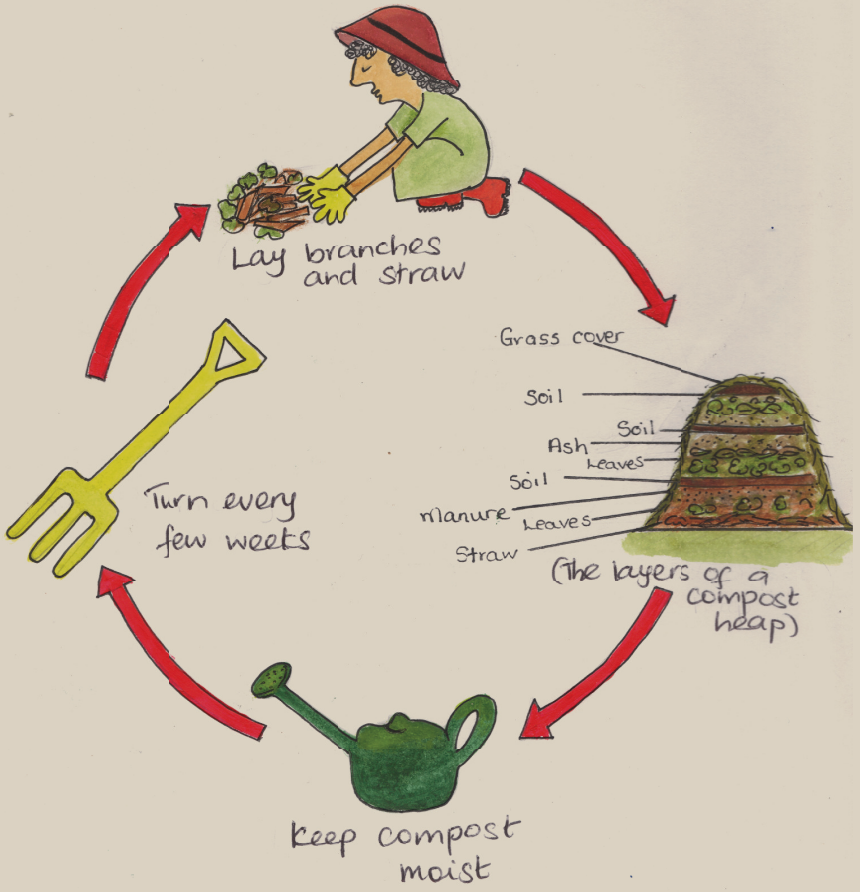
You can easily make compost with landscape trimmings and food scraps in your own backyard. With a small investment in time, you can improve the health and appearance of your yard, save money on fertilizer all while preserving natural resources and protecting the health of your family and pets, and that of our planet.

BASIC COMPOSTING

1. To begin with start your compost pile on bare earth. This allows worms and other beneficial organisms to aerate the composts and be transported to your garden beds.
2. Lay small branches or straw first, a few inches deep. This aids drainage and help aerate the pile.
3. Add composting materials in layers, alternating moist and dry. Most ingredients are food scraps, tea bag etc...dry materials are leaves, woods, Shredded paper etc.
4. Add manure especially green manure. This activates the compost piles and speeds the process along
5. Keep compost moist. Wet occasionally or let rain do the job.
6. Cover your pile of compost. Covering help retain moisture and heat, two essentials for compost.
7. Turn...every few weeks gives the pile a quick turn with a shovel. This aerates the pile.

How to compost?

Making compost



Other composting methods in the tropics

1. The Indore method

The Indore method involves putting layers of different materials on top of each other to form a pile. This is also known as the 'add-as-you-go' method.

To begin with start your compost pile on bare earth. This allows worms and other beneficial organisms to aerate the composts and be transported to your garden beds.

Make a base 1 meter (m) wide and 3m long, with twigs and stick shoots that are difficult to decompose. This allows aeration which is important for the survival of micro-organisms.

Then the layering should be as follows:

1. **10 centimeters (cm) of materials that is difficult to decompose such as maize stalks, leaves, woods, shredded paper. Then sprinkle with water.**
2. **10cm of material which is easy to decompose, such as fruit and vegetable scraps.**
3. **2cm of animal manure (if available).**
4. **A thin layer of soil from the surface of cropped land to obtain the microorganisms needed for the composting process.**
5. **Repeat these layers until the pile reaches 1m to 1.5 m high.**
6. **Cover with grass or leaves (such as banana leaves) to prevent water loss.**

Complete this process within one week. After 2 to 3 weeks the pile should be taken apart and rebuilt. This is because the materials do not all decompose evenly. Again, a layer of coarse material should be laid down first.

