



ERYNOLE

Home Composting

What is composting?

Composting is a biological process that transforms organic waste into a substrate rich in nutrients for vegetation. As happens in nature, the soil and plants derive nourishment from their waste: dry leaves, fallen twigs, remains of animals and insects; **organic material** which, thanks to the action of bacteria and fungi, is decomposed and transformed into soft soil rich in **humus**, which performs very important functions:

- Improves the structure of sandy soils
- It prevents the soil from drying out by promoting **water retention**
- It increases the porosity of the soil, favoring its **aeration**
- Makes clayey soils softer and easier to work
- Acts as a slow-release reserve of **nutrients** for vegetation
- Binds harmful elements such as heavy metals, making them no longer available for absorption by living organisms.

Current cultivation practices tend to deplete the organic substance in the soil, thus forcing the use of chemical fertilizers to ensure the plants have a correct supply of nutrients.

While the use of synthetic fertilizers satisfies the cultivation needs, it does not allow the replenishment of the reserve of organic matter essential for the life of decomposing organisms and consequently for the life of plants. Instead, this happened when agriculture was able to guarantee the return of organic matter to the soil with the use of animal waste such as manure and sewage.

Composting simply reproduces this natural process in a more controlled way and with considerably shorter times. in order to obtain a **stabilized material** compatible with use in agriculture or gardening as an organic fertilizer and soil conditioner.

The process of transformation into compost is defined as **biological** because much of the merit of the transformation is of the decomposing organisms contained in the soil and in the waste that degrade and transform the organic substance; therefore, in order for the process to develop adequately and in shorter times than natural ones, the ideal living conditions for these microorganisms must be maintained.

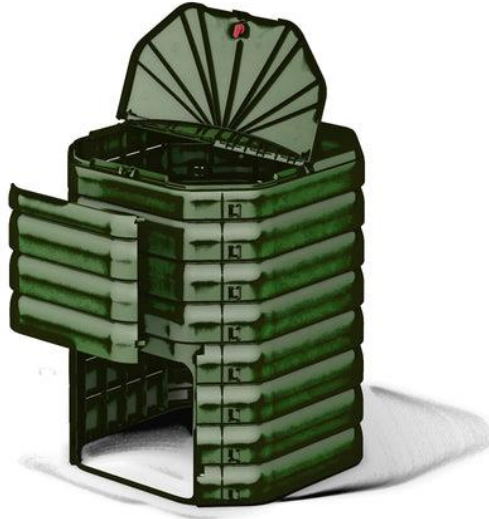
To start the composting process, you must first have the necessary tools, that is a composter, organic waste, and garden soil.

The Composter:

in general, a composter is a container suitable for housing waste that is decomposing and transforming into compost. Therefore, it must allow **good ventilation**, offer protection from atmospheric agents and animals, and be robust and durable. There are "do-it-yourself" alternatives such as old wooden boxes, or metal bins (without the bottom and pitted) or using bricks and wood, but the most convenient, quick and lasting solution is the purchase of a ready-made composter, usually they are made of recycled plastic, ready to use, with a capacity of 300 liters, therefore suitable for domestic use. The composters of this type consist of three parts: **the upper part**, consisting of a large door, through which the waste is introduced, **the central body**, in which fermentation takes place, equipped with an opening to collect the compost and side air intakes that allow the recirculation of oxygen, and **a base**, formed by a grid and a cone that allow regular ventilation in all points of the organic mass, thus ensuring the absence of bad odors. Before filling with the organic material it is necessary, only for the first use, to insert two buckets of garden earth inside the composter, then proceed to add the organic material, it is good to add the latter on a daily basis or in small time intervals, in order to avoid accumulating too high quantities of organic waste, both for hygienic reasons and because adding too large masses of organic material risks overloading the composter and consequently slowing down the decomposition process.

The use of the composter has some **indisputable advantages**:

- It guarantees a better use of space and is therefore recommended for those with **confined spaces**
- It is preferable for hygienic reasons, as the waste is protected from contact with pets and children, and also protects against bad odors
- Maintains the right level of humidity
- Promotes faster decomposition
- Protects the compost from atmospheric agents
- It makes the daily introduction of even modest quantities of waste more convenient



What to use?