The material which was on the outside of the pile and has not decomposed should be placed into the middle of the new pile and watered. This should then be covered with the remaining material. The original layered structure is lost.

After another three weeks this process may have to be repeated depending on how much the pile has decomposed. Full decomposition should take 3 months.

NB: Ash in small quantities also acts as an accelerator and can be sprinkled over each layer of soil. However, too much ash could be harmful to the microorganisms in the pile.

2. The Bangalore method

The Bangalore method is a popular method of composting. A few days after completing a pile, it is covered with mud or moist grass so that it is closed off from the outside air. This allows 'anaerobic' micro-organisms (that do not need air) to decompose the pile.

The heap should be 1m to 1.5m high, 1m wide and 3m long.

The method for building the pile is as follows:

1. **10cm layer of material that is difficult to decompose (stalks and crop residues). Then sprinkle with water.**
2. **10cm of material that is easy to decompose (fruit and vegetable wastes).**
3. **2cm of animal manure (if available).**
4. **A thin layer of soil from the surface of cropped/farmed land to obtain the micro-organisms needed for the composting process.**

5. **Repeat these layers until the heap reaches 1 to 1.5m high.**
6. **Cover with wet clay, mud or damp grass.**

3. Pit composting

This method involves making compost in pits which have been dug in the ground. The best depth for a pit varies according to local soil conditions and the depth of the water table.

A typical pit would measure 1.5 to 2m wide, 50cm deep and any length. The pit can be lined with a thin layer of clay to reduce water loss. Often, several trenches are dug next to each other, to allow turning from one pit into the next. Take care not to dig the pits too close to each other as the walls between them will be too thin and may collapse.

Material should be placed in the pit in layers as described below. For a larger pit measuring 2m wide, 2m long and 1m high, 1 to 1.5 liters of water should be poured on before applying the layer of soil which seals the pit.

The layering is as follows:

1. **10cm of material which is difficult to decompose (stalks or crop residues).**
2. **10cm of material which is easy to decompose (fruit and vegetable scraps).**
3. **2cm of animal manure (if available).**
4. **A thin layer of soil from the surface of cropped /farmed land to obtain the microorganisms needed for the composting process.**
5. **Repeat these layers until the heap reaches 1 to 1.5m high.**
6. **Cover with grass or leaves (such as banana leaves) to prevent water loss.**

After 2 to 3 weeks, all the contents of the pit should be turned over into the second pit and 2 to 3 weeks later this should be turned into the third pit. As the decomposing material from pit 1 is turned into pit 2, new material which is ready for composting can be put into pit 1, thus creating a process of continual compost making.

4. TRENCH COMPOSTING

Trench composting is similar to pit composting except that plants are grown directly onto the pit as opposed to taking the compost out of the pit and spreading it on land.

A trench should first be dug. The size depends on how much material you have available and how many plants you are planting in the trench. The width can range from 50cm to several meters, the depth 1m or less and it can be any length.

It should then be filled as follows:

1. **10cm of material which is difficult to decompose (stalks or crop residues).**
2. **10cm of material which is easy to decompose (fruit and vegetable scraps).**
3. **Add 2cm of animal manure (if available).**
4. **A thin layer of soil from the surface of cropped land to obtain the microorganisms needed for the composting process.**
5. **Repeat these layers until the pile is about 50cm above the ground.**
6. **Cover with soil, grass or leaves (such as banana leaves) to prevent water and nutrient loss and leave to settle for about one month before planting.**

Less digging is required if the trenches are dug as shown in the picture. In these smaller, individual trenches layers of soil should be added in between the compostable material. It should be left to settle for about a month before planting. These trenches make more efficient use of compostable material because more crops can be grown in the same area as a wider trench.

COMPOSTING QUERIES

MAKING COMPOST

THE THREAT OF RATS

Having a compost bin doesn't necessarily mean you'll have a rat problem. However, if there are rats in the area then it's likely they may pay an occasional visit. How to Make Your Heap Less Attractive to Rats?

Here are some things you can do to discourage them:

1. **Place a sheet of strong chicken wire or weld mesh under your compost bin or pile. This will stop burrowing rats getting into the bin. Make your compost rat proof:** e.g. in a chicken wire box
2. **Disturb your bin/ agitate the contents regularly as (rats only like undisturbed heaps).**
3. **Never put cooked food into a bin/ heap.**
4. **Don't put egg shells into the bin/ heap.**
5. **Only put raw food scraps into a compost bin not an open heap.**
6. **Cover the raw food scraps with other materials e.g. grass clippings.**
7. **Consider locating your bin/pile in an open place in your garden. Rats dislike crossing open spaces, preferring the shelter provided by walls or fences. Avoid placing the bin next to old sheds or hedges.**

ODOR & FLIES

A good compost should never emit any strong disagreeable smell, or attract any pests such as flies. If that is the case with your compost pile... you need to figure out what you did wrong. A few pointers are listed below.

- Did you add one of the 'NEVERS' to your pile (see page 7). Remove them and never add them again.
- Did you quickly dispose of food scraps on the top of your pile? Take a moment to cover them with a small layer of brown materials each time, so that they are buried underground and are not exposed.
- Have you turned your pile lately? If not...go do it now.

Composting in flats and housing estates

Composting is almost always associated with the outdoors. But as more Seychellois families find themselves living in flats and apartments with no backyards, composting becomes absolute.

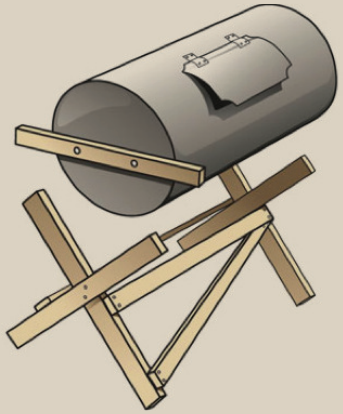
Photo: Darren Bonnelame

Many people will not compost on their balconies because turning the pile can get a bit messy. However, rotating bins are designed to make the task of turning your pile easier, and less messy. They are the ideal solution to balcony composting. Here is a DIY Guide

Making a composting tumbler in four easy steps:

STEP 1

Mark an opening on the side of a food-grade barrel using masking tape. Bore a 3/8-in.-dia. hole at each of its corners and use a jigsaw with a metal-cutting blade to cut out the shape of the door. Clean up the edges of the door and barrel with a file.



STEP 2

Attach the door to the barrel: Use screws or bolts to fasten metal hinges or make a flap hinge from scraps of bicycle inner tube. Screw a couple of small blocks to the inside of the barrel to keep the door from falling in and another on the outside to act as a latch.

STEP 3

Make two X-shaped stands using pressure-treated 2 x 4s or scrap lumber. Fasten the Xs together with bolts, screws or nails that are bent over where they exit. Connect the two X-shaped stands with horizontal lumber, and add diagonal braces to keep them steady.

STEP 4

Attach a wooden turning lever to the end of the barrel using large sheet metal screws or a couple of bolts. Rub a bar of soap on the components of the wooden stand that make contact with the barrel to lubricate them.

If you live on a housing estate, here's why a rotating bin is best for you too!!

- Sealed, aerated drum speeds composting process.
- Durable, robust construction will last many years.
- Easy to access finished compost by inverting drum over a wheelbarrow.
- "Continuous use" models keep fresh compost materials separate from finishing compost.
- 100% pest proof.

Read more: How to Build a Rotating Compost Bin in 4 Easy Steps - Popular Mechanics
Follow us: @PopMech on Twitter | popularmechanics on Facebook
Visit us at PopularMechanics.

Other organic gardening tips

- Use rainwater harvesting methods to ensure you are not using treated water to water your garden.
- Cultivate a healthy tolerance for weeds... where you see pests, wildlife see habitat and source of food!

Further reading and resources

McDowell, C. F and T. McDowell 'Home composting made easy'
Wildlife clubs of Seychelles 'Environmental Protection in Seychelles: A Guide to your rights and responsibilities'...
Seychelles Solid Waste Management Policy (2013).
Seychelles Sustainable Development Strategy (2011-2020).
www.organicgardening.com/learn-and-grow/design/tips
www.popularmechanics.com

About Sustainability for Seychelles

This booklet has been produced by Sustainability for Seychelles (S4S), a legally registered NGO established in 2007, as part of its project called 'Engaging Civil Society in Sustainable Waste Management', which is being funded by the Global Environment Facility - small grants program. The project seeks to showcase a more participatory process for tackling environmental problems through close collaboration and networking between communities (CBOs), the private sector and government. One key component of this project is the promotion of home composting among members of the general public of Seychelles. Home composting is a simple and effective way to divert bio-degradable waste from landfills. Many thanks to S4S Board Member Mrs. Mia Dunford for her contributions to the home composting program.

Many thanks to the team who has put this booklet together: Aubrey Horter, Ginnie Laurencine, Dyllis Pouponneau, and Michele Martin

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APDESIGNS.