The raw materials for the production of compost are **organic waste** (remains of fruit, vegetables, food scraps, dry leaves, twigs, etc.) while they are to be **absolutely avoided** inorganic waste and synthetic substances (glass, plastic, metal, painted materials, batteries, etc.). However, if it is true that all food waste and plant elements are biologically convertible into compost, not all of them have the same potential for decomposition and the same fertilizing efficacy: there are substances that are transformed more slowly than others, and elements that are not treated by decomposing organisms, in particular **the following materials must never be introduced**, as they are hardly biodegradable:

- Kernels and walnut shells
- Meat bones and fish bones in large quantities
- Coupled cardboard containers (tetrapak)
- Inked, coated or laminated paper
- Synthetic fabrics
- Oil

Some materials, despite being organic in nature, and therefore theoretically compostable, are **less suitable** for the production of compost and therefore should be included with criteria:

- Citrus peels (often treated with preservatives, they are slow decomposition)
- Fish, meat, and cured meats (although they degrade easily and are rich in nitrogen, they can attract the attention of insects, rodents and other unwanted animals)
- Animal droppings (they may contain pathogenic germs and parasite eggs, so they should be avoided for hygienic reasons)

Instead, they must be used and are **extremely suitable**:

- Fruit and food leftovers
- Tea and coffee grounds filters
- Ink-free (even greasy) paper and cardboard
- Pot plants, flowers and soil
- Biodegradable small animal litter
- Manure
- Hair and feathers
- Wood chips
- Foliage
- Ash



Fundamental parameters to observe: Oxygen and Humidity.

Oxygen: the microorganisms responsible for the decomposition of organic substances need oxygen to live, the surest way to guarantee this precious resource is the mixing of waste with a high quantity of water (remains of fruit, food scraps, coffee and tea grounds) with dry and woody scraps (dry leaves, broken twigs, paper, ash), so as to give the mass an optimal structure, preventing it from compacting and creating a network of interstices in which air can circulate. If the compost tends to compact it will need to be worked through a fork or similar tool, in order to restore proper ventilation.

Humidity: is a fundamental parameter as all living organisms need water for survival, without adequate humidity (40% minimum) the transformation reactions would suffer a sudden slowdown of the process or even at its stop. To measure the humidity of the compost, there is a very simple empirical system, you take a handful of compost in your hand and clench in your fist, an ideal moisture texture leaves your hand slightly damp. If the hand remains dry, it means that water must be added to the substrate, if it is too wet, dry waste must be added to absorb excess moisture.

Troubles and solutions:

it may happen that things do not go as they should, and that more or less annoying problems occur, especially for those who are struggling with home composting for the first time. The following are the problems that may arise and some tips to solve them:

- **Presence of unwanted guests (rodents and other animals):** is due to the accumulation of fresh and **uncovered materials** (meat, fish, cured meats ...) to avoid this problem just cover immediately the fresh material with other already composted material or with simple soil
- **Formation of bad odors:** this is due to an excess of nitrogen (too much food waste compared to dry waste) and the absence of oxygen in the composter, to solve this problem just insert more dry waste such as dry leaves and twigs and turn the compost over to mix them well
- **Slow composting process:** the problem has the opposite cause to that seen previously, i.e., too much dry waste, to solve it just add wet waste (fruit, kitchen waste, etc ...) and turn the compost

Compost management and use times:

Fresh compost: this term refers to compost matured **from 2 to 4 months**. Fresh compost can be used on flower beds, in the vegetable garden or at the base of trees, preferably in autumn, incorporating it into the surface layer of the soil or at the end of spring, when the plants are already in an advanced stage of vegetation, this is because the fresh compost **is rich in organic substances** and **fertilizing** elements that plants need during the flowering and fruiting phase. It is highly **not recommended** instead to use fresh compost as soil for potting flowers and plants, as the decomposition processes are still active and would damage the roots of the plants.

Ready compost: This is how you can define compost that is aged between **6 and 9 months**. This type of compost has a lower fertilizing effect than fresh compost, but has a better **stabilization**, as the decomposition process takes place very slowly, so it can be used to **fertilize** the soil in **preparation for sowing** of plants or to carry out **transplants**.

Mature compost: after **from 9 to 12 months** the compost can be defined as mature, during this period there is a reduction in weight and volume of the organic mass. This type of compost can be used as a **substrate** for pot plants, as it **does not damage** the roots, and it can also be used as a substrate for the cultivation of any garden plant. or in the garden, right from sowing. It is the most suitable compost for **indoor plants**.

As we have seen, therefore, composting is not only a good practice for **disposing of organic waste in a sustainable way**, but it is also a method that allows you to obtain a **high-quality product**, whether it is used as a **substrate** for the germination and growth of plants, or as a **fertilizer** to stimulate the flowering and fruiting processes.



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